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THE AEROPLANE

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ON PEACE.

For nearly five years our Press and our politicians have been proclaiming to the world at large and to the people of this country in particular that the signature of any German on a scrap of paper is worthless.

On Saturday, June 28th, the representatives of the German people signed a scrap of paper, and forthwith threw the Allied Nations and the United States into paroxysms of joy—if the newspapers of the world are to be believed.

One is not and never has been a believer in Universal Peace, whether produced by treaty, or by an upsetting of the balance of power by a League of Nations, or by the regeneration of the human race. Nor is one a believer in peace between temporary Allies any more than eternal enmity between temporary enemies.

We are but little nearer, in the passing of eternity, to permanent or universal peace now than we were in 1914, or in 1814, or in 1014, or in the year 14 B.C.

The soundest policy as a preservative of peace is to obey the motto "In time of peace prepare for war." Only by readiness for war can peace be maintained.

In the recent war we saw the beginning of aerial warfare and realised a little the value of Air Power. In the next war we shall see aerial warfare properly developed, and aircraft put to their logical uses.

This nation and this Empire is more vulnerable to attack by aircraft than by any other weapon, it is better fitted to use aircraft as a weapon of offence than any other weapon, and it must rely more than any other nation in future wars on the efficiency of its anti-aircraft defences.

Thus it behoves us as a people to prepare forthwith to set up such an Air Force and such a system of defence against aircraft as will insure us for all time against invasion, and against interference in our communications with the British Dominions Overseas, and such as will enable us to strike at once by way of the air against any nation which has the presumption to disturb our peace.

Our politicians will hamper the setting up of such an Air Force, and the people will not heed the lesson of this war. For this reason those who have eyes to see and minds to understand have upon them henceforth the burden of working for a big Air Force as those of an earlier generation had the task of working for a big Navy.

Let us, therefore, to whom aircraft and all that the word implies are the first of our interests, dedicate ourselves to the task of maintaining the Air Power of this Kingdom.—C. G. G.

ON A TERRITORIAL AIR FORCE.

Speaking at the Independent Force, R.A.F., dinner recently General Trenchard stated that a Territorial Force scheme for the R.A.F. is under consideration. He gave no indication whatever of the lines on which the scheme is to be worked, but the natural assumption is that it will be more or less based on the Territorial Force scheme of the Army as organised by the Viscount Haldane.

Whatever may be the popular opinion of Lord Haldane, as gathered from the common news-sheets, the indisputable fact remains that his Territorial scheme was remarkably good, and that it played a very important part in such success as the British Army achieved in this war. Lord Haldane is recognised by experienced officers of the General Staff as one of the best War Ministers whom this country has had for several generations. It is true that he was weak in his faith in aviation and that the R.F.C. owed him no thanks for anything, but it is none the less a fact that he did much for the British Army, and that it was largely due to him that the little British Expeditionary Force at the beginning of the war was the most efficient army in the world.

The Chief Problem.

Lord Haldane's task before the war was very similar to that which confronts Sir Hugh Trenchard after the war. When one regards the situations side by side one finds that in each case there is the primary obstacle of a Government whose first consideration is to maintain itself in office by pandering to the mob. The people must be placated by the old bribes of *panem et circenses*. They must have cheap food and cheap amusements (one can hardly call the entertainment tax a hindrance). There is very little money to spare for the defence of the country. With the exception of a few intelligent people, the population of the country believes that it is in for a prolonged period of the deepest peace.

There is, then, the choice between a very small permanent force of the very highest efficiency, plus as large a volunteer force as can be raised, and a badly-paid, badly-equipped professional force of larger size, without any volunteer backing. The problem to be faced is simply how to spend to the best advantage the small amount of money which can be extracted from a Government which is much more concerned about its own immediate present than about the future of the Empire.

Lord Haldane chose to spend the bulk of his money on building the B.E.F., and his policy was wholly justified in the first six weeks of the war. His Territorial scheme was equally well justified in the next six months, when the semi-trained Territorial battalions were pitchforked into the line to hold up the German advance until the first of the Kitchener Armies began to arrive.

The End of the Parallel.

But when one comes to consider the relative difficulties of the two tasks of raising a Territorial Army and of raising a Territorial Air Force—given equal official support and equally good staff work in each case—the parallel ends abruptly. In fact there can be no comparison.

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Consider, for example, what inducement can be offered to join a Territorial infantry battalion. A man must join from one of three motives. Either he must be a whole-souled patriot who thinks it his duty to learn to defend his country—in which case he is qualified for a place in a museum. Or he likes soldiering for soldiering's sake, but cannot afford to be a professional soldier—which probably accounts for the bulk of the Territorial Force. Or he likes the idea of swanking around in a uniform on occasion—which also accounted for a large number of "Terriers" before the war.

All he gets for his trouble is a holiday in the country for a week or so once a year—and generally a very wet and uncomfortable holiday. For it he has to sacrifice his spare time on four or five days every month. He has to tramp down to an ugly drill-hall, generally in a slum. And he has to do uninteresting drills and marches which seem to lead nowhere in particular and back again. After which his friends and acquaintances jeer at him for "playing at soldiers."

Air Force Inducements.

Consider, as against all that, the inducements which can be held out by the Air Ministry to persuade people to join a Territorial Air Force, if it is run on the right lines.

In the first place, pilots who have left the R.A.F. and who cannot afford to fly at their own expense can go on flying at intervals for years. Not only will they keep in training, but they will keep in touch with the latest aeronautical developments.

One knows for certain that this inducement alone would bring dozens of present pilots into the Territorial Air Force, and probably it would bring thousands into it, if there were room for them. Also in years to come it would induce many thousands of youngsters to join, because every boy at school to-day wants to fly, just as the previous generation wanted to drive a motor-car and as the older generation wanted to drive a railway-engine or even a traction-engine.

That craving to be an engine-driver is one of the universal desires of youth which continues from generation to generation and survives into the old age of the individual. And it can be made a very valuable national asset if it is handled the right way.

Territorial or Temporary.

Furthermore, many an ex-pilot of the R.A.F., and many an observer for that matter, would rather join a Territorial Air Force than take a Temporary Commission in the R.A.F. As Captain Barron has pointed out in his article on the reorganisation of the R.A.F., the Temporary Commission scheme may only appeal to a very limited number of people, because many will regard it as a "dead-end occupation." A Territorial Air Force does at any rate afford present-day pilots and observers a chance of keeping in the closest touch with their old Service and of keeping thoroughly up-to-date in aeronautical affairs while continuing to make a decent living at their normal professions.

Inducements to Airmen.

Apart from officers and airmen-pilots, a Territorial Air Force offers strong inducements to ex-airmen of the R.A.F. and to ordinary mechanics all over the country, as well as to youths of the higher social classes who cannot hope to fly owing to physical defects.

One of the greatest harms done to this country in the early days of the war was the calling-up of skilled mechanics who were Territorial soldiers. They went into the line as infantry and were killed in hundreds. Many thousands more joined the Kitchener Armies as privates and were likewise killed, or maimed so as to be unfit for work.

Now, if all the former air-mechanics of the R.A.F., and a number of other skilled mechanics from engineering works, garages, and so forth, all over the country, could be induced to join a Territorial Air Force, not only would the R.A.F. be thoroughly adequately manned in time of war, but these particularly valuable men would be saved for the reconstruction of industry after the war. One believes firmly that if all those thousands of gallant and patriotic mechanics and engineers who were killed during the first year of the war were still alive, the outlook for British Industry would be far brighter than it is to-day, for they would stand none of the Bolshevist nonsense and treason which is talked in our factories by the trench-dodging scum who, unhappily, form so large a proportion of our surviving industrial population.

An additional inducement to mechanics and engineers to join a Territorial Air Force is the fact that they would thus learn a great deal about the construction of aircraft and aero-engines, or—in the case of those who have already worked on aircraft—would keep their knowledge up to date, and so would be ready to take important jobs in the Aircraft Industry when the great boom in Civil Aviation arrives, as it will do some day—though none can say whether it will be in two, five, fifteen, or twenty-five years' time.

Inducements to Youths.

Similarly, youngsters now at school would find it worth their while to join as airmen, because, in case of war, they would automatically drop into their places in the mobilised R.A.F. Those who were fitted for the job would certainly be promoted at once to be technical officers, if they were unfit to become pilots. Many would be taught to fly. All the rest would be kept at a job at which they were already more or less proficient.

An attempt is being made already in a very small way—as already noted in this paper—to induce youngsters between 14 and 20 years of age to join a branch of a London Territorial Battalion and learn something of aeronautical engineering as taught by ex-R.A.F. officers. This is a step in the right direction—or perhaps one should rather describe it as an attempt at toddling in the right direction—but, obviously, although it has had the official blessing of General Trenchard, it is wrong in principle, as the steps of toddlers generally are.

In the first place, if the R.A.F. is to be the R.A.F. and is not to be a part of the Army, it is quite wrong that aeronautics should be taught under the auspices of a T.F. Battalion of the Army. In the second place, any instruction of this sort, if it is to be given at all, should be given at an R.A.F. station of some sort—for preference in an aeroplance shed at an aerodrome among actual aeroplanes. There are plenty to spare at Hendon and Hounslow and elsewhere. Or the classes might be held at the Agricultural Hall or one of the other numerous R.A.F. stores in London itself. However, doubtless this small matter will be put right when a proper cut-and-dried Territorial Scheme is laid down by the Air Ministry.

An Ancient Idea.

So far one has merely indicated roughly how much easier it will be to induce people to join a Territorial Air Force than it can be to get recruits for the Territorial Army. There are many other inducements, but one has neither the time nor the space in which to set them forth. They may be left to the recruiting offices of the R.A.F. (T.F.) whenever they may be established.

Actually the idea of a Territorial Air Force is far from new. In April and May of 1914 Mr. W. E. de B. Whittaker, now Major, General Staff, wrote a series of articles in this paper on "A Reserve for the Royal Flying Corps" and on "Local Training," setting forth with his customary lucidity and peculiar humour the difficulties

and also the great possibilities of a Territorial scheme for the R.F.C. As he rightly argued, in those days pilots were so few and far between that there was little possibilty of raising the personnel of a squadron in any one town, or of establishing an aerodrome, or of raising the money to buy machines—despite the sporting offer of the city of Liverpool to raise and equip a volunteer squadron.

Many points in his article published on May 7th, 1914, might well be of value to-day to those who may be concerned with drafting the new Territorial scheme. And as to the general effect of a Territorial Air Force the end of the said article may well speak for itself :—

"This spreading of aviation (Territorial) into the most curious nooks of the Kingdom, to places where business is the only god, would do much to popularise aviation among the people. Familiarity with flying would teach the populace many lessons both as to the safety of aeroplanes and the instability of aviators. When a man does not understand a thing he invariably dislikes it.

"It (Territorial aviation) might have some strange effect on patriotic feeling. To see a part of the country's defences flying over one's back garden is a noble sight calculated to rouse the finest instincts in man. So long as the local aviator preserved a judicious attitude as to miscellaneous landings, there is no reason why he should not become as popular as the local mayor when he wears his triumphal collar."

Value for Money.

To-day the position is very different in many ways, and a Territorial Air Force would give the Nation very much better value for its money than it could do in the days in which Mr. Whittaker introduced the Territorial idea.

We have now enough trained pilots and mechanics in any really big town to supply the whole personnel of a squadron, and some cities could raise a couple of squadrons. This trained personnel could easily train new people as they might come along in the future. We have aerodromes to spare all over the country, with huts and sheds for more squadrons than any Territorial scheme is likely to raise. Also we have machines, literally as well as figuratively, to burn—if certain "Questions in the House" may be taken as reasonably accurate statements. The country would get better value out of those machines by handing them over to volunteer squadrons than ever it is likely to get by "reduction to produce" for the sake of giving employment to unskilled labour and officials of the Salvage Department.

The Finance Question.

Thus one sees that a vast Territorial Air Force can be raised and equipped practically without asking the Treasury for a penny, merely by using matériel which already exists, and for which the Treasury has already paid, or for which it will have to pay sooner or later.

The personnel will cost nothing, except for uniforms—of which there is probably an excess as great as the excess of machines and engines. Only when called out for manœuvres will there be any pay and maintenance to consider, for all the other work of the squadrons will be done locally, in the spare time of the personnel.

So far as one can see, the only regular and constant expenditure would be on petrol and oil, and this, though representing perhaps a fairly large sum in the year, would actually be very small in proportion to the value received, and should be regarded as a National Insurance premium against future aerial invasion. Also, perhaps some of the Petrol Profiteers might help with gifts of fuel.

The Air Ministry's Choice.

To put the position briefly, the Air Ministry has the choice of two distinct policies. Given that it will have a limited grant from the Treasury, that sum can be spent in either of two ways :—

(A) It can all be spent on a Regular Air Force—consisting of officers with permanent, temporary, and special



HYDE PARK CORNER.—Photographed on Alexandra Rose Day from the red-nosed Handley Page bouquet-dropper

reserve commissions, and airmen under a permanent engagement, plus a liability to service in the reserve.

(B) It can have a much smaller Regular Air Force, with a very large Territorial Air Force attached.

In the first case most of its Vote will be spent in pay and allowances, and there will be little left for matériel. Which means that when war breaks out again it will find itself precisely where it was when this war began—namely, with a small but highly efficient force, but without aeroplanes or engines, without an Aircraft Industry capable of supplying its war needs, without a large trained personnel, and without means of sudden expansion.

In the second case it will be able to spend most of its money on matériel, because it will be able to get its personnel for nothing or next to nothing. Thus in case of war it would have a fairly healthy Aircraft Industry capable of expanding its output rapidly to equip the Territorial squadrons with the latest machines and engines.

It must be one or the other. The money may be spent mostly on men, or mostly on machines. It is certain that no post-bellum Government will dare to provide enough money to maintain a Regular Air Force adequate to our needs. Therefore it seems fairly self-evident that the only hope of maintaining our position as the leading Power in the air is to spend as much as possible on equipment and as little as possible on personnel.

Permanent Pay.

At the same time it is essential that those people who *are* paid by the Air Ministry—namely, the Regular officers and airmen—should be very highly-paid specialists, for on them will depend the degree of excellence and efficiency attained by the personnel of the Territorial Air Force.

General Trenchard has stated definitely that officers of the R.A.F. will be able to live, and live well, on their pay, so there need be no anxiety on that score. It will be far better to pay a small number of highly efficient people really well, and to have a large number of volunteers who will be paid nothing at all, than to have a medium number of people all badly paid, all without enthusiasm for their work, and all as inefficient at their jobs as was the average Technical Expert during the war.

Inducements to the Authorities.

Thus one sees that just as there is every inducement for the man who is keen on aviation to join the R.A.F. (T.F.), so there is every inducement for the Authorities, whether at the Air Ministry or in the Cabinet, to form an R.A.F. (T.F.). Correspondence, some of which has been published in this paper, shows how keen many people, both those formerly in the R.A.F. and others, are to join a Territorial Air Force. It is a newspaper axiom that for one person who writes a letter to a paper on a given subject there are 100 who intended to do so, or would like to do so, but don't. One only hopes that the Authorities are as keen on forming it, and that they will set forth their scheme, whatever it may be, before people have become bored waiting for it.—C. G. G.

ON THE RE-ORGANISATION OF THE R.A.F.

It has always been the custom in this paper to give all sides of every question a fair hearing, no matter how much the other sides might disagree with the editor's personal opinions. If, on occasion, the editorial opinion has predominated, it has only been because the opposition has not had the pluck or the ability to voice its arguments in print, or, one admits it freely, because the opposition has not thought it worth while. The history of aeronautics, especially of Service aeronautics, in the past six or seven years has proved the folly of the last-mentioned course of inaction, for unfortunately, from the opposition point of view, it has always been shown in the end that this paper has been right. Not that one takes any personal credit for the fact, for the fairly consistent rightness of The Aeroplane has simply been due to backing the opinions of the right people.

Because of this principle of giving all sides a fair hearing one has given full publicity to the letter of one "Audax" last week, and to a more elaborate argument in the form of an article by Captain Barron this week. Both these officers disagree with, or at any rate mistrust, the scheme for the reorganisation of the R.A.F. as disclosed in outline by the Chief of the Air Staff recently.

One's personal opinion is that the scheme will work out quite well in practice, though possibly modifications may be necessary in detail in the light of experience during the next few years. Moreover, it must be remembered that all we know at the moment is simply the outline, or perhaps one should say the skeleton, of the scheme. One could scarcely judge the beauty of Cleopatra or the strength of Milo of Crotona or the genius of Cæsar from a casual glance at their skeletons in a museum.

Those who have served under Sir Hugh Trenchard know his genius for handling the personnel of a fighting force, and those who have not had that privilege, but have merely watched the work of the R.F.C. under his guidance, have the fullest confidence in his ability to make good under difficult circumstances. Therefore there seems no reason to doubt the ultimate success of the R.A.F. scheme, so long as General Trenchard is allowed to work it out in his own way. One believes that the Secretary of State for Air, Mr. Winston Churchill, has that same faith in General Trenchard as have those who have served with him, and Mr. Churchill's own brilliant brain is certain to contribute ideas of great value to the scheme as it develops in practice.

It is an axiom that the ideal form of government is a benevolent despotism, and of all the King's Services the Royal Air Force more than any other has need of a benevolent despot to set it in order. The re-organisation of the R.A.F. is essentially a one-man business. When it has developed into a going concern, then perhaps it may be able to carry on with a Committee or a Board of Directors, or a Soviet, or something equally comic which the passing of time and the demands of the period may call into being. Meantime one is prepared to back the present scheme, of which, as already mentioned, we only know the skeleton.

The Blind-Alley Scare.

Captain Barron seems unintentionally to have given the answer to all critics of the scheme when he says that, like Wagner's music, it must be better than it sounds. If the scheme is as much better than all other schemes as Wagner's music is better than all other music, it will be far better than the R.A.F. deserves. If it is as the "Kaisermarch" is to "Pomp and Circumstance," or as "Parsifal" is to "Gerontius," then the R.A.F. will be the finest thing of its kind in the world—as it is now, for that matter, despite all its faults. Those who curse the R.A.F. and all its works ought to hear a few of the things that the people in the French and Italian and American flying services say about their own shows.

The thing that seems most to scare people about the new scheme is the notion that temporary commissions in the R.A.F. are simply a blind-alley occupation. So is any other occupation, as a matter of fact, if it does not happen to be the particular occupation for which the individual is best fitted. A man may study for the Bar,

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and never get any further than the long one at the Trocadero. Or he may be articled as a chartered accountant and yet never be of any account whatever. Or he may be articled as a solicitor and end by soliciting alms. Or he may walk the hospitals with intent to become a doctor, and end by walking the streets full of dope. A man can only succeed in a job for which he is fitted by constitution. Education alone can never make him a success. The prizes in any competition are very few in proportion to the competitors, and the majority of the population of any country are the "also rans."

Temporary or Permanent.

Similarly a man's success as an R.A.F. officer will depend on his fitness for success and not on whether he starts with a permanent or a temporary commission. General Trenchard stated quite plainly that each year a certain number of temporary officers will be given permanent commissions. And, though he did not say so, it must be evident in the nature of things that every year a certain number of officers with permanent commissions will resign, or will be compelled to resign under pressure by their brother officers, or will be invalided out, or will be killed. So one class balances up against the other.

Thus one sees that, for a start, the temporary officer, if he is superlatively good all round, has a fair sporting chance of becoming a permanent officer. And, if a man has faith in his own ability, he need not hesitate to take a temporary commission, for if he proves good enough he is certain to get either one of the permanent commissions which are to be reserved for temporary officers or one of those vacated by a permanent officer who has fallen out by the way.

A Means to an End.

Furthermore, a temporary commission in the R.A.F. may well be regarded as a means to an end in civil aviation. Presumably most of us who are concerned with aviation to-day believe that civil aviation has a great future. Otherwise, to put it in the vernacular, we should not be such mugs as to stop in it.

But, civil aviation is still very much in its infancy. In fact, to judge by the way it is squealing at the moment, it is suffering badly from infantile colic, or at any rate from teething troubles. And small blame to it, for candidly one does not think a whole lot of the way its wet-nurses in the Department of Civil Aviation are treating the poor little beast.

Nevertheless, in two or three or at any rate in five years' time Civil Aviation will be a really sound business, and those people who are now quitting aviation in disgust or in despair will be sorry that they did so. Civil aviation is merely suffering to-day from a slump after the unnatural boom caused by the war, but the growth of all industries shows that the base of any slump is higher on the chart than the peak of the last boom but one, so there is no cause for worry, but merely for caution.

As a matter of fact, a slump is a very healthy thing, for it weeds out the unfit. Those who lack faith, or lack ability, get out and leave more room for those who remain. The Air Force and the Aircraft Industry alike are better without them. Those who remain in the R.A.F. with temporary commissions are in fact simply using a means to an end.

Luck and Judgment.

The temporary officer demonstrates his faith in aviation by taking a temporary commission. If he is superlatively good, and if he also has the necessary luck—for luck plays an important part in all successful careers—he will become a permanent officer and will in time rise to a high command. If he has not the luck, but merely has good judgment, he will learn all he can during his years of temporary service and so will leave the R.A.F. full of all the latest knowledge of aeronautical theory and practice and will be fit to take a really good job in civil aviation. Meantime the people who get out now will have drifted into other occupations and will be out of date so far as aviation is concerned. One has said all this before, months and months ago, but it is just as well to say it again, for people who are feeling depressed are apt to forget precisely the things which ought most to cheer them and support their failing faith. Therefore one wants to impress on all present officers of the R.A.F. the fact that if they have the chance of a temporary commission they will do well to take it.

The greatest pity seems to be that so many youngsters of the right class are having their applications for temporary commissions turned down by incompetent wing and group commanders while a certain number of undesirables are being recommended by the same people. That is a matter of bad luck on one side and bad judgment on the other, but it cannot be helped.

Many a good man in the Navy and Army has had his career blasted by a bad mark put against his name in the Service records by a senior officer who has himself been cashiered at a later date. Such a stroke of bad luck is merely a man's fate, like being born blind, or losing a leg in a motor-bus accident. The good man is the man who rises superior to fate and carves a career for himself in a new direction.

"Throw-outs."

One point raised by "Audax" deserves particular notice. He suggests that proved fighting pilots will be thrown out of the R.A.F. to make room for officers trained in an R.A.F. Sandhurst. The idea is entirely that of "Audax" himself. There is nothing in General Trenchard's speech to suggest it.

Personally one thinks that it might be for the good of the future R.A.F. to do so. Some of the best fighting men (in all the Services and not in the R.A.F. alone) are quite the worst officers and some are far from being gentlemen. A man may be a bully and a cad to his inferiors in rank, and yet be a first-class scrapper. Or a man may be a fine lone-hand fighter and yet hopeless as a patrol leader or an administrator. One of the bravest gentlemen whom one knew in the old R.F.C. was constitutionally unable "to command a corporal"—as a brother officer put it.

In the reorganised R.A.F. the permanent officers must combine all the qualities desirable in an officer and a gentleman. They must have bravery, but they must also have brains. And it is possible that some of the youngsters who will come out of an R.A.F. Sandhurst three or four years hence may combine the two qualities better than some of those who have distinguished themselves as fighting pilots. There is no room in a fighting service for Trade Union principles. Payment by results is the only possible method of securing efficiency. And promotion by merit is only piece-work under another name.

Equal opportunity for all is a perfectly sound theory, but a man must be fit to take his opportunity when it offers. If a proved fighting pilot cannot administrate a flight or a squadron properly when he reaches the end of the period of his temporary commission, then he must get out and make way for somebody who can. That is only Nature's law of the survival of the fittest.

Again it is a matter of a man's faith in his own ability. If the proved fighting pilot, with all his war experience of how a squadron ought to be run, and of how men ought to be handled, is not prepared to back himself against the product of an R.A.F. Sandhurst, then the sooner he gets out of the Air Force the better for himself and everybody else.



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To those of faint heart one would merely point out that General Sir William Robertson, G.O.C.-in-C. the Army of the Rhine, lately C.-in-C. Forces in Great Britain, and formerly Chief of the Imperial General Staff, rose to the highest possible posts in the King's Army after having served for eleven years in the ranks before becoming a commissioned officer. Let his career be an example and an encouragement to those who find their prospects in the R.A.F. perhaps a little discouraging. To all such one counsels faith in the King's Service, faith in the Royal Air Force, faith in their Chief, and faith in themselves.—C. G. G.

AERIAL DEFENCE.

It is a time-honoured British custom to delay preparations for war until hostilities have begun. Then it is true that every effort is made to supply the deficiencies in men and material. But the necessary delay is the cause of the initial failures and heavy casualties which have marked the opening of every great war in which the British have been engaged. But there is yet a greater failing in the military policy of the English as laid down by the politicians. Inadequate preparations at the beginning of a war are invariably succeeded at the end by a relaxation of all precautions and a reduction of all systems of defence below a margin which would give adequate insurance against calamity in the future.

There is no indication that a similar policy will not be adopted once again now that official peace has been attained. There is a general impression amongst the public that the great nations of the world are so weary and impoverished that further trouble is impossible for years. It is possible that war may cease to be an amusement for a period of years, but it should not be forgotten that there are forces in national character which are stronger than weariness, and that a general impoverishment of nations does not necessarily prevent hostilities. Bankruptcy of a nation, as of a man, is often provocative of a recklessness which has little regard for consequences and gambles the national fortunes on the riskiest of stakes.

Major-General Ashmore, G.O.C. London Air Defence Area, in a speech delivered on June 23rd at the unveiling of a memorial to children of a Poplar school killed in an air raid in June, 1917, said :—

"For the moment there is no possibility of air raids. But what of the future? Can we say, 'It is peace. We need no more air defences'? With this object-lesson before us in Poplar, I do not think we can ever be content that London should be defenceless again.

"Commercial machines can all carry bombs. We have just seen an exhibition of the long ranges of modern machines. London is a very large, very important, a very easy target to find. The mere threat of an air raid would have a serious effect if there were no efficient defences. Efficient defences are a great deterrent, as we have seen. If they exist we may never be attacked. If they do not exist it is certain that an attack will be successful."

Aerial defence is a new branch in the science of war. It has been born and has grown during the past four years of war, and it is still in its infancy. Until the Armistice removed for a space the threat of enemy aerial action a continual series of notable improvements both in organisation and in the design and employment of the weapons of defence were carried into effect. The increase of experience and the enthusiasm of all ranks accelerated progress in these matters with remarkable effect. Is this all to cease?

Each war in the future will begin with an aerial attack by the aggressive Power on the nerve centres of its selected opponents in the hopes that an initial blow of great severity may give an easily-gained victory, or, if Fortune is not smiling, that the attack will interfere materially with the intricate process of mobilisation. No nation therefore can safely organise its aerial defences in peace-time along the same lines as are adopted in the case of other units in the military forces of the Crown. It will not be possible to wait until mobilisation is completed for the aerial defence services to become effective. It is essential that they should be maintained on a war establishment at all times, if the national safety is to be considered at all.

But there is another reason why it is advisable to maintain an adequate establishment. The importance of aerial defence will increase vastly in the future, and its sphere of action will extend as the capabilities of aircraft grow. Unless the system is kept in a state of vitality the improvements and developments in the future will be small. The Headquarters Staff can organise and can develop systems of control, but it can hardly be expected to devise those detail improvements which mean so much in the production of efficiency. These are as a rule the outcome of experience in the daily routine of station life. Most inventions are labour-saving in origin, and they need the rigour of work for their existence.

During the past war the detail developments in work with guns, searchlights, sound locaters, and balloon aprons have been many, and the greater majority have been designed or produced as a result of the suggestions made by junior officers and the rank and file.

If a drastic reduction is made in the aerial defence establishments (peace) this productiveness will cease and the continuity of training will be broken. Those who did so well in this work during the war will be deflected to other paths and the keenness and enthusiasm which produced such good results will have faded into insignificance.

This country is at the moment subject to democratic rule. If democracy wishes to justify its claims to virtue and wisdom, it should impress on its chosen representatives the necessity of insisting on the importance of aerial defence in the future policy of the Government. If the people lack interest in the matter and prefer present parcimony to future safety, then indeed will it prove that autocracy has many things in its favour and that minorities are often possessed of wisdom.—H. F.

THE ROYAL AERONAUTICAL SOCIETY.

The jubilee of the Royal Aeronautical Society, which was founded in 1866, would have been celebrated in 1916, but for the late lamented war. However, a belated celebration was made the occasion for a very largely attended Garden Party, on Sunday afternoon, June 29th, at the Cricklewood Aerodrome, which was lent for the occasion by Messrs. Handley Page, Ltd.

The members and guests were received by the chairman (Major-General R. M. Ruck, C.B., C.M.G.), and the Council, in the running shed.

Messrs. Handley Page's works were thrown open to the inspection of the visitors during the whole afternoon, and a Handley Page machine was occupied for the greater part of the time in carrying passengers.

Commander T. Y. Baker, R.N., and Major L. N. G. Filon, D.Sc., F.R.S., R.A.F., gave a lecture, illustrated by lantern slides, on "Navigation on a trans-Atlantic Flight," which attracted a large audience, and an exhibit arranged by the Technical and Research Departments of the Air Ministry was a centre of attraction. This exhibit comprised a number of aero-engines of both Allied and enemy origin, wireless and photographic equipment, armament items, specimens of steel construction, and the like.

The band of the Royal Air Force discoursed more or less sweet music throughout the afternoon, and in addition the D.A.P. Quartette gave a concert in No. 1 shed.

Tea was served in the running shed—and it is to be hoped that the Society reaped a handsome profit therefrom—as the difference between the price charged therefor and the value received indicates that if they did not the contractors must have done so to excess.



"Fastest flying on record."

The winner of the Peace Aerial Derby at Hendon, Captain Gathe good, flying an Airco aeroplane fitted with Napier engine and

B.T H. Magnetos

completed the course of 190 miles in 87 minutes, and four seconds later Lt. Nisbet on a Martynside aeroplane with Rolls-Royce engine and B.T.H. Magnetos, came in second—the fastest flying on record in an Aerial Derby.

These performances add further records to B.T.H. Magnetos and support the high opinion in which they were held by pilots during the war for reliability in service.

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B T-H

ON EIGHT YEARS OF "THE AEROPLANE."

It seems worth while to record the fact that with this issue of THE AEROPLANE begins the ninth official year of its existence, and its seventeenth half-yearly volume. One takes this opportunity of thanking those numerous readers who have stood it for so long. We are a patient and long-suffering people, and nothing proves the fact better than that THE AEROPLANE should have survived for eight years without being either suppressed by the Authorities or wrecked by infuriated readers.

It is a curious coincidence that this number of the paper should also be the first published without direct connection with any impending or present war, though one refrains from the hypocrisy of calling it "Our First Peace Issue," as one might do if one wished to be popular or conventional. When THE AEROPLANE was first published at Midsummer, 1911, one of the chief motives for starting it was to free one's hands for a campaign in this country with the object of preparing for the war with Germany which everybody with any understanding knew was bound to break out before long.

From 1911 till August of 1914, we who were concerned with this paper fought and intrigued and argued and preached for preparedness for war in the air. From August, 1914, till the signing of the Armistice we continued to fight and intrigue for better equipment and better administration in the Flying Services. For their help in this work before the war one desires to thank Mr. P. K. Turner, Mr. W. E. de B. Whittaker, Mr. W. H. Sayers, and Mr. E. M. Rossiter, all of whom laboured strenuously with the same objects in view (though very different in their methods) while on the staff of this paper, and all of whom have served the King throughout the war. During the war itself one's sole male assistant was the late Mr. W. L. Wade, who, unfit for military service, lived only long enough to see the object of all his work achieved, namely the command of the air held undisputed by the King's Flying Services. To his memory one owes a deep debt of gratitude. One is also greatly indebted to Miss S. F. Benda for much valuable work, especially as concerns military aviation, during the past two years.

Now THE AEROPLANE is acquiring a larger staff, and one is glad to be able to say that all the male members of that staff have served in the R.A.F. The Assistant Editor is Captain P. A. Barron, formerly a Technical Officer at S.W. Area Headquarters, and his assistant is Mr. G. L. Dore, Lieut. R.A.F., a scout pilot who was wounded and crashed in France.

The Technical Editor is Captain W. H. Sayers, formerly of the Seaplane Department at the Air Ministry and previously Lieut. R.N.V.R. at the R.N.A.S. Experimental Station, Isle of Grain, where he designed and built the highly efficient P.V. seaplanes and the famous "Kitten." His assistant is Mr. Leonard Bridgman, lately a Technical Officer in the Midland Area, and previously an infantry soldier.

Captain Sayers is at present the only former member of the staff of THE AEROPLANE who has returned to the fold. But one has hopes of others. And if fortune continues to favour this paper it is one's intention to add to the staff, as may be necessary, entirely from the personnel of the Flying Services.

During its eight years of existence this paper has had its headquarters at 166, Piccadilly. These offices are now too small and inconvenient, so in a few days' time headquarters will be removed to 175, Piccadilly. Thus the lucky figure 13 will still be made up by the sum of the address. The new offices are exactly opposite the Burlington Arcade, and as they are on the first floor and are thus independent of the eccentricities of elevators, they will be more readily accessible to visitors—who will be as welcome as ever, whether hostile or friendly, or merely menacingly neutral.

The immediate task of THE AEROPLANE is to assist in making Civil Aviation into a sound business proposition. In doing so one foresees that one will be obliged to continue to practise the gentle art of making enemies. That is always a praiseworthy occupation, for the Scriptures enjoin upon us that we shall love our enemies. One endeavours to obey that injunction. In fact one loves one's enemies so much that one makes a hobby of collecting them.

The new members of the staff and the regular contributors to the paper promise well in the same direction, and, as they are already absorbing the basic principle that THE AEROPLANE is not run for the benefit of its readers but entirely for the amusement of the editorial staff, there is every prospect of the said readers being as adequately supplied with mental irritation in the future as in the past.

The ultimate task of THE AEROPLANE in the piping times of peace which are now before us is to prepare for war. For this reason the King's Services will always be the first consideration in the policy of the paper. Of this future war for which we have now to begin to prepare one proposes to write in a few days' time, for if one is to maintain a reputation as a prophet it is well to start early while the going is easy.—C. G. G.

THE RE-ORGANISATION OF THE R.A.F.

The following letter has been received:—

Sir,—In reply to a letter signed "Audax" in your issue of June 25th, it seems to me that there is something to be said for General Trenchard's scheme for asking officers to accept temporary commissions. "Audax" complains that a temporary commission of this kind would lead one who accepted it merely into a "blind alley." I suggest that there are many who would be prepared to serve for a total of four years; one year of which would be occupied in training, while during the other three years the officer will be in all respects on the same footing as regards pay, disablement pension, etc., as the regular R.A.F. officer. After four years he will get a gratuity of £300, and will have under the C.A.S.'s scheme a first-class technical education at the expense of the Government. As is well known, the range of technical subjects in the Air Force is a very wide one, and a special feature is to be made of educating holders of temporary commissions in the future.

"Audax" should remember also that the work in the future R.A.F. will not be anything like as exacting as the war flying in the past, and will leave therefore more time and more opportunities for specialising in one of the many branches referred to above.

With regard to this second question in which he asks "why fighting pilots should be chucked out of the Service to make room for officers trained in an R.A.F. Sandhurst?" it seems to have escaped his notice that, even if all pilots in the Service on November 11th, 1918, were retained, this supply would not last for ever, and that it would still be necessary to legislate for the future supply. This is what Sir Hugh Trenchard is attempting with his scheme for an R.A.F. Cadet School.

In his last paragraph "Audax" states that he considers a Territorial Air Force to be a sound idea. It is, I believe, the intention of the C.A.S. that officers who have held temporary commissions should form this Territorial or Special Reserve Force, and I hope very much that "Audax" is right when he says that it will attract the best of the proved fighting and civilian pilots. I myself predict a great future for a reserve force composed of officers with three or four years' experience either with the R.A.F. in the field in the past or with the Regular Air Force in the future, and consider that such a force must be more efficient than one run purely on the lines of the Army Territorial Scheme, in which an officer need have only a month's preliminary training combined with a certain number of parades in addition to the ordinary fortnight's training in each year. AILERON.

THE AIR MINISTRY METEOROLOGICAL BRANCH.

The Air Ministry Meteorological Branch has removed to Canada House, Kingsway. The address for correspondence is, Secretary, Air Ministry (F.O.5), Canada House, Kingsway, London, W.C. The telegraphic address will be as heretofore, Flyindom, 'Phone, London. Requests for weather reports by telephone should be made to Holborn 2951, Extensions 520, 521, 522, 523, 524 or 525.

At Last !

For some time past the endeavours of designers and manufacturers in England have been concentrated on producing a *reliable* motor machine that combined lightness, simplicity of control, travel-comfort, and economy of running. A machine devised on these lines would have a universal appeal.

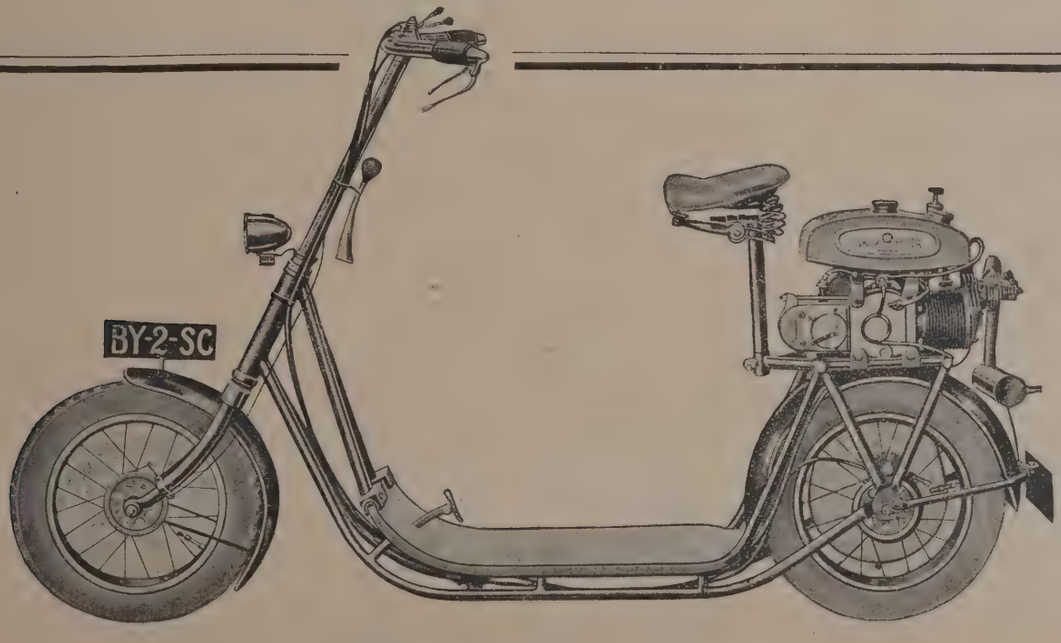
The advent on the market a few weeks ago of the

A.B.C. SKOOTAMOTA
TRADE MARK

aroused phenomenal interest, and the unanimous approval of press and public alike justifies our assertion that in the A.B.C. SKOOTAMOTA this "Ideal" is a reality at last. The design of the A.B.C. SKOOTAMOTA is due in great measure to the collaboration of Mr. Granville Bradshaw, the well-known Aero Engine expert.

An artistic little Booklet, No. 24, giving full particulars of this wonderful little machine can be obtained from the sole manufacturers and distributors:

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OUR TEMPORARY INSANITY.

By Captain P. A. BARRON, (late) R.A.F.

Major-General Sir Hugh Trenchard, K.C.B., D.S.O., dropped a bomb among the bombers the other day when he outlined to a select company of Independent Force officers the future of the R.A.F.

He was most apologetic over the plan that he sketched, and informed his hearers at the outset that many would be disappointed. And they were.

Had anyone else made the announcement, one thinks that the feeling of disappointment would have found expression, but the fame of Sir Hugh Trenchard is so firmly founded in a Force the higher commands of which have not been overstocked with heroes to worship that criticism was for the moment withheld. Among so many there was the feeling that if Sir Hugh says the scheme is good it is good, and there is nothing more to be said . . . or, at any rate, it must be better than it sounds, as the old lady remarked when speaking about Wagner's music.

One is quite prepared to believe that the tune to which the R.A.F. is to dance is better than it sounds, but one's ears are not deaf to certain discords. One feels that Sir Hugh's apologetic attitude indicates that he is not the composer but the conductor, and that he has had some difficulty in getting the component members of the band to play in harmony. One feels that he realises the defects as keenly as anybody.

Briefly he told his hearers that a very small number of permanent commissions will be granted, and that the strength of the Force will be maintained by the granting of temporary commissions. The word "temporary" is to indicate a period of two or four years. This appears to be a scheme calculated to please those friends of every country but their own who before the war begrudged every penny of the money spent on undermanned Services which, owing to non-militant vote-cadging amateurs in statecraft, were a direct incentive to militarism among our enemies.

The plan appears to be an extension to officers of the short-service system which so many Army men think a colossal mistake. It can have been formulated only for reasons of economy. Apparently the argument is that in four years, or perhaps two, it is possible to produce a moderately efficient officer. After that period he may revert to civilian life on the understanding that he will be called when wanted. To paraphrase Mr. Rudyard Kipling:—

> "I've served my time in the Air Force,
> His Majesty says, 'Good-day,
> And please to come when you're called for,
> And here's gratuity pay.'"

As a tentative scheme this may have some features that are not altogether bad. Presumably the temporary commissions will be given to officers who have served in the war. These will therefore remain on the active list until civil aviation has developed sufficiently to offer positions for a certain proportion of them. For the individuals this has attractions, but, if the premises upon which the argument is based are sound, then these officers who have served in the war are not the ones who should be granted temporary commissions, because they are already trained. If the temporary commissions are to be granted merely for the purposes of training a reserve, then it would appear to be logical to give them to those who are at present untrained. The reasonable course would be to grant temporary commissions to a large number of the more promising cadets who had not completed their training up to the time of the armistice and to select a number of officers who have served in the war for the purpose of leavening the mass with whatever traditions have survived the mésalliance of the R.N.A.S. and the R.F.C.

It is when we consider the type of person who will be attracted by the temporary commissions that we begin to realise the weakest points of the scheme. A short-service system for men is not at all the same proposition as it is when it is applied to officers who, in peace-time, should surely be drawn in the main from the professional classes.

The man of the working class (in practice it is the out-of-work class) who enlists as a private for three years does not stand to lose much. In fact, his Army training may be of commercial value in after-life. But the young man of the professional class who accepts a commission for four years is giving the most useful period of his life when he would otherwise be laying the foundation of his career. After his four years' service he will find himself with somewhat extravagant tastes landed into a world in which his school contemporaries have already begun to make their way. Whatever his career may be, he will have to start at the bottom, and, having been trained to regard himself as an officer and a gentleman, he will find it much harder to begin again in a subordinate position in the profession he, or his parents, have chosen.

The war has taught us that the boy who came fresh from school to a commission with ample pay is not likely to make a satisfactory civilian—at any rate for some years. Yet he is to-day starting afresh in a world that fully understands and to some extent sympathises with his position. It will be very different under peace conditions, when he finds himself starting four years behind his contemporaries.

We still have in this country, despite the efforts of mob-elected legislators to tax them out of existence, a large class of families with service traditions. The great majority of them are not moneyed people in the modern sense, but the sons of these families are reared in the atmosphere of the Public Schools and the Services. These families supply officers to the Navy and Army generation after generation, and they are the best officers in the world. They have family tradition behind them, and the Services are their careers.

Will the sons of these families be attracted by temporary commissions in the R.A.F? The answer is most certainly not.

We turn, therefore, to another class—the moneyed family, in which the sons may serve in a smart cavalry regiment for a few years, not because they intend to make it a career, but because it is the thing to do and gives them a footing in Society. It seems extremely probable that this class will be attracted by the temporary commissions.

We arrive, therefore, at the propositions that the sons of families with Service traditions strongly ingrained will not be lured into a Force that does not offer them a career, that the sons of other professional classes cannot afford to spend four years in an organisation that leaves them at a loose end as soon as they have gained a certain value to the country, and that the only person who is likely to be greatly attracted is the person of independent means who can afford to join the R.A.F. for a few years before he settles down to a comfortable career of dissipating the family dollars.

Frankly, one does not like the outlook. One holds the opinion, open, of course, to revision, that a class of professional officers with tradition behind them and

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The Imber Anti-fire Tank prevents fire in aircraft accidents.

entering the Force with the fixed idea that their service is the *raison d'être* of their existence will always prove superior to those others who regard it as merely offering them the opportunity of enjoying a few years of rather amusing experiences.

In opposition to these views are those held by non-militarists who say that we improvised out of ordinary civilians a Force good enough to beat the Huns, and could do it again. That argument is not quite sound. So far as air forces were concerned, all nations in the war practically started from scratch. If we had held undisputed mastery of the air on the first day of the war a vast number of lives and an incalculable amount of money would have been saved. Instead of starting from scratch next time one would prefer to start with a lead. We should like to see the enemy as reluctant to send up their aircraft as the Germans were to send out their Fleet.

The next point raised is that the active life of a flying officer is necessarily short—perhaps ten years—and therefore the R.A.F. cannot offer careers for a large number. In the first place one queries the proposition that, when freed from the strain of war conditions, the flying period is limited to ten years. One would be inclined to raise it by fifty per cent. Secondly, if practically all the ground jobs were filled by ex-flying officers, there would be plenty of appointments in the administrative and technical branches for the older officers.

What will be the relations between the regular R.A.F. officer and the temporary officer? One feels instinctively that there will be a gulf between them. Just at first this may not be very noticeable, for it is presumed that many of the temporaries will have seen active service. But later on, when these valuable officers have to retire in favour of the comparatively useless novices, one thinks that the line between the pukka and the temporary will be very strongly marked indeed. There will be the vast difference between the professional and the amateur.

One would prefer to see some of the money spent on the temporary commissioned branch devoted to the encouragement of a territorial reserve from which the permanently commissioned officers might to some extent be recruited. This would enable us with the balance to keep a larger standing force of permanent officers.

With regard to those who are demobilised, permission to retain rank ought to be conditional upon willingness to remain in the reserve with the obligation of a certain number of days' training each year. To allow the old R.N.A.S. and R.F.C. officers to lose touch with the Force appears to be a mistake

As one said at the outset, the scheme appears to be a tentative one drawn up at a time when the country is passing through a period of reconstruction. One sincerely hopes that it is not final, for one feels that it is not upon those lines that the ideal Air Force that will attract the best of the young men of Britain will be built up.

THE ROYAL AERO CLUB.

Rolls Memorial Library.

A meeting of the Library Committee was held on Monday, June 16th, 1919, when there were present:—Major C. C. Turner, Mr. Howard T. Wright, and Mr. Harold E. Perrin, Secretary.

Special Committee Meeting.

A Special Meeting of the Committee was held on Tuesday, June 17th, 1919, when there were present:—Brig.-Gen. Sir Capel Holden, K.C.B., F.R.S., in the Chair; Mr. Ernest C. Bucknall, Mr. G. B. Cockburn, Lieut.-Col. John D. Dunville, R.A.F., Lieut.-Col. T. O'B. Hubbard, M.C., R.A.F., Lieut.-Col. F. K. McClean, and Mr. Harold E. Ferrin, Secretary.

Election of Members.

The following new members were elected:—Lieut. Ian Patrick Anderson, R.A.F., Lieut. Cecil Wasbrough Andrewes (1/15th Highland Light Infantry), Lieut. Walter William Baker (Hampshire Regt.), Horace Rycroft Bass, Major Walter Henry Bell, R.A.F., Major Francis Herbert Bramwell, R.A.F., Edward John Bray, Bertram Christian, Albert Edward Cole, Capt. Edward O'Donovan Crean, R.A.F., Capt. Rupert John Goodman Crouch, R.A.F., Frazier Curtis, Capt. Robert Frederick Lea Dickey, R.A.F., Capt. Wilfrid Henry Dunn, R.A.F., Major Charles William Nutting, R.A.F., Lieut.-Col. Hubert Pennington, C.M.G., D.S.O., R.A.S.C., Capt. John William Pinder, D.F.C., R.A.F., Oswald Eric Tattersall, Capt. Albert Peter Thurston, Lieut. Harold Tomlinson, R.A.F., Capt. Cresswell Turner, R.A.F., Capt. Wilfrid Underhill, R.A.F., Capt. Robert Howell Craster Usher (Wiltshire Regt).

Trans-Atlantic Flight.

The following messages from the Officials of the Club in Newfoundland and Ireland were reported:—

"St. John's, Newfoundland.

"Royal Aero Club, London.

"Capt. Alcock and Lieut. Brown left St. John's, Newfoundland, in a Vickers "Vimy" Rolls on flight to England today, June 14th, 1919, at 4.13 p.m., G.M.T.

"Capt. Clements."

"Dublin.

"Royal Aero Club, London.

"Official time of arrival of Vickers "Vimy" Rolls crossing coast line Ireland was 9.25 a.m., B.S.T. (8.25 a.m. G.M.T.), June 15th, 1919. I examined machine and found everything in order.

"Major R. H. Mayo."

Balloon Ascents.

In view of the coming revival of the sport of ballooning, those wishing to participate, including owners of balloons, are requested to communicate with the Royal Aero Club, 3, Clifford Street, W.1.

The Flying Services Fund.

(Registered under the War Charities Act, 1916.)

Administered by the Royal Aero Club for the benefit of Officers, Non-Commissioned Officers and Men of the Royal Air Force who are incapacitated while on duty, and for the widows and dependants of those who are killed or die from injuries or illness contracted while on duty.

Honorary Treasurer.

The Right Hon. Lord Kinnaird.

Committee:

H.R.H. Prince Albert, K.G. (Chairman).
Mr. Chester Fox.
Lieut.-Col. T. O'B. Hubbard, M.C., R.A.F.
Lieut.-Col. C. E. Maude, R.A.F.
Brig.-Gen. R. H. More, C.M.G.

Secretary.—H. E. Perrin

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Messrs. Barclays Bank, Ltd., 4, Pall Mall East, London, S.W.1.

Subscriptions.	£	s.	d.
Total subscriptions received to June 3rd, 1919.....	15,062	11	5
W. G. Lavender	2	12	4
Miss E. Bairdsmith (4th contribution)	1	1	0
Total, June 17th, 1919.....	15,066	4	9

Jacques Schneider Maritime Cup.

The Jacques Schneider Maritime Cup having been won in 1914 by C. H. Pixton on a Sopwith seaplane, the nominee of the Royal Aero Club representing the British Empire, the Race for 1919 will be held in England early in September next. The exact date and place will be announced later.

The Race will be over a distance of 200 nautical miles exclusively at sea, in a closed circuit having a minimum course of five nautical miles, and situated outside any port or enclosed harbour. At least two alightings must be made on the water at points fixed by the officials.

The Committee of the Royal Aero Club will select the three competitors to represent the British Empire, and reserves to itself the right to hold eliminating trials.

Entries are to be made at the Royal Aero Club, 3, Clifford Street, London, W.1, not later than July 31st, 1919. Each entry must be accompanied by the entry fee of £20.

RELINQUISHMENT OF LEYSDOWN AERODROME.

The Air Ministry announces that Leysdown Aerodrome will shortly be vacated by the R.A.F.

"SHELL" PERFORMS THE "HAT TRICK!"
3 Successive Triumphs

1st "Daily Mail" £10,000 Prize—
London-to-Manchester Flight, 1910
won by Paulhan on "SHELL"

2nd "Daily Mail" £10,000 Prize—
Circuit-of-Britain Flight, 1911
won by Beaumont on "SHELL"

3rd "Daily Mail" £10,000 Prize—
America-to-Europe-direct Flight, 1919
won by Capt. Sir John Alcock, D.S.C. on "SHELL"

"SHELL"
AVIATION MOTOR SPIRIT

"Shell" Aviation has been released by the Government; and, after fulfilling Air Board requirements for aviation purposes, this Spirit de Luxe will be available for private motorists.

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The WORLD of AERONAUTICS

NEWS OF THE WEEK FROM ALL QUARTERS

Dirigible Balloonacy.

In the "Aircraft Journal" of America, an article was published recently dealing with the uses of airships in times of peace. The following suggestions are made:—

"The dirigible will be useful to the Bureau of Mines because it can carry prospectors at low altitudes as they search for symptoms of minerals.

"In tropical forests trees of great value can be hunted for by their flowers, leaves or other symptoms seen from above.

"In countries where migratory insects like locusts need surveillance, scientific measures can be taken to find their breeding places and sterilise the egg-laden areas. A dirigible can follow a locust cloud and by the use of gases and explosives disperse it or drive it away from valuable crops.

"The Revenue Guards and the Department of Justice can use the dirigible to detect smugglers and to pursue large bands of outlaws, especially if they are mounted or have stolen live stock or property in vehicles."

One does not know which suggestion to admire most. The bombing or gassing of locusts appear to be the most practical, and would seem to provide better sport than the hunting of trees by their symptoms.

The pursuit of large bands of outlaws seems to offer great possibilities. Large bands would, of course, be chosen, because the smaller bodies of bandits would not have sufficient strength to pull down the dirigible in order that they might be arrested.

More Crimes Needed.

The "Daily Mirror" on June 28th published a photograph of a machine flying through the Tower Bridge. Underneath the picture appeared the following:—

"Don't Do as I Do."—The Air Ministry has forbidden flying through the Tower Bridge. This picture shows General Seely, Under Secretary of State for the Air, recently doing the feat which is now forbidden."

The "Daily Mirror" does not appear to understand that the time has arrived when it is essential to invent some crimes in order to prove the necessity for aerial police. Shortly, we may see a special Experimental Crime Department to devise stunts that are dangerous to the public in order that they may be prohibited. The Department might, for example, try the sports of taxi-ing a Vickers "Vimy" down Rotten Row, sea-planing in the Round Pond of Kensington, or dropping war souvenirs, such as unexploded bombs, to incite people to invest in the Victory Loan. As the deadliness of each experiment is proved the necessary legislative action can be taken. One would like to suggest that prizes for original sin should be offered.

Before the Dry Law.

In the United States officers recruiting for the Air Service bring in their victims by aeroplane. A recent official report contained an account of a recruiting flight during which the engine gave trouble and the prospective recruit arrived thoroughly oiled but happy.

The new "dry" law will check this sort of thing.

A Novel Design.

An aeroplane of an entirely new design appears to have been invented in America. The following is a description which has been published:—

"Recent requests for bids for airplanes by the Air Mail Service resulted in eight bids, of which the lowest are from the Lawson Air Line Co., Milwaukee, which has designed a plane embodying mail car equipment, and allows for the employment of a mail clerk en route. The engines will be installed by the Government and it is expected that the Liberty engine will be used.

"The airplane is of the biplane type, with the chassis built between the two wings with engine space provided at each side. There is sufficient space so that the men can walk round the body, which is enclosed in glass. A rack has been designed in which the mail may be distributed during the flight, and a drop chute allows for the discharge of mail bags at principal cities without stops. A model of the plane has been ordered and will be demonstrated here (at Washington) when completed."

The chief novelty is the undercarriage between the two planes. Presumably, the designers consider that a chassis in that position is not so liable to suffer damage in the event of a bad landing. One is glad to note that engine space is provided on each side of the undercarriage which is so ingeniously protected, as otherwise the engines might have been crowded out of the machine. Also, it seems an admirable idea to provide a promenade round the glass-enclosed body, as had this been omitted, the crew might have tried to break their way in and disturb the sorter.

To Watch the Weather.

The "Daily Chronicle" says "the Air Board is to be congratulated on taking over the disused observatory on the summit of Ben Nevis, which lack of funds compelled the Scottish Meteorological Society to close in 1904. The highest peak in Great Britain, the top of Ben Nevis, is an ideal situation for the obtaining of data concerning the phenomena of the atmosphere, about which we know so little."

The "Air Board" certainly is to be congratulated upon this evidence of continued vitality. One had heard rumours that an Air Ministry had been founded.

At any rate, now we know why the classic aerodrome at Montrose has been closed.

Plans.

The club is always an interesting place to visit at the week-end. It is a recently formed Service club, and at present the newly demobilised gather in large numbers to discuss their hazy plans for the future.

Several companies with capitals ranging from £5 to £50,000 are formed every two minutes, and are as quickly wound up, and many are formed with no capital at all, with the main object of sitting still and watching the money come in. The atmosphere is tense with excitement, and agitated groups discuss the merits of every new scheme, one ingenious member flourishing a note-book into which he has copied all the new ideas that come to him each morning while he is shaving.

To go from group to group is to learn how easy it is to pick up thousands of pounds and amongst many of these get-rich-quick schemes, some of the following may be of use to those not blessed with a fertile imagination.

A company for the exploration of Central Africa, with the object of giving nigger kings joy-rides in aeroplanes and demanding ivory tusks in payment.

A company for supplying collar-stud machines, to be placed in conspicuous public places, and intended for the use of the red and angry owners of floating collars.

A company for making any old drink that will prove sufficiently intoxicating.

A company for supplying Nova Zemblians with Gold Flake and rum in exchange for white fox furs.

A company for receiving old gold braid from Service hats and re-upholstering it for the use of cinema attendants

A company for buying scrap metal and selling it as motor cars and many other sound propositions that could be handled with the necessary confidence.

Five thousand companies formed for the purpose of teaching girls to fly. All wound up, as being too dangerous. Besides which, it was considered to be unbusinesslike to risk having a balance-sheet made up of liabilities and no assets.

A company formed for the purpose of preserving the dignity of majors reduced in rank.

This company, for a small consideration, would salute and say "Sir" all day long, if necessary.

It came to nothing, as the greater number of members of the R.A.F. having been majors at some time or another, it was held that there would not be a sufficiency of junior members to do the work of the company.

Unfortunately, as everyone talks at once, none of the promotors get a fair hearing, otherwise there would have been several fortunes made and lost already. R. A.

Bad Taste.

The "Aerial Age" of America recently published the following:

"The first sermon from the air, preached by a 'sky pilot' of the Methodist Church, will be a headliner at the Methodist Centenary Exposition, to be held at Columbus, Ohio, June 20th to July 14th, according to plans announced.

"According to the exposition's Press agent the aerial sermon will be preached by a minister who will float above the heads of his congregation at a height of 2,000 feet or so. His message will be audible to all by means of a wireless telephone and a megaphone attachment."

It is difficult to conceive anything more nauseating than this method of advertising. One would think that the vulgarity of this "sky pilot's" methods of gaining "headliner" publicity would shock the religious susceptibilities of a partially fossilised Aztec.

S·B·A·C

BEFORE

DURING



AFTER

THE WAR

CELLON LIMITED,
22, CORK STREET,
LONDON, W.1.

The WORLD of AERONAUTICS (continued)

Autre Pays—Autres Moeurs.

It is understood that the French Authorities have given permission to the Nieuport firm to enter their latest type of high-speed single-seat fighter for open competitions in either France or any Allied country, and that they only failed to enter for the Aerial Derby because sufficient notice was not given to enable the necessary arrangements to be made.

It is further understood that the French Government is willing to supply responsible French firms who wish to initiate aerial transport schemes with service aircraft and engines and to pay these firms a subsidy for maintaining such service machines and engines in efficient running order.

Although our national vanity might have been piqued if a French machine had won the Aerial Derby, one feels that it would have been a useful lesson to the Air Ministry and would have shown the country the folly of prohibiting the use of the fastest British machines in the race.

With regard to the supply of machines and the subsidies for the encouragement of commercial aerial transport schemes, this policy is dictated by such sound common sense that one may feel assured that such a proposition would be enthusiastically condemned by our own Bolo.

No. 218 Squadron's Dinner.

A dinner will be held by 218 Squadron Officers. Will those desiring to attend please write to Major Wemp, c/o THE AEROPLANE, 166, Piccadilly, W.1, immediately?

No. 4 Squadron's Dinner.

A reunion dinner of No. 4 Squadron, R.A.F., will be held at the Criterion on July 22nd, Major-Gen. C. A. H. Longcroft, C.M.G., D.S.O., A.F.C., will be present as guest of honour. Any officer, past or present, wishing to attend should communicate with Mr. F. W. Rennie or Mr. Douglas Welch, R.A.F. Club, Bruton Street, enclosing £2 2s. cheque.

The Decline and Fall of Reticence.

Sir,—This recent war now just concluded in a patchwork Peace has brought many evils to a weary world, not the least of which in the decline in those honourable principles which governed throughout many generations of English history the actions and the conversation of those who held His Majesty's commission.

In most of the newsprints of the day one may see the elaborate advertisements of a system of mnemonics which has attained some fame among the forgetful. One is tempted to wish that all might undergo such a course of training in this system as would make it possible to remember its virtues without the constant reiteration of illimitable advertisement.

One of these advertisements is in the form of a letter from an officer (whose name and portrait are given) who prefaces his eulogy of the system with a description of his rapid progress through life from the day when his parents presented him to an expectant world. In flowing periods he tells of his entry into His Majesty's Navy, and of his early experiences in Naval aeronautics. At the age of 27 he reached the pinnacle of his earthly progress when he was gazetted Lieut.-Colonel in the Royal Air Force. A year later he attained his first serious failure and became a Member of Parliament.

Sir, his recent career would appear to be but a feeble testimonial to the new system for which he claims so much. He admits that it is scarcely two years since he first fell under its allurements while resting in one of His Majesty's ships of war, yet in that time his decline has been swift. Then he was an officer of promise (we are assured), to-day he is a Member of Parliament! It is hard to see what worse ill could befall him. His progress should be an example to others lest they, too, drift towards the rapids of Westminster borne there by sheer force of memory.

Yet it is not the career of this candid Member of Parliament which is of interest to those who have pride in the manners and habits of officers in the Military Forces of the Crown. Reticence and a strong dislike of self-advertisement have always dominated the actions of those who have the honour of their great profession at heart. Have these principles been allowed to lapse because the soil of France and Flanders covers the mortal remains of so many of those who worthily upheld them? And are we to expect in the future glaring advertisements of soaps, patent medicines or tailors written by soldiers and sailors of notoriety?

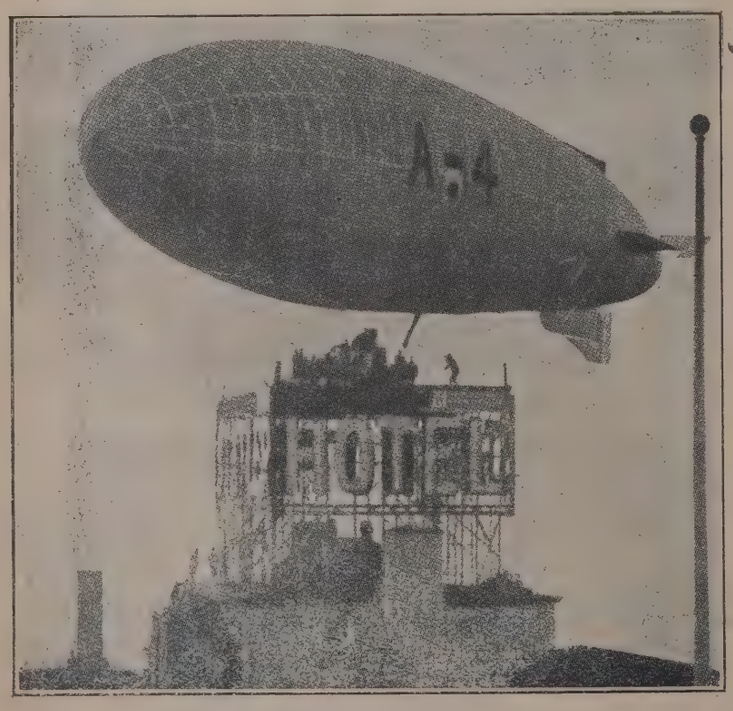
Will such headlines as "How the Use of Bermondsey Beer Brought Me Promotion to Brigadier-General," or "From Midshipman to Mansion House; or How Howell's Hair Oil Helped Me to Municipal Success," fill the advertisement pages of our prints in future? The old order is indeed dying; but surely it is not too much to hope that even in this modern England public opinion will be against soldiers and sailors adopting the methods of musical comedy actresses or of mythical old ladies of obscure origin whose "bad legs" have been cured by continuous applications of somebody's "Elixir of Vitality," price 1s. 6d. post free.

MILES.

The Sky Entrance

A 160 ft. airship, carrying five passengers, recently flew from Akron to Cleveland, Ohio, against a stiff wind in about an hour, and although both wind and rain interfered, a landing was effected on a platform of 30 by 50 ft., built on a hotel roof. The airship was steered slowly over the hotel and ropes were thrown down to the platform on to which the carriage of the balloon was drawn.

An airship, to carry 12 passengers, is being constructed to make flights during this summer to the hotel roof from Akron.



An American Airship alighting upon the roof of an Hotel at Cleveland, Ohio.

Ten Thousand Pound Flights.

It has been announced that Capt. Sir John Alcock, D.S.C., and Lieut. Sir A. Whitten Brown, winners of the "Daily Mail" £10,000 which they invested in Joy Loan, will give free flights over London in a Vickers "Vimy" Rolls-Royce machine to subscribers of £10,000, and will present each passenger with an autographed photograph of their Atlantic machine

The American Method.

The Curtiss Aeroplane and Motor Corporation has repurchased from the American Government 2,176 aeroplanes and 4,608 motors which they made during the war.

Included in the deal are 1,100 aeroplanes which the Curtiss Corporation did not build, but which they are buying in order to get back the Curtiss engines with which they are fitted.

All machines needing overhauling will be sent to the plant in Buffalo, and a staff of mechanics will be maintained to inspect every one before delivery to customers.

The American Government seem to have found a far better way of disposing of its surplus aircraft than the method adopted over here of scrapping the machines as soon as they were delivered by the makers.

The Sahara Flight.

Lieut. Lemaitre, the French aviator, attempted to fly from Paris across the Sahara. The first stages were to Casablanca, Marakesh and Mogador. He left Mogador on June 28th, and flew over Agadir on his 2,200-mile flight across the Sahara to Dakar.

A telegram reached Paris on June 30th intimating that he had crashed at Porte Etienne in Mauritania, about 400 miles from Dakar. He and his passenger are safe.

BRITISH

NIEUPORT

& GENERAL AIRCRAFT Co. LTD.



1



2



2



3



3

OUR organisation which has in the past been responsible for our success in the design and production of Naval and Military Aircraft as evidenced by the Nieuport "Night Hawk" being chosen by the R.A.F. to fill their latest requirements for fighting scouts is now concentrating its energies on the development of commercial machines. Above are depicted reading from top page:—

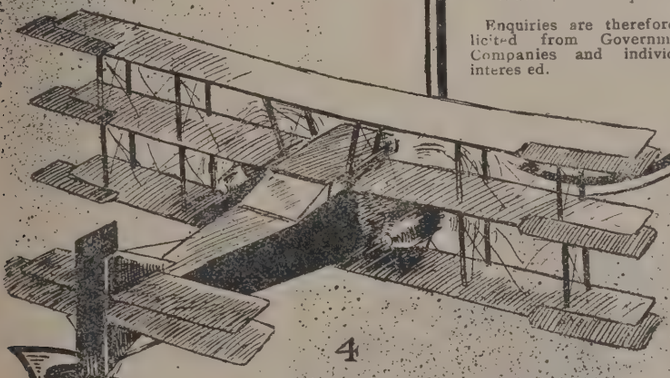
(1) *Four or six-seater—an ideal passenger machine.*

(2) *Two-seater (side by side) and single seater. These are excellent sporting machines. Would also be invaluable for training purposes.*

(3) *"Night Hawk" which is being delivered in large numbers to the Government.*

(4) *Fourteen-passenger machine which has a spacious saloon to accommodate 12 passengers.*

Enquiries are therefore solicited from Governments, Companies and individuals interested.



4



Daily Mail

DELIVERED BY AEROPLANE TO-DAY

Telephone: Willesden 2455 (3 lines). Office: Langton Road, Cricklewood, N.W.2. Telegrams: Nieuscout, Crickle, London.

CONTRACTORS TO H.M. GOVERNMENT.

The WORLD of AERONAUTICS (continued)

The Trans-Atlantic Flight.

THE AIRSHIP ATTEMPT.

The British Naval Airship R.34 is expected to make an attempt upon the Atlantic flight on July 2nd. Her officers are :—

Captain.—Major G. H. Scott, A.F.C. First Officer.—Lieut. G. S. Greenland. Second Officer.—Lieut. H. S. Lock. Engineer Officer.—Lieut. Shotter. Navigating Officer.—Major G. G. H. Cooke, D.S.C. Meteorological Officer.—Lieut. G. Harris. Steersmen.—Major J. E. M. Pritchard, O.B.E.; Lieut.-Comdr. Lansdowne, U.S.N. Wireless Officer.—Lieut. R. F. Durrant. Air Ministry Representative.—Brig.-General E. M. Maitland, C.M.G., D.S.O., Superintendent of Airship Equipment.

THE AEROPLANE ATTEMPT.

The Handley Page aeroplane has been ready for the start since June 20th, and Vice-Admiral Mark Kerr hopes to make the flight in 18 hours.

Mr. Raynham's Martinsyde is now rebuilt, and has been renamed the "Chimera." It is ready for the trial flight, which has by this time probably taken place.

A £5,000 PRIZE.

American newspapers announce that a prize of $25,000 has been offered by Mr. Raymond Orteig for the first non-stop aeroplane flight between New York and Paris, a distance of about 3,600 miles. Competitors must be of Allied nationality. The Aero Club of America is preparing a set of rules concerning the conditions under which the flight must be made. Competitors may start from either side.

Coming Events.

JULY.

The Royal Naval, Military, and Air Force Tournament at Olympia open until July 12th.

Saturday, July 5th.—Hendon Peace Meeting.

Sunday, July 6th.—Special Flying Displays at Hendon

Saturday, July 12th.—R.N. Air Station Eastbourne Dinner.

Saturday, July 12th.—Summer meeting at Hendon.

Sunday, July 13th.—Special Flying Displays at Hendon.

Saturday, July 19th.—Martinsyde Recreation Club Sports at Woodbridge Road, Guildford.

Friday, July 25th.—The Amsterdam Aircraft Exhibition opens.

AUGUST.

Tuesday, August 5th.—Handley Page Social and Athletic Club's Sports. Starting at 12 midday at Cricklewood Lane.

Thursday, August 21st.—R.A.F. Annual Athletic Meeting at Stamford Bridge.

Sunday, August 24th to Sunday, August 31st.—The "Avenir's" Tour de France Aérien.

DATES TO BE ANNOUNCED LATER.

Hendon—Birmingham—Manchester Air Race.
Hendon—Paris—Hendon Air Race.
Hendon—Brighton—Hendon Air Race.

PARIS NOTES

AERODROME FIRES.

The Paris aeronautical industry has sustained two very big losses by fire in the last two weeks. Firstly, there was the fire at Voisin's works at Issy-les-Moulineaux, although happily it is believed the loss does not exceed £16,000. Work is continuing in that part of the works left untouched, and the new four-engined Voisin will undergo further trials as soon as the few modifications have been completed.

Secondly, there was a conflagration at the Saint-Cyr aerodrome on the 21st inst. The fire broke out about two in the afternoon in a repair shop, and, aided by a violent wind, spread rapidly to the neighbouring hangars, and was not subdued till six in the evening. Eighteen hangars, 102 machines, and a huge stock of fabric, airscrews, motors, and spare parts, were reduced to cinders. Most of the complete machines, such as Breguets, Spads, and Moranes, were removed in time. It is estimated that damage to the extent of £160,000 was caused, although, contrary to the canards which quickly circulated, it represents but a twentieth of the total value of material in this one centre of aviation. The military authorities are instituting an inquiry into the cause. Some authorities, who know the aerodrome and its occupants well, are asking whether it may not have been caused by the Annamites working on the aerodrome who were imprudent enough to light fires in proximity to the Bessoneaux.

AN AERIAL TOURNAMENT.

Last Sunday, the 22nd inst., on the east side of Paris was opened the Stade Pershing, built by American soldiers and presented to the French nation. As is usual with such opening ceremonies, a great gala programme was arranged, among which, to cut a long story short, was an exhibition with different types of avions belonging to the French, Italian, Belgian, and American armies. The following took part :—French : Two Spads, two Farmans. Italy : two S.V.A., three Capronis (one triplane). Belgium : one D.H.Q., two Breguet, one Hanriot, one Spad. America : One Salmson, one D.H., one Avro, and one Spad.

To end up the day really nicely and to show the civilians how the war was really won, a battle was to take place between two Spads and a Fokker, the Fokker being mounted by an American, Capt. Moseley. Naturally the Spads were to triumph over the Fokker, although why it was necessary to have two Spads to attain this end the authorities do not vouchsafe. However, revenons à nos moutons, a lively combat ensued, and the Boche machine was (cimematographically, at all events) beaten, and should have landed on the parade ground at Vincennes. It did, but not in the way intended, and the pilot was seriously injured. The machine was reduced to bois cassé.

PARIS-CASABLANCA ON THE WAY TO DAKAR.

Readers may have noticed that I often refer to Dakar in these notes. I wonder if they know where it is? Take a map of N.W. Africa and follow the coast round from Tangiers and Dakar will be found situated on that part of the West African coast nearest to South America, hence the interest of the French in their own sort of Atlantic enterprises. Lieut. Lemaitre, who at the time of writing last week's notes had only got as far as Cazaux, left there at eight in the morning last Wednesday, and arrived at Casablanca at five p.m. Actually there is no further news of his continuance of the trip, although rumours abound. What is very sad to relate, however, is that, although his route from Casablanca to Dakar will take him over desert and savage country inhabited only by hostile or inhospitable tribes, and that, therefore, he must avoid landing by every precaution and means in his power, the French authorities, whilst permitting him to make the flight, refused him the help of any torpedo boats which are always in the vicinity, in case he should descend to the sea, whilst following the coast.

Lieut. Lemaitre is very discouraged at this refusal on the part of the authorities, and, whilst he is going to see the attempt through to its successful or unsuccessful conclusion, he has announced that it is the last of its sort that he will undertake. The unfortunate decision of the military and naval authorities is commented on very unfavourably here, and is the subject of considerable protest. Lieut. Lemaitre was the first to initiate an aerial postal service between France and Morocco.

FRENCH INFLUENCE IN THE BALKANS.

The Budget Commission has just voted the necessary credits for establishing several aerial lines in the Balkans. These lines will have Constantinople as a base, and will serve principally Asia Minor and Syria. Mesopotamia is to be left to the British influence, but the French will run one line with a terminating point at Cairo. According to present arrangements, the following is a list of the new airways proposed :—Constantinople-Smyrna-Grecian Archipelago ; Constantinople-Palestine, Mecca-Egypt ; Constantinople-Armenia, Caucasia-Persia ; Constantinople-Bucarest-South Russia ; Constantinople-Salonika-The Balkans.

£20,000 FOR ALGERIAN AVIATION.

From Algiers comes news that local financial delegations voted on June 13th a sum of £20,000 for the establishment of transportation by the way of the air.

BRITISH RECORD FLIGHTS—INFORMATION WANTED.

The Sporting Commission of the F.A.I., under the presidency of Mr. Soreau, have fixed August 31st as the last date on which dossiers relating to possible height, duration, speed or other records made during the war can be accepted.

Any pilots who have put up performances that they seriously believe to be world's records in any particular class are asked to get the necessary documents and proofs in dossier form and to send the whole to the Commission Sportive Aeronautique, 35, Rue François Première, Paris, before August 31st.

SAUSAGES FOR SALE.

The American Aviation Camp at Romorantin (Loir-et-Cher) notify for sale 100 kite or observation balloons having a capacity of 991,000 litres, eight smaller balloons and several baskets, nacelles and attendant tackle. The French Press point out what an anomaly it is that the Americans are allowed to sell comparatively useless stuff, and yet are not only not allowed to sell their cars, but are permitted or ordered to burn them.

A TIMELY GIFT.

The Military and Naval Aeronautical Convalescent Home at Viry Chatillon (S.O.) is about to close its doors. At the end of its useful career it finds itself with a surplus of £2,000, which it proposes to hand over to the joint Aeronautical Aid Society of the French Aero Club and the French Aerial League.


ABC
THE MOST
EFFICIENT
AERO ENGINE
IN THE WORLD
WALTON MOTORS LIMITED
WALTON - ON - THAMES
Telephone .. Esher 319
Telegrams .. "Motors, Walton-on-Thames
Ltd.
Ltd

First in the Field —and in the air

with an aeroplane designed and built solely for commercial purposes - - - - the

BAT TYPE F.K. 26.

This machine is a dual purpose model—it can be employed either as a comfortable four or five seater passenger machine—or its cabin can be denuded of its luxurious internal fittings to provide cargo space for 2,000 lbs. of mail matter or goods.

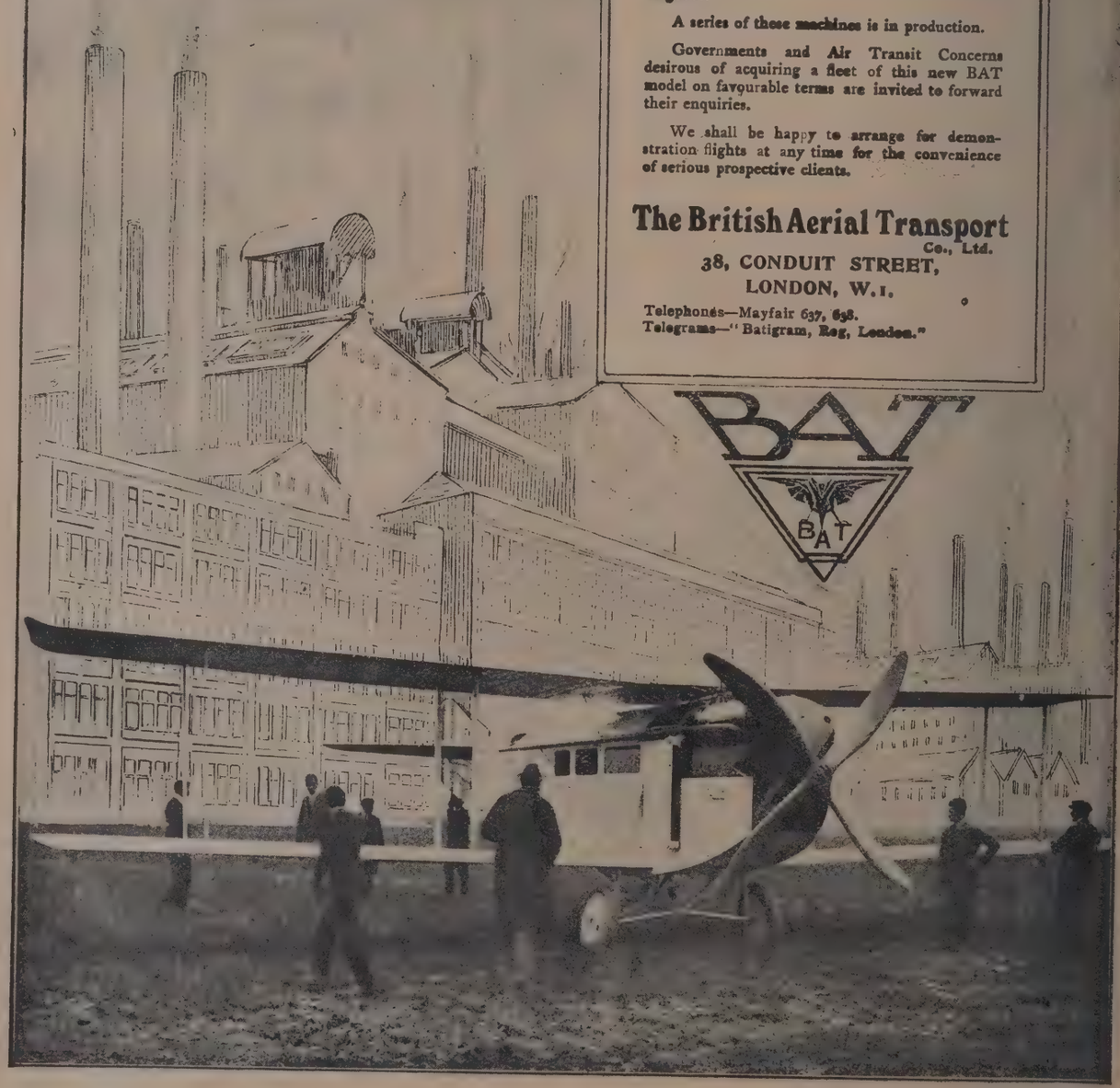
A series of these machines is in production.

Governments and Air Transit Concerns desirous of acquiring a fleet of this new BAT model on favourable terms are invited to forward their enquiries.

We shall be happy to arrange for demonstration flights at any time for the convenience of serious prospective clients.

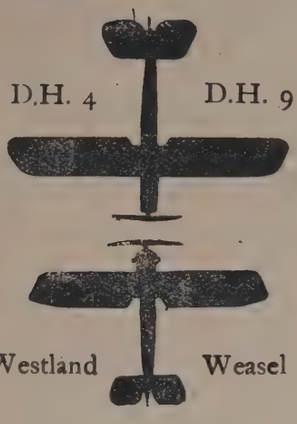
The British Aerial Transport Co., Ltd.
38, CONDUIT STREET,
LONDON, W.1.

Telephones—Mayfair 637, 638.
Telegrams—"Batigram, Reg, London."





Westland Seaplane



D.H. 4 D.H. 9

Westland Weasel



Westland Wagtail



Short Seaplane
200 HP. Canton

These Illustrations give an idea of the range of our War production, which included machines of Westland design.

Westland Aircraft Works

(Branch of Petters Limited)

Yeovil

The same design staff and organization will deal with Peace enquiries, and our private aerodrome is available for testing.



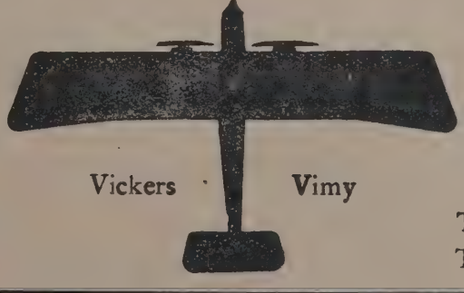
Short Seaplane
225 HP. Sunbeam



Sopwith 1½ Strutter



D.H. 9A



Vickers Vimy

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Telegrams : Aircraft, Yeovil

Every type of Engine
Overhauled & Repaired

During a period of twelve months we overhauled and repaired 2,000 Engines, amongst which were the **Hispano-Suiza, B.H.P., Beardmore, R.A.F., Rhone, Clerget, Gnome,** etc., etc., and gave satisfaction in every case.

The High Quality and Reliability of our work are guarantees that you will get the highest service and satisfaction.

Our works rank as one of the largest and best equipped in the Kingdom and we can meet every demand

promptly and thoroughly

CARS RENOVATED & REPAIRED

Paintwork, Upholstery and Coach Building in all branches. Cars collected at our London Depot

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MERCÉDES SPECIALITY.

Works - - - - - - - WEYBRIDGE

Telephone—550 Weybridge. *Telegrams—"Mercedes Weybridge."*

AERONAUTICAL ENGINEERING

SUPPLEMENT TO "THE AEROPLANE"

INCORPORATING AIRCRAFT ENGINEERING, AERODYNAMICS, AIRCRAFT FINANCE AND COMMERCIAL AERONAUTICS AND MATTERS PERTAINING TO THE AERONAUTICAL ENGINEER AND THE AIRCRAFT TRADER.

THE WEEKLY COMMENTARY.

In the article on the Development of Aircraft Engines, Capt. Sayers suggests with considerable emphasis that it would be well worth while for aero-engine builders to design power-plant units, including engine, radiator, service petrol and oil tanks, and their connections, complete in a frame so that the whole might be bolted onto a fuselage end plate.

Capt. Sayers also argues strongly in favour of the substitution of a generator, battery and coil ignition system to replace the magneto.

Under the heading of "Modern British Aeroplanes" two machines built by the British Aerial Transport Co. which have as yet made no public appearance are described.

The report of the Wilbur Wright Memorial Lecture, read by Mr. Leonard Bairstowe, is concluded.

A letter from Mr. J. D. North on page 62 criticises Mr. C. W. Tinson's article on Longitudinal Stability recently published, and points out an important factor which has been neglected therein.

An illustrated description of certain American designs of super-charger, intended to maintain the output of aero-engines at high altitudes, is given in this issue.

The American work is entirely of the nature of a development of the Rateau exhaust gas turbo-compressor system, which has been boomed in the Press as an "Aerial Turbine."

THE DEVELOPMENT OF THE AERO-ENGINE, PAST AND FUTURE.—IV.

By Capt. W. H. SAYERS, late R.A.F.

Thus, although the Diesel type of aero-engine offers many possibilities for the future, the immediate development of commercial aviation must proceed with the aid of engines more or less similar to those of the present day.

The number of cases in which it would be possible to carry the extra weight of a Diesel-type engine at present is strictly limited.

The immediate problem, therefore, is to turn the petrol engine of to-day into a reliable and reasonably cheap power plant.

It has already been said that 75 per cent. of the failures of to-day are accessory failures, and that the engine proper can be made almost absolutely reliable by a process of "easing up."

Any really competent engine designer should be able to produce an engine which would itself never fail—if he were allowed to add ¼ lb. per horse-power to the weight of his present engine, and this part of the problem presents no difficulties.

With the accessories the question is different.

The Habits of Engine Builders.

Engine-makers themselves are very largely to blame for having in the past failed to look after the installation of their engines.

A few encounters with the representatives of firms who are responsible for the design of some of the best-known types of aero-engines give the impression that they neither know nor care what happens to their products when once they have left the test bench.

Apparently, if they care at all, the care is confined to their advertising department, and, if they know, their knowledge is admirably concealed.

A proper study of the conditions under which their engines have to be used, and a properly organised installation department, at the service of any aeroplane manufacturer who wished to instal one of the firm's engines, would prove a much better investment in the long run than the building of a few special engines for much-advertised competitions.

The Design of Power-Plant Units.

It is by no means impossible to treat an aeroplane power plant as a single unit, and to design an engine, radiator, oil tanks, and service fuel tank complete in a frame which can be bolted to a suitable front plate on any fuselage or nacelle, leaving the aeroplane builder nothing to do but to bolt on his power unit and make a few control connections and possibly fit one fuel supply pipe to the service tank.

It might possibly be necessary to arrange for two different-sized radiators—one for high-speed machines and a larger one for slower types—and to issue the power units in two types for each engine—one for pusher and the other for tractor airscrews.

Any engine manufacturer who cares to go to the trouble of attacking this problem and producing a complete and satisfactory power unit on these lines may be certain of a warm welcome from every aeroplane designer.

Not only that, but he will know that his engines will be run under fair conditions and will not be credited with breakdowns really due to quite external causes.

Failure due to faulty installation could be practically abolished by such means at the expenditure of only a fraction of the time and trouble which is occasioned by the haphazard methods now employed, and a very considerable advance would thus be made towards reliability.

Ignition Troubles.

Next in importance to faulty installation, the ignition system probably accounts for more trouble with present-day aero-engines than any other accessory. The modern

magneto has a reputation for extraordinary reliability, and deserves it.

Nevertheless, the magneto is electrically and mechanically a *tour de force*. It is a combination of an electrical generator and an induction coil compressed into the smallest possible space and made to work under the most unfavourable conditions possible.

The maximum pressure generated in the high tension winding of a magneto armature is in the neighbourhood of 10,000 volts, and it is possible that this figure is greatly exceeded on occasion.

The Magneto's Handicap.

Insulating materials, particularly those which are suitable for such pressures as those mentioned, are practically all of low mechanical strength, and are liable to seriously deteriorate at high temperatures and in contact with oil.

The conditions which obtain in a magneto armature—lack of space and liability to mechanical stress from vibration, generally in the presence of a high temperature and with a liability to accidental soaking in oil—are by no means desirable ones.

In spite of this, in practice magnetos rarely break down—in the sense of failing to generate their normal output at the correct instant—but in modern high-duty aero-engines they frequently fail to produce the required spark at the necessary place—*i.e.*, across the sparking-plug terminals.

This failure is usually due to a derangement of the sparking-plug itself—sometimes to a fault developed in the high-tension wiring from the distributor to the plug.

The latter is, properly speaking, an installation fault.

Failure to produce a spark at the plug points because the plug is oiled up, or because of a small deposit of carbon across the insulating surfaces, may be avoided in time by plug designers.

It could be avoided at once if a source of ignition current is employed with a reasonable surplus of output over that actually needed for ignition.

It would be very difficult indeed greatly to increase magneto output, and particularly to increase the maximum pressure developed at the instant of breaking the primary circuit, simply because of the unsatisfactory conditions under which the magneto has to work.

The Coil and Battery System.

The coil and battery ignition of ancient days suffered from crude design and insufficient output, but inherently it has great advantages over the magneto.

Properly designed and made and with the addition of an engine-driven generator, coil ignition is likely to supplant the magneto entirely for all high-duty engines such as are used for aircraft work.

A purely low-tension, direct-current generator will give a much greater energy output for the same overall dimensions and weight than will a magneto. The insulation required on its windings can be relied upon to withstand the effects of heat and oil with much greater certainty than can that of a magneto.

An induction coil, made with the care now given to the building of a magneto armature, instead of on the lines of amateur-built spark coils which used to be employed for ignition purposes, enclosed in a weather-proof case and put well away from the engine heat and oil, can be made to give a very much heavier discharge, when fed by such a generator, than is given by any existing magneto.

The production of such an ignition plant is all in the regular way of business of existing magneto manufacturers, who would enhance considerably their own reputations and that of British Aircraft by turning their attention to this subject and producing a satisfactory ignition system.

The Value of Surplus Spark Energy.

Given these possibilities of a much greater spark energy spark-plugs with longer gaps and with greater room for insulation can be used, giving greater security against actual plug failure.

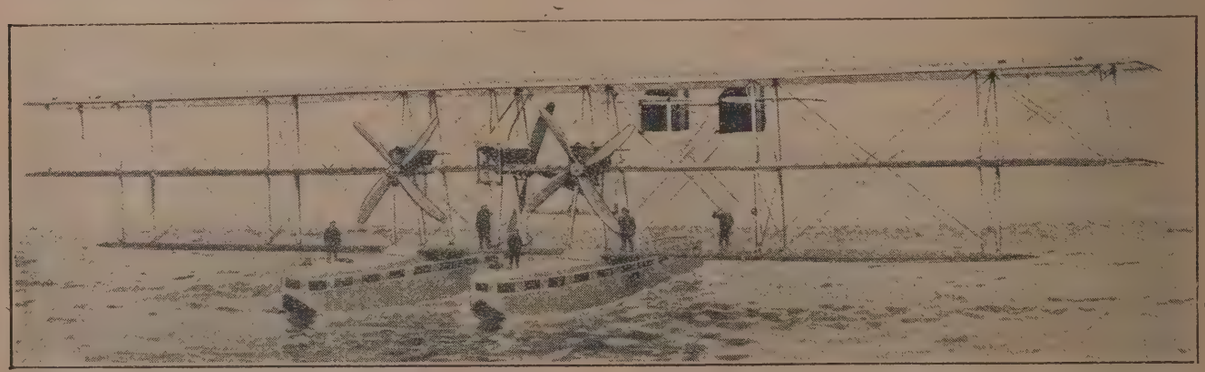
Over and above this, a very large surplus of spark energy would secure the certainty of ignition, even with an oiled-up or sooted plug, in fact under almost any conditions except those of metallic short circuiting of the plug points.

There is no difficulty in providing such surplus ignition energy with a coil, generator, and battery system. There are rather serious difficulties in the case of the magneto.

There are signs that some of the advantages of this type of ignition have been recognised, and that the old myth of the inferior quality of ignition which was obtained from coil and battery outfits was due to some intrinsic quality in the type of spark produced, instead of to the ill-design and inefficiency of the appliances themselves, is dying out.

The American "Delco" system of ignition, successfully used on the Liberty motor, is evidence of this fact, and the performance of the trans-Atlantic N.C. boats equipped with this ignition gear is testimony to the possible reliability of the system, for one learns that there was not a single fire in any of the engines employed in any of the three N.C. boats.

But the full advantages which can be secured by adopting this method of generating high-tension ignition current will only be realised when sparking-plugs of less cramped type than those now customary are used to complete the ignition scheme.



A Projected Passenger-carrier for long-distance overseas work, designed by Short Bros., of Rochester. Accommodation for 50 passengers with dining and sleeping facilities to be provided in the floats. The tail is to be carried on booms, "Bat-Boat" fashion. Span 160 ft., overall length 100 ft. Engines, 3 Rolls-Royce "Condor," each of 600 h.p. Estimated speed 100 m.p.h. The outer sections of the wings are arranged to detach in case of an emergency landing on the sea.

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MODERN BRITISH AEROPLANES.

VI.—The British Aerial Transport Co., Ltd.

(Continued.)



Three-quarter Front View of the B.A.T. "Baboon" Training Machine (170 h.p. A.B.C. "Wasp" Engine).

THE B.A.T. "BABOON" F.K.24.

A small dual control two-seater, designed for training purposes.

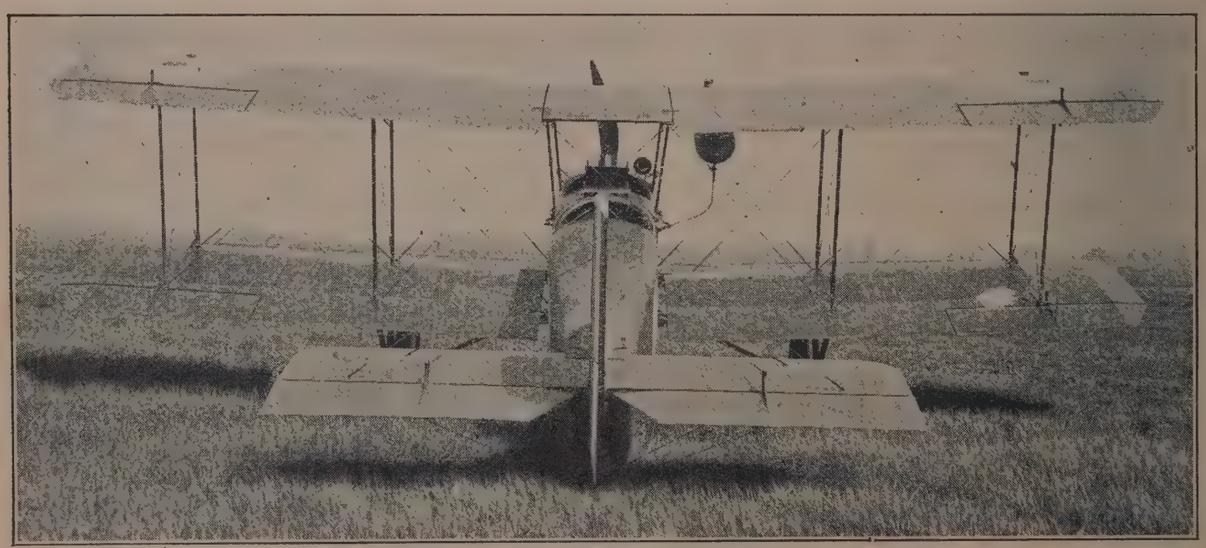
Very great attention has been paid in design to ease of manufacture and interchangeability of parts, so as to make it as easy and as cheap as possible to repair damage done by careless pupils and school mechanics.

As an instance of this it may be noted that ailerons, rudder and elevators are all identical and interchangeable.

The following are the leading particulars:—

SPECIFICATION.

Type of machine	Two-seater biplane (Dual Control)
Name or type No. of machine	B.A.T. F.K.24 "Baboon"
Purpose for which intended	Training
Span	25 ft.
Gap	4 ft. 8½ in.
Dihedral	2 deg.
Overall length	22 ft. 8 in.
Maximum height	8 ft. 10 in.
Chord	5 ft. 7 in.
Total surface of wings	259 sq. ft
Span of tail	9 ft. 10 in.
Total area of tail	27.75 sq. ft.
Area of elevators	12 sq. ft.
Area of rudder	6 sq. ft.
Area of fin	5½ sq. ft.
Area of each aileron and total area	6 sq. ft. each—24 total
Maximum cross-section of body	7.5 sq. ft.
Vertical area of body	52 sq. ft.
Engine type and h.p.	170-h.p. A.B.C. "Wasp"
Airscrew	B.A.T. 2-blade, 7 ft. 10 in. dia., 5 ft. pitch
Weight of machine empty	950 lbs.
Load per sq. ft.	5.2 lbs.
Weight per h.p.	7.95 lbs.
Tank capacity	2 hours
Tank capacity	12 galls.
Disposable load apart from fuel	400 lbs.
Total weight of machine loaded	1350 lbs.
PERFORMANCE—	
Speed down	90 m.p.h.
Speed, landing	40 m.p.h.
Climb—	
To 10,000 ft.	12 mins.



Rear View of the B.A.T. "Baboon" (170 h.p. A.B.C. "Wasp" Engine).

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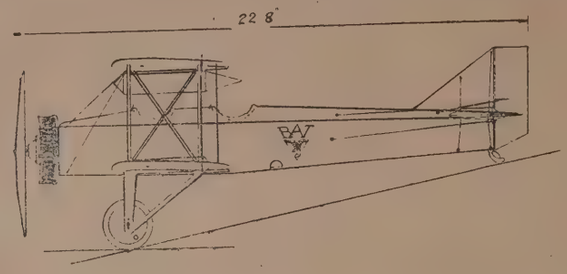
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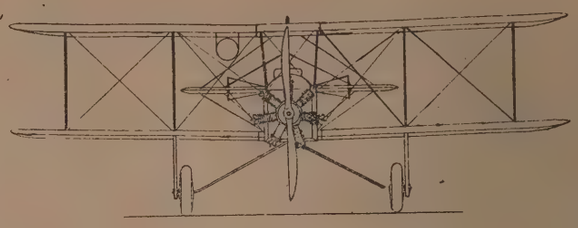
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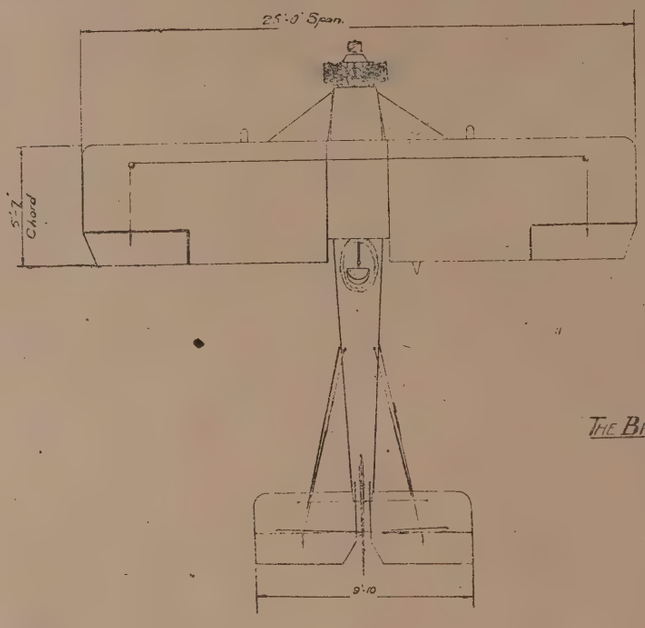
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AeroEngines

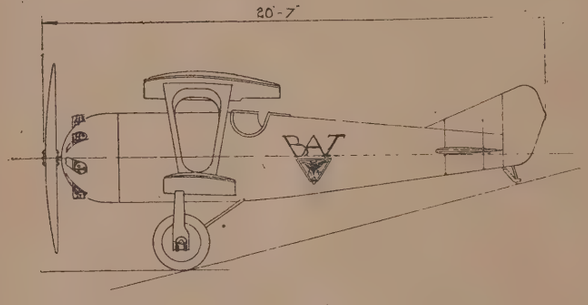
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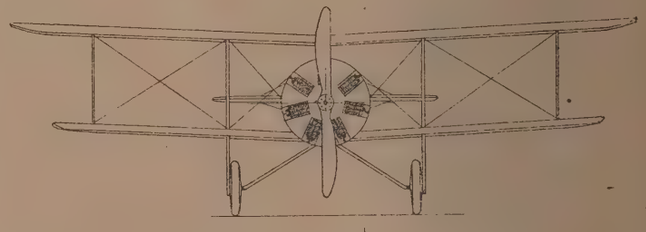


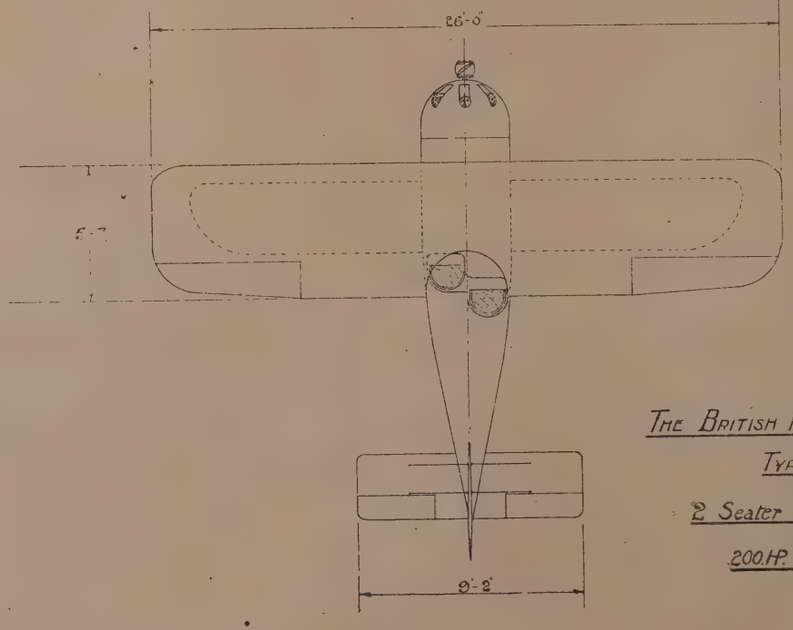




The British Aerial Transport C° Ltd
Type F.K. 24 "Baboon"
Two Seater Biplane
A.B.C. 1/C.H.P. Wasp.







The British Aerial Transport C° Ltd
Type F.K. 27.
2 Seater Sporting Biplane
200 H.P. A.B.C. Wasp. II.

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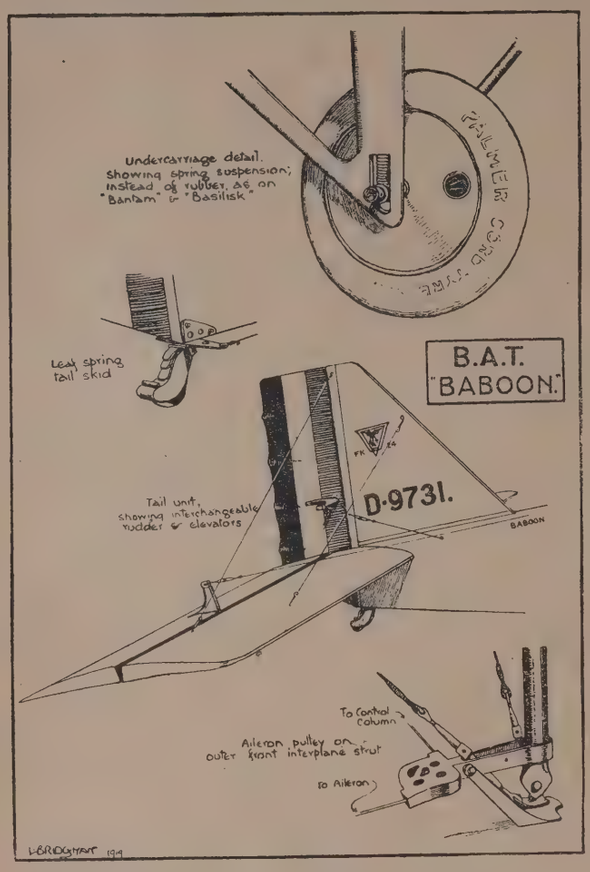
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Some Details of the B.A.T. "Baboon" Training Machine.

THE B.A.T. F.K.27.

A really high performance two-seater sporting type machine, which follows generally the outline of the "Bantam" and "Basilisk" in design.

The two seats are arranged in a "staggered" or échelon position in the fuselage just below the trailing edge of the upper wing.

The lower wing is of considerably smaller chord and slightly less span than the upper.

The leading particulars are as given below:—

SPECIFICATION.

Type of machine	Two-seater biplane
Name or type No. of machine	B.A.T. F.K.27
Purpose for which intended	Sporting type
Span	26 ft. top, 22 ft. 10 in. bottom
Gap	3 ft. 11 in.
Overall length	20 ft. 7 in.
Maximum height	7 ft. 10 in.
Chord	Top 5 ft. 7 in., bottom 3 ft.
Stagger	8½ in. on leading edge
Dihedral	3 deg.
Total surface of wings	200 sq. ft.
Span of tail	9 ft. 2 in.
Total area of tail	23.4 sq. ft.
Area of elevators	6.3 sq. ft.
Area of rudder	4.4 sq. ft.
Area of fin	2.8 sq. ft.
Area of each aileron and total area	7.5 sq. ft. each—15 sq. ft. total
Maximum cross-section of body	10.5 sq. ft.
Vertical area of body	40 sq. ft.
Engine type and h.p.	200-h.p. A.B.C. "Wasp"
Airscrew	B.A.T. 2-blade, 7 ft. 10 in. dia., 5 ft. 4 in. pitch, 1850 r.p.m.
Weight of machine empty	800 lbs.
Load per sq. ft.	7 lbs.
Weight per h.p.	7 lbs.
Tank capacity	4 hours at ¾ throttle
Tank capacity	30 galls.
Disposable load apart from fuel	400 lbs.
Total weight of machine loaded	1,400 lbs.
PERFORMANCE—	
Speed low down	142 m.p.h.
Speed at 10,000 ft.	130 m.p.h.
Landing speed	50 m.p.h.
Climb—	
To 5,000 ft.	2 mins.
Ceiling	24,000 ft.

AERO ENGINE TESTS APPLIED TO CAR ENGINES.

It has heretofore not been considered necessary to test motor-car engines on the bench for long periods of continuous running at full power—because car engines are not generally required to run at full power for long periods in actual service.

The Sunbeam Motor Car Co., of Wolverhampton, have, however, demonstrated the fact that their new 16 h.p. (rated) four-cylinder car engines are capable of standing up to tests similar to those imposed on aero engines, by running two of them on the bench for 25 hours non-stop at 100 per cent. over their rated capacity.



Side View of the B.A.T. "Basilisk" (320-h.p. A.B.C. "Dragon fly" Engine).

AMERICAN SUPERCHARGING DEVELOPMENTS.

A Possible Means of Acquiring Additional Efficiency in Engines used on Commercial Aircraft.

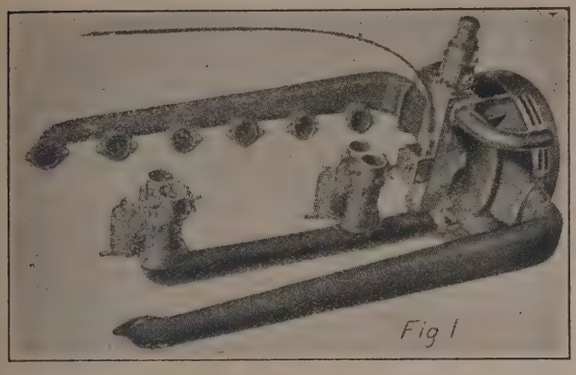


Fig. 1.—The Sherbondy Supercharger Unit for the Liberty Engine.

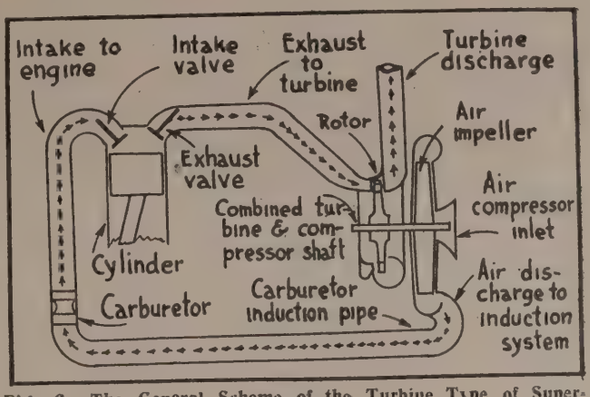


Fig. 2.—The General Scheme of the Turbine Type of Supercharger.

It is now a matter of common knowledge that a considerable amount of experimental work was carried out in various Allied countries with a view to maintaining the power output of aero engines at high altitudes.

So far, no details of this work have been published beyond a few references to the fact that Prof. Rateau had designed an exhaust-driven turbo-air compressor designed to supply air at normal ground-level density to aero-engines at high altitudes.

According to an American Journal—the "Aerial Age Weekly," of New York—the American authorities took up this question, and, working along lines laid down in Europe, secured very promising results.

Soon after the American declaration of war against Germany, the U.S. Government requested Mr. E. H. Sherbondy, and Dr. Sanford A. Moss, of the General Electric Co., of America, to take up the investigation of this problem

Both these gentlemen finally adopted the main lines of the Rateau system—to the extent of utilising a turbine driven by the exhaust gases of the engine, made to drive a turbo-air-compressor which supplies air to the carburetters of the engine.

Mr. Sherbondy made certain experiments with a compressor gear driven from the engine shaft, but eventually abandoned this method for the turbine drive.

"Aerial Age Weekly" publishes general arrangement drawings of the original Rateau supercharger, and of the Sherbondy modification, together with a number of other illustrations.

Generally all three types differ only in detail. All employ a turbine of the single wheel and expanding nozzle type associated with the name of de Laval, which drives a centrifugal air-compressor on the same shaft at some speed round about 30,000 r.p.m., and a mechanism more or less similar in principle to the ordinary aneroid which controls the exhaust gas admission to the turbine in such a manner as to maintain an approximately uniform pressure on the delivery side of the compressor.

Fig. 2, attached, shows diagramatically the *modus operandi* of all three systems.

Fig. 4 is a general arrangement of one of the Rateau superchargers showing the disposition of the turbine and the compressor.

Fig. 5 is a similar view of the Sherbondy supercharger. In this figure A is the air compressor-impellor, mounted upon the shaft S, which also carries the turbine rotor B.

Exhaust gases are led by two special manifolds to the annular chamber N, and passing through the nozzles R, impinge on the turbine buckets K and pass to the exhaust outlet E. Between N and E is the bye-pass valve V. The bye-pass valve is controlled by the diaphragm F, which is open to the atmospheric pressure on one side and has on its other side a sealed chamber containing air at normal atmospheric pressure.

Movement of the diaphragm with varying external air pressure controls a small piston valve O which opens or closes oil ports leading to a cylinder whose piston P is on the stem of the bye-pass valve V.

At ground level this bye-pass is wide open and no exhaust gases pass the turbine nozzles. As the altitude increases and the external pressure on the control diaphragm decreases the bye-pass is progressively closed, more and more gas passes through the turbine, and the speed of the turbine-compressor unit is automatically regulated so as to maintain the required pressure in the induction pipes.

Air enters the compressor through the intake G and is driven by the impellor A into the circumferential chamber C, and passes to the induction pipes and carburetters through the outlet J.

The turbine and compressor casings are separated by a water space W which is coupled to the engine-cooling system. In the centre of the shaft and surrounded by the water space is a labyrinth packing system which prevents leakage of exhaust gases from the turbine to the compressor.

Fig. 1 gives a general view of the complete supercharger unit, with exhaust manifolds and carburetter connections as applied to the 12-cylinder Liberty engine.

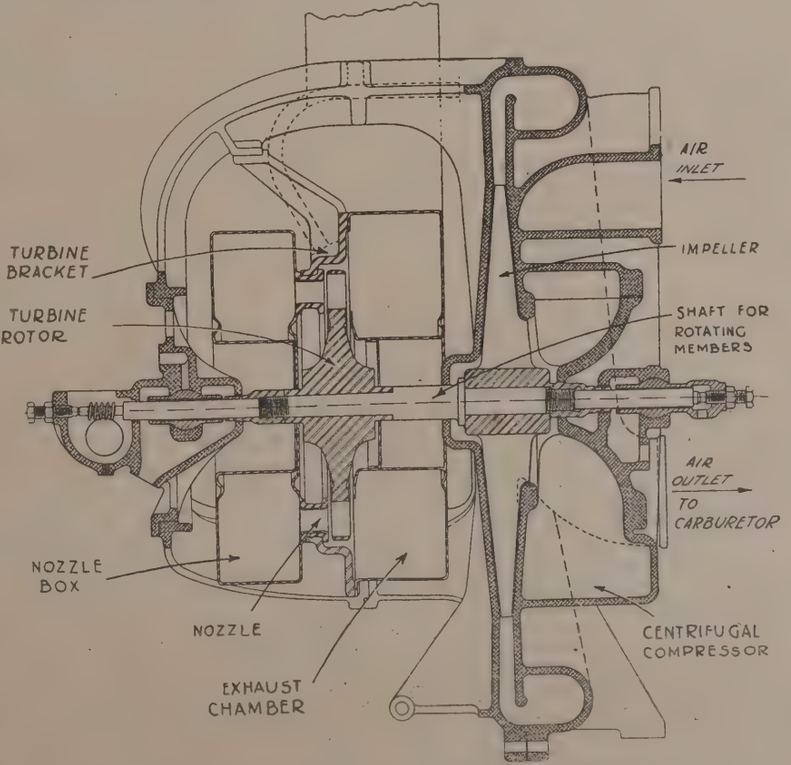


Fig. 4.—Cross-section of a Rateau Turbo Supercharger.

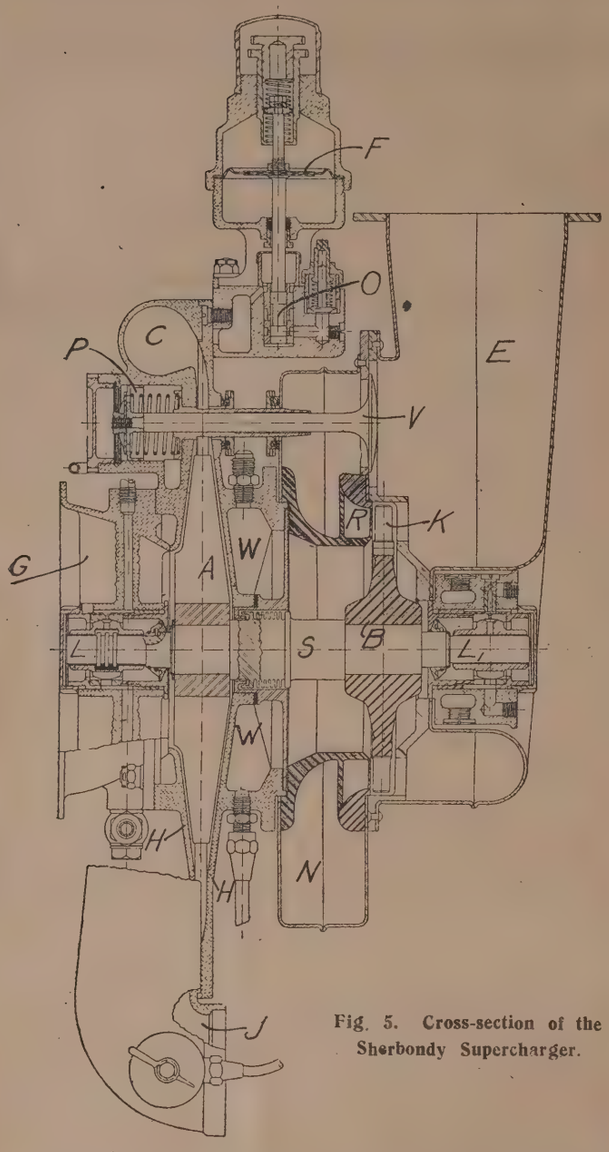


Fig. 5. Cross-section of the Sherbondy Supercharger.

Fig. 3 shows the turbine rotor and the air impellor mounted on the shaft.

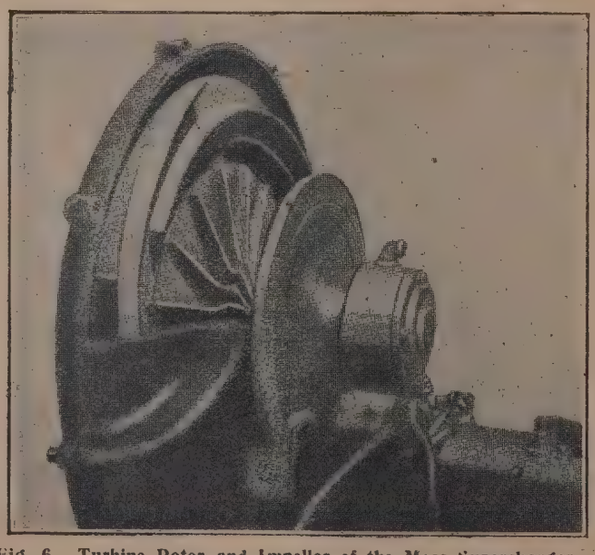
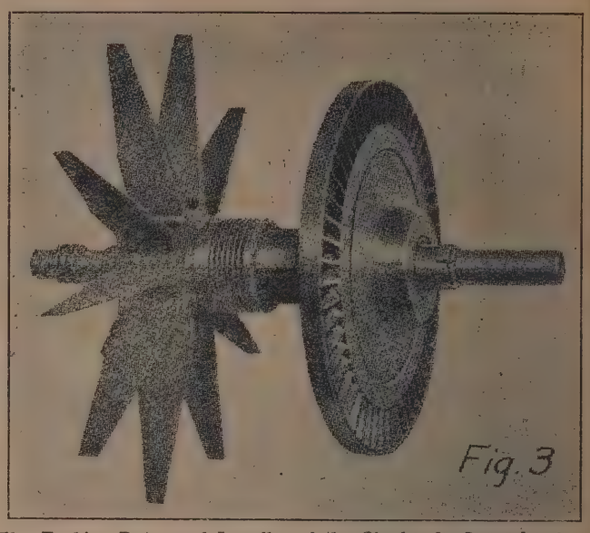


Fig. 6. Turbine Rotor and Impellor of the Moss Supercharger.

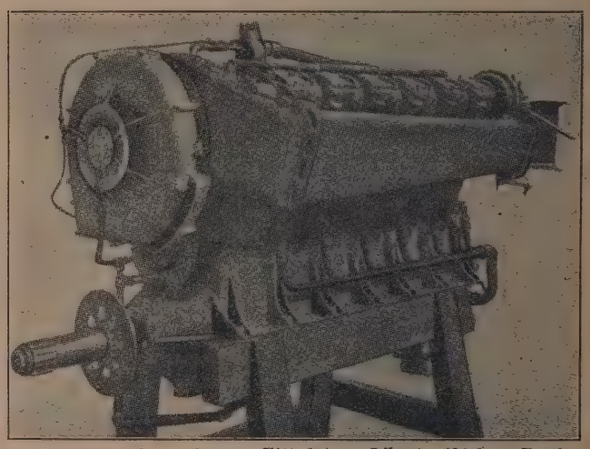


The Turbine Rotor and Impellor of the Sherbondy Supercharger.

The Moss supercharger differs from the Sherbondy mainly in detail.

Fig. 6, which shows the turbine wheel and the impellor, together with part of the compressor casing, shows the general similarity of lay out. In this case the rear shaft-bearing has been water-jacketed to minimise the effects of its close proximity to the exhaust gases, and the casings of the turbine and the compressor are separated to allow air circulation between the two units.

Both the types described above are designed to preserve full air supply to the 400-h.p. Liberty engine up to 20,000 feet.



The Moss Supercharger Fitted to a Liberty 400-h.p. Engine.

A GIANT SEAPLANE.

According to a note in "Engineering," Vickers, Ltd., are at present engaged upon the design of a very large seaplane

This machine is to be, as far as the structure is concerned, entirely of duralumin, and will have a total weight of roughly 50 tons, with a disposable lift for fuel, crew and cargo of 20 tons.

A TRADE MOVE.

Mr. E. C. Newman, for five years connected with the Sopwith Aviation Company, has recently joined the British Aerial Transport Company. Mr. Newman may safely be called one of the pioneers of British aviation, for he started aeroplane work with the Short Bros. in 1908 and was working with the late the Hon. Charles Rolls in Bournemouth when that pioneer pilot was killed. After the death of Mr. Rolls, Mr. Newman went to the Crystal Palace, where he joined the late Mr. Moissant, the American aviator, who had just arrived there from Paris on a two-seater Blériot.

Mr. Newman went to America with Mr. Moissant, and was with him when he was killed at New Orleans. He stayed on in America working with Mr. J. A. D. McCurdy, the pioneer Curtiss pilot, and returned to England in 1912, where he joined the Bristol Company. He worked with them for a considerable time at Brooklands, and he joined the Sopwith firm in 1914, where he has since been concerned with the tuning up and testing of the experimental machines. His long and wide experience of experimental work should be of very great value to Mr. Koolhoven and the B.A.T. Company.



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THE WILBUR WRIGHT MEMORIAL LECTURE

(Continued.)

Engine Weight and Supercharging.

When saying that an engine weighs 2 or 3 lbs. per horse-power it is common practice to use the maximum horse-power the engine can give continuously. In designs as they now exist, this maximum power is usually developed at ground level. The power developed during high flying is less than this maximum and in fact is about half of it at 15,000 feet where the weight per horse-power is 4 to 6 lbs. Attention has been drawn to methods of keeping up the power of the engine, and two main lines of progress show promise. In one of these the design is based on high altitude conditions and the full power development at the ground prevented; in the other a blower is provided which increases the air taken into the cylinder at high altitudes. The exhaust turbine, developed by Rateau for this express purpose, has now reached an advanced stage of development. The weight of the blower and the power necessary to drive it must be offset against the increased power due to greater charges, and although an important reduction of engine weight below 6 lbs. per horse-power at 15,000 feet may be expected, the limit will always be above that quoted for ground level.

Airscrews.

The consideration of airscrew design for supercharged engines brings into prominence a very useful but somewhat accidental balance between the output of power of a non-supercharged engine and the power required to drive the airscrew. Some of the important stresses in an engine arise from centrifugal forces, and for this and other reasons a limit is put by makers to the maximum permissible speed of rotation to the crankshaft. The combination of aeroplane, airscrew and engine with which we are best acquainted goes a very long way towards a natural arrangement for the prevention of excessive speed. The balance is very seriously disturbed if a supercharged engine, which maintains constant horse-power from the ground to 15,000 feet, is used. An idea of the magnitude of the change of speed can be obtained from a simple formula which says that the horse-power for flight in the neighbourhood of normal top speeds varies as ρV^3. For constant power the aeroplane speed and airscrew revolutions will be $\sqrt[3]{2}$ times as great at 15,000 feet as at the ground. This is an increase of 26 per cent, or from 1,400 to 1,760 r.p.m. and would be many times the excess allowed for good running. It will be noticed that the effect of supercharging an engine is to convert a small loss of speed with height into an appreciable gain.

In order to deal successfully with the supercharged engine when it arrives, it will be necessary to abandon fixed airscrew blades and to have a device which admits of the adjustment of pitch during flight. In civil aviation there will be time for the operation by hand of the necessary mechanism. Satisfactory methods of holding wood blades in metal sockets have been developed and it is not improbable that the work of operating the variable pitch mechanism can be thrown onto the engine. There appears to be every reason to think that the difficulties are well within the reach of engineers and will be overcome whenever the demand becomes sufficiently insistent.

A discussion of some importance has been raised by the conflicting requirements of airscrew designers and engine makers. It is apparent from the trend of engine design that crankshaft speeds of 2,500 r.p.m. are contemplated in order to reduce weight per horse-power. On the other side, the airscrew designer finds a loss of efficiency of the airscrew which becomes serious at high speeds and much greater than any gearing losses in the engine. If, for civil flying, it may be anticipated that the engine unit will have a horse-power of about 400, the gearing for a "tramp" aeroplane should bring the airscrew revolutions down to 1,000 or 1,200 r.p.m. If necessary, four-bladed airscrews can now be used, and the slow rotation and large diameter will not only tend to high efficiency but probably also to quieter running.

The use of ungeared engines and large powers was bringing a new feature into airscrew design. Tip speeds of 600 ft. per second are not uncommon even with gearing, and airscrews have been used with tip speeds in excess of 850 f.s. On theoretical grounds it was expected that changes in the type of air flow from an airscrew would appear at about 500 f.s., or roughly half the velocity of sound in air.

The importance of the subject was becoming very great in the closing period of the war and a special design was made at the Royal Aircraft Establishment which could be rotated on a spinning tower at speeds up to nearly 1,200 f.s. The results obtained were very striking, the simplest of observations sufficing to indicate a great departure from the type of flow on which normal airscrew design is based. Standing in the rear of the airscrew, the usual strong breeze was felt at speeds below 900 f.s., but disappeared before the top speed of 1,160 f.s. was reached, leaving a region of comparative calm. The change was noticed more readily on shutting down owing to the suddenness with which the slipstream made is reappearance. The phenomenon was investigated and it was found that the new type of flow was largely centrifugal, whereas the normal flow resembles that of a jet of rather less diameter than the airscrew. There was no sudden increase in the rate of variation of power with speed, but considerations of momentum suggest that almost the whole of the thrust had disappeared. As an organ of propulsion, the airscrew was probably very inefficient.

An experiment in flight with an airscrew having a tip speed above the velocity of sound has been contemplated, and this is one of the cases in which flight on an aeroplane presents the only available means of progress. It will be a difficult experiment, but is accepted by the experimental pilots because of its value. I should like to add my personal tribute to the courage and skill of the members of the Experimental Staff and Flying Squadron at the Royal Aircraft Establishment. In one instance in particular, loss of life occurred in a very direct attempt to assist in urgent design. An accident of which the cause was particularly obscure had recurred and an investigation was being made. The Royal Aircraft Establishment was approached for assistance and completed a valuable report; when the last records were being taken the aeroplane came to grief by a repetition of the accident which they were investigating. Both pilot and observer lost their lives.

Factors of Safety.

I am not going to deal with the calculations made when estimating the load which an aeroplane can safely bear, but to draw attention to the loads which may come on it due to its motion through the air. A further difference between military and civil flying is shown in the process, and it will be seen that the fighting pilot carried out his work under exciting conditions during which his aeroplane was subjected to severe strain, and in which his physical sensations must have added considerably to those due to the presence of an enemy.

The forces on an aeroplane can be measured by an instrument called an "accelerometer." Although it has a good scientific name it is a very prosaic instrument which measures the heaviness with which a pilot sits on his seat. Ducking the nose of the aeroplane tends to throw the aviator out, and at the moment at which he loses his seat the instrument reads zero. During a loop it may indicate that instead of a real weight of 10 stone, the pilot's apparent weight is 40 stone. His head is then very heavy on his shoulders, and on the one occasion on which I experienced the sensation my head was distinctly unstable, and an incautious movement brought it forward "cut of control."

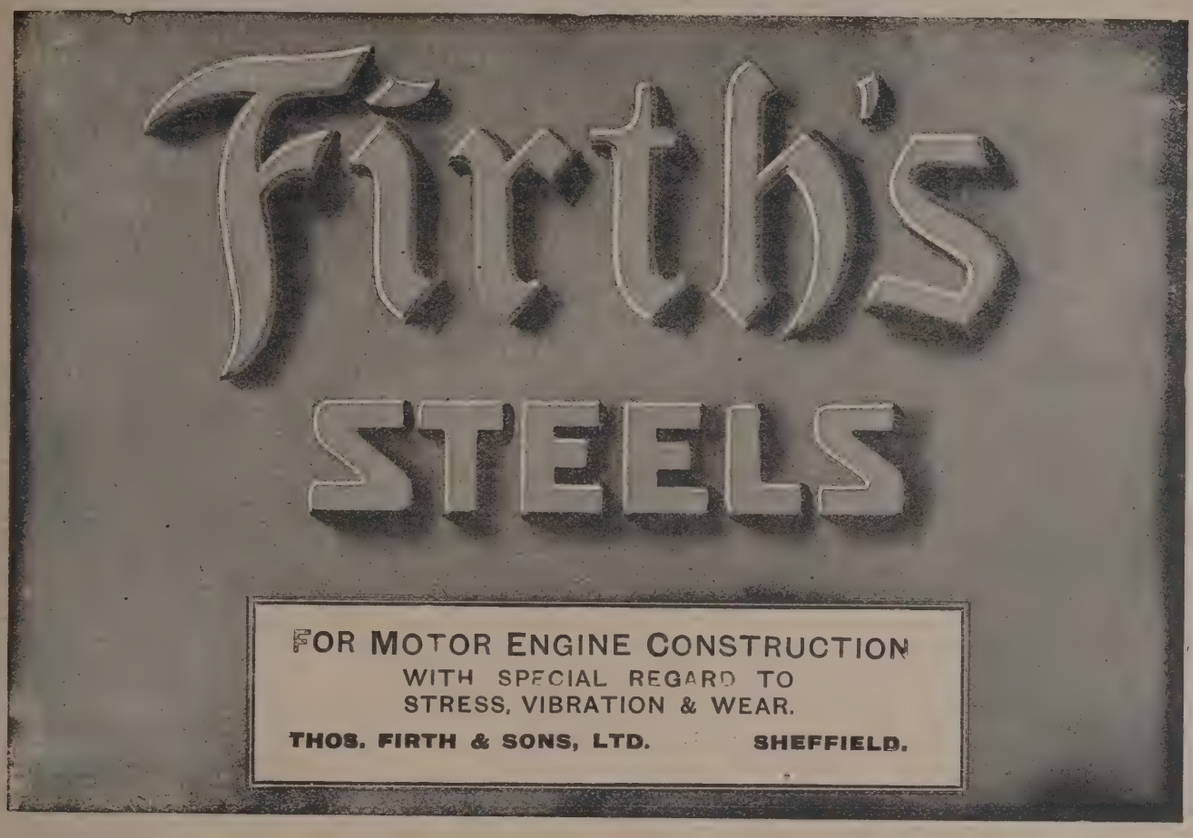
The first record occupied nearly half an hour in the taking, of which about twenty minutes was in the air. The instrument was strapped to the knee of an observer, and at intervals the pilot interposed some of the trick evolutions of flying on the more normal course of the flight. The first clear deduction from the record is the uneventfulness of straight flying, especially at good heights. This is shown by the tendency of the black line to keep about the value 1, so that the pilot and passenger have their usual weight. Flying low down the changes called "bumps" sometimes reduce a pilot's apparent weight to half its ordinary value, and at other times increase it to nearly one and a half times.

Leaving the record of ordinary flight and coming to the "stunts" it was found that on two occasions the pilot was in danger of leaving his seat, and the importance of a belt will be appreciated. Looping and spinning produce heaviness on the whole, the extreme value being nearly three times the normal. A rapid turn almost always increases the apparent weight, and in a mock fight it is very noticeable that the greater number of manœuvres seat the pilot more solidly, and therefore help in the accurate control of the aeroplane's motion. In a few instances and for a few seconds the apparent weight is zero, whilst the extreme in the other direction is as great as four times the normal.

Periods of high stress do not last long, but the air forces have been fully transmitted through the structure, which is then liable in fighting to be loaded to four or five times the load in level flight. Although the conditions of fighting are very exacting, the demand for adequate structural strength has been met with considerable success. It would therefore appear that for civil transport structural design is far advanced towards complete safety.

Controls.

Control is difficult to define in numerical form, especially as the manœuvres are rapid; it takes only a few seconds to get from a level keel to a vertical bank, and the pilot is far too busy to observe a stop watch. At the Royal Aircraft Establishment the idea was formed and developed of photographing one aeroplane from another. The cinema camera used was carried on one aeroplane which flew steadily along a straight level path; the film was driven by a small windmill. Directed towards a second aeroplane flying behind, any motion, such as turning, rolling, or looping, could be photographed. The latest stage of the experiment is to use simultaneously a number of instruments bearing the undignified title of "Rats," which record the movements of the controls during the manœuvre. The scheme will only be outlined this evening as a full description will shortly



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be given by the Royal Aircraft Establishment. Given such a method of investigation, it would be possible, even in a fighting scout, to assess the merits of any particular control in a definite numerical statement, and so lay the foundation for the final design of the best systems.

Relay Control for Large Aeroplanes.

With the exception of a few flying boats; the control of all heavier-than-air craft has been by column or wheel and rudder bar connected by cables to the elevator, ailerons, and rudder. This is a partial relay, as the couples which move the aeroplane come from the air and are far greater than those exercised by the pilot's muscles. An aeroplane of a given size may be light or heavy on its controls, and those designs in which the control is light are greatly appreciated. Forces on a pilot's hand of 1 to 3 lbs. are described as light, 5 to 10 acceptable, and 30 to 40 lbs. heavy. Bigger forces can be taken through the legs from the rudder bar. The largest manually controlled aeroplane weighs twenty times as much as the smallest, and, other things being equal, this would represent the increase in the pilot's effort. A small aeroplane with light control may represent a heavy type of large aeroplane. Some relief can be obtained by the use of an adjustable tail plane, but this is too slow for such operations as landing. In meeting the new problems involved in the control of large aeroplanes, balanced surfaces were introduced, and have sufficed to bridge the present range of size—at any rate, for those large aeroplanes which have sufficient stability to fly themselves for the greater part of their time in the air. It might be thought that no limit existed to the possibilities of balancing, but it is found that the conditions required are not the same at all speeds of flight. It is important that the controls shall not "take charge," due to overbalance, and so a small reserve of stability of the control surface is necessary. A more important but less obvious limitation arises from the fact that the atmosphere is gusty, either naturally or because of the airscrews. This gustiness upsets all hope of accurate balance, as the irregular forces on the pilot's limbs lead to discomfort. Some appreciable degree of stability in the controls is thus indicated, and as a corollary it is necessary to look to new ideas. The most promising development is one which assists the pilot in the same way as the steering engine of a ship assists the helmsman. The stage of finality is still distant, but one control has been developed and used for seaplanes which relieves the pilot of three-quarters of the effort required to move the ailerons.

Stability.

The relay control just mentioned only assists the pilot and does not remove the necessity for his constant attention. The human being is a complex mechanism onto which aeronautics throws all its outstanding difficulties, and, although the opinion is probably heretical, I believe that pilots are not anxious to do unnecessary work. At any rate, one of them had the normal human characteristic and fixed a plate in the wind which was to operate the relay control when one wing went down and sideslipping began. He discovered a natural period of the aeroplane. Every six seconds down came the right wing; the control put over the ailerons and brought it up as expected, but overshot the mark, so that "hunting" occurred until the pilot intervened. It is probable that that natural period had never been suspected, just as early aeroplanes were thought to be free from phugoid oscillations.

These natural periods are indicators of stability, and every aeroplane has its own characteristics. Many records are now available from the Royal Aircraft Establishment and some from Martlesham Heath. In a lecture to this society some years ago I had the pleasure of exhibiting a number of small models made to illustrate the mathematical theory of stability. Most of the examples to-night are taken from flight records, and as such are devoid of any theory. It is perhaps necessary to say this clearly, otherwise the distinction might be missed in the exactness of the agreement.

Two pieces of apparatus, one a simple block of wood, will draw attention to the mechanical ideas which in aviation constitute the basis of stability. Everyone knows that a top-heavy body falls over; an aeroplane may have a property exactly analogous to top-heaviness and a tendency to turn over on its back. The wooden block stands steadily on the table until disturbed, when it oscillates and gradually settles back to its initial state. This is one of the noticeable characteristics of the motion of a stable aeroplane. The other way up, the block is stable against a small blow, but it is upset by a larger one and is typical of a limited range of stability. All these motions are familiar. A fourth type is far less common, and the model used to illustrate it is correspondingly uncommon. If I spin the gyro and set the apparatus in a vertical position, it will oscillate slowly, the amplitude getting greater and greater until the apparatus falls over. This is the condition known to engineers as hunting. I propose to show a record taken on an aeroplane which hunted.

Stable Aeroplane.

The figure (not reproduced) shows a speed record taken by an automatic apparatus attached to an aeroplane. A special clutch was provided, by means of which the control column could be locked; the record begins with the aeroplane flying at 62 m.p.h. and the lock just put into operation. As the steady speed for the control position was 73 m.p.h., the aeroplane, being stable, commenced to dive and gain speed. Overshooting the mark, it passes 83 m.p.h. before again turning upwards; there is a very obvious dying down of the oscillation, and in a few minutes the motion would have become steady. The record shows that after a big bump the aeroplane controlled itself for more than two miles without any sign of danger.

Unstable Aeroplane.

The next record is very different, and not so easily obtained, since no pilot cares to let an unstable aeroplane attend to itself. No lock was provided, but by gently nursing the motion it was found possible to get to a steady flying speed with the control column against a stop. Once there, the pilot held it as long as he cared to, and the clock said that this was less than a minute. After a few seconds the nose of the aeroplane began to go up, loss of speed resulted, and stalling occurred. Dropping its nose rapidly, the aeroplane began to gather speed and get into a vertical dive, but at 80 m.p.h. the pilot again took control and resumed ordinary flight.

Further Records.

As an aeroplane may be flown at different speeds, it is necessary to examine the effect of speed on stability, and the next record shows good stability for a modern aeroplane at speeds of 83 m.p.h. to 111 m.p.h. and for conditions more onerous than those of a locked control column. The records were taken by the equivalent of a pinhole camera carried by the aeroplane and directed towards the sun. The pilot started the record by putting the nose of the aeroplane down and then abandoning the control column. Big oscillations were produced which died down with considerable rapidity. All records show marked damping, and without measurement it is difficult to detect any effect of speed. In another record, which is uncommonly interesting, the effect of speed is obvious. The upper diagram shows that at a speed of 100 m.p.h. and a height of 10,000 ft., the aeroplane is satisfactorily stable. During one period the pilot did his best to fly level, whilst for another the aeroplane was left to its own devices and proved to be a good competitor to the pilot. At a speed of 90 m.p.h. at 1,000 ft. the oscillation died down for the few first periods and then became steady. The stability in this condition was very small indeed, and a reduction of speed to 70 m.p.h. was sufficient to produce hunting.

The oscillations so observed are calculable, and the effect of gusts in a natural wind are readily deduced from the oscillations observed in still air. It is to be hoped that the stability of the aeroplane will now receive the attention which has in the past been devoted to performance, and has led to a British literature unparelleled in any other country in the world. It is easy to make an unstable aeroplane; it is not difficult to make a very stable aeroplane. On the other hand it needs considerable care to give an aeroplane a desired degree of stability.

Once it is conceded in the necessary official quarters that the study of stability is important, there will be no difficulty in beginning the progressive collection of data, but if this work is to proceed satisfactorily it is necessary that an appreciable part of the time of the staff of the National Physical Laboratory and the Royal Aircraft Establishment shall be continuously devoted to it. Incomparably more laborious than that relating to performance, it is work which can only be broken into at frequent intervals at a cost of serious loss of time and accuracy, and in the days to come, when the number of aeronautical engineers with mathematical knowledge is sufficient for the needs of the industry, this data will be fundamental stock-in-trade. The immediate needs of the industry have much support, but a policy of looking two or three years ahead has fewer advocates, in spite of the fact that such provision is necessary if Britain is to keep her lead in the air.

LONGITUDINAL STABILITY.

The following letter has been received:—

Sir,—I have noted from your recent issues some articles by C. W. Tinson on the subject of longitudinal stability; these articles are very misleading, and contain considerable inaccuracies.

It is impossible to discuss the subject fully in a letter, but Mr. Tinson's error is most noticeable in his last article, where he shows the conditions in a terminal nose-dive, omitting the main plane moment, which is of considerable magnitude, even at the angle of no lift. The conditions he works out for the resistance weight and tail plane couples could not, of course, produce equilibrium.

I do not know if Mr. Tinson has access to official publications, but if he has, I would refer him to Confidential Information Memorandum No. 22, which was published by the Admiralty in February, 1917. This covers the conditions of loads on tails in high-speed flight, particularly the conditions for a terminal nose-dive.

It may be of assistance in reading this C.I.M. to note that coefficient Kq used therein is the same as the Km of present-day use, and that the value of Q (i.e., $KqpAv^2$) is negative in a nose-dive.

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MARKET TOPICS.

PRICES ARE FOR QUANTITIES ON USUAL TERMS.

JUNE 26th, 1919.

COPPER.—This market has, during the past week, been very active, and prices have made a fairly substantial advance. It has been pointed out on two or three occasions recently in these reports that immediately the demand for Copper revives values would begin to harden; the present advance, however, appears to be a little premature, as consumers are not making heavy purchases, and the present prices are undoubtedly due to American movements.

Consumers are, of course, showing much more interest in the market, and there are good signs of improvement. The situation at present calls for great care and watchfulness, as the high level of values has made the market a little sensitive. English B.S. Ingots are scarce, and prices are very high. Strong Sheets have also advanced during the last 10 days from £114 to £121 per ton.

COMPARATIVE PRICES.

	Per Ton. £	s.	d.
To-day, June 25th	87	5	0
Last week	84	0	0
Last month	79	7	6
Average price, 1918	115	10	0

TIN.—At the present time prices are steady, but the demand from consumers is not large, and the market is being influenced by the lifting of the embargo on imports into U.S.A., and the expected signing of the Peace this week-end.

It should be pointed out that although the American embargo will be lifted on June 30th it is not expected that permission will be given for the importation of Tin before the end of July.

It is reported that Eastern Tin has recently been sold at prices below the London market. The future of the market is uncertain, but it is not expected that there will be a serious rise.

COMPARATIVE PRICES.

	Per Ton. £	s.	d.
To-day, June 25th	242	10	0
Last week	243	0	0
Last month	245	7	0
Average price, 1918	329	10	0

LEAD.—This market is in a weak condition, and buyers are afraid to buy far ahead, their action being due, primarily, to the huge stocks which the Government still hold, the approximate quantity being 120,000 tons. There is no guarantee that the Ministry of Munitions may not suddenly decide to turn the metal into cash, even if it is sold at a price less than the present market value; it is, in fact, known that they have recently accepted a special price of £23 per ton for a large quantity.

This kind of thing will certainly not encourage confidence; on the other hand, it has already damped the little interest which was being shown by consumers. Yesterday prices were £22 5s. net.

STEEL.—This market is still in a state of uncertainty, uncertainty of labour, hours, costs, prices. At the present time the Teeside Steel works are on strike for a 44-hour week. The outlook is very perplexing and obscure, and Steelmakers are faced with very severe competition from U.S.A.; also reports are continually being received of large orders being secured by American firms in foreign and Colonial markets.

The market, of course, is in a very unsettled position; buyers cannot obtain firm prices, and rather than cover their future requirements at an indefinite price prefer to live hand-to-mouth.

TIMBER.—Consumers continue to show interest in this market, although there is a feeling of uncertainty, which is probably due to the freight question and the apparent shortage of certain classes of Timber. Timber merchants have now combined with the object of forcing down the present shipping rates, and the action they have taken should certainly result in the rates being reduced.

There is a serious shortage of Aeroplane Spruce, and constructors should watch their stocks very carefully indeed, as there are no signs of supplies coming forward at present. There must, of course, be large quantities on the other side. There is a very strong demand for Hard Woods, but very little Timber is arriving recently; consequently, prices are hardening, and there are no indications that they will decline to the low level which they have reached since the Armistice was signed.

A very serious fire occurred in Manchester recently, and it was estimated that over 1,000 standards of Timber were destroyed, including some very valuable stocks of Hard Woods. This is very serious, indeed, as the shortage of Timber is likely to become acute, if the expected demand is realised. It should be pointed out that the whole of the Timber destroyed was Government stocks, and it is understood that every stick could have been disposed of a short time ago, if the Government prices had only been reduced a little.

FABRIC.—As stated last week, the whole of the Aeroplane Linen held by the Government, has been sold to Mr. Martin, and it transpires that the price is in the vicinity of the figures indicated in the last issue, viz., 1s. 8d. per lineal yard. It is also reported that Mr. Martin proposes to sell the Fabric at 2s. per lineal yard.

This is quite a reasonable price, and even if Aeroplane constructors are proposing to use cotton fabric on their commercial machines, it is not expected they will be able to purchase supplies at anything approaching this figure. The quality of some of the linen fabric is very poor, indeed, and intending buyers should be very careful before making purchases.

Although the Ministry are complimenting themselves on having effected a good deal in the interests of the taxpayers, it should be noted that they have omitted to point out that the Fabric must have actually cost the Government 2s. 9d. per lineal yard, and the actual loss between the price paid and the price obtained from Mr. Martin must be just over £2,000,000.

It is not, of course, inferred that the Government could have disposed of the Fabric at the price which was paid, but at the same time, the price obtained is not very handsome, and taking all things into consideration, the Ministry should not consider themselves entitled to any compliments.

THE PLACE FOR PRESENTATION PLATE.

So many people connected with aviation have had dealings one way or another with the Goldsmiths' and Silversmiths Company, Limited, that it is probably of general interest to the readers of this paper to know that the Swords of Honour presented by the City of London with the Freedom of the City to Admiral Sir David Beatty and Field Marshal Sir Douglas Haig at the Guildhall on June 12th were designed and manufactured by the said Goldsmiths and Silversmiths Company.

Probably of considerably more interest to the aeronautical community is the fact that the aforesaid firm are still specialising on making silver models of various types of aircraft for presentation purposes. During a recent visit to the firm's shop in Regent Street one noticed some extraordinarily fine examples of such models. There was one large and very perfect B.E.2b; another of the ancient Grahame-White biplane known as "Lizzie," which had been built to the order of the father of a flying officer who had learnt to fly on that particular machine. There were two small and very pretty specimens of Vickers' Fighters, and a beautiful little model of an early R.E.8 which had been presented to the Hon. Mrs. Dawnay, of Hillington Hall, by sundry grateful flying officers who had the good fortune to be sent to Hillington when Mrs. Dawnay was running it as an R.F.C. hospital. This particular model had been damaged in an accident, and had just been rebuilt by the Goldsmiths and Silversmiths Company.

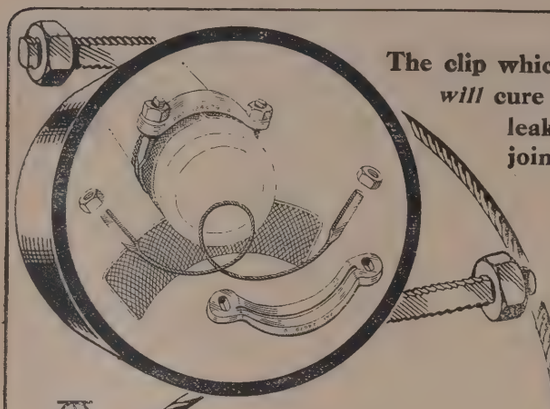
These little models do in fact make very much more suitable presentations to people concerned with aircraft than do the ordinary conventional silver cups and such things.

TRANSATLANTIC LUBRICATION.

The Rolls-Royce engines of Capt. Sir John Alcock's Vickers "Vimy" machine upon which the Atlantic flight was made were—as in customary with these engines—lubricated with "Castrol R," and Messrs Wakefield have received from Sir John Alcock a telegram testifying to the excellent qualities of that brand of oil.

B.T.H. MAGNETOS.

It is worthy of note that the Napier "Lion" engine of the DeH. machine upon which Capt. Gathergood finished first in the Aerial Derby was equipped with B.T.H. magnetos, designed and manufactured by the British Thomson-Houston Co., Ltd., of Rugby.



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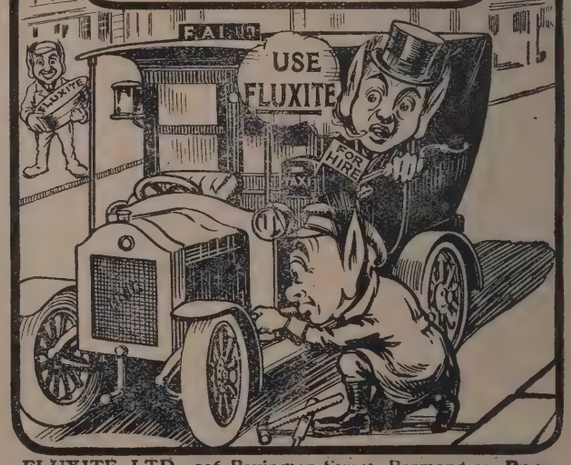
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COMMERCIAL AERONAUTICS & CIVIL AERIAL TRANSPORT

A REAL "LONDON" AERODROME.

By "MEDWAY."

The comments recently published in THE AEROPLANE on the subject of the programme and conduct of the Whitsun meetings at Hendon give rise to the consideration of a question of really great importance. Ought we to have within easy reach of London a concern that could really deserve the name of the London Aerodrome, run on truly educational lines for the ultimate purpose of encouraging civil and commercial aviation in general and without any bias towards any particular private interest?

Personally, I am a great believer in publicity, provided it is properly organised. Nowadays no industry or movement, however great, need regard direct publicity as something rather beneath its dignity. A good many years have passed since the present Prime Minister pressed his fourpenny pup on a somewhat reluctant public by advertising a catch-phrase intended to convince everybody that the animal was worth at least ninepence. During the war the works of great artists have been more or less prostituted in order to increase the strength of official appeals to the public to practise economy and finance wilful waste. Patriotism has been inculcated by advertisement. Advertisement exercised a moral force in favour of enlistment, more effective upon many natures than the physical force of the Compulsory Service Act—"What did you do in the Great War, Daddy?"

We have also, as a nation, announced on public posters and public platforms our deep affection for any and all of our Allies, particularly upon occasions when the real public sentiment was, to put it mildly, lukewarm. The natural instinct of the primitive man is to dislike anybody who does him a service. As somebody remarked when a former friend cut him in the street, "I don't know what I have done to annoy him; he doesn't owe me a penny."

TEXTS AS ADVERTISEMENTS.

In short, advertisement nowadays is not merely ubiquitous but universal. Even texts from the Bible are inserted as advertisements in the agony columns of the "Times," if not by the Deity himself, at least by those who believe themselves to be very closely associated with His views and objects.

The possession of a real London aerodrome, properly run for the one and only object of serving as an advertisement for civil and commercial aviation, would be an enormous asset to the movement, and I believe the receipts would be so good that the advertisement would cost less than nothing. This advertisement would begin and end with the programme. The printed programme itself, instead of telling us how Mr. So-and-So was getting on as a motor agent, would contain varied quotations from recognised authorities rubbing in the practical use of aeronautics and at the same time discouraging wild hopes calculated to lead to wild speculation and even wilder execrations when the inevitable result subsequently occurred.

A FUNNY COLOURED INDUCEMENT.

The programme, in the proper sense—that is to say, the programme of events—would, of course, be the biggest advertisement of all. As already suggested in the columns of this paper, every manufacturer and every pilot of an interesting machine should be positively encouraged to take part. Each machine would not be merely indicated by name, but would be described and its capabilities briefly outlined. Only a good effect could be produced on the business man with some capital to be invested if he could be told on decent authority that such and such a machine would carry so many passengers over stages of so many miles with a total operating cost of so much a mile, allowing such and such a rate per mile for depreciation. With this information he would regard the machine, not as a funny coloured inducement to waste an afternoon, but as a possible money-maker in which he could take a serious interest.

BORED WITH JOY.

The movement cannot make an indefinite living simply out of joy-rides. These form a good stop-gap until really permanent propositions mature, but sooner or later the novelty will wear thin. At least half the joy-riders go up solely for the sake of being able to say that they have done it. Many will not trouble to do it twice, except for some definite purpose connected with serious business. Many of those who are quite keen at first will get bored after a few trips. The joy-ride will remain for some time as a section of the business, but it cannot be permanently the backbone of it.

The London aerodrome should be a place at which the seeker after information will meet the man who can give it him, and at which the seeker after pleasure will be given information in a palatable form. The secret of good propaganda is to inculcate ideas that lead to business and at the same time to make people think that those ideas have arisen spontaneously out of their own superlative intelligence.

I should like to see Hendon taken over as an official demonstration ground, either controlled by the Air Ministry or else by, let us say, a Joint Committee of the Royal Aero Club and the Society of British Aircraft Constructors. In the early stages we certainly want to encourage the joy-ride habit, because every man who goes up will talk about it, and, as he talks, will become more and more convinced that the whole thing is quite simple and safe. The joy-ride, however, should not be an end in itself, but only a means to an end, and this end should not be profit of any single firm, whether that firm is mainly concerned with the manufacture of aeroplanes or with the retailing of motor-cars.

It is very easy to get a sound movement discredited by bad handling, or by handling which indicates that a personal profit is the main consideration. We want a broader outlook than this, and I hope we may get it at Hendon. If not, it seems to me we must establish a really good London aerodrome at some other point which must be carefully selected as being easily accessible and situated in pleasant surroundings.

MORE FICTITIOUS FIGURES ON FLYING.

By "BLUE ENSIGN."

"Engineer Officer's" "Fictitious Figures on Flying" are almost as dangerous to aviation as the estimates he decries. Based on his experience they may be accurate, but the writer, who had the honour to serve with the first R.N.A.S. Handley Page Squadron on the Belgian Coast, proposes to point out certain underlying fallacies, and submit an estimate based on actual working knowledge of large aircraft, the efficiency of which, under proper organisation, can be very much higher than is commonly supposed.

The two most serious errors are the selection of an excessive stage run of 500 miles and the small amount of work got out of the plant employed.

Examination of probable air routes shows that stages of 500 miles are rarely necessary or desirable, towns of sufficient size to be used as ports of call generally lying close together; further, a run of five hours' continuous flying is a considerable strain on a pilot, especially in hard weather. A run of 250 miles will reduce the chances of unavoidable crashes and increase the paying load carried by the machines. It may be pointed out that very few runs in excess of 250 miles are made by express trains simply to ease the strain on the engine crew.

"Engineer Officer" says little of his type of machine, but, from his cost figures, it appears reasonable to assume the following:—

Speed, 115 m.p.h.; loadings, 16.2 lbs./h.p., 9.6 lbs./sq. ft.; total weight, 16,200 lbs.; structure at 30 per cent. of total, 4,860 lbs.; engines, four at 250 h.p., at 3.9 lbs. per h.p. installed, 3,900 lbs.; fuel, three hours' full power at 0.5 lbs. per h.p., 1,500 lbs:; oil, four hours' full power at 1 gallon per h.p. engine hour, 160 lbs.; tankage at 10 per cent. of fuel, 166 lbs.; crew of two men and gear, say, 500 lbs.; weight of machine, less paying load, 11,086 lbs.; maximum possible paying load, 5,114 lbs.

Allowing for bulkage and incomplete loads 2.0 tons = 4,480 lbs., appears to be a reasonable estimate.

The writer has seen aircraft worked at an average flying time of 30 hours per month, or 360 hours per year, and is convinced that 1,000 hours per annum can be easily obtained and exceeded in commercial practice; but the question of ease of operation must be kept in view during design; it is no exaggeration to say that at present it is absolutely disregarded.

For the purpose of this article it is sufficient to note that the modern aeroplane, apart from its engine, is a very reliable piece of machinery, and is only responsible mechanically for about 10 per cent. of the failures to undertake or complete a flight, the remaining failures being due to engines. By designing the engine and its installation as a self-contained unit which can be changed in some three or four minutes, an efficiency far ahead of anything at present attained can be reached. Nor does the adoption of such a unit construction present any great difficulty.

"Engineer Officer" makes no allowance for the reduced wear and tear of commercial as compared with War service. Well cared for a machine should last from two to three years, an average life of two years, with an overhaul every six months, should enable a company to maintain its aircraft in excellent order.

The cost of a machine per hour then becomes:—

	£
Cost of aeroplane (new)	10,000
Four overhauls, at £1,500 each	6,000
Scrap value	2,000
Cost per annum per machine	7,000

The cost of engines per hour of flight is the most serious question aviation has to face. The best types of modern aero motors cannot be trusted to average more than 80 hours between overhauls, and after two such overhauls will require extensive replacements.

Further, the load carried by a machine depends greatly on its propeller efficiency, and a total life of 100 hours at maximum efficiency is not likely to be exceeded.

ENGINE COSTS.

	£	Hours run.
Cost of 250 h.p. motor (new) at £5 per h.p.	1,250	80
Cost of first overhaul	150	80
Cost of second overhaul	250	80
Cost of third overhaul, including replacements	800	80
Cost of fourth overhaul	150	80
Cost of fifth overhaul	250	80
	2,850	480
Less scrap value of engine	200	
	£2,650	

FUEL COSTS.

Petrol, 17½ gallons per hour, 8,400 at 2s. 6d., £1,050; oil, 1 gallon per hour, 480 at 5s., £120; total fuel, £1,170; propellers at £40 each, £200; total cost of 250 h.p. for 480 hours, £4,020; cost per h.p. hour, 8s. 4d.; cost per engine hour, £8 4s.; cost per machine hour, £33 6s.

It will be necessary to maintain in store some 100 engines for every 100 actually in machines, but apart from the cost of housing and attention, these do not represent any expenditure on the part of the company so far as cost per machine per engine hour is concerned; to make some allowance for them, however, this cost will be taken at £40 per hour in lieu of £33 6s.

The number of flying days per year must depend on the countries in which the service is worked; to avoid undue optimism 250 is taken as a figure. It will become much higher in time, but, as the rate of development cannot be foretold, a low estimate is advisable.

A satisfactory organisation must obtain the maximum amount of flying from each machine, also, because the one superiority of air transport is speed, the minimum delay at each stopping-place. This should not exceed 15 minutes either for refuelling the machine or changing load. Also, a machine should be capable of flying for 10 hours between examination of the machine.

Supposing a route 5,000 miles long, containing five main stages of 1,000 miles, each of which in turn is divided by refuelling depots into 250-mile stages, it should be possible to run a daily service each way with four machines at each main depot, two on duty, one stand by, and one under overhaul. The four machines between them do 5,000 hours' flying per annum corresponding to 1,250 hours per machine.

The organisation of the route then becomes six main depots at 1,000 mile intervals; 15 sub depots at 250 mile intervals; four machines at each main depot, or 24 machines in all; time for trip, flying at 100 m.p.h., 50 hours; 19 stops at 15 minutes each, 4.25 hours; total, 54.25 hours; total number of trips per annum, 500; hours flown per annum, 25,000; ton miles flown per annum, 25,000, by 100 by 2 = 5,000,000 ton miles.

COST OF WORKING SERVICE

	£
Machines—24 at £7,000 each	168,000
Engines, 25,000 hours at £40 per hour	1,000,000
Pilots, four per short stage and 50 per cent. in reserve, 120, at £500 per annum	60,000
Main depots, six, at £15,000 per annum each	90,000
Sub depots, 15, at £5,000 per annum each	75,000
Insurance ..... say	150,000
Offices, 10 sets, at £3,000	30,000
Hands, 80 per main depot, at £250 per annum each	120,000
Hands, 20 per sub depot, at £250 = 15 by 5,000	75,000
Cars, 20 per depot	42,000
Total	£1,819,000

Increasing this by 20 per cent. in view of the roughness of the estimate total cost is, say, £2,200,000. Cost per ton mile to company, £0.44, about 8s. 10½d. Allowing 30 per cent. profit on above charge per ton mile becomes £0.57 = 11s. 5d.

Cost of passenger tickets per mile, taking one man and gear at 200 lbs., is £0.051 = 1s. 2½d., a good deal less than special train.

London to Liverpool is about 200 miles, representing a ticket cost of £10 2s., say, £17 10s. return.

The cost of speed is always high, and for a service timed at 80 miles per hour in place of 100, the load carried per horse-power, the determining factor of all transport costs, can probably be increased from the 16.2 lbs., assumed, to some 22 lbs.; of this, 1.44 will be absorbed in structure, and 0.5 lbs. in extra fuel, leaving 2.86 lbs. per h.p. extra to go in to paying load. In the machine considered this would increase the load to 7,974 lbs., say, a working load of 3.2 tons, bringing down the cost per ton mile £0.275 and £0.358 = 7s. 2½d., and per passenger mile to £0.032, about 8d.

The most striking feature in the foregoing figures is the cost of engines, a factor that the future will see reduced. The writer is of opinion that his estimate is on the high side, but it is not of the 4s. 6d. a mile for a car order to which "Engineer Officer's" calculations are comparable.

A MODEL-MAKING COMPETITION.

The judging in the above competition, inaugurated by Messrs. Thos. Parsons and Sons, took place at the Exhibition of Famous War Models, 315-317, Oxford Street, on June 3rd.

H.M. Queen Alexandra has graciously consented to accept the First Prize Model in the Senior Section of the Competition, and H.R.H. the Prince of Wales the First in the Junior Section.

The winner of the First Prize of £60 in the Senior Section is Mr. L. F. Rudd, 2, Upper Grange Road, Bermondsey, S.E., with a model of H.M.S. "Princess Royal."

The winner of the First Prize of £25 in the Junior Section is Mr. J. R. Baker, aged 16 years, 9, Whitfield Street, Tottenham Court Road, W.1, with a model of a Handley Page aeroplane.

The prizes in this competition, generously given by Messrs. Thos. Parsons and Sons, amount to £170. Their Exhibition of War Models to aid disabled sailors and soldiers has been a great success—over £10,700 being handed to the War Seal Foundation.

Air Records

When famous pilots like Fonck, Casale, Sadi-Lecointe and France insist on having Lumiere propellers for their record making machines there is a very good reason.

Fonck—29 530 feet

He is going to attempt a climb to over 10,500 metres. Lumiere propeller.

Casale—30,510 feet

Climbed in 41 mins. on May 28th with a 300 h.p. Nieuport 29, and raised the world's record to nearly 10,000 metres with the same machine on June 7th. Lumiere propeller.

Sadi-Lecointe—29,200 feet

Flying a 500 h.p. Spad made the previous record on May 19th, also used a Lumiere propeller.

British Machines

Fitted with British Lumiere propellers could win the world's speed and height records. Try one. Test propellers can be supplied at once.

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Aircraft Disposal Department.

FOR SALE.

AEROPLANES—SECONDHAND.

6 Blackburn "Kangaroos," fitted with "Falcon" 250 H.P. Rolls-Royce Engines.

15 Bristol Monoplanes, complete with 110 H.P. Le Rhone Engines.

AEROPLANES—NEW.

20 Martinsyde F.3. Machines, less engines.

Tenders are invited for the above, returnable on or before July 14th. Forms from Controller.

PROPELLERS.

New Propellers made for engines that are now obsolete—in mahogany or walnut.

Four Bladed	-	30/-
Two Bladed	-	25/-

To be sold singly or in quantities, and arrangements can be made for delivery.

Any further particulars may be obtained from the Controller,

AIRCRAFT DISPOSAL DEPARTMENT,
YORK HOUSE,
KINGSWAY, E.C.2.

POWER ALCOHOL AND AERIAL TRANSPORT.

By "MEDWAY."

I have always been adequately impressed with the value and importance of alcohol as a commodity, but my opinion of the particular brand known as "power alcohol" has risen still higher on reading the report of the Inter-Departmental Committee appointed last autumn to consider the subject. The name "power alcohol" is given to a spirit containing 95 per cent. of pure alcohol in order to distinguish it from "powerless alcohol" commonly known as "war whisky." The stronger stuff used to be called "industrial alcohol," but this name has been given up because some of the more strenuous representatives of labour, not realising the true significance of the term, decided in their own minds that industrial alcohol must be something even worse than war whisky, specially produced by the bloated capitalist for the nefarious purpose of poisoning the honest working man of the industrial class

However, enough of names. We must get on to facts. This committee that has now reported has come to some very definite conclusions, and, as the committee itself consisted mainly of Government officials, it may be that the Government will consider its views worthy of casual perusal before being finally pigeon-holed. The committee, many members of which started with no knowledge whatever of the subject, has come to the unanimous conclusion that power alcohol is, or could be, very valuable for fuel purposes, and that consequently a permanent body with funds, powers, and staff should be set up by the Government to get ahead with the preliminary work.

SAMPLING THE ALCOHOL.

This permanent body will no doubt sample all the available brands, after which its view of the question should be rosy-hued if indistinct. It will at least be convinced that it is high time to abolish any customs and excise restrictions which make alcohol unnecessarily expensive or cause it to be denatured with nasty stuff that completely spoils the taste. The present denaturant is wood spirit. Among the suggested alternatives are formaldehyde, pyridine, and tobacco oil. The last may find favour with habitual chewers, but none of the three are commonly used in any large quantities in the more popular liqueurs. I believe there are plenty of Irishmen who will drink methylated spirits. There are certainly coloured races who have a great taste for axle grease, so altogether the problem of rendering power alcohol unfit for human consumption without being positively poisonous is a fairly tough one.

On the staff of the permanent body there will be no great rush for the job of the gentleman who is to decide whether the denatured mixtures are absolutely undrinkable or entirely poisonous. The nation will, however, doubtless hold in honoured memory those who die for the cause.

The next important point in the Report will come as a blow to those of my readers who do not possess aeroplanes. There is no likelihood of any really large quantity of power alcohol being produced in this country from home sources (groans and curses). A paltry hundred million gallons per annum may be got by the synthetic conversion of alcohol from ethylene extracted from coal or coke oven gases. There is very little hope for potato spirit, because the potato has not enough strength to produce more than about 20 gallons of alcohol per ton, and consequently the price would be about the same as that of the worst brandy, the fiery temper of which makes it dangerous to dispute its claim to having been born in 1865.

POWER FROM TREES AND FLOWERS.

The committee tells us that we shall get our power alcohol from tropical and sub-tropical countries, mainly from molasses, maize, and other cereals, and certain trees, flowers, and shrubs. For instance, the flower of the mahua tree which grows in Hyderabad can be collected and delivered to a distillery near by at a cost of 30s. per ton, from which 90 gallons of power alcohol can be distilled. There is no reason why the cost of the raw material should be any higher if we depend on maize or other grains grown in the right places and tended by cheap labour.

It is not seriously suggested that we should set about redesigning all our engines to use alcohol neat. The idea is rather to employ alcohol mixtures in existing engines. Alcohol-benzol about half and half will give about the same power and consumption as petrol, but might be troublesome for starting in cold weather. Alcohol-ether is a likely mixture for aerial use. The ether is obtained from the same materials as the alcohol and in the same distillery, and does not add much to the cost. It is thoroughly volatile, and there ought to be nothing against this fuel as a standard for our Imperial air routes.

Now we come to the real beauty of the whole position. I suggest seriously that the air routes ought to be outlined so that the intermediate landing grounds are in the majority of cases placed where alcohol crops can be grown extensively and cheaply. The aeroplanes would start off from England with supplies of synthetic alcohol. At points on the way they would pick up fresh supplies of alcohol distilled locally, the cost of which would be extremely low, because there would be nothing to pay for freight or distribution.

FOOD FOR LAND, OR PIGS.

The distillery would be next door to the aerodrome. The method of cultivation would no doubt involve the rotation of crops, so that the districts would become self-supporting in the matter of food. Personally I know nothing whatever about the rotation of crops, but I hazard the above statement for what it is worth. I believe also that the waste stuff from the distilleries makes very good food either for land or for pigs, I forget which. In either case the ultimate result is much the same. Anyhow, the crops would rotate all the time, and not merely after the consumption of the alcohol.

My distillery-aerodromes would, I feel sure, be extremely popular. Things would go swimmingly. There would be a big tap for filling the tank and a small tap for filling the pilot, and the gentleman inside the distillery would have been induced by monetary considerations to forget to put the denaturant into the stuff that came out of the small tap. This would be an obvious precaution. The life of the pilot working the Imperial air routes would be a short but a merry one. His cargo including films of interesting topical events, he would have a thoroughly up-to-date cinema show to attend in the evenings. The district would soon become a populous one. There are lots of people who would invent reasons for living in it. Besides, it would be within a few hours of London or Melbourne, or both, and there would be a mail service every couple of hours or so. In fact, it would possess overwhelming attractions as a week-end resort.

EARL ALCOHOL OF ETHER.

Altogether, if my readers will take the trouble to extract the pure spirit from the mash in this article, I think some at least of them will agree that I have really got on to a great idea and one that will lead to the development of what are at present very remote and unprofitable districts in the British Empire. When the first chain of alcohol distilleries is complete I hope that a free passage along the route will be given to the originator, formerly unknown as "Medway." I look forward to the day when his reply to the toast of "The World's Benefactor" will be received with loud and prolonged cheers—(Hic! hic Hurr-r-r upp!)—during which the recently created Earl Alcohol of Ether will sink modestly into his chair.

COMMERCIAL AVIATION LANDING GROUNDS.

"Automotive Industries" of June 12th publishes the reports made by American Army Aircraft officials on the considerations entering into the location and design of landing grounds for commercial aviation.

Because of the thinner atmosphere in districts located at relatively high altitudes it is necessary to make the landing grounds in such districts of greater length, since the machine will require a longer run before it will gain flying speed and be able to leave the ground.

The U.S.A. War Department has developed a formula from which it is found that at 1,000 ft. altitude a square field with a 600 yd. side is required, whilst at 500 ft. 1,800 yds. is required.

The height of the surrounding country, the character of the soil and the prevailing winds are other important considerations. The point of landing must be at least 1,200 ft. from an obstacle 100 ft. high, and 500 ft. from an obstacle of 60 ft. Large concrete crosses or circles are being used by the Army to mark the fields, so that they can be seen distinctly from a great height.

Hangars should be placed to bear the brunt of the prevailing winds, and act as a protection to the ground and the aeroplanes landing on it.

A GARDEN PARTY.

The chairman and directors of Vickers, Limited, gave a garden party on June 24th at Edgwarebury House, Elstree, the residence of Sir Trevor Dawson, in honour of Captain Sir John Alcock, K.B.E., D.S.C., R.A.F., and Lieutenant Sir A. Whitten Brown, K.B.E.

Many guests brought their autograph books, which kept the aviators busy until tea time. A Royal Artillery band played during the afternoon.

HONOURABLE MENTION.

It is interesting to note that the Vickers "Vimy" (Rolls-Royce) machine in which Capt. Sir John Alcock, K.B.E., D.S.C., and Lieut. Sir Arthur Whitten Brown, K.B.E., made the trans-Atlantic flight were fitted with Lang airscrews.

THE INFLUENCE OF THE AERO ENGINE.

As a result of the alliance of the Siddeley-Deasy Motor Car Co., Ltd., with Sir W. G. Armstrong Whitworth and Co., Lt., the Armstrong-Siddeley car has been introduced with a six-cylinder engine based on the Siddeley aircraft engines with overhead valves and embodying the use of aluminium. The well-equipped chassis is priced at £660.

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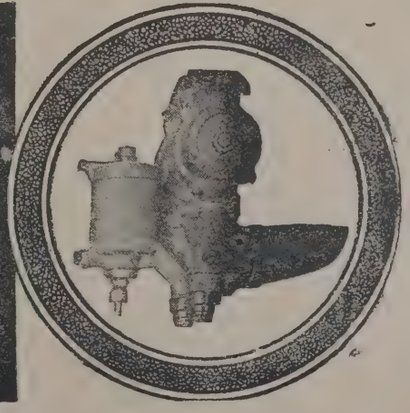
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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS

CIVIL AERIAL TRANSPORT NOTES.

United Kingdom.

HENDON-DUBLIN AND BACK.

On Wednesday, June 25th, Captain Gathergood, of Aircraft Transport and Travel, Ltd., left Hendon at 2.30 p.m. with an Airco 9 machine to take Mr. Gordon Selfridge on a business trip to Dublin.

In spite of a head wind and low clouds in the Irish Channel, Baldonnel aerodrome, Dublin, was reached without incident at 6.30 p.m., including half-an-hour's stop at North Shotwick for tea and weather reports. The return journey was accomplished on Friday, June 27th. Leaving Dublin at four o'clock, Captain Gathergood landed at Shotwick at 5.15 p.m., and after waiting half-an-hour for weather reports, Hendon was reached at 7.15 p.m. Thus the return journey from Dublin to Hendon was accomplished in 2¾ hours' actual flying time.

Very severe weather was encountered on the North Coast of Wales, which necessitated a detour round the coast at about 200 ft., but after leaving Shotwick beautiful weather was encountered and the trip was entirely without incident.

When it is remembered that the distance is about 320 miles, the journey can be considered as a good example of modern high-speed aerial transport.

AVRO FLYING.

A honeymoon journey by aeroplane was chosen by a bride and bridegroom at Chorley Wood, Bucks, on June 26th. On a space immediately in front of the parish church where the wedding took place, an Avro limousine three-seater was waiting, with a silver horseshoe attached to the undercarriage, and after the ceremony and reception the couple took their seats in the machine and started their journey to Fowey, Cornwall, where the honeymoon is to be spent. They arrived at Fowey at 8 p.m.

The bride was Miss Nora Standen, granddaughter of Mrs. Macnamara, of Chorley Wood Lodge, and her husband, Mr. R. Hamilton, of the Indian Civil Service.

Return flights to Folkestone, St. Albans, and on Sunday, June 22nd, to Whitley Camp—two officers wishing to remain in London for Peace Celebrations on Saturday night, and who had to be on Church Parade at Whitley at 10.45 a.m. on Sunday, were able to do this with the aid of an Avro.

A remarkable feat was performed during the week. An American officer, due to return to Germany on Sunday morning received his first dual instruction on an Avro on Tuesday afternoon, and made his first solo flight on one of the ordinary passenger-carrying Avros after only five hours' dual control. The certainty and accuracy with which he flew showed great credit to his instructor, Mr. H. R. Hastings, A.F.C.

The Avro Limousine is doing daily trips over London, the feature of the machine being that women can wear their ordinary hats.

The Aerodrome at Brighton has now been sanctioned, and will be opened in a few days. Those at Margate and Southsea are now open.

Italy.

A regular air mail service has been started between Rome and Naples, with two trips daily from each city. An aerial line will be started between Rome and Palermo in the near future. The trip will take about 4 hours.

Central Africa.

The "African World" states that King Albert has purchased fifteen seaplanes of different types, and has personally contributed two million francs for an experimental service for carrying passengers and aerial mail on the Congo and its chief tributaries.

Argentina.

Maj. A. Kingsley, representative of the Aircraft Manufacturing Company, is making arrangements for the establishment of a service between Buenos Aires and Montevideo, with two D.H. machines, one for four and the other for 16 passengers.

United States of America.

On June 25th a resolution was proposed in the House calling on the Postmaster-General for a statement of facts regarding the loss by the Harriman National Bank, New York, of cheques of the value of £12,000 sterling, alleged to have been destroyed through the burning of a mail aeroplane between Cleveland and Chicago.

Mr. J. W. Harriman, president of the bank, alleges that he wrote several times to the Postmaster-General requesting an explanation why the fact of the destruction of mail was never communicated to the bank to enable it to protect itself, and adds that as he is unable to obtain any explanation from the post office he has been obliged to ask Congress to demand one.

[How very English! Who can doubt our cousinship across the sea.—ED.]

A WARNING.

The Air Ministry stated on June 27th for the information of all pilots that the practice of flying through the Tower Bridge between the high-level footways and the bascules must cease. Any such cases reported in future will be severely dealt with.

AIRCRAFT SALVAGE.

The Aircraft Disposal Board announces that they are offering for sale a large number of aeroplane propellers.

The propellers are all in good condition, but are suitable for engines now obsolete as far as the R.A.F. is concerned.

The prices are 25s. each for two-bladed, and 30s. for four-bladed propellers.

These propellers are for sale over the counter at the Disposal Board's showroom, York House, Kingsway.

The Disposal Board are asking for tenders, on or before July 14th next, for the following aeroplanes:—

Six second-hand Blackburn "Kangaroo" biplanes, each with two 275 h.p. "Falcon" Rolls-Royce engines.

Fifteen second-hand Bristol monoplanes with 110-h.p. Le Rhône engines.

Twenty new Martinsyde Type F.3 biplanes without engines.

Particulars will be found in the advertising columns of this issue.

A HENDON PEACE MEETING.

The Directors of the Grahame-White Co., Ltd., announce that to celebrate the signing of Peace, a special air race meeting will be held at the London Aerodrome, Hendon, on Saturday next, July 5th, when the programme will include a speed contest round the aerodrome pylon course.

The race, which will commence at 4 p.m., will be run in two heats of four laps each, and a final heat of six laps.

The prizes include the London Aerodrome "Peace Trophy" presented by the Directors.

The entrants include:—

1. Lieut. C. Turner, A.F.C. B.A.T. 170-h.p. A.B.C. "Wasp." 120 m.p.h. approx.
2. Capt. P. R. T. Chamberlayne. Grahame-White "Bantam." 80-h.p. Le Rhône. 90 m.p.h. approx.
3. Major C. Draper, D.S.O. B.A.T. (Special "Bantam"). 170-h.p. A.B.C. "Wasp." 125 m.p.h. approx.
5. Major R. H. Carr, A.F.C., D.C.M. Grahame-White "Bantam." 80-h.p. Le Rhône. 90 m.p.h. approx.
12. Major C. H. C. Smith, D.S.C. Bristol Monoplane. 110-h.p. Le Rhône. 110 m.p.h. approx.
19. Capt. D. H. Robertson, A.F.C. Avro. 110-h.p. Le Rhône. 80 m.p.h. approx.
20. Lieut. G. R. Hicks, D.F.C. Avro. 110 h.p. Le Rhône. 80 m.p.h. approx.

It is expected that Mr. Prodger will take part in the contest, and also Capt. G. Gathergood, A.F.C., who will probably use the same machine on which he won the Aerial Derby.

The usual passenger flights and special looping displays will take place during the afternoon, and also on Sunday afternoon.

[One doubts whether the majority of the machines mentioned can safely be allowed to race round pylons on such a restricted course as that at Hendon.—ED.]

B.T.H. MAGNETOS.

The winners of the first and second prizes in the Aerial Derby, the Airco D.H.4R, with a 450 h.p. Napier engine, and the Martinsyde F.4, with a 275 h.p. Rolls-Royce engine, were both fitted with magnetos manufactured by the British Thomson-Houston Co., Ltd.

THE B.L.I.C. REMOVAL.

The head office and works of the British Lighting and Ignition Co., Ltd., have been moved from 204, Tottenham Court Road to Cheston Road, Aston, Birmingham.

The London Depot and Repair Works have been established at 201, Tottenham Court Road.

FOSTER FIXED FOCUS FOR FIERY FURNACES

THE IDEAL PYROMETER FOR HIGH TEMPERATURES.

Book 17 Post Free.

FOSTER INSTRUMENT Co.

Letchworth, Herts., Eng.

AIRCRAFT FINANCE

THE ATLANTIC FLIGHT AND THE SHARE MARKET.

If any mercenary enthusiast had expected the successful Atlantic flight to inspire a boomlet in aircraft and kindred shares, he must be very disappointed with the Stock Exchange. The effect on the securities in question has been negligible, if not exactly nil. *Autres temps, autres moeurs.* Events of infinitely less importance have frequently worked wonders in the boosting of share prices.

An Opportunity Missed.

One is thankful in a way, without being really surprised, that the opportunists missed the chance of manipulating a boomlet. It would have been short-lived, and with the pernicious effect inseparable from a five days' wonder of this kind can very well be dispensed with by the Industry. Indeed, one suspects that a revision of the old gag to the effect that no home is complete without a few aircraft shares would sound more cynical than convincing.

Loan Campaign Not to Blame.

It is no use maintaining that the War Loan campaign militated against any spectacular stock market display by aircraft shares. That disability would have proved quite trivial had the promoters and experts in manipulative finance determined to act. They realise that the psychological moment has not arrived, else they would not have allowed the opportunity to slip away.

The Public Attitude Is Responsible.

It may be wondered why this is so, and for answer it is only necessary to consider the attitude of the public towards investing money in aviation ventures. The public has been convinced, principally by the air raids and secondarily by the pleasure shows, of the effectiveness of flying, but as yet the public has not been convinced of the commercial soundness of aerial transport.

Simple Reasoning.

If 5 per cent. is obtainable on British Government loans, which we have all been told constitute the finest security in the whole world, and the investment basis of the rest of the financial structure has been correspondingly changed until a thing you used to consider cheap if it yielded 4½ per cent. on the money laid out, now offers about 6 per cent. or more, what would you demand on an aircraft share?

What the Public Want.

The average investor maintains that in the present stage of development, and in view of the uncertainties of the reconstruction period, the risk attaching to an investment of money in an aviation venture is worth at least 10 per cent., with possibilities. He needs the possibilities badly, and is not at all sure of the 10 per cent. risk, and would squeal loudly if he suffered from a temporary fit of nerves. He is not unreasonable.

The Demonstration of Commercial Possibilities.

Of course, one is referring to an essentially aviation proposition, dependent exclusively on aircraft, and not one of the composite undertakings, or any of the big armament giants who can afford to experiment and develop aircraft in anticipation of the possibilities of the future. This pioneering may be expensive, but they would not take it on seriously unless they were convinced that within the immediate future it will pay.

How long it will be before the shares of purely aircraft ventures will gain in popularity amongst the general public will depend mostly on the conviction driven home by actual commercial success. If, when this eventuates, the popularity was a bit overdone, it would not be a surprise.—W. J. Davies.

CURRENT TOPICS.

The Protection Society.

It makes one hopeful to watch the various phases of the development of the commercial side of aviation. The formation of the Aeronautical Intelligence Bureau is a good thing, and means much. A company limited by guarantee, with not more than 150 members, each liable for £1 in a winding-up, the objective is to write for mutual advancement and protection, to obtain and distribute status information, to promote and oppose legislation, etc.

Some Well-known Members.

If the policy is carried out efficiently the benefits must be substantial. Among the subscribers are R. H. Tetley (Palmer Tyre Co.), F. M. Luther (Beardmore Aero engine), G. A. Mansfield (Motor and Aircraft Supplies Co.), R. Delpech (Triplex Safety Glass), J. F. Inshaw (Auster); and the registered office is 30, Bedford Row, W.C.

Stock Markets Restricted.

Everyone hopes that the big loan operation will be a brilliant success and a speedy one, but somehow there is not the same degree of enthusiasm as when the war was in progress. This is a pity. Probably it would have been better policy for the authorities to prohibit temporarily the amount of other borrowing, most of which is not of the indispensable type. However, if one excludes a few gambling specialities, the Stock Exchange is moribund.

Some Useful Propaganda.

By the way, it is pleasant to note that a financial daily paper has blossomed out with an Aviation Supplement. This is not, strictly speaking, propaganda work, but it should serve the useful purpose of keeping aviation to the fore, and in the course of time results should be beneficial.

Ruston and Hornsby Results.

Ruston and Hornsby is the amalgamation of Ruston, Proctor and Co. and Richard Hornsby and Co., carried through not so long ago, and they have been concerned with aircraft. After providing £40,697 for depreciation of buildings, plant, etc., a dividend of 8 per cent. is to be paid, and £40,000 goes to reserve, leaving £41,000 to be carried forward.

Whitehead Affairs: Winding-up Petition.

In the Companies (Winding-up) Court, before Mr. Justice P. O. Lawrence, a petition for the winding-up of Whitehead Aircraft (1917) was presented by New Pegamoid Co., 134, Queen Victoria Street, E.C., and Hobday Bros., 25, Great Eastern Street, E.C. The petition is to be heard on July 8th.

NEW COMPANIES.

Larkin-Sopwith Aviation Co. of Australasia, Ltd. Private company. Registered June 5th. Capital, £31,500 in 30,000 preferred ordinary shares of £1 each and 60,000 deferred ordinary shares of 6d. each. Objects: to enter into an agreement with H. J. Larkin and to carry on in Australia or elsewhere the business of manufacturers of and dealers in aircraft and accessories, etc. The subscribers (each with one share) are:—A. E. Fisher, 11, Glenarm Road, E. (5), and H. G. Butler, 19, Colle Road, S.E. (23), both solicitor's clerks. First directors: H. B. Larkin, R. J. Turner, and J. T. Leete (all permanent). Registered office: 4, St. Mary Axe, E.C.

Knox and Co., Ltd. Private company. Registered June 6th. Capital, £2,000 in £1 shares. To manufacture and deal in motor-cars, internal-combustion engines, aeroplanes, airships, boats, and conveyances of all kinds. The subscribers (each with one share) are:—H. Knox, 10, Lower Grosvenor Place, S.W.1, aeronautical engineer; T. R. Kitchen, 10, Adolphus Road, Finsbury Park, N.4, manager to Elias Wild and Sons, Ltd. Directors: H. Knox and T. R. Kitchen. Registered office: 180, Piccadilly, W.1.

AIRCRAFT IN PARLIAMENT

The following oral answer was given on June 4th :—

MISS DOUGLAS-PENNANT.—GOVERNMENT DECISION.

Sir ROBERT THOMAS : On the suggestion of the Leader of the House, I beg to repeat the question which I put yesterday as to whether the Government are now prepared, in view of what occurred in the other House last week, to agree to set up a Committee of Inquiry in respect of Miss Douglas-Pennant's dismissal ?

Mr. BONAR LAW : The Government have given most careful consideration to the opinion expressed by the House of Lords that a judicial inquiry should be held into the circumstances in which Miss Douglas-Pennant was removed from her appointment under the Air Ministry in August of last year. The Government see no sufficient reason for departing from the decision already taken by them. The responsibility of instituting such an inquiry must rest upon the Government. It would involve a large expenditure of public money, it would be contrary to the general principles of Departmental Administration, and it would establish a very undesirable precedent, for if an inquiry were agreed to in regard to this lady, who has great personal influence, it would be difficult to justify the refusal to take a similar course in the case of many others who are not in an equally influential position. In these circumstances, His Majesty's Government have decided that they cannot assume the responsibility of setting up this tribunal.

Sir R. COOPER : Is it not a fact that in this case there has been made public the suggestion that there are grave irregularities in this particular Department, and, if that is so, will not the right hon. Gentleman's answer rather confirm the belief, which holds very widely in the public mind, that there is something very bad behind it ?

Mr. BONAR LAW : I am not the least afraid of that belief being entertained. The reasons I have given are quite sufficient. If such a precedent were established, I cannot see where it would end.

An HON. MEMBER : Does not the decision of the Government mean that a Minister has the right, in the exercise of his authority, to destroy, set aside, and abrogate entirely the personal rights and safeguards which are given under the Regulations under which people are serving.

Mr. BONAR LAW : It means nothing of the kind, but it does mean that the head of a Government Department, like the head of every other administrative business, must be free to make changes in regard to those who assist him, if for reasons which seem to him good a change is necessary.

Brig.-Gen. CROFT : Is it not a fact that Miss Douglas-Pennant was not superseded, but was dismissed, which is a very different thing ?

Mr. BONAR LAW : I do not think it is possible to argue the question. I believe it was admitted, and Lord Weir had to apologise, as to the method in which the decision was announced, but the point goes far beyond that, and it is whether the officer responsible for the Department is justified in making a change.

Sir R. THOMAS : In view of the very unsatisfactory nature of the right hon. gentleman's reply, and having regard to the very important and even vital letters which have been omitted from the White Paper which has been laid on the Table of the House, letters which affect very materially this case, I beg to ask permission to raise this matter at a quarter-past eight this evening as a matter of definite public importance.

Mr. SPEAKER : The hon. Member has omitted one of the most important words in connection with that Standing Order—namely, the word, "urgent."

Sir R. THOMAS : I beg to add that word

Mr. SPEAKER : The hon. Member can hardly ask me to say this is an urgent matter, because it has been before the House for the last two or three months, and has been discussed here more than once. Therefore, I could not accept a Motion of that sort as being within the Rule which says these matters must be urgent.

Sir R. COOPER : May we give notice that we shall raise this on the Adjournment of the House ?

Mr. SPEAKER : Yes, as often as you like.

* * *

The following written answers were given on June 4th :—

CIVIL AVIATION.—KENT COASTAL DISTRICT.

Mr. JOYNSON-HICKS asked the Under Secretary of State to the Air Ministry whether there is any accommodation for civilian aviation in the South-East corner of England lying between Margate and Deal; whether he is aware that the coast towns there are looking forward to the possibilities of such aviation during the summer; and whether arrangements can be made to utilise a portion of the Manston aerodrome for this purpose.

Major-Gen. SEELY : The answer to the first question is in the affirmative. No requests for aerodrome accommodation in the area mentioned have been received and there have been no special representations as to the possibilities of civil aviation there this summer. There would be no objection to the use of part of Manston aerodrome for civil aviation this summer.

SCOTLAND.

Mr. STURROCK asked the Under Secretary of State to the Air Ministry whether he can now publish the plans formed for the development of civilian flying at stations in Scotland situated to the North of the Lowland line at which the lately issued diagram stopped: whether he is aware of the local feeling on the East Coast of Scotland against the threatened closing down of the aerodrome at Montrose; and whether, in view of the geographical suitability of this station for North of Scotland and Scandinavian traffic, he will, before coming to a decision in this matter, make a personal investigation into the question at Montrose.

Major-Gen. SEELY : The Air Ministry will, of course, gladly examine and endeavour, if possible, to assist any suggestions put forward for the development of civilian flying north of the line in question. At present no such suggestions have been received, with the exception of an inquiry from Dundee. Although the aerodrome at Montrose is being closed down as a service station, it will be available for use later as a civil station. Should the demand warrant it Montrose might become a centre for Scandinavian traffic, but it is premature to make a pronouncement on the matter as yet.

YATE AERODROME (GLOUCESTER).

Mr. RENDELL asked the Under Secretary of State to the Air Ministry whether girls and women who volunteered for work at the Yate (Gloucester) aerodrome have been recently discharged, and why; whether a yet larger number of women not before employed have been taken on in their stead, and why; whether those discharged are receiving out-of-work donation as the result of this method of procedure; if those discharged were regarded as inefficient, how long had they previously been employed without such defect being discovered; why, if the work has diminished at the aerodrome there are now employed a greater number of women than were employed a month ago; and what was the reasons for the unusual methods of business adopted by the Air Ministry at Yate.

Major-Gen. SEELY : I have now received a further report on this matter. The numbers of women discharged and enrolled since April 1st last are as stated in the reply which I gave my hon. friend on May 29th; but I am now able to explain more fully the reasons for the action taken. In April last the work in connection with the construction of aeroplanes at Yate had greatly diminished, and this opportunity was taken to recommend the demobilisation of certain women who were considered inefficient, but with whose services it had not been possible previously to dispense. These women's places had to be filled. A further twelve of the "yet larger number" referred to by my hon. friend were taken on to replace women discharged on compassionate grounds; six were merely converted from the status of civilian subordinate to that of member of the Women's Royal Air Force. At the same time the growth of salvage work has tended to more than counterbalance the diminution of construction work. In reply to the third part of the question, I have no information as to how many of the women discharged are receiving the out-of-work donation. In reply to the fourth part of the question, the answer is that they had an average service of six months.

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The following oral answers were given on June 5th :—

AEROPLANES (GIFTS TO OVERSEA DOMINIONS).

Lieut.-Col. MOORE-BRABAZON (*by Private Notice*) asked the Under Secretary of State to the Air Ministry if he could now state how many surplus aeroplanes now in possession of the Air Ministry, and under what conditions, will be presented as a free gift to the Dominions, India, and the Crown Colonies.

Major-Gen. SEELY : I am glad to say that His Majesty's Government have approved a proposal of the Air Council that a gift of aeroplanes should be made to each Dominion and to India, and that corresponding action should be taken in the case of any Colonial Government or Protectorate requiring machines. The object of His Majesty's Government is to assist the Dominions and India and the Colonies and Protectorates in the establishment of air forces, and thereby develop the common defence of the Empire by air.

Lieut.-Col. MOORE-BRABAZON : Can the right hon. gentleman say if this will apply to any particular types of machines or to all types of machines now in use ?

Major-Gen. SEELY : We hope to be able to meet all the requests for free gifts on the part of the Dominions. It may be that in some cases they will ask for types of which we have none available, but we hope that will not occur and that we shall be able to meet all their requests.

* * *

The following written answers were given on June 5th :—

DEMOBILISATION.—APPLICATIONS FOR RELEASE.

Mr. LUNN asked the Secretary of State for War why the air mechanics attached to No. 20 Balloon Base, Kirkwall, who have been registered for early release since January last, are still kept in the Service; and, seeing that these men are not doing work, and are being kept at the public expense, will he see that their release for civil employment is immediately carried out.

Major-Gen. SEELY : I have called for a Report on the matter, and will communicate with the hon. Member as soon as it is received.

ROYAL AIR FORCE.—PROTECTION CERTIFICATE LOST

Col. GREIG asked the Under Secretary of State to the Air Ministry whether a substitute Protection Certificate or preferably a proper discharge certificate can be issued at once to Joseph Deighan, No. 131463, 30, M'Dowall Street, Johnstone, Renfrewshire, who has lost his temporary Protection Certificate, given him on April 8th, 1919, at Blandford Camp when discharged from the Royal Air Force on medical grounds (his eyes having been injured as a result of blacksmith's training at Halton Camp, Wendover), and who has applied for one without results and who, being unemployed and having a wife and four children, cannot draw either his twenty-eight days' pay and ration money or the out-of-work grant unless he obtains such a certificate.

Major-Gen. SEELY : The letter of application referred to in the question has not been traced, but instructions are being issued to No. 131463 J. Deighan, to report the loss of his Protection Certificate to the Pension Issue Office, Baker Street, W.1, forwarding at the same time his temporary pension allowance book. The Pension Issue Office will then arrange for a fresh Protection Certificate to be issued to him. In the meantime he should apply to the local war pensions committee for financial assistance, and he is being advised to do this.

SENT TO RUSSIA (W. SUTTON).

Mr. T. GRIFFITHS asked the Secretary of State for War whether he was aware that W. Sutton, No. 155451, Royal Air Force, recently at Blandford Camp, has been dispatched to Russia although he never volunteered; and whether he will make inquiries into this case.

Major-Gen. SEELY : This airman was under orders for Russia before the ruling was given that only Regular airmen and volunteers were to be sent. Arrangements are being made to release, at an early date, all airmen (other than Regular airmen) who did not volunteer for Russia.

ALDERGROVE AERODROME (C. McGRUB).

Capt. C. CRAIG asked the Parliamentary Secretary to the Ministry of Munitions whether he was aware that Charles McGrub was lately discharged from the Aldergrove Aerodrome, county Antrim, after having worked there for twelve months; that McGrub had served with the Colours throughout a considerable portion of the War; that many men who did not join the Colours have been kept on at the aerodrome: and whether, in view of the pledges of the Government that they would do all they could for ex-Service men, he will see that McGrub is reinstated in his position at the aerodrome at Aldergrove.

Major-Gen. SEELY : I find that Charles McGrub, after being engaged at the Aldergrove Aerodrome on June 5th, 1918, left work on September 5th. He came back on the 12th of that month, but was discharged with 150 others on May 17th last, as there was no longer work for these men to do. Of the 150 men who have been retained preference has been given in every possible case to ex-Army men.

REGENT'S PARK.

Sir WILLIAM PEARCE asked the Under Secretary of State to the Air Ministry when the completion of the transfer of standard stocks from Regent's Park to Ruislip is completed in September will the buildings in Regent's Park be then removed and the land now occupied be restored to the public.

Major-Gen. SEELY : I regret that I am unable to add anything on this question to the reply which I gave to my hon friend on May 10th. Perhaps he will address a question to the Parliamentary Secretary to the Ministry of Munitions at a later date.

The following written answers were given on June 6th :—

ROYAL AIR FORCE (W. MUMMERY).

Mr. JOHN JONES asked the Under Secretary of State to the Air Ministry whether he is aware that W. Mummery, No. 220892, 1A.C. (attached 99th Squadron, Royal Force), joined the Royal Naval Air Service in 1916, was in France till May 14th, 1919, and on that day was sent from Marseilles to India without any leave; that this man and others with him were never medically examined before being sent to India; and whether it is the practice to transfer men to distant stations in tropical climates without medical examination and without leave.

Major-Gen. SEELY : Inquiries are being made in this case, and I will communicate the result to the hon. Member very shortly

REGENT'S PARK.

Sir W. PEARCE asked the Parliamentary Secretary to the Ministry of Munitions if he will remove the Air Ministry store buildings in Regent's Park immediately the standard stocks are transferred to Ruislip, and restore this open space for public use.

Mr. KELLAWAY : No store buildings in Regent's Park have so far been notified to the Disposal Board by the Air Ministry as being surplus to their requirements.

COMPENSATION FOR DAMAGE BY AEROPLANES.

Sir PHILIP MAGNUS asked the President of the Board of Trade whether he is considering the measures necessary to provide compensation for damage to private property or loss of life caused by any kind of aeroplane, whether in use for commercial, experimental, or other objects.

Major-Gen. SEELY : It is considered that, for the present, compensation for damage to private property or life should be dealt with by the ordinary law affecting damage to persons and property until further experience is gained. The question of compulsory insurance will be considered fully before the new Act is framed, to take effect from January 1st, 1920.

* * *

The following oral answers were given on June 25th :—

WOMEN'S ROYAL AIR FORCE

Lieut. KENWORTHY asked the Under Secretary of State to the Air Ministry what was the numerical strength of the Women's Royal Air Force, officers and other ranks, respectively, on November 1st, 1918, and on June 1st, 1919.

The UNDER SECRETARY of STATE for AIR (Major-Gen. Seely) : The figures are as follows :—

November 1st, 1918, 496 officers, 25,062 other ranks.

June 1st, 1919, 442 officers, 20,419 other ranks.

The figure for November 1st includes 24 officers and 1,543 other ranks Women's Royal Naval Air Service serving at Women's Royal Air Force stations and subsequently transferred to that force.

Lieut.-Comdr. KENWORTHY : Will the right hon. gentleman consider the hastening of the demobilisation of these ladies, in order to give employment to discharged unemployed soldiers?

Major-Gen SEELY : Yes, Sir; that is being borne in mind. The process of reduction is continuing. Of course, the hon. and gallant gentleman will understand that during the very rapid demobilisation of the men of the Royal Air Force we depend principally upon women to carry us through this difficult period.

Mr. HOGGE : Is the right hon. and gallant gentleman aware that the numbers he has given us of those transferred from the Admiralty are different from those given by his right hon. friend the Prime Minister?

Major-Gen. SEELY : I do not think that is so. Of course, there is the difference in date. I think he will find that they are correct. I have gone through the figures myself very carefully.

Colonel ASHLEY : Is the Women's Royal Air Force to be a permanent service or is it to be done away with shortly?

Major-General SEELY : The Women's Royal Naval Air Force does not now exist as such; these were ladies transferred on November 1st to the Women's Royal Air Force.

* * *

The replies to the following questions were not received in time for inclusion in the OFFICIAL REPORT, June 24th :—

ROYAL AIR FORCE.—POST-WAR CONDITIONS OF SERVICE.

Mr. RAPER asked the Under Secretary of State to the Air Ministry if he could now make a statement as to post-war conditions of service in the Royal Air Force.

The UNDER SECRETARY of STATE for AIR (Major-Gen. Seely) : The final consideration of this question is now proceeding and will, I hope, be completed very shortly.

Mr. RAPER : Is the hon. and gallant gentleman aware of the fact that the uncertain state of the future conditions of the Air Force prevents a large number of ex-officers of the Air Force arriving at a decision as to their future career?

Major-Gen. SEELY : I am fully aware that it is a most urgent matter to come to a decision on this question. If my hon. and gallant friend will put down a question in a fortnight's time I hope to be able to give him a full statement.

AIR MINISTRY (STAFF).

Mr. ARNOLD asked the Under Secretary of State to the Air Ministry the number of the staff of the Air Ministry on May 31st, 1919, as compared with the number on the date of the Armistice, November 11th, 1918.

Major-Gen. SEELY : The number of persons of all types employed in the Air Ministry at the Armistice was 4,646 and on May 31st 3,289. It will be understood that the large amount of work due to demobilisation has necessitated the retention of a large clerical staff.

* * *

On June 24th, Mr. KELLAWAY (Deputy Minister of Munitions), in the course of a speech introducing the Estimates for the Ministry of Munitions said :—

At the outbreak of war the British Army had in its possession about 100 aeroplanes. The Ministry became responsible for aeroplane production on September 12th, 1917, when the production had increased to 500 aeroplanes per month.

At the date of the Armistice, that is to say, a period of little more than eighteen months, production had been increased to 4,000 per month. I should like to have dwelt on that figure and what it means.

There is a very romantic story behind this story of aeroplane production, that at a time when raw material and machinery was very largely engaged on other essential war production this country was able, thanks to the ingenuity of its craftsmen and the far-sightedness of its captains of industry, to make so great a step forward in its aircraft production as that, and the improvement in the fighting quality and the safety of the machines was just as great as the increase in the numbers. I think there is no question amongst informed men that during the latter stages of the war this country held the supremacy over her enemy in the air.

That was due not only to the extraordinary fighting spirit and ingenuity of the men who flew and fought the machines, but also to the ingenuity and patriotism of the craftsmen and the employers engaged in that great industry.

Concerning various criticisms upon experimental supplies, Mr. Kellaway said :—

Many of these experimental supplies had never been made in this country; they were absolutely foreign to our industrial practice. They included such things as poison gas, anti-aircraft bullets and tanks.

Let me take two examples. I have here sections of bullets which stopped the German air raids on this country. There are six of them, from the first crude bullet, indistinguishable from the bullet that the infantrymen fired out of his rifle, up to this one which to the ordinary layman does not differ on casual examination from the first, but that bullet used only once, on Whitsunday of last year, prevented any further air raids on this country.

Were we right to scrap the earlier bullets when we found a better one? Were we not right to stop the contract for the earlier bullet and to pay compensation to the contractors?

I would not have liked to have been the Minister to stand up in this House on one of those nights when London was being raided, and when questioned as to whether we had not a bullet to stop the raids to have said, "Yes, it is true, but the contractor is engaged turning out the earlier form of bullet, and we must not turn them off that in order to make the new bullets, otherwise the Comptroller and Auditor-General, the Public Accounts Committee and the Press will denounce the Department as being wasteful muddlers."

I remember standing in my garden at Blackheath—I think it was on the occasion of the first raid—watching a Zeppelin which was hovering over Woolwich Arsenal and apparently dropping its bombs with complete impunity. Our poor little pom-poms and anti-aircraft guns did not get within miles of their objective; they could not fire more than two miles in those days.

We have now anti-aircraft guns which can fire effectively at objects five miles in the air. I watched that Zeppelin, and I do not think that I ever had a greater sense of humiliation than when I thought that it was possible for Germany to attack the very heart of this Empire to do its best—and it did a great deal—to check the moral of our people, and interfere with production, without our being able effectively to reply.

When the Zeppelin raids were stopped, as they were, by the heroism of our airmen, and the engines of defence which we were able to provide, a new problem presented itself, because the bullet that had been effective against the Zeppelins was not so effective against the heavier-than-air machines, and our men had to go on with their experimentations, trying to devise a bullet which would be equally effective.

As the Committee knows, that bullet was found, and during the later months of the war we had not the dread of air raids. But if you are going to put it on the ground of money alone, and consider the loss of money on these contracts on the one hand, surely you ought to compare it with what would have been the loss if those raids had gone unchecked.

On the day after Whit Sunday last year it was known that Germany had prepared for air raids on this country, by heavier-than-air machines, greater in magnitude than had ever been attempted before. Why did they not come?

They did not come because the reception that their airmen got that Sunday night made it impossible to get men to face such risks

On the mere ground of money alone, if that ground is taken, then on these contracts the Department can claim to have acted justly and properly in the action which it has taken.

Captain WEDGWOOD BENN : During the war I was interested in the Air Force, and I can still remember the real feeling of pleasure and relief it was to me when I visited home during my leave and my right hon. friend the President of the Local Government Board (Dr. Addison) was able to show how the appalling deficiency in the supply of aircraft was being made good by the new programme which the Munitions Board was preparing at that moment. But it does seem to me essential, looking at the Department as one dealing with munitions of war, to realise that it is not in the heaping up of things we have got that we can make any preparation of things whatever for any future conflict in which we might be engaged. That, really, is the answer to the hon. gentleman's tirade against the Free Trade position of this country.

* * *

The following oral answers were given on June 25th :—

ROYAL AIR FORCE.—AIR NAVIGATION.

Capt. WEDGWOOD BENN asked the Under Secretary of State for Air (1) whether any sextant suitable for taking bearings in the air is in use or being experimented with; (2) what liaison exists between the Air Ministry and the Admiralty with a view to applying to air navigation the experience of the Navy; (3) what is the staff of the Air Navigation School; and whether it includes any qualified marine navigators; (4) what progress is being made in instruction in taking bearings in the air.

The UNDER SECRETARY of STATE for AIR (Major-Gen. Seely) : At the moment the whole system of instruction in aerial navigation is being revised, and the schools of aerial navigation re-organised; and in this process we shall certainly keep in close touch with all those whose experience of aerial or marine navigation is likely to be of assistance, and endeavour to perfect, as far as possible, all mechanical aids to navigation, such as sextants. Experiments with various types of sextant are already being carried out with this object

At the present moment there is great hope of the early development of a satisfactory artificial horizon sextant and experiments are now being carried out at the Royal Air Force experimental establishments with a view to its early perfection. I would add that the officers who are dealing with this question will be very glad if my hon. and gallant friend will give them the benefit of his advice and criticism.

Capt. BENN : Is the Air Force taking full advantage of the navigating experience of the Admiralty? That is the point.

Major-Gen. SEELY : Yes, Sir. I think we may say we are working in absolutely close co-operation with them, and many of the officers dealing with this matter have themselves sea experience.

Capt. BENN : Are any of the instructors in the navigation schools naval officers?

Major-Gen. SEELY : Speaking from recollection, many of them are or have been in the Navy. I should like to have a precise question on that point

Capt. BENN : The question is on the Paper.

Lieut.-Comdr. KENWORTHY : Are there any navigating officers among the instructors?

Major-Gen. SEELY : I must have notice as to the precise number of navigating officers. My hon. and gallant friend is aware that many of our Air Force officers guiding us in this matter are naval officers.

Capt. BENN : Are they naval officers or members of the Royal Naval Air Service, which is different?

Major-Gen. SEELY : Both

AERONAUTICS and The LAW

CURIOSITIES OF AIR LEGISLATION—(*Continued.*)

By "THE LINCOLN IMP."

Impenitent Impudence.

Having already brought about one amendment of the 1919 Regulations and hoping to be in time with the rest for the Air Bill, 1920, the Imp feels in good fettle. He offers no apology for his impudence recently in offering to improve upon Regulation-pattern definitions, and has several more improvements to suggest. The *advocatus diaboli* is a most useful member of society, and as much a part of our constitution as "His Majesty's opposition." To proceed, therefore :—

What is an Aerodrome?

"*Aerodrome*" means any definite and limited ground or water area intended to be used and capable of being used either wholly or in part for the landing or departure of aircraft. So say the Regulations.

Will some official please tell us? What is an area which is definite but not limited? Or limited but not definite? The definition excludes ships' decks and the roofs of buildings, although used as aerodromes, and seems to include the whole area of the enclosed camp and hangars of an aerodrome, and not merely the landing surface. The ambiguity leaves a useful loophole for persons infringing the circuit and other regulations. Another ambiguity lurks here in the word "aircraft" in its context. Which is meant—"an" aircraft (singular) or "all" aircraft (plural)? A kite is "an" aircraft, and most tennis lawns are "capable of being used for the landing of kites." But "all" aircraft would include giant airships and seaplanes, as well as Avros, etc., and few aerodromes cater for such a miscellaneous clientèle as this. If aircraft does not mean "any" and does not mean "all" what does it mean? When is an area not an aerodrome because not "capable of being used . . . for the landing . . . of aircraft"?

What, again, do the words "intended to be used" mean? Intended by whom? Suppose that you intentionally land in my field to serve a writ on me and I intentionally acquiesce in your immediate departure by air—*anglicé* turn you out!—my field, it seems, has now become "an aerodrome" to which any minion of Mr. Churchill has right of access!

What an Aerodrome Is.

"*Aerodrome,*" suggests the Imp, means a surface (a) habitually used (b) for the landing or taking off of flying machines, (c) or purposely adapted (d) for such use.

(a) The neutral term "surface" draws no unnecessary distinctions between land and water, and includes decks and roofs as naturally as sea or soil.

(b) "Habitually used" is intentionally elastic; it is sufficiently elastic to enable common sense to be applied to each case as it arises.

(c) "Flying machines" not "aircraft." The attempt to include under one term the landing-grounds of airships, balloons, kites, and flying machines is too difficult, and can only lead to confusion.

(d) "Purposely adapted." This excludes meadows and other open spaces which, however admirably adapted by nature to be used as aerodromes, are not in fact so used by man nor adapted for such use by their owners or others.

Clear as Mud!

"No aircraft shall fly," "Right to land," "To fly aircraft," "To navigate aircraft," "The flight proposed," "Unable to land," "A flying machine when in the air," "To take off," "Alighting aircraft," "Aircraft in the air," "About to land," "When an aeroplane starts," "Aeroplanes flying," "Trick landings," "When taking off or alighting," "Approaching for the purpose of landing," "Landing zone," "Commence to take off," "Night landings," "Shall be elevated," "On land," "Dangerous to flying," "At which he lands," "Arriving or departing by air."

The Regulations regard such phrases as these as too clear to need definition. Let them tell us then who flies—the pilot or the craft? How should one distinguish "to take off" from "to start," "to commence to take off," "to elevate," or "to depart by air"? When is an aircraft which is "compelled to land" "unable to land" although it has "a right to land" at the aerodrome "at which he lands"? How can you tell whether it is "about to land" or only "approaching for the purpose of landing" or merely "arriving by air"? Is a kite balloon which has been elevated an aircraft in the air, and if its pilot has not been licensed to navigate aircraft is it flying in contravention of the regulation "no aircraft shall fly, etc." ?

What Is Flight?

"To fly," "To land," "To take off." Not until the reader has tried his own hand at the game will he realise the difficulties inherent in the attempt to define these simple ideas in clear and suitable language. The Imp has to apologise for the seeming pedantry of the definitions he is about to offer, and can only hope that some reader will quickly displace them by better ones.

"*Flight*" in relation to an aircraft includes motion and rest in the air, but does not include the motion or rest of a flying machine between the acts (a) of coming into contact with and of leaving the surface. "To fly" has a corresponding meaning.

"*In the air.*" An aircraft is in the air when it is off every surface (b).

How to Take Off and Land.

"*Taking off*" in relation to a flying machine (c) includes the act of leaving the surface (a) and the sequence of acts and events (d) immediately preceding and succeeding that act. "To take off" has a corresponding meaning. Aircraft designed to be lighter than air and lifting kites are taken off by the act of freeing them from the restraint which keeps them on or in comparative proximity to the surface (e).

"*Landing*" in relation to a flying machine (c) includes the act of coming into contact with the surface (a) and the sequence of acts and events (d) immediately preceding and succeeding that act. "To land" has a corresponding meaning. Aircraft designed to be lighter than air and lifting kites are landed by the act of subjecting them to a restraint which keeps them on or in comparative proximity to the surface (e).

Nota Bene.

(a) A flying machine which is taking off does not begin to fly until it leaves the surface, but is still taking off after it has begun to fly and may be beginning its landing while it is still flying and continuing it after it has come into contact with the surface, although it has then ceased to be in flight. Is that clear?

(b) This is not superfluous. A scout-craft on an airship is not in flight except as part of the airship. Otherwise an offence is committed if the scout pilot has his licence in his pocket and is on the airship!

(c) Flying machines "take off," other aircraft "are taken off," one speaks of "flying a kite" but not of a kite "taking off."

(d) An "event" is here used in the sense of that which happens or may happen without human intervention and an "act" in the sense of that which happens by human intervention and is intended to happen or is deemed by law to have been intended to happen. Hence it seems that a bad landing resulting in a crash is a landing, but a stall and unintended nose dive into the ground is not, although the stall was intentional; conversely, an unintentional stall converted into an intentional (though compulsory) landing is a landing. Similarly, a "forced" landing is a landing if the pilot lands the machine but not if for any reason the machine lands itself. A bumpy landing is one landing, not several. But to bump in a fog may be no landing at all. At a few feet from the ground a machine will be landing if it goes on and touches, although it takes off again, but if it "lands six feet up" and goes round again it will not have been landing, but only "attempting to land."

Carried away by the exuberance of his own verbosity, the Imp is forgetting to be a devil and to pin-prick the minions of the Minister for Air! To it, Teazer! Go for them, Gadfly!

Regulation Bloomers.

1. If a test pilot may be defined as a pilot who flies aircraft for experimental purposes within the precincts of an aerodrome, then a test pilot needs not a licence. Any fool can test is the argument one supposes! (Sect. 1 (3) and proviso (b)).

2. Aircraft owned by aliens can—nay, must—be registered (it seems) if the applicant is British—though a man of straw not worth a shilling (Sched. I., Regs. 1 and 2).

3. A company which is registered and has its principal place of business in the United Kingdom can own aircraft which ply for hire over England although every one of its shareholders and directors is an alien (Sched. I., Regs. 1 and 2).

4. A navigator who applies for a licence is required (*inter alia*) (a) to have no moral defect (b) not to have more than two (2) dioptres of latent hypermetropia (c) to have a degree of auditory acuity compatible with the efficient performance of his duties and (d) to calculate azimuth. But cheer up, my hearty! Who said you needed a licence to navigate aircraft? The Regulations don't say it, so why apply for one?

5. An airship having voluntarily stopped its engines in a dead calm is "under way," and must be treated by other aircraft as being not under control. An airship being towed by a ship is not under way, and for the purposes of the rules of the air is classed as a free balloon (Sched: vii., Interpretation, Rules (6) and (20)).

6. An aeroplane flying below 6,500 ft. and at 900 yds. distance from the nearest point of a licensed aerodrome must conform to the circuit law. Not so a similar aeroplane which is 500 yards nearer the aerodrome, unless it is (a) about to land or (b) leaving or (c) starting (Rules of the Air 34, 32, and 33).

By way of a final piece of impudence let us conclude with Section 1 of the Air Bill, 1920, as the Imp would have it drawn as at present advised. The italicised words have either already been defined by the Imp or are to be defined in the sequel.

AIR BILL, 1920.

1. Within *the realm* no *aircraft* and whether within or without the realm no *British aircraft*.

(1) Shall *fly*:
- (a) Without being marked in the *prescribed* manner, or
- (b) over any *prohibited area* or
- (c) So as to endanger any person unnecessarily, or

(2) Shall *take* or *be taken off*,
- (a) Having on board otherwise than in pursuance of the prescribed permission:
  - (i.) A *postal packet* or
  - (ii.) Radio-signalling apparatus or
  - (iii.) Photographic apparatus or
  - (iv.) A *trade passenger* or
- (b) Not having on board:
  - (i.) The prescribed persons licensed in the prescribed manner to control that aircraft in the air; and
  - (ii.) Means of displaying and making the prescribed lights and signals; and
  - (iii.) The prescribed *flying papers*; or
- (c) From a *public aerodrome* otherwise than in the prescribed manner and from the prescribed place.

(3) Shall *land* or *be landed*:
- (a) After entering the realm by air without first reporting at an *appointed aerodrome*; or
- (b) At a public aerodrome otherwise than in the prescribed manner and at the prescribed place.

(4) While *in the air* shall eject or let fall any person or article except:
- (a) Ballast; or
- (b) A prescribed signal; or
- (c) An article or a person supported in the prescribed manner.

THE LINCOLN IMP.

THE CODE OF THE AIR.

The Paris correspondent of THE AEROPLANE writes:—

The Code of the Air, created by the Peace Conference, is still in a large measure secret, although certain individual items have leaked out, giving the impression that it has been composed with care and foresight. The British influence is apparent in all that concerns aerial transport or circulation in general, that is to say, in its general provisions it follows closely the air regulations already in force in the British Isles.

It first deals with day and night identification of machines: national colours of each country and green and red lights. All aerobuses must be fitted with wireless, although aircraft having less than a certain passenger-carrying capacity must obtain special permission to carry a wireless installation. The reason for this is not clear, because whatever the number of passengers carried a pilot will always be glad of the wireless to obtain his bearings or to ask help.

Every machine will be registered, and will figure on its national register. This registration will necessitate the observance of certain rules. Machines will be forbidden to carry explosives or persons suffering with contagious diseases, and must abide by the postal and customs regulations to which the practical application of aerial navigation has given new duties.

TRAFFIC CONTROL.

Machines will overtake on the left and cross on the right, but there is no ruling for overtaking when climbing! which is extraordinary, seeing that so many collisional accidents have occurred, starting with the Thomas-Dickson one in Italy.

COMMUNICATION IN THE AIR.

Pilots will have to conform to one method of communication whilst in flight, and the system must be international. Thus there will be a new use for the Morse code.

The medical requirements of the Air Code as formulated by the Peace Treaty in Paris are summarised as follows:—

1. No licence to fly will be accorded without a medical certificate of fitness.

2. Every candidate, before receiving authorisation to fly, either as pilot, officer (navigator?), or mechanic of a public transportation service must present himself, and undergo an examination before a competent medical authority selected by the State or acting under its authority.

3. Such medical examinations for the selection of pilots and navigating personnel must have special regard to the physical and mental aptitude of the applicant.

(a) Absence of all mental trouble, and of any physical or moral defect in so far as same would affect the security of navigation.

(b) The minimum age of pilots and navigating personnel engaged in the transport of passengers and cargo is nineteen years.

(c) GENERAL SURGICAL EXAMINATION.—The aviator must not suffer from any wound, have undergone any operation, nor show any anomaly, congenital or acquired, that would interfere with his duties as an aviator.

(d) GENERAL MEDICAL EXAMINATION.—The aviator must not suffer from any disease or complaint that would render him incompetent to control aircraft. He must possess a heart, lungs, kidneys, and a nervous system capable of resisting the effects of altitude and prolonged flight.

(e) EXAMINATION OF EYES.—The aviator must possess a degree of accurate vision compatible with the necessity of his functions. Pilots and officers of aerial crews must not suffer from latent hypermetrophia to a greater extent than two dioptres; they must possess muscular co-ordination adapted to refraction. The field of vision of each eye and the perception of colours must be normal.

(f) EXAMINATION OF EARS.—The average ear must be normal. The aviator must possess a degree of accuracy of hearing compatible with the duties he will be called upon to perform.

(g) "VESTIBULAIRE" (?) apparatus must be intact and must not be hyperexcitable or hypoexcitable.

(h) EXAMINATION OF NOSE AND THROAT.—The aviator must have complete nasal permeability and be free from any affection, acute or chronic, of the upper respiratory organs.

4. Each country may decide on their own methods of examining applicants, provided that the details and the limits of the tests employed have been previously agreed upon by the authorised representatives of each nation.

5. Applicants having fulfilled the above conditions will receive a certificate permitting them to obtain a licence.

6. To assure that all navigating personnel continue to possess the above qualifications they must undergo a periodical examination at least every six months, and the results of such examination must be recorded in their dossier.

After illness or accident each aviator must undergo a new examination in order that his suitability to continue as a member of the navigating personnel be decided; such decisions being noted on the flying ability log-book.

7. All aviators who, prior to this convention, have given proof of their fitness for flying and who retain same, need not necessarily be excluded from the navigating personnel by reason of the fact that they do not fulfil all the conditions.

8. Any nation may increase the severity of the conditions; the above are the minima.

THE VICTORY LOAN.

The Air Ministry makes the following announcement:—

In order to assist the progress of the Victory Loan it has been decided to allow commercial or private aeroplanes, flying over the British Isles, to drop, subject to the undermentioned condition, small discs of paper, advertising the loan, on the towns or country over which they are passing.

Clause 2 (d) of Regulation 5 of the Air Navigation Regulations, 1919, will not apply to aircraft engaged on this special work provided that any companies or other owners of aircraft willing to undertake the work act on the instructions of the Secretary, National War Savings Committee, Salisbury House, Salisbury Square, E.C.4, from whom all further information can be obtained.

Unless this condition is complied with, action will be taken in accordance with Regulation 10 (1) of the Air Navigation Regulations, 1919.

THE IMPERIAL AIR FLEET.

Lord Morris, ex-Premier of Newfoundland, addressed a meeting at Birmingham on June 30th promoted to stimulate interest in the project of presenting an aeroplane by Birmingham to South Africa.

There was peculiar appropriateness, he said, in Birmingham selecting South Africa for its gift, inasmuch as the late Mr. Joseph Chamberlain was probably more identified with the freedom of and the granting of responsible government to South Africa than anyone else, and the wisdom of Mr. Chamberlain's South African policy had been shown by the way in which not only British-born colonists but the Boers had rallied to the help of the Motherland in the war.

Already £1,700 has been promised towards the £2,200 required.

THE R.A.F. IN RUSSIA.

In May last I was warned to report at the Air Ministry, and everyone said "Overseas!" and the best of luck. On arriving there I reported, together with several other pilots and observers, and was asked various questions, and then told I was to obtain two suits of mufti, a civilian overcoat and cap, and a mosquito net, and report to a certain captain at Blandford. I was in-



structed not to mention the stunt to anyone, as it was a secret mission.

A Secret Mission.

Think of it, a secret mission with suits of mufti and a mosquito net! "Where were we going and what for?"

On arriving at Blandford I found a merry little party of three pilots and four observers who were also on this secret stunt. No one knew where we were going, so we had to wait. Next day we travelled back to town and reported at the Tower, where we were medically examined and given a slip of paper on which was the following:—

You must have two suits of mufti, etc., etc.

You must take supplies of everything for at least six months.

You must have clothing to stand a climate varying from summer on the Riviera to winter in the North of Scotland.

You must mention nothing of this to anyone.

Cameras are permitted.

There was some other advice as to kit we should obtain.

We were given leave and told we should be wired for. Well, on June 14th we entrained on a "North Special" about midnight and found we were going to Newcastle. On this train were infantry, artillery, and all other branches of the service, but no one seemed to know where we were going eventually.

On arrival at Newcastle we embarked on the "City of Marseilles," and left port on June 15th at about 5 p.m., and were escorted out to sea by De H.6's and destroyers.

The Secret Revealed.

After leaving port the secret was revealed—Russia; and then we all wondered what mosquito nets were for, but we soon found out.

We discovered that the total number of R.A.F. was one colonel, four pilots, four observers, one E.O., and about 57 N.C.Os. and men—hardly a flight, but it must be remembered that it was only a small expedition, and at that time things were none too rosy in France.

After an uneventful voyage we arrived at Murmansk, which is a little port that is never frozen up and has been built since the war. Here we commenced to unload the ship and obtained a railway truck on the quay, which was converted into an office.

Soon after landing we started to recruit for the Slavo-British Aviation Corps (S.B.A.C.) and Slavo-British Allied Legion.

Seaplanes Required.

After looking round Murmansk it was decided that an aerodrome could not be built, so a seaplane ship was wired for, as the Kola River is an ideal place for watercraft and the surrounding valleys are full of lakes where a seaplane could alight in case of engine trouble.

Recruits were coming in satisfactorily, so our C.O., Lieut.-Col. Maund, D.S.O., a man who had been in Russia before the Revolution with Col. Valentine, decided to form instructional classes for the S.B.A.C. Each of the R.A.F. officers had a subject, and the time was well spent in instructing the old Russian pilots and mechanics who had joined us.

The chief subjects were Aerial Gunnery, Contact Patrol, etc., etc., and the school was practically a miniature Reading. It must be remembered that our Russian friends had not flown or seen an aerial gun for nearly a year, so their knowledge was a trifle rusty. Also ground strafing and contact patrol were practically unknown in the Russian Flying Corps.

The Interest of Russian Pilots.

The Russian pilots were extremely interested in the Aldis Sight and the C.C. gear, and when we told them of the performances of our latest machines they were amazed, as the last machines they had before the Revolution were Sopwith 1½ strutters, a few Pups (which were liked by all who had flown them), some Nieuports, and Spads. But these machines only carried one gun, and they thought it wonderful when they heard of a Camel with two guns, and an Aldis Sight, Snipes, Bats, Bristol Fighters, etc.

Soon after this the seaplane ship, H.M.S. "Narrana," arrived, and the land R.A.F. or R.F.C. were invited to dinner by the sea R.A.F. or R.N.A.S. I think I am quite right in saying that we all had a very enjoyable evening after having lived on practically Army food for some time.

Mistaken for Devils.

The seaplanes soon got to work, and during the first flight over Murmansk the inhabitants were extremely frightened, as they had never seen an aeroplane before. One woman was crying, and could not be made to understand that the machines would not hurt her. I think she thought they were "devils from hell" (no offence to the seaplane people meant) which the Allies had brought to their aid.

Soon after this the machine-gun class were put through their firing tests, and one R.A.F. observer, complete with aerial Lewis gun, managed to get lost in some marshy ground near the range. After wandering about for an hour or so in the marsh he found us, and seemed very fed up. He was nearly bitten to death by mosquitos, and said things to me he ought not to have said, as I had chosen the range. However, all went well, and we had a very successful afternoon.

Next day we sailed for Archangel, and the Navy, who were in front, had a scrap with Bolshevik and German forces just before entering Archangel. One of our seaplanes that was up spotted



THE R.A.F. IN RUSSIA.—Centre, Lieut. Schviesnikoff, R.A.F (killed). Extreme right, Capt. Kozakoff, R.A.F. The Sopwith "Camel" was one flown by Capt Kozakoff. The Russian pilots are wearing the uniforms of private soldiers, as at that time no officers' uniforms had arrived.



THE PARK OF NO. 1 RUSSIAN SQUADRON.—This Squadron was of Russian Pilots on Sopwith 1½-strutters and Nieuports.

an enemy battery firing at our ships and dropped a 230 lbs. bomb, which caused the gunners to hop it.

On our arrival at Archangel, Backnaritza Wharf, we immediately proceeded to look for an aerodrome, and after a great deal of searching found a small field about 300 yards long by 150 wide, which served the purpose.

In Travelling Quarters.

After landing, we were told to look for a sleeping car for the officers and sleeping cars for the men, also cars we could fit up as messes and trucks for spares, as we had to live in this mobile train. It was sent up to the aerodrome, together with the machines, and when we managed to get the train in order everyone was comfortable and happy.

Work now commenced at the aerodrome—machines were rigged, the aerodrome levelled, hangars erected, and everyone was very busy. Our mess president was a very wise man and bought a considerable quantity of foodstuff from the various ships in harbour, so that we were very happy and had a change from biscuits and bully, etc., although the food supplied was very good

Early in August our first machine was ready. We landed in Archangel about Aug. 4th, and the flight commander, Capt. F. V. Robinson, D.F.C., made the first trial flight. It was good to see an aeroplane in the air again after our long wait. Flying now began in earnest, and as there were two fronts—the River Dwina and the Vologda railway—we were fairly busy.

Forest and Swamps.

What a country to fly in! Miles and miles of forest and swamp, and nowhere to land in case of engine failure.

The line was about 30 miles north of Oberzetskaia, and we had to fly 70 miles before reaching the enemy. On our first trip down, the Bolsheviks had one Archie (anti-aircraft gun) which was a huge joke, as the gunners' one idea seemed to be to put up shots round themselves so that we should not drop bombs on them.

The seaplane ship now went back to Murmansk and we carried on at Archangel.

The seaplanes (Faireys) used to do the bombing and reconnaissances before we were ready, and although they had to fly 70 to 80 miles down the railway line before reaching the lines, they had reliable engines—Eagle VIII., Rolls—and there was absolutely *no place whatever* to land during the whole of the trip. Of course there were hundreds of lakes where a seaplane might have made a forced landing, but there was no place for a De H.6, let alone a De H.4, to land.

About this time the Russian Squadron got going on Sopwith 1½ strutters, and two Nieuports which were found in Archangel, having been sent there by the Allies before the Revolution, and most of them were still in perfect condition. This squadron went up the river and established an aerodrome at Siskoe. This squadron (called a squadron, but not a squadron in strength as we know it) was composed of ex-Russian officers and men of the old Russian Flying Corps, and did very good work indeed. There was also a pilot from the "Narrana" with them, and he was flying Sopwith-Schneider machines.

From this time we practically confined ourselves to the railway force near Oberzetskaia, and did reconnaissance, bombing, ground strafing, contact patrol, art. obs., photography—in fact, everything except night flying.

Some Useful Work.

During the month of August we dropped many tons of bombs, and did a considerable amount of photography and reconnaissance, and on one occasion one bomb dropped from 150 ft. in Oberzetskaia station caused over 70 casualties.

Early in September the infantry decided to push for Oberzetskaia, so we started intensive bombing and ground strafing, and the enemy were pushed back to within about four miles of Oberzetskaia. Progress in the infantry was very slow, as when the enemy retired he blew up all the bridges, which had to be repaired before our armoured train (not the R.A.F. train) could proceed.

About this time the enemy received reinforcements in the shape of six anti-aircraft guns and some German gunners who knew



THE R.A.F. IN RUSSIA.—A Crash. This picture gives some idea of the conditions in Northern Russia.



A Bolshevik Flying-boat (Salmson Engine) which Landed in the British Lines.

now to shoot, so that Archie got very hot. Just before taking Oberzetskaia the Bolsheviks had 11 anti-aircraft guns in one small siding, and as the gunners could shoot we always had some bits of fabric or wood missing on our return home.

About Sept. 2nd the infantry made the final push for Oberzetskaia, so we went down in formation of three machines. Up to that time we had been down singly, so there was much surprise when three machines rolled up. On this occasion we each carried five bombs—two 112 lbs., two 40 lbs., and one 20 lbs. Cooper—which the observer deposited over the side.

Frightening the Bolsheviks.

After dropping our eggs we all went down low to ground strafe, and the Bolsheviks were so frightened that the infantry took Oberzetskaia without much struggle, and I think I am right when I say without a casualty.

This was attributed to the material and moral effect of the bombs and machine-gun fire from the machines overhead. We found later that the enemy had some very strong defences round Obersetskaia, but was in a terrible state of nerves owing to the presence of aircraft overhead.

After capturing Oberzetskaia we found a spot that would be suitable for an aerodrome. It was just a widening in the Oberzetskaia-Onega road, and when we had cut some of the trees down and levelled it off a bit, it measured about 50 yards by 250 yards, with trees all round, so was a very small place for De H.4s.

The R.A.F. train now moved down here, and we erected hangars and commenced work from this aerodrome. This was a relief, as the line had now moved and was about 15 to 20 miles away, so that instead of 150-mile trips to the line and the same distance back again, we only had short trips, for which we were very thankful. I forgot to say that the seaplane ship came back to Archangel just before we moved down the line, and as our mess was in order we gave them a return dinner, which was very enjoyable.

A Bolshevik Seaplane.

Also whilst at Archangel a Bolshevik seaplane came over, but as two of our machines were up at the time of his visit he wisely decided to come down and surrender.

From Oberzetskaia aerodrome we commenced to bomb Emtza, about 40 miles away, and one flight was made to Plezetskaia—60 miles over—for photographic purposes. Here we discovered a Bolshevik aerodrome, but his machines, Sopwith 1½ strutters and Nieuports (Allied machines that had been sent to Russia before the Revolution), were not of much account, as they would never fight or come up when we were over.

One Sopwith came over and dropped two bombs miles wide of the mark and then crashed between the lines, and was afterwards salved by us. Another machine (enemy) was seen up in the air by one of our machines, but before a scrap could take place the Bolshevik machine caught fire in the air and crashed in flames in the forest.

Not Inclined to Fight.

I believe a Bolshevik Spad was seen on the river front near Siskoe, but it would not fight.

On one bombing raid of ours one of our pilots hit an enemy anti-aircraft gun mounted on their armoured train, and from a prisoner's statement killed six gunners.



An Aerial Photograph of Oberzetskaia taken during the Bolshevik Occupation.—This shows Bolshevik Trains, Bomb Craters and surrounding Forest. The white Rows are Timber for Engine Fuel (Railway Engines). The Two Round Towers to the North of the Station are Water Towers about 60 feet high. This Photograph was taken on August 18th, 1918.

In October some reinforcements came out with R.E.8s, and Lieut.-Col. Maund, D.S.O., went home. The new C.O. was Lieut.-Col. Van der Spuy, M.C.

Whilst we were at Oberzetskaia the infantry tried to capture the enemy armoured train, and the R.A.F. was asked to cut the railway line behind the train to prevent its escape. This was done, the line being cut with a 112 lb. bomb; but unfortunately the armoured train was not captured.

A Successful Expedition.

Another trip was made by one of our machines to the River Onega. The infantry reported a large Bolshevik boat coming up the river and asked for an aeroplane to spot it and try to destroy it, so our machine went over and dropped two 112 lb. bombs, which we claimed were within 25 to 50 yards from the boat. The boat was not seen again, but we heard later that it had to be beached and then towed back, as the bombs blew its side in. That was the end of the Bolshevik boat.

Soon after this we were relieved by the reinforcements and went back to Archangel for a rest. The observers applied to go home to learn to fly, and we heard that leave was being granted, so we all got home on the same boat, and the powers that be at the Air Ministry said we need not go back to Russia unless we wished, so we have not gone back.

A Forced Landing.

I have just remembered several more incidents and hope they will be interesting.

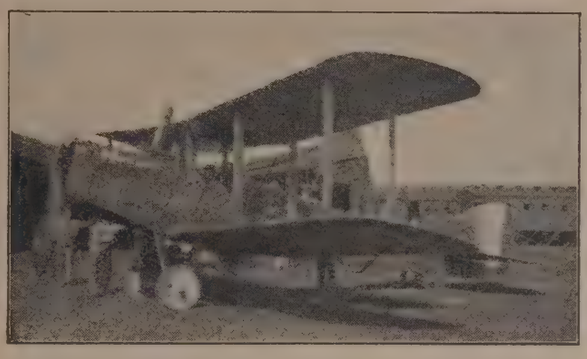
One of the machines was returning from a raid and was just north of Tundras (30 miles south of Archangel) when the engine conked, and the pilot decided to come down on a swamp to the east of the line. This was accomplished very successfully, and although the machine was damaged, both pilot and observer were unhurt. (Of course, if one's engine conks in Russia, one has either to try to land on the railway line—a single track and broader gauge than British railways—or land in the forest or swamp. In each case it means a crash, and the thing is to let oneself and the machine down as lightly as possible.)

After a Crash.

On all our trips over the lines we carried two days' rations and a pocket compass, besides military load, so when this machine crashed the pilot and observer commenced to walk westward by the compass, as they knew the railway line was to the west of them. After scrambling through thick forest and marshy ground, often knee deep in slime, for over an hour they eventually hit the railway line and saw a small hut some distance away. Here they found a Russian signalman, and tried to explain that they wanted to telephone to Archangel. After much arguing, etc., they got through to Headquarters in Archangel and said they were unhurt. Later on they caught a train to Archangel, very wet, tired, and fed up.

Next day a party went out with them to salve the machine, but after searching for hours in the thick forest they could not find it, so returned home.

After this we sent another machine up to try to locate the crashed one, and this soon spotted it, took bearings, and came home to report. The crash was about five miles from the railway line and on the edge of a swamp, so another party went down together with about 30 Russian labourers, and after struggling through the swamp and forest again, found the machine.



THE R.A.F. IN RUSSIA.—An R.A.F. D.H.4 Starting on a Bombing Expedition.

Now came a very hard task—getting a De H.4 machine through five miles of thick forest and swamp. All detachable things—planes, rudder, undercarriage, etc., etc.—were taken off and sent back to the railway line, and some of the Russians were told off to cut a road through the forest to enable the fuselage to be dragged to the line.

Other Russians began to make a sleigh to support the fuselage so that it could be pulled along. Work went on all night, and eventually the road was ready and the machine (fuselage) dragged by about 50 Russians to the railway line, where it was loaded on a truck and sent to Archangel.

Hard Work and Mosquitoes.

The time taken to make the sleigh, cut a road (the road was formed of trunks of trees cut down), and drag the machine the five miles was about five days. This was in the summer, and the mosquitoes were terrible, and as the poor pilot and observer were out superintending this work the whole of the time, we all decided that we would come down near the railway if any more engines conked.

It may be said that the machine was not worth all this trouble, but we only had eight out there and could not afford to lose any.

The Bolshevik seaplane that landed in our lines was overhauled and flown by a Russian pilot, who used to take the General (Brigadier-Gen. Finlayson) down the river to the river force. This journey by boat occupied from two to three days, but by aeroplane it was performed in about three hours, and the General and other people used always to fly down and back again



Officers of the Original R.A.F. Detachment in Russia.

—in fact, the machine was practically called the General's machine.

The only trouble with it was that there were no Salmson spares in the country, so that when the Bolshevik pilot landed on our aerodrome on a Maurice Farman with an engine of the same type, we were in luck's way, as this gave us a spare engine for the flying boat, although I don't remember the original Salmson in the boat ever breaking down.

The Result of Engine Failure.

Another incident worth relating took place when we were stationed at the Oberzetskaia aerodrome.

One of our machines—De H.4—went for a reconnaissance over Kodish, and while over the enemy's lines the engine conked (oh, these R.A.Fs. !). Running through Kodish is a wide road (the roads in Russia are just tracks covered with tree trunks), so the pilot headed for our lines (our force was on the road north of Kodish) and just managed to cross over the Bolshevik front line about 300 ft. up. He managed to get back into our lines and tried to land on this road, but where he touched the ground the trees narrowed and his wings caught in the tree trunks, thus stopping the machine, which was, however, very slightly damaged.

After getting out of the machine and walking up the road, the pilot and observer met the doctor, who was accompanied by stretcher bearers and stretcher. The doctor had seen the machine coming down and had hastened down the road to render any assistance that might be necessary. On arriving at the headquarters of our force the pilot phoned to R.A.F. Headquarters at Archangel to say he and his observer were uninjured. We at Oberzetskaia were much concerned about his non-return, and it was not till next morning that we heard he was safe.

The distance from Kodish to Archangel by road and river was a good 200 miles, so did not send help that way.

A road from Oberzetskaia ran to Tegra and joined the Kodish road there—distance about 80 miles—so we formed a party of mechanics, about eight, and started them off along this road, Oberzka to Tegra, to salve the machine. They were given one week's rations, and took a Lewis gun and two carts with Russian drivers. Owing to the state of the roads and slow travelling it was calculated that it would take the relief party at least three days to reach the crash, so the pilot went to Archangel *via* road and river and left the observer to look after the machine till the arrival of the relief party.

The observer managed to obtain a small Russian cart and a pony, so he took off the planes and packed up the fuselage on this cart, which commenced to creak and groan under the weight. However, progress was made, very slowly though, the Russian driver managing his cart very well.

An Unwelcome Visitor.

The relief party made good progress, but one evening, as they were preparing to camp for the night, a huge bear dashed out of the forest and went across the road, but was gone before the Lewis gun could be brought into action. This rather livened things up, and the next day the relief party arrived in Tegra, and was proceeding along the Kodish road when they met our friend the observer, with about three days' growth of beard and moustache, riding on a fiery steed (otherwise a Russian pony), and in the distance was the machine on its new undercarriage, the cart.

Things were now re-arranged, the other two carts taking a share of the weight, and the procession moved on to the river at Siskoe. Here provisions ran low, and our observer managed to wangle some more and also a blanket for himself. The poor fellow had been without one since landing (crashing). It might be mentioned that we sent some of the observer's personal kit (razor, toothbrush, etc.), also a bottle of whisky, with the relief party.

It was a good thing we sent the whisky, as our observer made friends with a Russian skipper, and owing to the good effect of the spirit managed to get a boat (boats were none too plentiful at that time), on which the machine was loaded and the journey up river made to Archangel, where the machine was handed over to stores.

J. I. Starbuck.

LONDON AND ITS AERIAL FUTURE.

Lord Montagu of Beaulieu presided at a dinner of the London Society at the Royal Adelaide Gallery, Strand, on June 26th, when Mr. G. Holt-Thomas read a paper on "London and its Future Aerial Transport."

The Chairman said that he took a great deal of interest in aviation in London, because so far as he read the Transport Bill now before Parliament, aviation was the only thing that was left out of it, and the only thing that would not be controlled. London must be the centre for the meteorological research of Western Europe. Meteorology and navigation were the two most important things to study in aviation to-day.

Geographically speaking, the position of London in regard to Western Europe was the most important. We were the nearest of all the big capitals to the Atlantic, and our meteorologists were, owing to the difficulties of foreseeing the variations in our changeable climate, possibly as good as, if not better than, any in the world. London must naturally become, in his opinion, the centre of meteorology in Western Europe.

Covered-in Parks.

London was the biggest capital in the world and he thought they needed above everything in winter open spaces which were not subject to the disadvantages of wintry weather. He was going to throw out an idea which might seem somewhat fantastic, but which, he thought, many of them would live to see. He thought they would live to see some of their parks roofed in. They would live to see a park like St. James's Park or the Green Park covered with a great glass roof, which would be the central landing stage of London. There would be the aeroplanes landing on the roof, light and sunshine pouring through the glass, the sides open, and the wind blowing through and underneath, so to speak, an open winter garden.

They would land all their aeroplanes, say, right in the middle of Hyde Park or St. James's Park, and right underneath the masses would be taking their pleasure. He only threw that out as an idea, but he believed that it would come, and that a landing stage in the middle of London would be practicable.

Mr. Holt Thomas, at the outset, confessed that he could not imagine, enthusiast as he was, that internal flying in London was going to render any great service; that was to say, he could not see aeroplanes conveying mails from the General Post Office in the City to the Post Offices of the West End, although it was impossible to prophesy safely as regarded flying in view of the enormous progress recently made.

In an incidental reference to the air raids on London, he urged the need of a sufficiently large Air Force being kept in existence to repel possible future attacks by air. He had no doubt that all who had read the newspapers that evening thought that a League of Nations, though very desirable, was rather doubtful, and that if we were left without an Air Force we should be in a very precarious position.

As to the general question of aerial transport, Mr. Holt Thomas alluded to the recent long-distance flights, observing that the occupants of the machine which crossed the Atlantic took considerably longer to travel by ordinary means from Dublin to London than it took them to cross this enormous space.

One could get to Paris to-day quite easily and comparatively comfortably by train and boat, but nothing but the aeroplane would carry either passengers or letters in 2½ hours, and he saw aircraft competing much more with cables, for instance, than the train. He would go so far as to say that if he started an aeroplane, say, every two hours from London to Paris, and vice versa, no more telegrams would be sent, as they could convey words far more cheaply than any cable or telegraphic system and much faster.

£120 a Journey to Paris.

It cost 2d. per word to send a telegram from London to Paris. Assuming that it cost £120 to fly from London to Paris, and taking one of his own machines, which was to-day used on the military service between London and Paris, they could carry (he was quoting General Sykes) 672 lbs. of matter. Assuming such a low weight as 2,000 words per ounce—he thought it could safely be put at 5,000—the number of words carried would be 21,500,000, which worked out at so low a figure that one could hardly talk about the price per word. As the calculation would show, they could carry words at 700 a penny.

The same calculation showed one—and this was a subject which they had been specially studying—how the telegraphic and telephonic communication of this country could be linked up with the telegraphic and telephonic services of another country. There was another reason for talking chiefly of mail and matter, as compared with passengers—viz., the expense. Suppose it cost 10s. a mile, or £120, to fly to Paris, carrying two passengers. The price of £60 was almost prohibitive. But consider the weight, say, of two 11 stone passengers as made up of half-ounce letters, and the situation was completely changed. The two 11 stone passengers equalled 9,856 letters, and at the same price per trip, the transport of the letters cost about 3d. each. The charge would, of course, have to be much higher because one would not get 10,000 letters to deliver. Also a special form of collection and delivery would have to be arranged for, as it was no use flying from London to Paris in two hours and taking four more to deliver letters to their destination. Every one must recognise that speed must be paid for.

With regard to the possibilities of stereoscopic photography in charting unsurveyed country, Mr. Holt Thomas said that a single aeroplane had in one flight completely covered with photographs an area of 40 square miles. The cameras used for this work were quite automatic and, once started would go on taking photographs of whatever was under them, without any attention until the films were used up.

NAVAL & MILITARY AERONAUTICS

FROM THE "LONDON GAZETTE."

AIR MINISTRY, June 24th.

R.A.F.—FLYING BRANCH.—Capt. W. St. J. Scott-Scott to be Capt., from (S.O.), April 10th.

Lt. W. D. Harris to be Lt. (A.), from (O.), Jan. 8th.

Sec. Lts. to be Lts. :—J. McFarlane, April 26th, 1918 (substituted for notification in "Gazette," April 11th); L. E. O. Lounds, May 30th, 1918 (substituted for notification in "Gazette," Feb. 4th); C. H. G. Sanders, Oct. 4th, 1918 (substituted for notification in "Gazette," March 7th); J. G. Prestwick, Oct. 18th, 1918 (substituted for notification in "Gazette," March 7th); H. R. Hill, M.C., Nov 16th, 1918 (substituted for notification in "Gazette," May 23rd)

K. E. M. Holmes (Sec. Lt., R.G.A., T.F.) is granted a temp. commn. as Sec. Lt. (A.), Sept. 19th, 1918).

C. H. Matthews (Sec. Lt., Hamps. R., T.F.) is granted a temp. commn. as Sec. Lt., (O.), Oct. 25th, 1918.

316207 Flight Cadet W. W. Brander is granted a temp. commn. as Sec. Lt. (K.B.), Oct. 6th, 1918.

The following relinquish their commns. on ceasing to be empld. :—Capt. (Hon. Maj.) J. A. Dennistoun (Maj., Manitoba R.), Nov. 25th, 1918; Lt. G. S. O'Brien (Lt., Can. Cyclist Corps), Feb. 14th; Lt. G. W. Blaiklock (Lt., Quebec R.), Lt. (Hon. Capt.) A. R. Fairbairn (Capt., C. Ont. R.), Lt. J. E. Hanning (Lt., Can. Engrs.), Lt H. G. Kent (Lt., C. Ont. R.), Lt. N. I. Sheppard (Capt., Alb. R.), Lt. (Hon. Capt.) W. H. Shoenberger (Capt., C. Ont. R.), Maj. F. V. Woodman (Maj., Sask. R.), March 31st; Lt. C. J. L. Laurence (Lt., C. Ont. R.), April 14th; Lt. W. M. E. Chester (Lt., C. Ont. R.), April 16th; Sec. Lt. (Hon. Lt.) J. C. Snelgrove (Capt., Can. R.), April 29th; Capt. P. M. L. Edmonds (Lancers), May 19th; Sec. Lt. (Hon. Capt.) G. H. Gillis, D.F.C. (Capt., Can. A.P.C.), June 5th; Lt. A. Dodds (Lt., N. Staffs R.), June 7th; Lt. S. H. Short (Lt., Can. F. Art.), June 10th; Lt. H. Towse (Lt., Manitoba R.), June 11th; Sec. Lt. E. Hill (Lt., C. Ont. R.), June 12th.

Transferred to unempld. list :—Lt. (actg. Capt.) A. V. Milton, Feb. 11th; Lt. C. Cox, Feb. 21st; Sec. Lt. W. H. Grant, Sec Lt. K. T. Phillips, March 1st; Sec. Lt. C. R. McNeill, Lt. G. Ponsford, March 7th; Sec. Lt. (Hon. Lt.) R. S. Hall, March 11th; Sec. Lt. W. Graham, Sec. Lt. P. B. Keffer, Sec. Lt. A. V. F. Weir, April 1st; Lt. F. Little, April 3rd; Lt. A. K. Mackereth, April 5th; Sec. Lt. H. T. Barnett, April 6th; Sec. Lt. G. O. Ford, Sec. Lt. G. G. Lane, April 8th; Lt. C. Kniveton, April 9th; Sec. Lt. R. Kelly, Lt. T. G. Lowe, M.C., April 10th; Lt. W. G. Holbrow, Sec. Lt. P. Kemp, April 11th; Lt. R. A. Kirkpatrick, Sec. Lt. C. Lambe, Lt. H. T. B. Lockwood, Sec. Lt. E. F. Phillips, April 13th; Lt. L. V. Foster (Notts and Derby R.), April 14th; Sec. Lt. L. A. Fonseca, Sec. Lt. A. G. Hamilton, Sec. Lt. R. G. Kirk, Lt. H. Laycock, Sec. Lt. M. Phillips, April 15th; Lt. C. H. Davies, April 16th; Lt. (actg. Capt.) H. R. Griffin, Lt. G. L. O'Neill, April 17th; Sec. Lt. S. H. Batty, Sec. Lt. L. C. Phillips, April 18th; Sec. Lt. J. W. Grooms, Lt. H. A. Laurie, Lt. T. Longman, Lt. A. L. McKay, Sec. Lt. H. S. D. Wooley, April 19th.

Lt. L. G. Kettlewell, April 20th; Lt. A. F. Organ, April 21st; Lt. N. S. Robson, Sec. Lt. R. Teakle, April 23rd, Lt. C. G. Lee, Lt. B. C. Moody, April 24th; Sec. Lt. (Hon. Lt.) F. L. S. Kelman, Lt. S. G. Knock, April 25th; Sec. Lt. C. J. Knight, Sec Lt. V. O. Knowles, Sec. Lt. P. Phillips, April 29th; Lt. T. Guigan, Sec. Lt. F. W. Harrison, Capt. N. D. M. Hewitt, Sec. Lt. J. Harrington, Sec. Lt. W. F. Lane, April 30th; Lt. R. H. Hemmens, May 1st; Capt. G. L. Lloyd, May 2nd; Sec. Lt. J. E. Gordon, Lt. J. H. Hartley, May 3rd; Capt H. G. White, May 4th; Lt. E. E. Morgan (R.G.A.), May 5th; Sec Lt. (Hon. Lt.) B. M. Storey, May 6th; Lt. W. L. Grech, Sec. Lt. W. Leith, May 7th; Sec. Lt. F. E. Hall, Sec. Lt. R. S. McCall, Sec. Lt. C. G. Paul, Sec. Lt. H. N. F. Pearson, Sec. Lt. (Hon. Lt.) P. Pyne, May 8th; Sec. Lt. L. Hudson, May 9th; Sec. Lt. E. C. Collymore (substituted for notification in "Gazette" March 28th), Lt. T. M. G. Lamb, May 10th; Lt E. C. Burton, May 11th; Sec. Lt. H. Kershaw, May 12th; Lt. (Hon Capt.) T. W. P. Chaloner (Yorks. R., T.F.), Lt. C. H. Collins, May 13th; Lt. H. Haywood, May 14th; Sec. Lt. J. W. Pickering, May 15th; Sec. Lt. E. W. Berry, Lt. S. P. J. Yeates, May 16th; Capt. A. Morrison, Sec. Lt. R. Mugford, May 17th; Sec. Lt. E. J. Bannister, Sec. Lt. J. H. W. Haswell, Sec. Lt. M. G. Haight, May 18th; Sec. Lt. J. G. Lethbridge, Sec Lt. L. C. Phippen, May 19th; Sec. Lt. J. Carter, Sec. Lt. M. D. McTaggart, Lt. C. F. Putwaine, Sec. Lt. J. E. H. Rogers, Lt. E. I. Sutcliffe, Lt. C. A. Stewart, May 20th; Sec. Lt. G. R. Whamond, May 21st; Sec. Lt. H. C. Biard, May 22nd; Sec. Lt. (Hon. Lt.) C. K. Johnston, M.C., Capt. C. T. MacLaren, O.B.E., Lt. S. Norman (Lond. R., T.F.), Sec. Lt. G. A. Raybone, Sec. Lt. G. V. Snell, Lt. L. F. Wheeler, May 23rd; Sec. Lt. R. L. Lawson, Lt. S. C. Young, May 24th; Sec. Lt. H. R. Hayden, Sec. Lt. P. F. Keevil, Lt. the Hon. J. S. Parker, May 25th; Lt. B. E. Taylor, May 26th; Sec. Lt. C. H. Foot, May 28th; Sec. Lt. W. E. Cutton, Sec. Lt. W. A. Gallon. Lt. W. M. R. Gray, Sec. Lt (Hon. Lt.) C. C. Hirst, Sec Lt. L. M. Robinson, May 29th; Lt. H. H. Mawer, Lt. C. D. McGurk, Sec. Lt. C. Wilson, Sec. Lt. J. H. A. Wilmot, May 30th; Lt. C. H. Adamson, Lt. F. B. Baker, Lt. E. E. Dafforn, Lt. E. T. Evans, Lt. J. B. Fenton, Lt. P. I. Lewis. Sec. Lt. F. C. Maugham, Sec. Lt. T. S. Platten, Lt. S. F. P. Polhill, June 1st; Lt. H. A. Hay, M.C., Lt. R. C. Milne, Sec. Lt (Hon. Lt.) N. W. G. Wilkinson, Sec. Lt. W. Wilson, June 2nd, Sec. Lt. F. Massom, Lt. D. A. Parrott, Sec. Lt. N. A. Richardson, Sec. Lt. L. J. Ryall, Lt. R. G. Torrance, Lt. F. S. Wilkins, June 3rd; Sec. Lt. A. W. Ansell, Sec. Lt. A. Drummond (Rifle Bde.), Lt. A. Glynne, Sec. Lt. (Hon. Lt.) V. Soper (Dorset R.), Lt. B. Truscott, Sec. Lt. P. E. J. Thomas, Lt D. S. Walsh, June 4th; Capt. B. E. P. Gregg, D.S.C. (Yorks. R.), Lt. G. E. B. Lawson, Lt. D. Lindley, Lt. H. E. Pryce, June 5th; Sec Lt. L. F. Gross (North'd Fus.), June 6th; Lt. A. W. Ellis, June 7th; Lt E. T. Cosslett, Sec. Lt. F. W. Dodman, Lt. C. J. M. Evans, June 9th; Lt. F. F. Keen, Capt. N. MacMillan, M.C., June 10th; Sec. Lt. A. G. Ely, Lt. D. F. Farrar, Sec. Lt. A. A. Maddan, Lt. T. S. Wilson, June 11th, Sec. Lt. W. L. E. Dickson, Sec. Lt. W. A. Foot, Sec. Lt F. H. Knobel, Lt. G. E. Manning, M.C., June 12th; Sec. Lt. S. Dixon, Lt. R. W. Frean, Sec Lt. E. A. Gray, Capt. H. R. Hawkins, Sec. Lt. A. L. Matson, June 13th; Sec. Lt. F. V. Raleigh, June 14th; Sec. Lt. E. H. Edgar, June 15th; Sec. Lt. J. J. Antoncich, Sec. Lt. P. J. Dowell, Lt. G. Pilditch, M.C., June 16th; Sec. Lt. S. H. J. Garne, Lt. L. A. Hooke, June 23rd; Lt. A. E. Gates, June 24th.

Maj. F. E. Sandford, A.F.C., is temporarily transferred to unempld. list, June 16th.

Sec. Lt. (Hon. Capt.) A. Cumming relinquishes his commn. on account of ill-health, and is permitted to retain the rank of Capt., May 29th.

The following Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank :—J. A. Chubb, W. Gaunt (contracted on active service), G. R. Halliday, June 12th.

Lt. C. F. Wolley-Dod (Lt., Notts. and Derby R.) resigns his commn., and is permitted to retain his rank, May 16th.

Lt. C. B. R. Macdonald (Capt., R.E.) resigns his commn., June 18th.

Sec. Lt. J. S. McGeown relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, June 12th.

Sec. Lt. C. E. Irving is antedated in his appointment as Sec. Lt. (A.), June 1st, 1918.

The date of appointment of Sec. Lt. T. Mundy and Sec Lt. E. A. Murray to be Lts is March 8th, and not May 8th, as stated in "Gazette," May 23rd.

The rank of Sec. Lt. C. D. Clark is as now described, and not as stated in "Gazette," May 30th.

The initials of Lt. L. G. Hall are as now described, and not as stated in "Gazette," April 4th.

The surname of Maj. (actg. Lt.-Col.) A. K. Tylee, O.B.E., is as now described, and not "Tyler" as stated in "Gazette," May 9th.

The notifications in "Gazette," March 7th, concerning the undermentioned Officers are cancelled :—Sec. Lt. A. Holdsworth, Sec. Lt. C. W. Phillips, Sec. Lt. T. D. Sykes.

The notification in "Gazette," March 18th, concerning Capt. D. Plaistowe is cancelled (notification in "Gazette," April 4th, to stand).

The notification in "Gazette," March 28th, concerning Lt. J. Ll. Davies is cancelled.

The notification in "Gazette," April 11th, concerning Sec. Lt. C. D. Metcalfe is cancelled (the notification in "Gazette," April 29th, to stand)

The notification in "Gazette," April 29th, concerning Lt. W. G. Barlow is cancelled.

The notification in "Gazette," May 16th, concerning Sec. Lt. M. D. McTaggart is cancelled.

The notification in "Gazette," June 3rd, concerning Lt. A. R. Cowan is cancelled.

ADMINISTRATIVE BRANCH.—Capts to be graded for purposes of pay and allowances of Majs. whilst empld. as Majs. :—W. R. Mackenzie, D.S.C., P. J. Wiseman, May 1st.

Capt. (actg. Maj.) J. Selwyn to be Capt., from (S.O.), and relinquishes the actg. rank of Maj. on reduction of estbt., March 24th.

T. I. Birch (Capt and Qtr., R.W. Surr. R.) is granted a temp. Commn. as Capt., Oct. 30th, 1918, with seny from April 1st, 1918.

Lt. E. R. Wilkinson to be actg. Capt. whilst empld. as Capt, from July 21st to April 30th.

Lt. D. H. Macintyre to be Lt., from (A.), June 4th.

Sec. Lt. J. Cobley to be Lt., April 25th, 1918 (substituted for notification in "Gazette," Feb. 14th)

Sec. Lts. to be actg. Lts., without pay and allowances of that rank, whilst empld. as Lts. :—E. J. Gordon, from Feb. 5th to Feb. 28th; T. Caine, from Feb. 20th to April 30th; Sec. Lt. J. W. A. Legge-Willis to be Sec. Lt., from (K.B.), May 2nd.

F. V. Russ is granted a temp. commn. as Sec. Lt., June 20th.

Transferred to unempld. list :—Lt. W. G. Barlow, Feb. 26th; Sec. Lt. (Hon. Lt.) C. A. Lace, March 4th; Lt. F. R. Hatch, March 14th; Sec Lt. R. Laurier, March 15th; Capt. F. A. Forde, March 25th; Sec. Lt. W. E. Lindsay, April 2nd; Sec. Lt. J. Macintosh, April 13th; Sec. Lt. E. J. Lainchbury, April 16th; Sec. Lt. R. W. King, April 23rd; Lt. W. Hunt, April 26th; Lt. R. S. Hay, Lt. R. B. Laue, April 29th; Capt. H. S. Kelly, May 11th; Sec. Lt. (Hon. Lt.) A. C. E. F. Kennish, May 17th; Sec. Lt. (Hon. Lt.) I. A. N. Beadle, May 21st; Lt. T. A. E. Layborn, May 23rd; Sec. Lt. S. W. Lewis, May 26th; Lt. (Hon. Capt.) P. S. Mumford, Sec. Lt. W. H. Seward, May 28th; Capt. J. S. Macgrath, May 30th; Sec. Lt. O. C. Dinorman, Lt. (Hon. Capt.) A. Herbert, May 31st; Lt B. Burton, Sec. Lt. H. F. Griffiths, June 1st; Sec. Lt. J. M. Bannerman, June 2nd; Lt. F. C. Staines (R. West Surr R.), June 3rd; Sec. Lt. J. W. V. Payne, June 4th; Sec. Lt. W. Roxburgh, June 6th; Maj. C. F. Steele, June 7th.

Maj. Sir J. Eardley-Wilmot, Bt. (Rifle Bde., Spec. Res.), relinquishes his commn. on account of ill-health caused by wounds, June 20th.

Capt. L. E. Eeman relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, March 8th (substituted for notifications concerning this Officer in "Gazettes," March 7th and 28th).

Lt. (Hon. Capt.) H. J. Petty relinquishes his commn. on account of ill-health contracted on active service, and is granted the rank of Capt., May 31st.

Lt. H. P. L. Gardner (Norfolk R., Spec. R.) relinquishes his commn. on account of ill-health contracted on active service, June 21st.

The notification in "Gazette," April 1st, concerning Lt. J. K. Line is cancelled.

The notification in "Gazette," June 13th, concerning Sec. Lt. (Hon. Capt.) A. N. Wyatt is cancelled.

TECHNICAL BRANCH.—Lt.-Col. H. Blackburn to be Lt.-Col., from (S.O.), April 2nd.

Capt. A. Garrard to be actg. Maj. whilst empld. as actg. Maj., Grade (A.), from April 1st, 1918, to April 30th.

Capt. (actg. Lt.-Col.) G. Waddell to be Capt., Grade (B), from (S.O.), and to relinquish the actg. rank of Lt.-Col., Sept. 22nd, 1918.

Lt. W. J. Bunting to be actg. Capt. while empld. as Capt., Grade (A), from Nov. 1st, 1918, to April 30th (substituted for notification in "Gazette," May 9th).

Lt. E. W. Chatterley to be actg. Capt while empld. as Capt., Grade (B), from Oct. 2nd, 1918, to April 30th

Lt. W. G. Stuart to be Lt., Grade (A), from (Ad.), Aug. 19th, 1918.

Sec. Lt. S. G. Newport to be Lt., March 24th (substituted for notification in "Gazette," April 11th).

Sec. Lt. (Hon. Lt.) D. R. Mitchell to be graded for purposes of pay and allowances of Lt. while empld. as Lt., Grade (B), from May 1st to May 14th.

Lt. N. A. Ayres to be Sec. Lt., Grade (A), from (Ad.), Nov. 1st, 1918, and to be Hon. Lt. (substituted for notification in "Gazette," Nov. 22nd, 1918).

Sec. Lt. W. W. Hammond to be Sec. Lt., Grade (B), from Grade (A), June 25th (substituted for notification in "Gazette," June 13th)

Sec. Lt. (Hon. Lt.) E. A. Horan (Lt., N.Z. Forces, Otago R.) relinquishes his commn. on ceasing to be empld., June 4th.

Transferred to unempld list :—Sec. Lt. (actg Lt.) P. Merrivale, March 7th; Lt. C. D. Fairweather, April 1st; Capt. M. O. Illingworth, April 9th; Sec. Lt B. F. T. Hare, April 17th; Lt. H. B. Lee, April 18th; Maj. A. K. Hall, O.B.E., April 30th; Lt. H. D. Legge, May 2nd; Lt. S. E. G. Lees, May 4th; Capt. A. W. Gillespie, May 16th; Lt. F. T. McSorley, May 17th; Lt. S. R. McLaren, May 18th, Sec. Lt. W. Hill, May 20th; Lt. S. H. Miller, May 21st; Lt. G. Glen, Sec Lt J. H. C. Harrold, Sec. Lt. W. Muir, Sec. Lt. A. R. Mutter, May 28th; Lt. W. W. Foster, May 29th; Sec. Lt. H. J. Amery, Lt. F. C. Elstob, Lt. T. W. Franks, Sec. Lt. L. E. Pool, May 31st; Lt. B. H. Davies, June 1st; Capt. W. E. Dommett, June 3rd; Sec. Lt. L. Russell, June 4th; Lt. F. A. W. Braine, Sec. Lt. G. T. Godfrey, Sec. Lt. S. A. Read, June 5th; Sec. Lt. A. Gill, June 11th; Sec. Lt. B. Greig, June 23rd.

Lt. J. H. Lester relinquishes his commn on account of ill-health contracted on active service, and is permitted to retain his rank, May 26th (substituted for notification fn "Gazette," June 6th)

Lt. P. N. Shone (Lt., S. Staffs. R.) resigns his commn., and is permitted to retain his rank, June 25th.

The notification in "Gazette," May 7th, 1918, concerning Lt. G. P. Harding, M.C , is cancelled.

Medical Branch.—Transferred to unempld list :—Capt. F. A. Hampton, April 23rd; Capt. N. S. Gilchrist, April 30th; Lt. F. S. Drewe, May 30th.

The notification in "Gazette," April 18th, concerning Sec Lt. L. W. Jones is cancelled.

Chaplains Branch.—Principal Chapln. for Presbyterians.—Rev. W. Moffat (A.C D.) is granted a temp. commn. as Chapln., with the relative rank of Lt.-Col., and is granted the relative rank of Col. while empld. as Principal Chapln., March 7th, seny. Jan. 1st (substituted for notification in "Gazette," Feb 4th)

Memoranda.—Sec. Lt. (Hon. Lt.) R. V. J. S. Hogan to be Lt., April 2nd, 1918.

The following Overseas Cdts. are granted temp. commns. as Sec. Lts. :—184247 H. D. Abraham, L. Brown, 171525 N. J. McDonald, 316832 J. H. Simmers, Feb. 15th.

The following Cdts. are granted hon. commns. as Sec Lts. :—175106 C. Barker, 13822 C. J. Bucknell, 13813 F. T. Hollingsworth, 1807 V. V. Johnson, 203257 D. McDonald, 128431 H. C. Sharp, 137491 R. J. Summers, 137506 G. P. Tate, 137505 R. J. B. Tiernay, 49303 B. Watson, 50083 I. M. Williams, April 10th; 1039 G. A. B. Best, 36452 J. C. Brown, 67879 C. J. Bufton, 1617 H. A. Cust, 651302 E. M. Cubison, 22313 R. E. Duggan, 890267 L. H. Green, F. V. Griffen, 128982 G. W. Norris, 795861 H. F. Oliver, 71448 W. J. Paton, 100431 R. S. Preston, 23/147080 W. J. Sandford, 5209 T. E. Taylor, 137054 E. A. Webb, 13/60936 L. W. Widdocks, 37191 R. W. Worthington, 5032 A. B Waldron, April 16th; 154164 J. G. Leask, April 19th; T.R.13/59177 J. Gray, April 20th; 66285 G. W. Keeble, April 22nd; 538104 J. Alderton, 175112 R. V. Crook, 20071 W. W. Currie, 27149 A. E. Lupton, 117323 J. M. Matthieson, 55512 L. Motley, 100639 C. B. Pinnock, 137537 E. J. Seaward, 42880 G. O. Thomson, 250591 F. Veall, April 25th; 194019 L. H. Wilmot, April 26th; 13/58428 C. H. Aley. 110062 E. C. Davies, T.R./8/3289 G. H. Piercey, 2943 H. E. Waite, April 28th; 44310 M. E. Curlender, 11969 E. M. T. Gritton, 25443 W. C. Gubbins, 20176 W. R. Lewis, 117737 R. B. Swindell, May 5th; 460883 A. J. Potter, May 12th.

Maj. J. F. Dyer (Capt., Bt. Maj., E. Lancs. R.) relinquishes his commn. on ceasing to be empld., June 9th.

Lt.-Col. (Hon. Col.) L. Munro (Col., Spec. List) relinquishes his commn. on ceasing to be empld., and is permitted to retain the rank of Col., June 16th.

The following relinquish their Hon. commns. on ceasing to be empld. :—Temp. Hon. Capt. F. C. Lea, March 31st; Temp. Hon. Lt. J. L. Napier, June 16th; Temp. Hon. Lt. H. P. Dickinson, June 25th

Transferred to unempld. list :—Capt G. Aste (Lt., R.A.S.C.), from (S.O.), May 1st; Lt. G. H. H. Lyall, M.B.E., from (S.O.), May 1st; Maj. E. C. Hatcher, May 6th; Capt. W. B. Adams, from (S.O.), June 1st; Capt. (actg. Maj.) S. G. Rome, M.C. (Lt., A. and S. Highrs.), resigns his commn. and is permitted to retain the rank of Maj., June 25th.

The initials of 123869 Cdt. A. H. Reed are as now described and not C. H. Reed, as stated in "Gazette," May 9th.

The notification in "Gazette," April 1st, concerning Capt. F. A. Ford is cancelled.

Admiralty, June 27th.

The King has been pleased to give orders for the following promotion in and appointments to the Most Excellent Order of the British Empire, in recognition of the services of the following officers during the war :—

O.B.E. (Military Division).

Lt. (actg. Lt.-Cmdr.) G. E. Mills, R.N.V.R.—For valuable services as 2nd in Command, R.N.V.R., Anti-Aircraft Corps.

Lt.-Cmdr. G. E. Nathan, R.N.V.R.—For valuable services whilst attached to the Anti-Aircraft Branch at General Headquarters, Great Britain.

Lt. H. J. Wagg, R.N.V.R.—For valuable services as 2nd in Command of the Anti-Aircraft Telephone Staff at General Headquarters, Great Britain.

War Office, June 27th.

The King has been pleased to approve of the following award of the Distinguished Service Order to the following Officers in recognition of their gallantry and devotion to duty in the Field :—

Capt. G. A. Hill, M.C. (4th Bn. Manch. R., and R.F.C.) (N. Russia).—He has since early December, 1917, been constantly working between the north of Russia and Rumania and Southern Russia. He has attended Bolshevik meetings at night when street fighting was at its height, passing back and forth through the Bolshevist fighting lines, and has been almost daily under fire without protection. He has conducted himself with courage and coolness and rendered valuable service.

Lt. H. O. Loug (No. 3 Sqdn., R.F.C., now R.A.F.).—For most conspicuous gallantry and ability during June and July, 1916. He initiated low-flying attacks on troops, transport, and trains far beyond the enemy lines. He also brought down several enemy aeroplanes. These flights were carried out alone and unescorted. He did splendid work.

Air Ministry June 27th.

R.A.F.—The following temp. appointment is made at the Air Ministry :—Deputy Director.—Lt.-Col. I. M. Bonham-Carter, O.B.E., and to be actg. Col. whilst so empld., June 8th, vice Col. B. C. H. Drew, C.M.G.

The following temp. appointments are made :—Staff Officer, 1st Class.—(Air) Lt.-Col. G. I. Carmichael, D.S.O., June 23rd.

Staff Officers, 3rd Class.—(P.) Capt. A. M. Waistell, D.S.C , Jan. 21st; (T.) Lt. C. T. Inman, May 16th, vice Lt. D. C. Sutherland.

Flying Branch.—Capt. W. R. Read, M.C., A.F.C., retains the grading for purposes of pay and allowances of Maj. whilst empld as Maj., (A.), June 5th.

Capt. J. S. Wheelwright, D.S.C., to be Capt., (A'ship.) from (T.), May 1st.

Lt. (Hon Capt.) I. G. Roberts to be actg. Capt. whilst empld. as Capt (A.), from Dec. 18th, 1918, to April 30th.

Sec. Lt. L. Michell, M.C., to be Lt., June 8th, 1918 (substituted for notification in "Gazette," March 7th).

The following Sec Lts. (late Gen. List, R.F.C , on prob.) are confirmed in their rank as Sec. Lts. (A.) :—C. H. Swan, July 13th, 1918; P. H. Leigh, Aug. 24th, 1918.

The following relinquish their commns. on ceasing to be empld. :—Lt. R. L. Tribe (Lt., R.G.A.), June 20th, 1918; Lt. W. J. Blitch, D.C.M. (Lt., W. Ont. R), Oct. 19th, 1918; Lt. G. T. Henderson (Lt., R.A.S.C.), Nov. 1st, 1918; Lt. H. E. Merritt (Lt., Northumb Fus.), Feb. 26th; Sec. Lt. (Hon. Lt.) E. A. Bradshaw (Lt., C.A.S.C.), April 14th; Sec. Lt. (Hon. Lt.) L. S. Dell (Lt., R.F.A.), May 14th; Capt. G. O. Johnson, M.C., May 15th; Sec. Lt. (Hon. Lt.) J D. Le Grove (Lt., W. York R.), Lt. J. P. Nickalls (Lt., R.F.A.), June 2nd; Lt W. H. S. Towell (R.N.), June 6th; Lt. N. Partridge (Lt., Manitoba R.), June 9th; Capt. F. W. I. V. Fraser, O.B.E., M.C. (Capt., Sea. Highrs.), June 12th; Sec. Lt. J. Brewster (Sec. Lt., R. Berks R.), June 13th.

Transferred to unempld. list :—Sec. Lt. J. McD. Moore, Feb. 2nd; Sec. Lt. G. H. B. Smith, Feb. 12th; Lt. R. C. Crowden, M.C., March 6th; Sec. Lt. A. A. Phillips, March 10th; Sec. Lt. H. C. Jepson, March 11th; Sec. Lt. J. W. Richards, March 18th; Sec. Lt. T. S. Gordon, Sec. Lt. H. N. Hyslop, Sec. Lt. W. S. Horne, April 1st; Lt. A. E. Ellis, April 9th; Sec. Lt. E. Munro, April 10th; Sec. Lt. J. S. Houston, April 11th; Sec. Lt. H. Howes, Sec. Lt. P. B McCowan, Sec. Lt G. A. A. Le Moine, April 13th; Sec. Lt. J. Ker, Sec Lt. J. Sayner, April 15th; Lt. H. M. Hoskins, April 16th; Sec. Lt. E. G. Hamilton, Lt. J. H. Morris, Sec. Lt. T. H. Welch, April 19th; Lt. R. H. Davison, Sec. Lt A. Galt, Sec. Lt. J. M. MacDonald, April 22nd; Sec. Lt. R. H. Hofmeyr, April 23rd; Lt. S. Jennings, April 24th; Lt. H. C. Jones, Sec. Lt. P. C. Molland (King's R.R.C.), Lt. A. Niven, April 25th; Sec. Lt. J. Morton, April 26th; Capt. J. S. Maitland, April 28th; Sec Lt. (Hon. Lt.) F R. Daniel, M.C. (R.F.A.), Lt B. Holding, April 29th; Capt. A. C. Horsbrugh, Sec. Lt. E. Jolley, April 30th; Sec. Lt. R W. Kellett, May 1st; Lt. E. A. Coghlan, Lt. G. C. Stead, May 5th; Lt. A. Buchanan, D.F.C., Lt. M. R. James, D.F.C., May 6th; Lt. E. McIver, May 7th; Sec. Lt. R. Boyle, Sec. Lt. P. W. Johnson, May 10th, Sec. Lt. D. R. Hoon, Lt. F. D. J. Silwood, May 12th; Lt. A. Howard, May 14th; Lt. H. A. W Hopson, Lt. J. K. S. Smith, May 15th; Lt. C. W. E. Browse, Sec. Lt. (Hon. Capt.) W. A. Moore, Sec. Lt. H. B. Smith, May 17th; Sec. Lt. S. Saxon, May 18th; Capt. H. Hulbert, May 19th; Sec. Lt. L. Bennett, Sec. Lt. A. E. Eastes, Lt. A. T. Glanville, Sec. Lt. S. A. Jefferd, Lt. H. O. McDonald, Sec. Lt. D. Turnbull, May 20th; Capt. H. L. Tracy, May 23rd; Capt. A. H. George (Ches. R.), Lt. S. H. Preston, May 27th; Lt. E. G. Amatt, Capt. H. H. Maddocks, M.C., Lt. H. W. Norman, May 28th; Lt. D S. Judson, Capt. W. G. McMinnies, A.F.C., May 29th; Sec. Lt. A N. Abbott, Lt. Y. H. Sowter, Sec. Lt. F. G. Wall, Lt. L. Walmsley, M.C., May 30th; Sec. Lt. I. Holliday, Lt. E. G. Latham, May 31st; Sec. Lt. C. E. J. Dingle, Sec. Lt. C. R. French, June 1st; Sec. Lt. C. Ashworth, Lt. L. C. Biddle, Sec. Lt. T. L. Elliott, Sec. Lt. M. Hinshelwood, Lt. L. W. King, Lt. R. H. Lemon, Capt. A. M. Wyatt, June 2nd; Sec Lt. E. J. Ashby. Lt. A. J. del Chopin (R.F.A., T.F.), Sec. Lt. J. C. Campbell (W. Yorks. R.), Sec. Lt. (Hon. Lt.) J. L. G. Fasham, Lt. A. G. Freeman, Lt. R. K. Wilson, June 3rd; Sec. Lt. A. W. Amson, Sec. Lt. H. J. Ashley (South Lancs. R.), Lt. T. F. Clarke, Sec. Lt. H. M. Green, Sec. Lt. T. A. Priestly, Sec. Lt. P. N. G. Whitlam, June 4th; Lt. C. H. Connab, Capt. J. E. A. Hoare, D.S.C , Lt. W. C. Mars, Lt. R. C. Purvis, Capt. A. T. Riley, June 5th; Lt. H. E. A. Reynolds, June 6th, Sec. Lt. A. E. Betts, Lt. E. J. Collins, Sec. Lt. B. T. Humphreys, Lt. H. J. Hussey, Sec. Lt. A. E. Haylett, June 7th; Lt. F. W. Knox, June 9th; Sec. Lt. T. H. Heald, June 10th; Sec. Lt. E. J. W. Addington, Sec. Lt. H. A. Gill, Sec. Lt. J. F. Houchin, Sec. Lt. H. Kellman, Lt. R. C. Kean, Capt F. J. Miller, Sec. Lt. R. N. Palmer, Sec. Lt. J. Stopford, June 11th; Lt. S. P. Ball Lt. A. S. Keep, M.C., Lt. A. G. Lambert, Sec. Lt R. W. Paulger, Sec. Lt. (Hon. Lt.) A. P. Quaife (Dorset R.), Lt. L. G. Warren, Capt. D. C. Woods, June 12th; Sec. Lt. K. J. S Boardman, Sec. Lt. W H Bruce, Lt. R. H. S. Hunter, Sec. Lt. C. P. King, Lt. C. J. Ramsbottom, Sec. Lt. V. O. Reid, Lt. M. H. Scott, Sec. Lt. R. W. G. Le Sueur, Sec. Lt. J. E. S. Tennant, Lt. A. W. Thompson, June 13th; Capt. J. P. Findlay, Sec. Lt. L. G. Green, Sec. Lt. J. F. Gourlay, Lt. C. G. Salmond, Sec. Lt. N. McL. Steeples, Sec. Lt. H. H. Thesen, June 14th; Sec Lt. R. R. Hill, Lt. W. J. M. Tomson, June 15th; Lt. E. O. Amm, Sec. Lt. C. C A Clark, Sec. Lt. J. M. S. Conning, Sec. Lt. G. W. Hockey, Sec. Lt. A. E. Mallinson, Sec. Lt. H. A. M. Miller, Lt. C. F. Straughan, Sec. Lt. N. C. Tanner, June 16th; Lt. N. C. F. Nailer, Lt. R. L. Paine, Capt. W Waugh, June 17th; Sec. Lt. G. F. Fountain, June 23rd; Capt. N. Brearley, D.S.O., M.C., A.F.C. (King's L'pool R.), Sec. Lt. G. M. Finlayson, Sec. Lt. G. R. Gibbons, June 26th.

Maj. A. D. Bell-Irving, M.C. (Gordon Highrs.) relinquishes his commn. on account of ill-health contracted on active service, June 24th.

Maj. A. C. Clarke (Capt., Welsh R.) resigns his commn. and is permitted to retain his rank, June 28th.

Maj. A. Leamon-Berry is cashiered by sentence of General Court Martial, June 6th.

The following Capts. relinquish their commns. on account of ill-health and are permitted to retain their rank :—J. E. Brewin, June 13th; L. H. F. Irving (contracted on active service), June 18th.

The following Lts. relinquish their commns. on account of ill-health and are permitted to retain their rank :—S. F. Napper, June 12th (substituted for notification in "Gazette," March 21st); L. R Sinclair (contracted on active service), June 17th; L. F. Cocks (contracted on active service), June 19th; C. W. G. Ratsey (contracted on active service), June 23rd.

The following Sec. Lts. relinquish their commns. on account of ill-health and are permitted to retain their rank :—J. R. Johnson, May 9th (substituted for notification in "Gazette," Feb. 21st); W. N. Matthews, June 10th.

Sec. Lt. A. F. V. Clark is removed the Service, May 9th.

The appointment of Sec. Lt. G. P. Kells is antedated to Aug. 26th, 1918.

The initials of Lt. G. A. Brooke are as now described, and not "G. M." as stated in "Gazette," April 29th.

The rank and initials of Sec. Lt. H. Gatfield are as now described and not "Lt. H. H. Gatfield" as stated in "Gazette," April 29th.

The initials of Lt. R. W. P. Goodwin are as now described and not as stated in "Gazette," May 2nd.

The Christian names of Lt. Harvey Allan Miller are as now described and not "Harry Allan" as stated in "Gazette," June 17th.

The Christian names of William George Edwards are as now described, and not "William Edwards," as stated in "Gazette," Aug. 6th, 1918.

The surname of T. C. Beeken is as now described, and not "Becker" as stated in "Gazette," Feb. 14th.

The surname of Lt. S. A. Oades, M.C., is as now described, and not "Oudes" as stated in "Gazette," April 29th.

The surname of Lt. P. C. Norton is as now described, and not "Morton" as stated in "Gazette," April 29th.

The surname of Sec. Lt. W. K. J. Shirlaw is as now described, and not "Shirlam" as stated in "Gazette," April 29th.

The surname of Lt. L. C. Jarrett is as now described, and not "Janett" as stated in "Gazette," May 2nd.

The surname of Lt. A. R. Browne is as now described, and not "Brown" as stated in "Gazette," April 29th.

The surname of Sec. Lt. J. J. Comerford is as now described, and not "Comerfield" as stated in "Gazette," May 6th.

The notification in "Gazette," June 6th, concerning Lt (actg. Capt.) H. C. Southerin is cancelled.

The notification in "Gazette," Feb 4th, concerning Lt. A. G. Niven is cancelled

The notification in "Gazette," April 15th, concerning Sec. Lt. W. T. Neilson is cancelled ("Gazette" notice of May 27th to stand).

ADMINISTRATIVE BRANCH.—Sec. Lt. C. E. Yates to be actg. Capt. whilst empld. as Capt., from Jan. 15th to April 30th

Capt. J. F. Hay to be graded for purposes of pay and allowances of Lt., from (S.), Jan. 8th (substituted for notification in "Gazette," Feb. 25th).

Lt. A. S. Budge to be Lt., from (K.B.), April 17th.

Lts. to be Lts. from (S.O.):—G. Verden, May 18th; (Hon. Capt.) P. V. G. Van der Byl, M.C., June 1st.

Sec. Lt. E. A. Williams to be actg. Lt. whilst empld. as Lt., from Sept. 16th, 1918 to April 30th.

Sec. Lt. J. H. Blackey to be Sec. Lt., from (A.), June 5th.

Sec. Lts. to be Sec. Lts., from (K.B.):—H. F. Turner, R. G. Smith, April 17th.

Sec. Lts. to be Sec. Lts., from (O.):—H. S. Gargett, and to be Hon. Lt., June 3rd; C. W. Clutson, June 4th.

The following are granted temp. commns. as Sec. Lts.:—W. Brown, T. G. Cemery, C. L. Helsdon, T. H. Jolley, R. N. Tomkins, H. J. Vale, June 24th

The following relinquish their commns. on ceasing to be empld.:—Sec. Lt. M. Landless (Sec. Lt., Gloster R.), April 20th, 1918; Lt. (Hon. Capt.) P. W. McLean (Capt., Sea. Highrs.), March 14th; Capt. G. A. Revington (Lt., R.N.), June 25th; Capt. G. R. Turner (Capt., E. Kent R.), June 27th.

Transferred to the unempld. list:—Lt. (Hon. Capt.) J. MacNeil, Jan. 15th; Sec. Lt. H. G. Murray, April 14th; Lt. H. V. M. Hoskins, April 22nd (substituted for notification in "Gazette," May 6th); Lt. W. Hopps, April 29th; Sec. Lt. A. J. Brown, Capt. L. C. Coates, May 1st; Lt. E. H. Hereford, May 2nd; Sec. Lt. W. S. B. Northover, May 4th; Lt. R. E. Roberts (Welsh R.), May 15th; Sec. Lt. (Hon. Capt.) R. Falcon-Cooke, May 20th; Sec. Lt. O. C. McCaw, May 22nd; Lt. K. J. B. Munro, May 30th; Sec. Lt. E. A. Burden, May 31st; Sec. Lt. S. A. V. Austin, June 1st; Sec Lt M Cooper, June 4th; Lt W D. Boehrer, June 9th; Lt. H. C. Calvert, Lt. C. D. Kirkbride, June 11th; Sec Lt. F. T. Beer, Lt. E. Hichens, Lt. C. F. J. North, June 12th; Sec. Lt. R. D. Cheveley, June 13th.

Sec. Lt. G. P. Forbes relinquishes his commn. on account of ill-health and is permitted to retain his rank, May 18th.

Sec. Lt. E. R. Tremlett to take rank and precedence as though his appointment as Sec. Lt. bore date March 26th

The initial of C. Howard (Capt. and Qtr., Gen. List) is as now described, and not "G." as stated in "Gazette," Feb. 14th

The surname of Sec. Lt. H. J. Cutler is as now described, and not "Cutter" as stated in "Gazette," April 25th.

The surname of Capt. S. Walters is as now described, and not "Watters" as stated in "Gazette," May 2nd.

The notifications in "Gazette," Aug. 16th and Nov. 29th, 1918, concerning Lt. H. Tilley (D.L.I.) are cancelled.

The notification in "Gazette," Jan. 31st, concerning Lt. J. N. Mackay is cancelled.

The notification in "Gazette," May. 13th, concerning Capt. (actg. Maj.) L. C. Coates is cancelled.

The notification in "Gazette," May 27th, concerning Sec. Lt. C. B. Dick-Clealand is cancelled

The notification in "Gazette," June 13th, concerning Sec. Lt. J. Dale is substituted for notification which appeared in "Gazette," May 27th.

TECHNICAL BRANCH.—Capt. A. Belton is to be graded for purposes of pay and allowances of Maj. whilst empld. as Maj., Grade (A) May 1st.

Capt. E. Holloway, O.B.E., to be Capt., Grade (A), from Grade (B), May 22nd.

Lt. S. W. Davies to be actg. Capt. whilst empld. as Capt., Grade (A), from Feb. 1st to April 30th

Sec. Lt. (Hon. Lt.) F. W. Day to be actg. Capt. whilst empld. as Capt., Grade (B), from July 24th, 1918, to April 30th.

Lts. to be Lts., Grade (A), from (Ad.):—Lt. A. L. C. Hartland-Rowe, Sept. 3rd, 1918 (substituted for notification in "Gazette," April 18th); Lt. D. A. Parker, June 23rd; Lt. R. Macfarlane to be Lt., Grade (B), from (Ad.), May 13th (substituted for notification in "Gazette," June 17th).

Sec. Lt. F. J. F. English to be Lt., Dec. 30th, 1918 (substituted for notification in "Gazette," Jan. 3rd).

Sec. Lt. (actg. Lt.) A. J. Macnab, M.C., to be Lt., Grade (A), June 26th, 1918.

Sec. Lts. to be Sec. Lts., Grade (A), from (Ad.):—R. Lyne, Jan. 1st; MacD. Goodall, June 13th.

Transferred to unempld. list:—Capt. G. K. G. Kerr, Feb. 2nd (substituted for notification in "Gazette," Feb. 21st): Capt. L. B. W. Jolley, March 8th; Sec. Lt. W. Neilson, April 2nd; Capt. C. G. Nevatt, April 13th; Sec. Lt. T. Hodgson, April 17th; Capt. J. Pegg, April 19th; Maj. T. B. Hornblower, April 29th; Lt. G. S. Holloway, April 30th; Capt. M. G. Jones, Lt. A. L. Jurd, May 1st; Capt. R. G. MacNaughton, May 2nd; Sec. Lt. J. A. H. Hood, Lt. G. R. Thorne, May 7th; Lt. C. J. Couchman, May 8th; Maj. G. Dixon-Spain, M.C. May 15th; Lt. J. P. Lawes, May 16th; Sec. Lt. A. E. S. Baker, May 17th; Sec. Lt. H. Chaplin, Lt. H. L. Gradon (R.N.V.R.), May 26th; Maj. A. P. Hartley, Lt. W. M. Stace, June 4th; Lt. R. H. Semmence, June 7th; Capt. S. Allenby, June 11th; Lt. (Hon. Capt.) S. Hooper, Sec. Lt. H. B. Norris, June 12th; Lt. R. C. S. Jamie, June 16th; Lt. W. S. Tapson, June 23rd, Sec. Lt. F. G. Farrell, June 26th.

Lt. C. S. Willmott relinquishes his commn. on account of ill-health, and is permitted to retain his rank, June 10th.

Lt. G. H. C. Crooke-Rogers (Lt., Worc. R.) resigns his commn., and is permitted to retain his rank, June 28th.

Lt. (actg. Capt.) R. Stephenson, D.F.C. (temp. Sec. Lt., Ches. R.), resigns his commn., and is permitted to retain the rank of Capt., June 28th.

Sec. Lt. H. J. C. White (Sec. Lt. in Army) resigns his commn., and is permitted to retain his rank, June 28th.

The rank of Lt.-Col. A. S. Hellawell, O.B.E., is as now shown, and not "Maj" as stated in "Gazette," April 4th

The Christian name of Lt. Henry Smith is as now described, and not as stated in "Gazette," March 4th.

The surname of E. G. Davison is as now described, and not E. G. Davidson as stated in "Gazette," Oct. 22nd, 1918.

The notification in "Gazette," March 5th, concerning Lt. C. A. Elliott is cancelled.

The notification in "Gazette," March 11th, concerning Sec. Lt. H. A. Creswell is cancelled.

The notification in "Gazette," May 23rd, concerning Lt. H. H. Ballard is cancelled.

CHAPLAINS BRANCH.—The Rev. A. J. N. Saunders is transferred to unempld. list, May 28th.

MEMORANDA.—Capt. E. J. Sayer, M.C., is granted the hon. rank of Maj., June 3rd.

Sec. Lt. C. F. Kearns (A. and S.) is granted the hon. rank of Lt., April 1st.

The following Overseas Cdts. are granted temp. commns. as Sec. Lts.:—60527 G. F. Evans, 171428 F. C. Miller, Feb. 15th.

Temp. Hon. Lt. S. H. Troughton relinquishes his hon. commn. on ceasing to be empld., June 16th.

Transferred to unempld. list:—Maj. J. M. Voyd, from (S.O.), May 1st; Capt. E. V. Andreini (Beds. R., T.F.), from (S.O.), May 29th; Lt. H. J. G. Newman, M.B.E., from (S.O.), May 30th; Lt. J. W. Jennings, from (S.O.), June 14th.

Lt. J. E. B. Thornely, O.B.E., relinquishes his commn. on account of ill-health contracted on active service, and is granted the rank of Maj., June 20th.

The notification in "Gazette," May 9th, concerning Sec. Lt. F. T. L. Avis is cancelled.

FROM THE COURT CIRCULAR.

BUCKINGHAM PALACE, June 26th.

The King held an Investiture in the Quadrangle of the Palace at 11 o'clock this morning.

The following were severally introduced into the presence of His Majesty, when The King invested them with the Insignia of the respective Divisions of the Orders into which they have been admitted:—

THE MOST HONOURABLE ORDER OF THE BATH (MILITARY DIVISION).—Companion.—Brig.-Gen. Philip Game, R.A.F.

THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE.—Officers.—Military Division.—Major Ion Cooke (Connaught Rangers), attd. R.A.F., Major Frank Gray, R.A.F.

His Majesty then conferred decorations as follows:—

THE MILITARY CROSS.—Lieut. Eric Forsyth, R.A.F.

The King and Queen, accompanied by the Princess Mary, honoured the Royal Naval, Military, and Air Force Tournament at Olympia with their presence this afternoon

BUCKINGHAM PALACE, June 28th.

The King held an Investiture in the Quadrangle of the Palace at 11 o'clock.

The following were severally introduced into the presence of His Majesty, when The King invested them with the Insignia of the Division of the Order into which they have been admitted:—

THE DISTINGUISHED SERVICE ORDER AND THE MILITARY CROSS AND BAR.—Major Arthur Peck, late R.A.F.

THE DISTINGUISHED SERVICE ORDER.—Major Wilfred McClaughry, Aus. F.C.; Capt. Edgar McClaughry, Aus. F.C.; Major Franks Robinson, R.A.F.

His Majesty then conferred decorations as follows:—

THE MILITARY CROSS AND BAR.—Lt. Hamilton Hervey, R.A.F.

THE MILITARY CROSS.—Major Lacey Mills (E. Surrey Regt., attd. R.A.F.).

BUCKINGHAM PALACE, June 30th.

The Prince of Wales and the Prince Albert, attended by Captain the Lord Claud N. Hamilton and Major Louis Grieg, were present at the Royal Naval, Military and Air Force Tournament at Olympia

ADMIRALTY APPOINTMENTS AND PROMOTIONS.

THE HALF-YEARLY PROMOTION LIST.

Lieut.-Commander to be Commander.—J. G. Bower, D.S.O.

* * *

The following appointments have been made:—

June 27th.—Wt. Elect.—J. Bryant, to "Furious," June 26th.

June 28th.—Payr. Lieut.—J. F. Stephens, to "Empress," in charge, June 27th.

Actg. Payr. Sub-Lieut.—R. W. Pearse, to "Vindictive," June 15th.

Payr. Mid.—E. J. Foster, to "Furious," June 25th.

OFFICIAL COMMUNIQUE.

RUSSIA (BOLSHEVIK).

June 24th.—The incursions of enemy aeroplanes have been definitely stoped by the measures adopted by us.

PERSONAL NOTICES.

NAVAL.

MARRIAGE.

KERSHAW—MARSHALL.—On June 24th, at All Saints, St. John's Wood, N.W., Major Ronald Hargrave Kershaw, R.A.F. (late Sqd. Comdr., R.N.A.S.), son of the late E. E. Kershaw, Staff Surgeon, R.N., and Mrs. Selby Hall, of Sliema, Malta, was married to Iris Claire, second daughter of Mrs. Jack Marshall, of Seacourt, Hayling Island, Hants.

BIRTHS.

BREDIN.—On June 24th, 1919, the wife of E. Chichester Bredin, R.N.A.S., of a son.

BUSS.—On June 21st, at a nursing home in London, the wife of Major H. A. Buss, O.B.E., D.S.C., of a daughter.

MILITARY.

ENGAGEMENTS.

ASHMORE—PARSONS.—The marriage of Major-General E. B. Ashmore, C.B., C.M.G., M.V.O., R.A., to Betty, daughter of the Rev. F. W. and Mrs. Parsons will take place on July 17th at Holy Trinity Church, S. Kensington.

KNIGHT—DITKOWSKI.—The marriage arranged between Captain A. Knight, M.B.E., N. Lancashire Regt., and R.A.F., and Charlotte Beatrice, only daughter of Dr. and Mrs. Ditkowski, of Paris, will take place at Brompton Oratory on Tuesday, July 8th, at 2 p.m. All friends welcome at the church or at the Hyde Park Hotel.

NORTHOVER—PAPSONS.—The engagement is announced between Captain Roland Northover, 4th Lancashire Fusiliers, late R.A.F., and Dorothy, only daughter of Mr. and Mrs. Charles Parsons, of 110, Park Street, Grosvenor Square, W.

MARRIAGE.

FAITHFULL—REYNOLDS.—A marriage has been arranged, and will take place at the Brompton Oratory at 2.30 p.m., on

Thursday, July 17th, between Major G. F. H. Faithfull, Indian Army and R.A.F., son of the Rev. A. F. Faithfull and Mrs. Faithfull, of Storrington, Sussex, and Leila, daughter of Lieut.-Colonel J. P. Reynolds and Mrs. Reynolds, of Dove Park, Woolton, Liverpool.

BIRTH.

MARSH.—On June 26th, 1919, at a nursing home in London, to Eileen, wife of the late Capt. P. E. G. Marsh, M.C., R.A.F., of Wethersfield, Essex—a daughter (posthumous).

AIR FORCE.

DEATHS.

DARE.—Cpl. Samuel Dare, R.A.F., who died on June 18th at the Central Flying School, Upavon, Wilts, was the husband of Isabel Dare, and only son of the late Samuel and Eliza Dare, of 16, Paragon Road, Hackney.

FRY.—Capt. Alfred Andrew Fry, Adjutant, 22nd Wing, R.A.F., late 3rd Monmouthshire Regiment and 2nd South Wales Borderers, died suddenly on June 27th at Vectis Villa, Wolsley Road, Esher, while on leave from France.

ENGAGEMENT.

GARSTIN—OSSORIO.—The engagement is announced between Capt. N. L. Garstin, R.A.F., son of Mr. F. C. Garstin, C.C. and R.M., Stutterheim, Cape Province, South Africa, and Maria Ossorio (Babs), only child of the late F. de P. Ossorio, of Manila, and Mrs. F. de P. Ossorio, 2, Boyne Park, Tunbridge Wells.

MARRIAGES.

EVANS—AYLING.—On June 25th, Capt. Donald Singleton Evans, R.A.F., son of Mr. and Mrs. W. H. Evans, of Buntingford, Herts., was married to Gladys Katie, daughter of the late Mr. and Mrs. Thomas Ayling, of Southsea, Hants.

TAYLOR—NAYCE.—The engagement is announced between Lieut. W. E. Taylor, R.A.F., second son of Mrs. M. Taylor, of Wondau Road, Wigram, and Millicent, eldest daughter of Mr. and Mrs. H. F. Nayce, The Sycamores, Andover.

TYSOE—FERNYHOUGH.—On June 24th, at Christ Church, Lancaster Gate, W., Donald F. Tysoe, R.A.F., was married to Ethel Milne Fernyhough.

BIRTH.

MILES.—On June 23rd, at Dalkey, co. Dublin, the wife of Lieut. J. L. Miles, R.A.F., of a son.

* * *

It is reported that the two British aviators who were forced to make a landing at Astrakhan and were made prisoners are Lieut. Ingram, R.A.F., and Lieut. Mantle, R.A.F.

THE PEACE TERMS.

The following is the full text of the Aerial and Aerial Navigation Clauses of the Peace Treaty :—

PART V.—MILITARY, NAVAL, AND AERIAL CLAUSES.

In order to render possible the initiation of a general limitation of the armaments of all nations, Germany undertakes strictly to observe the military, naval, and air clauses which follow.

SECTION III.—AIR CLAUSES.

ARTICLE 198.

The armed forces of Germany must not include any military or naval air forces.

Germany may, during a period not extending beyond October 1st, 1919, maintain a maximum number of one hundred seaplanes or flying boats, which shall be exclusively employed in searching for submarine mines, shall be furnished with the necessary equipment for this purpose, and shall in no case carry arms, munitions, or bombs of any nature whatever.

In addition to the engines installed in the seaplanes or flying boats above mentioned, one spare engine may be provided for each engine of each of these craft.

No dirigible shall be kept.

ARTICLE 199.

Within two months from the coming into force of the present Treaty the personnel of the air forces on the rolls of the German land and sea forces shall be demobilised. Up to October 1st, 1919, however, Germany may keep and maintain a total number of one thousand men, including officers, for the whole of the cadres and personnel, flying and non-flying, of all formations and establishments.

ARTICLE 200.

Until the complete evacuation of German territory by the Allied and Associated troops, the aircraft of the Allied and Associated Powers shall enjoy in Germany freedom of passage through the air, freedom of transit and of landing.

ARTICLE 201.

During the six months following the coming into force of the present Treaty, the manufacture and importation of aircraft, parts of aircraft, engines for aircraft, and parts of engines for aircraft, shall be forbidden in all German territory.

ARTICLE 202.

On the coming into force of the present Treaty, all military and naval aeronautical material, except the machines mentioned in the second and third paragraphs of Article 198, must be delivered to the Governments of the Principal Allied and Associated Powers.

Delivery must be effected at such places as the said Governments may select, and must be completed within three months.

In particular, this material will include all items under the following heads which are or have been in use or were designed for warlike purposes :—

Complete aeroplanes and seaplanes, as well as those being manufactured, repaired or assembled.

Dirigibles able to take the air, being manufactured, repaired or assembled.

Plant for the manufacture of hydrogen.

Dirigible sheds and shelters of every kind for aircraft.

Pending their delivery, dirigibles will, at the expense of Germany, be maintained inflated with hydrogen; the plant for the manufacture of hydrogen, as well as the sheds for dirigibles, may, at the discretion of the said Powers, be left to Germany until the time when the dirigibles are handed over.

Engines for aircraft.

Nacelles and fuselages.

Armament (guns, machine guns, light machine guns, bomb-dropping apparatus, torpedo-dropping apparatus, synchronisation apparatus, aiming apparatus).

Munitions (cartridges, shells, bombs loaded or unloaded, stocks of explosives or of material for their manufacture).

Instruments for use on aircraft.

Wireless apparatus and photographic or cinematograph apparatus for use on aircraft.

Component parts of any of the items under the preceding heads.

The material referred to above shall not be removed without special permission from the said Government.

PART XI.—AERIAL NAVIGATION.

ARTICLE 313.

The aircraft of the Allied and Associated Powers shall have full liberty of passage and landing over and in the territory and territorial waters of Germany, and shall enjoy the same privileges as German aircraft, particularly in case of distress by land or sea.

ARTICLE 314.

The aircraft of the Allied and Associated Powers shall, while in transit to any foreign country whatever, enjoy the right of flying over the territory and territorial waters

of Germany without landing, subject always to any regulations which may be made by Germany, and which shall be applicable equally to the aircraft of Germany and to those of the Allied and Associated countries.

ARTICLE 315.

All aerodromes in Germany open to national public traffic shall be open for the aircraft of the Allied and Associated Powers, and in any such aerodrome such aircraft shall be treated on a footing of equality with German aircraft as regards charges of every description, including charges for landing and accommodation.

ARTICLE 316.

Subject to the present provisions, the rights of passage, transit and landing, provided for in Articles 313, 314, and 315, are subject to the observance of such regulations as Germany may consider it necessary to enact, but such regulations shall be applied without distinction to German aircraft and to those of the Allied and Associated countries.

ARTICLE 317.

Certificates of nationality, airworthiness, or competency, and licences, issued or recognised as valid by any of the Allied or Associated Powers, shall be recognised in Germany as valid and as equivalent to the certificates and licences issued by Germany.

ARTICLE 318.

As regards internal commercial air traffic, the aircraft of the Allied and Associated Powers shall enjoy in Germany most favoured nation treatment.

ARTICLE 319.

Germany undertakes to enforce the necessary measures to ensure that all German aircraft flying over her territory shall comply with the Rules as to lights and signals, Rules of the Air and Rules for Air Traffic on and in the neighbourhood of aerodromes, which have been laid down in the Convention relative to Aerial Navigation concluded between the Allied and Associated Powers.

ARTICLE 320.

The obligations imposed by the preceding provisions shall remain in force until January 1st, 1923, unless before that date Germany shall have been admitted into the League of Nations or shall have been authorised, by consent of the Allied and Associated Powers, to adhere to the Convention relative to Aerial Navigation concluded between those Powers.

THE ROYAL NAVAL, MILITARY, AND AIR FORCE TOURNAMENT.

The Royal Naval and Military Tournament of former years is revived this year, and owing to the progress of aviation, is known as the Royal Naval, Military, and Air Force Tournament. It is open at Olympia every afternoon and evening from June 26th to July 12th.

The Army are the people who can and do perform most of the events, for they are in their element on the ground, and for their biggest shows, so far as scenery goes, only require a certain amount of wood and coloured canvas, with the addition of a "jazz orchestra" performing on old tins and pieces of corrugated iron.

The Navy are not so lucky, for they cannot bring their ships with them, but they can bring their guns, and make a noise, and with the Marines, can drill and show how they make raids on enemy coasts and such small wars.

THE R.A.F.'S PART.

Something more than drilling and groundwork is expected of the R.A.F., but they are more handicapped still, for to attempt to fly in Olympia would be very bad for the illuminations thereof, and also probably for the machine, not to mention the pilot.

The only possible interesting thing to do is to assemble and dissemble a machine, and that is what is done this year, although a little story is woven round it in the programme, viz. :—

ROYAL AIR FORCE.

AFTERNOON DISPLAY.—An Aeroplane is proceeding by road; orders are received for the machine to reconnoitre.

For this display a machine is brought into the arena packed on a float. The machine is erected and prepared for flight. Immediately it is ready for flight an orderly arrives with fresh instructions that the machine is to proceed at once by road to another aerodrome.—[Truly artistic verisimilitude.—Ed]. These instructions are carried out by dismantling and packing the machine ready to move off to its new destination.

EVENING DISPLAY.—The arena is in darkness; a hostile machine is located crashed near a French village. The workshop lorry and transport lorry arrive and dismantle the machine. Ambulance party also arrives to attend to the injured pilot.

In this display the salvage party are working under light provided by the workshop lorry; and, having dismantled the machine, it is loaded on to the transport lorry ready for departure.

THE 2.30 P.M. R.A.F. SHOW.

In the Afternoon Display, two heavy lorries lumber into the arena, each complete with a Sopwith "pup" fuselage with detached wings. One "pup" is painted white, and the other a brown and white check. In each case a serjeant assisted by four men and two W.R.A.Fs. proceed to wheel the machine off the lorry and then attach the wings with tremendous speed, and succeed in making the machine look like a Camel, as the struts are not lengthy enough to give any dihedral to the top plane.

Whilst the wings are being attached, the pilot, knowing he will not have to fly the machine, or to illustrate the usual carelessness shown by most pilots, gets aboard in complete flying kit without inspecting the machine.

The engine is then run up and successfully fires on about three cylinders, the pilot taking great care not to accelerate it above 500 r.p.m., apparently in case the wings should be blown off.

The machine is then dissembled, although not in the quickest way, which would be to attempt to fly it, but in the orthodox fashion by serjeant and mechanics (male and female).

It is then pushed back into the lorry and away they go.

THE 8 P.M. R.A.F. SHOW AND THE REST.

The evening performance is more thrilling owing to the darkness, and is also more realistic, perhaps owing to the darkness; besides an injured pilot, although a Hun for the purpose of the story, must appeal to those people who go to aerodromes, not to see the flying—but in order that they may not miss a crash in case one occurs.

The attempt is a good one, but displays many weak points, which would hardly be noticed by the general public, to whom the sight of an aeroplane at close quarters on the ground still gives a thrill; also if the engine is run up and they see the wheels go round they expect it to take off immediately.

The rest of the Tournament is quite usual, numbers of horses, gorgeous displays of uniform and much noise, and one pays to see exactly what one does see. The tanks are an innovation and cause much interest. The "Attack" is the grand finale, explosions all over the trenches, clouds of smoke, tanks and infantry firing in all directions; in fact, so much noise, that there might almost be a war on.—G. L. D.

RESULTS.

Among the competitions held during the afternoon of June 26th was a series of tugs-of-war between Navy, Army, and Air Force teams, resulted as follows :—

Railway Construction Troops, R.E., beat No. 2 (N) A.R.D., R.A.F.

Headquarters, E.R.S., R.A.F., beat R.N. Barracks, Chatham.

3rd Group, R.A.F., beat team from British troops in France.

No. 1 S, A.R.D., R.A.F., beat 3rd West Yorks Regiment.

On June 27th, in the tug-of-war, No. 1 (S) A.R.D., R.A.F., was scratched.

On June 28th, the following in the tug-of-war (110 stone) 3rd Batt. Leinster Regt. beat 3rd Group R.A.F. by two pulls to nil.

On June 30th the 1st Irish Guards beat No. 1 Co. A.R.D. R.A.F., by two pulls to nil in the Tug-of-War.

THE CANADIAN AIR BOARD

A Canadian Air Board has been appointed to control all civil and commercial flying in the Dominion.

Mr. A. L. Sifton, Minister of Customs, is Chairman, and General Mewburn, Minister of Militia, and Mr. C. C. Ballantyne, Minister for Naval Affairs, are members. Lieut.-Colonel Biggar is Vice-Chairman. Dr. Coulter, Deputy Postmaster-General is a member of the Board, which seems to indicate the possibilities of a Canadian aerial mail in the near future.

ZEPPELINS AGAIN.

It is rumoured that a Zeppelin airship has been shot down by Esthonian troops. Documents found upon the bodies of the crew are stated to have proved that soldiers of the German "Iron Division" are fighting with the Landswehr.

THE BROCK BULLET.

Among the claims before the War Inventions Commission on June 30th, was that of the widow of the late Commander Brock, R.N.A.S., for compensation in respect of the bullet invented by her husband. This bullet as is well known, was instrumental in the destruction of the majority of enemy airships brought down in England.

AIR RAIDS ON LONDON.

On June 27th, Colonel H. de Watteville delivered a lecture on "London Air Raids" at the annual meeting of the London Topographical Society, held in the rooms of the Society of Antiquaries at Burlington House. The Earl of Kerry was in the chair.

Colonel de Watteville said there was no doubt that long before the war the Germans had made up their minds that the new air-arm was to be a decisive factor in it. The airship was being developed as a counterblast to sea supremacy, but the technical difficulties at the outset of the war had not been overcome to the extent which enthusiasts had desired.

The German Army had then a greater number of Zeppelins than had the German Navy, but five of them came to grief in the early weeks, and the naval airships were then brought forth. During the war some 120 great airships had been constructed by the Germans, but out of that total there were never more than twelve or sixteen ready to take the air at one time.

Dealing with the German naval airships, he said that wireless telegraphy played a considerable part in their navigation. There were some officers in London who knew half an hour before the airships left their sheds in Germany that a raid was to be made on these shores.

The lecturer described the failure of the German military airships based on Belgium, but remarked that the German naval air service was of stiffer metal. Larger airships which would rise to higher altitudes were constructed, and attacks were made on England and on London.

They were, however, met with more effective defensive methods, and the bringing down of the Zeppelin at Cuffley by Capt. Leefe Robinson proved to be the moral turning-point of the air attacks on London by airships. It was witnessed by ten other raiders, and the sight of the burning airship dropping to earth was too much for them.

With the bringing down at Potter's Bar of Commander Matthi, who was a marvellously clever navigator, the sting was taken out of the attack on London.

Colonel de Watteville repudiated the suggestion that the amount of damage done in these raids was suppressed. "Our communiqués of the damage done by the airship raids were absolutely correct," he said. "Every single casualty and every single bit of damage that was done by a German raider throughout the war was recorded."

Some of the airship commanders boasted when they returned to Germany of their exploits in "bombing London," when, in fact, they had never reached it. One, by name Buttlar, had lectured in Germany about his fine attacks on London, and also had written a book. His airship had never been nearer it than forty miles.

Colonel de Watteville also described the aeroplane raids on London from their bases in Belgium. It was still a mystery to him why the Germans did not collect their best pilots to raid it, after some of the demoralisation produced in the east of London in 1917. But both airships and aeropalnes had been defeated. Illustrations were shown on the screen giving the courses taken by aircraft in raiding London. In one case Colonel de Watteville said two enemy airships, entering the country at different points, almost came into collision near London.

R.A.F. OFFICERS CHARGED.

A verdict of guilty was returned by the jury at Middlesex Sessions on June 24th in the case of the two R.A.F. officers, Lieut. Charles Hankey and Lieut. Charles Joseph Young, who were charged with selling property belonging to the Government. William John Twigg and Thomas Oswin, motor engineers, of Hampton, were found guilty of receiving the property.

It was alleged that when left to superintend the transfer of certain stores from Hurst Park to other depots, Lieut. Hankey sold a pair of lorry wheels and magneto parts to Oswin for £20, and 10 barrels of lubricating oil for £40 to Twigg, and also other accessories to Twigg for £15.

Lieut. Hankey, who gave evidence, said that he honestly believed he had a right to sell the goods, and it was his intention to hand over the money he received to the Air Ministry, but he was arrested before he could do this.

In the case of the two officers, Mr. Sharpe said it was a most painful sentence that he had to pass. Both the accused were in positions of trust. He ordered Lieut. Hankey, who was the superior officer at Hurst Park, to prison for 12 months, and Lieut. Young to prison for nine months, both in the second division. It was stated that both officers would, as a result of the conviction, lose a considerable gratuity each.

ONE RESULT OF PEACE.

During the night of Saturday, June 28th, the searchlight station on the summit of Parliament Hill, Highgate, was destroyed by fire caused by a bonfire celebrating the announcement of the signing of the Peace Treaty being lighted too near the wooden fencing. Four fire engines were promptly on the scene, but the following morning the place was a complete wreck.

MORE GRIEVANCES OF CADETS.

Sir,—I have read for the last few months, with great interest, your "Cadets' Grievances," and see no reason why my case shouldn't be brought to light.

I was personally introduced to Major —— at the "Cecil" early in 1917, and, as a result, was accepted for service as a cadet in the R.F.C.

I received my papers calling me up for August, 1917, ordering me to proceed to Farnborough. I was there about a fortnight and was then sent with the first batch of cadets that were sent to No. 1 Wing at St. Leonards. Eventually, I was sent to the "Cecil" for my medical examination, and was passed as an observer. A fortnight later, together with the others, who were passed as observers, I was sent to No. 5 Wing at Wendover, and we were told that we had been sent there to wait until we were 19. A month later the whole Wing was removed to Hastings, and there all the observers were kept until February, 1918, when we were sent for another "Air Board," this time at Hampstead. With several others I was passed as a pilot, and after another month was sent to the S. of M.A. at Oxford.

You will see that instead of a six weeks' course at Hastings, I had six months'.

I arrived at Oxford to see the last lot of cadets given their commissions. After passing the examination there, I was sent to the School of Armament at Uxbridge, and under the new Air Force arrangement, after passing the examination there, I was made a Flight Cadet "A," and posted to an aerodrome.

For an instructor I was given an "old woman"—one always nervous about getting his pupils off solo—and when I was ready to get off myself, the aerodrome was closed down, and the instructors and pupils sent to another one, and some time had elapsed before we could do any more flying, which meant starting again. This was near the end of July.

This aerodrome was full, with new pupils always arriving, so there was a continual shortage of machines, with the result that when the Armistice was signed I had just passed Category "A," and managed to get on Scouts.

Shortly afterwards the aerodrome was condemned, and flying ceased, and in time we were all drafted off to other aerodromes, there to be demobilised without any chance to do any flying, however eager one was.

I suppose, being English, I shall, with many others, just have to tolerate ie—with several big unpaid clothing bills. I would certainly rather do this than go whining to those whose influence got me into the Air Service, or ask the Air Ministry to look into my case, even though I know that if I had gone into the Infantry I should probably have had my commission from some time past, and now have a decent-sized gratuity to look forward to, as well as knowing my clothing bills were paid.

I am a Public School fellow, and unhappily, much as I tried before I was 18 to join up and get overseas, I was unsuccessful, and now, thanks to the Air Force, I cannot boast of any service overseas.

Surely there must be some Englishman of position who is ready to take up such cases and get things fixed for us in some way or other—either by getting us gazetted as officers, with so many days' pay and clothing allowance, or at least an officer's gratuity.

"HARD-TOUCHED CADET."

FIRST TRIP OF DUTCH SEAPLANES.

Seaplane and flying-boat flights between England and Holland are becoming relatively common, and on several occasions recently Dutch official visitors have chosen the aerial route as speediest and most convenient.

In each case previously it has been British machines which have been provided for such passengers—notably in the case of the Dutch Aviation Mission which made the return journey in British flying-boats. Recently, however, Dutch seaplanes made the flight for the first time to British shores, arriving at Felixstowe for the purpose of taking back to Holland two Dutch medical officers who had been visiting this country to investigate the British system of medical examination of pilots.

On the return journey as neither of the Dutch seaplanes—two-seater float machines of the Friedrichshafen type—were equipped with wireless, a British F.5 flying-boat with two Eagle VIII Rolls-Royce engines was detailed to escort them as far as Scheveningen. At this place the Dutch seaplanes turned inland and following the canals reached Amsterdam where they alighted safely, while the British machine returned to Felixstowe. Both the out and return journeys occupied 1 hour and 55 minutes, and throughout the whole trip the F.5 was in wireless communication with its base at Felixstowe.

FRENCH LONG-DISTANCE FLIGHTS.

The French Aeronautical Department has arranged for a series of long-distance flights to be made by war pilots over various capitals. London, Madrid, Constantinople, Prague, Warsaw, Vienna, Brussels, Amsterdam, and Cairo (*via* Constantinople) are included. Trips will also be made to Tunis, Algiers, and Dakar (West Africa).

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ON R 34.

A full account of the voyage of R.34 from Edinburgh to New York will be found in the later pages of this paper, where Brigadier-General Maitland's log is given in full, together with a complete record of the signals made by the ship during her voyage. Meantime the feat calls for a certain amount of editorial comment.

In the first place all writers on the subject seem to have forgotten how much of the success of R.34 is due to the pioneers of airship work in this country. The impression seems to exist that airships have been developed entirely during the war. As a matter of fact very much good work was done long before the war.

Much as we all admire the industry and the engineering ability of those who produced the excellent Zeppelin airships, of which R.33 and R.34 are frequently supposed to be merely very good copies, it must not be forgotten that the Zeppelins themselves owed much to British experiments. At a time when the Zeppelins were ugly slab-sided, ill-shaped craft, we in this country produced, at the Vickers works at Barrow, a ship which was of good streamline shape, with symmetrical rudders, elevators, and fins, very like the Zeppelins of six or seven years later.

This ship, which was jestingly nicknamed the "Mayfly," was a failure because of structural weaknesses due to sheer inexperience, but if those responsible for the ship had had money placed at their disposal, as had the makers of the Zeppelins, there can be no doubt that by the outbreak of war our airships would have been as far in advance of the German craft as were our Trade-designed aeroplanes in advance of German aeroplanes. As in all our other preparations for war, our airships suffered from the meanness of self-seeking politicians, and we paid in blood during the war for the money we saved before the war.

The Pioneers of Rigid Airships.

The men to whom the credit is due for what was good in that early ship were Captain Murray Sueter, R.N., Commanders Masterman and Schwann, R.N., Lieuts. Boothby and Neville Usborne, R.N., and Engineer-Lieut. Randall, R.N.

Captain Sueter, who became, later, a Commodore and a C.B., never lost his faith in airships, but, as Director of the Air Department at the Admiralty, being limited as to the money he could spend and being extraordinarily far-sighted, he, in association with Mr. Winston Churchill, spent what money was available in building many aeroplanes and seaplanes instead of one or two big airships, and thereby saved the British Aircraft Industry from extinction, thus saving the Royal Flying Corps in the Field at its most critical periods, and so saving the British Army from heavy losses. To him, in his retirement we as a nation owe a deep debt of gratitude for his work in helping us to our present position as the leading Air Power, both in airships and aeroplanes.

Commander Masterman became Brigadier-General, R.A.F., and was given a C.B.E. and an A.F.C. for airship work. Commander Schwann became Brigadier-General Swann, C.B., R.A.F., and did much excellent seaplane work, besides being for a period Deputy Chief of the Air Staff.

Lieut. Usborne was killed in a combined aeroplane and airship accident about half-way through the war, and Engineer-Lieut. Randall is lost somewhere in the wilderness of the R.A.F. Lieut. Boothby, now Lieut.-Col. R.A.F., has remained faithful to airships, and has done much valuable work during the war, both in training personnel and in experimenting with airships, to assist the airship section of the R.A.F. in attaining success. One regrets that he, as the sole pioneer of British rigid airships who is an active airship officer, had not the reward of commanding R.34 on her historic voyage. None the less he has the satisfaction of seeing his life's work crowned with success, and of being justified in his faith.

Another Pioneer.

The senior officer on board R.34, Brig.-General E. M. Maitland, C.M.G., D.S.O., though not one of the pioneers of rigid airships, is at any rate a pioneer of British aeronautics, for one first met him when he was making strenuous efforts to induce a Voisin biplane to fly at Doncaster in 1909, and long before that he was an ardent balloonist. He continued to experiment with aeroplanes, and in 1910 or 1911 he smashed both his ankles in a crash with a machine of his own.

Not at all disheartened, he continued to fly, and joined the R.F.C. at its formation, being then a Captain in the Essex Regiment. Eventually he took his aeroplane pilot's certificate in France. Then he transferred to the little non-rigid Army airships, and commanded No. 1 Squadron R.F.C. (Airships and Balloons) at Farnborough until the Navy took over the airships, when he transferred, along with several other Army officers, to the service of the Admiralty.

While serving with the Army airships he acquired the distinction of being the first person to leave a moving airship by parachute. Later on he became the chief apostle of parachutes in this country, and it is to his determination in preaching parachutes and his continual personal demonstrations of their reliability and utility that many of our officers and men owe their lives to-day. And, but for the obtuseness and obstinacy of those who refused to fit parachutes to aeroplanes, in spite of General Maitland's advocacy, many other lives might have been saved during the war.

General Maitland, then a Wing-Commander R.N.A.S., was also responsible—jointly with Lieut.-Colonel (then Squadron-Commander) DelaCombe—for the introduction of kite-balloons to the British Navy and Army. Some day one will tell the whole of the story of that introduction, which is one of the funniest of the whole war, but meantime it may be accepted as history that but for General Maitland's appreciation of the military possibilities of K.Bs. and Colonel DelaCombe's appreciation of their naval possibilities, and their ability in overcoming obstructionists in both Services, we should have remained for a very long time without those useful if inelegant aids to war.

For a long time General Maitland was in charge of all K.B. work for the R.N.A.S., but eventually he came back to airships as such. To-day he is Director of Airship Equipment, a post which, if not quite big enough to give his ability full scope, does at any rate assure that some of his knowledge is turned to good account.

His presence on R.34 as representative of the Air Ministry is eminently satisfactory, for if not one of the pioneers of rigid ships he is at least in the direct apostolic succession, and is a pioneer.

Congratulations.

One has not the honour of knowing any of the operating crew of the ship, so one cannot write of their Service records, but their selection for the voyage is a guarantee of their experience and their success is proof of their ability. To Major Scott, as skipper, one offers the heartiest congratulations on having commanded the first airship to cross between the Old and New Worlds.

Also one congratulates Major Pritchard on being the first to set foot on American soil after arriving by air from Europe. One hopes that these officers and the whole crew of R.34—including the stowaway—will be suitably decorated on their return to England.

Some Minor Reflections.

It is true that R.34 was only some 6 hours faster from shore to shore than the record voyage of the s.s. "Aquitania," and one believes that she was considerably slower than the super-battle-cruiser (said to be "Glorious") which took Mr. Balfour to America in 1917, and is reported to have done the journey from Queenstown to Sandy Hook and back inside six days. But it must be remembered that the whole journey was an experiment, and no risks were taken. It was better to go slow and get there than to drive all out through whatever weather might occur and risk running the engines to death or shaking the ship to pieces. Now that the trip has been done, other airships can start going for trans-Atlantic records, as the steamships did.

Also it is a fact that the distance covered was very much less than that covered by the Zeppelin which flew from Bulgaria to a point far south of Khartoum and back, in November, 1917. The time spent in the air by R.34 was also, apparently, less. But here again the whole trip was an experiment, and North Atlantic weather in July is less settled than North African weather in November.

Future Developments.

With further experience the speed of the airship will become higher and higher, and its range will become longer and longer, till it becomes the recognised vehicle for high-speed, long-range passenger transport. It will probably be true always that the speed of the fastest aeroplane will be double that of the fastest airship, but when the airship attains a speed of 100 miles an hour it will be fast enough for practical purposes, and it will have the advantage as a load-carrier.

At an early date one proposes to publish a Special Airship Issue of The Aeroplane and to give therein as much information as is available concerning the world's airships. It will there be shown that the airship is a much more practical vehicle than many people think. Meantime it may be taken that the voyage of R.34 is merely a demonstration to the populace of the future possibilities of airships. One congratulates the officers and crew of the ship again on the success of their demonstration.—C. G. G.

PEACE CELEBRATIONS.

The Air Ministry made the following announcement on July 3rd:

In order to prevent useless applications and to avoid disappointment it is made known that it will not be possible to permit Service aircraft to be lent for the purpose of giving exhibition flights during the Peace and other celebrations.

A SUCCESSFUL WAR CHARITY.

The Royal Air Force Aid Committee and R.A.F. Prisoners Fund, which has Lady Henderson, D.B.E., for its President and Chairman, has issued its final report, of which the following is a brief resumé.

Lady Henderson began this work on Oct 9th, 1914, and immediately raised £9,000, which sum was expended upon small necessities for every man in each squadron in France, until those articles could be bought at canteens, when the C.Os. of the squadrons requisitioned comforts in bulk.

Hundreds of flying suits and goloshes were sent out during the first winter, and mackintoshes, gum boots and oilskins were dispatched, until they became a Government issue.

The following statistics show the articles sent during the war to all Fronts:—

4,000 books, 5,700 Cardigans, 615 footballs, 5,000 games, 160 gramophones, 1,000 records, 5,160 gum boots, 26,250 handkerchiefs, 6,800 helmets, 9,500 mittens and gloves, 11,800 mufflers, 6,550 oilskins, 850 shirts and vests, 202,335 small parcels, 70,000 socks, and 15,000 sundry articles.

Early in 1915 "first capture" food parcels were sent to each R.A.F. prisoner. In many cases relations of prisoners asked the Committee to buy the food and send out parcels. This led to the institution of a department where inquiries about the missing could be made. Clothing, supplied by the War Office, and food parcels, were sent to all N.C.Os. and men prisoners

In October, 1914, a Fund was inaugurated by Mrs. Sueter for supplying comforts for the men of the Royal Naval Air Service, and for three and a half years the ratings at all the R.N.A.S. Stations, both at Home and abroad, were provided with warm garments, books, games, gramophones, cigarettes, etc., about 200,000 articles being distributed. On the amalgamation of the two Flying Services, it was thought advisable that there should be only one joint Fund for dispensing Comforts; so in June, 1918, the R.N.A.S. Comforts Fund combined with the R.A.F. Aid Committee.

AIR MINISTRY WEATHER BULLETINS.

The Air Ministry issued the following on July 3rd:—

An interesting testimony to the accuracy of the official bulletins, compiled by the Air Ministry, of the weather conditions along the Atlantic course, is furnished by a comparison of the Air Ministry weather charts with those which were formulated independently by the United States Navy in conjunction with the flight of the N.C. Flying-boats to Europe.

Considering the size of the Atlantic and the small number of weather observations received, it might have been expected that there would be considerable differences between the two sets of charts. This, however, has not been the case; in fact, the close agreement obtained is extraordinary.

This result is equally gratifying to the Air Ministry and U.S. Navy forecasters, and it is all the more noteworthy when it is realised that the amount of information at the disposal of the Air Ministry was much less than that available to the U.S. Navy from the fleet of destroyers and battle ships engaged in the operations involved in the U.S. trans-Atlantic flight.

It should be understood, so far as the Atlantic area was concerned that in the case of the Air Ministry, the information on which the bulletins were based was obtained gratuitously, through the Marconi Wireless Telegraphy Company, from the reports of liners and cargo ships, and these observations were at times inclined to be erratic and incompiete, whilst the U.S. meteorologists had the benefit of data obtained from warships provided primarily for the purpose. Observations of the weather on both sides of the Atlantic had also to be taken into consideration, and this information was available both to the Air Ministry and to the U.S. Authorities.

The results secured by the Air Ministry indicate that trained meteorologists can in most cases give as accurate information of the Atlantic weather from reliable weather reports received from merchant vessels and liners as from those received from a string of destroyers. The future of civil aviation will undoubtedly see a great development of this system of obtaining observations for the compilation of weather reports.

THE PORTRAIT SUPPLEMENT.

No doubt, many readers of this paper will wish to purchase copies of the photograph of General Trenchard which appears in this issue of The Aeroplane. Inquiries as to prices should be sent (together with an intimation as to the size of photograph required) to the owners of the copyright, Messrs. J. Russell and Sons, 51, Baker Street, W.1.



MAJOR-GENERAL SIR HUGH MONTAGUE TRENCHARD, K.C.B., D.S.O.,
Chief of the Air Staff.

The WORLD of AERONAUTICS

NEWS OF THE WEEK FROM ALL QUARTERS

An American Bolo.

The aircraft industry of America is clamouring for a consolidated Air Service and an Air Ministry on the British lines.

Now that the war is over perhaps no very great harm would be done.

Official News.

Major-General the Right Hon. J. E. B. Seely, C.B., C.M.G., D.S.O., M.P., Under Secretary of State for the Air, contributed an article to the "Times" of July 4th. It is 16 inches in length, and it states that "America was the first birthplace of practical flight." One regrets that its second birthplace is not mentioned.

The Gentlemanly Thing.

The following letter appeared in the June issue of the "Chloride Chronicle." One believes it is to be taken with a little chloride of sodium :—

Dear Sir,—I am always anxious to do the gentlemanly thing, but, though I have looked through quite a number of books on "Etiquette," I cannot find anything about flying, which is what I am worried about, and I hope you won't mind my asking your advice.

I am dead keen on flying, and have saved up two guineas which is the lowest price for a flight at Hendon (no reduction for children). It has taken me ages to do it, but I don't grudge the money. The awkward part is I have just got the exact sum, and I wonder if you are supposed to give the pilot sixpence for himself like you do a taxi? That would mean waiting a little longer—perhaps a week—but I want to do the proper thing, especially if it's Grahame-White.—Yours, etc., G. I.

P.S.—All the same, I don't see how it could make any difference to the sort of flight they gave you, because the aviator wouldn't know what he was going to get till he had landed—would he?

London's Pride.

According to the "Daily Telegraph" of July 4th, at the meeting of the Westminster City Council, it was decided to erect tablets at places which were struck by bombs in air raids during the war. There are nineteen such places in the Westminster area, and according to a police return seventy-eight people were killed and 167 injured in this district during hostile air raids. The tablets will be fixed subject to the consent of the owners and occupiers of the properties affected. The cost of the tablets will be £266. Chelsea is the only other borough council affected which is in sympathy with the proposal, as Hammersmith, whilst in favour, had the agreeable fact to record that no bombs fell within the borough area. Nine other borough councils were not in favour of the proposal—Bermondsey, Camberwell, Deptford, Lambeth, St. Pancras, Shoreditch, Southwark, Wandsworth, and Woolwich. From the other seventeen borough councils and the Corporation of London no replies were received. One of the members of the council, whose house was among those struck, said he was opposed to the proposal, which he regarded as a waste of public money. The members in favour of the proposal numbered eighteen, and eleven voted against."

One presumes that it will be a great joy to those who gained honour and wealth by evading service to show these tablets to their offspring who ask: "What did you do in the great war, daddy?" They will then be able to boast that though the bombs rained down on London they refused to leave their indispensable labour of inserting currants into buns for the troops in order that they might escape to the comparative safety of the sheltered trenches in France.

One recalls that after the execution of the Spanish fleet by the American Navy at Santiago the United States men-o'-war placed commemorative tablets over the sparsely-scattered shell holes in their hulls, an idea almost as grotesque as it would be to suggest that soldiers should wear an engraved plaque over such portions of their anatomies as had been injured in the war.

The Secrets of Success.

According to the "Times" :—

"One thing is beyond doubt and that is that commercial flying should flourish in America or nowhere at all; for the country in size and shape and terrain and distribution of population favours it to a high degree."

Whereas in this country endless fuss is caused by the aerial transport of dogs.

A Useful Warning.

The members of a certain Club where aviators do greatly congregate are notorious for the speed of their driving and for their careless habit of leaving cars about the street. The Secretary has, therefore, found it necessary to issue a warning, the final sentence of which announces that a member has recently been summoned "for leaving his car on the front of a house," which is not part of the Club's premises.

One has visions of the speed which, despite the best efforts of the brakes, resulted in a car plastering itself successfully on the front of a house like a squashed fly on a wall, and one rejoices that the driver survived to be summoned. These aviators are remarkably hard to kill.

Definitions.

The American "Aerial Age" is funniest as a rule when its humour is unintentional, but the following definitions have some merit :—

A designer is a bunch of erroneous ideas surrounded by the boss.

A data book is a collection of information nobody uses.

Tracing cloth is made to take the high spots of ink erasers.

A checker is a pessimist with a blue pencil, chronic indigestion, and no conscience, who spends his time trying to figure out the other way of doing everything.

The chief is a lucky dog, who holds his job by taking credit for the ideas of his designer.

Not a Good Comparison.

An article which most people will skip eagerly has appeared in an American paper dealing with the future of commercial aviation. The writer thinks that the "air industry" should raise the cry: "Don't ride, Fly," thus adopting the advertising methods of the telephone companies whose slogan has been "Don't write. Phone."

But since the telephones in this country became a State monopoly the injunction "Don't write. Phone" is so often disregarded by people who are in a hurry that the comparison is not a favourable one.

Sea Bathing from Aeroplanes.

According to the Liverpool "Journal of Commerce," "it appears that for commercial purposes large rigid airship stations should be established at distances of 2,000-3,000 miles apart, mainly for trans-oceanic traffic, while the aeroplane would be used for brining passengers. . . ."

But would passengers pay to be brined? Would they not prefer the old-fashioned bathing machine?

An "R.A.F. Soldier's" Revenge.

When an R.A.F. soldier was remanded at North London on Saturday on a charge of damaging a taxicab, the magistrate gave a little advice to the driver.

"Just a word of advice. If you drive a taxicab always be civil to those who wish to hire you. Of course, I know you will never stop if signalled to in the streets, but do not pass by rudely. Do it gently—a smile and a wave of the hand."

One's entire sympathy is with the "R.A.F. soldier," though this is the first time one has heard of the new rating. In future when this taxi driver is smiling and waving his hand at an "R.A.F. soldier," and consequently runs over a staff colonel, one trusts that he will raise his cap in honour of the dead.

Highly-Organised Apathy.

It is announced that 6,527 cars and lorries and 5,282 motorcycles have been removed from Kempton Park since May 28th, and that the scandal of all these vehicles being allowed to rust in peace has come to an end. The work was carried out by a handful of civilians, after it had proved too heavy a task to be dealt with by the vast resources of highly-organised apathy of the military authorities.

A Scandal.

According to the "Daily Express" of July 4th :—"A new feature of Paris life is the aerial sandwichman. A great biplane came swooping out of the skies yesterday between heavy showers of rain, and, flying very low, dropped circulars advertising somebody's new patent fire-extinguisher. The paper drifted down like multi-coloured snowflakes, and, although the nursemaids were scared, children left their games to pick them up." One does not know what an aerial sandwichman may be, but when nursemaids are so frightened that they fall fainting to the ground and their infant charges have to pick them up really one feels that this sort of thing ought to be stopped.

The WORLD of AERONAUTICS (continued)

Summer Fashions in the R.A.F.

The "Daily Mail" understands "that a new full dress uniform for the R.A.F. is under consideration, and that it is to be somewhat lighter in shade than the present uniform." It is further understood that arrangements are being made for an early issue to non-commissioned and other ranks who have not so far been issued with clothing other than the regulation khaki field service pattern.

One feels that this is not in accordance with the best traditions of the R.A.F. Surely the present uniform should be issued to all N.C.Os. and airmen before another change is made. Strong protests are expected from the clothing contractors against the proposed gross economy.

To Indicate Vertical Gusts.

In America aircraft have been used more extensively than in this country to advertise the Victory Loan, and there have been some curious incidents. On one occasion an aviator before starting on his trip informed the Chairman of the Victory Loan Committee over the telephone that he would need a good landing field and would be glad if a landing "T" could be provided. Upon arriving at the town, he found a well laid-out landing field, but, upon getting closer, observed what appeared to be an immense cross standing upright in the centre of the field.

He found this cross to consist of a tree, the branches of which had been sawn off, and a large board which had been nailed to the top. This enormous upright "T" had been painted white.

He had to explain that as a wind vane it was a failure, unless it were intended to indicate vertical gusts.

The Royal Naval, Military and Air Force Tournament.

The following letter has been received :—

Sir,—Being deeply implicated in the inauguration of the work done by the R.A.F. in the Tournament, I venture to protest against the sarcastic article written by your "Mr. G. L. D." on the subject. The machines are not "pups," but one of the latest types of scouts produced in the war. Your writer might have noticed that they are each fitted with two machine-guns; the type is the Pumel.

It was also not recorded that the interplane wires were hooked onto the planes; this is also one of the latest ideas, and was the reason why the planes could be fitted at so great a speed. The engine was constructed to fire on three cylinders in order that its noise might not frighten the audience, and consequently it could do no more than 500 r.p.m. In conclusion, I might add that the pilot got into his machine whilst the planes were being fitted to show the complete confidence he had in his mechanics.

(Signed) .....

[The signature is illegible.—Ed.]

[This is the first time one has heard of this entertaining type of machine, the "Pumel."]

The Engine that Died.

The "Aircraft Journal" of America states that :—

"During the year of Post Office operations a very careful record has been kept of the mechanical causes of forced landings. These have been entirely connected with the motor. There have been a total of 37 forced landings due to motor trouble, which is one forced landing for every 3,460 miles flown.

"Of the motor troubles sufficient to bring down a mail plane six have been due to ignition trouble. Leaking radiators or water lines are responsible for seven forced landings. It is believed that trouble from this source will be minimised by the installation of a radiator in the wing now fastened between the propeller and the engine in a position where it catches the vibrations of both the propeller and the engine."

The information is interesting, but one feels that the last sentence is involved. One has hardly ever seen a wing fastened between the engine and the propeller.

At the end of the report there is a table showing the various causes of forced landings. One explanation reads :—"Thrust-rod broke crankcase; killed motor."

One presumes that had the trouble been merely a broken piston the report would have stated that the engine was ill.

Aeronautical Fiction.

"Wing Adjutant," the well-known writer of aeronautical fiction, has contributed some to the "Daily News." With reference to the trans-Atlantic voyage of the R.34 he has written :—

"The cost of the flight, allowing for depreciation, wages, and running costs, has been estimated at from 30s. to £2 per mile. In order to obtain revenue to cover this a charge of 6d. per ounce per journey would produce a most handsome profit if the full freight was always carried. On this scale an average load of 4½ tons, or little more than two-thirds full revenue load, would pay."

One would like to know upon what facts the estimate of 30s. to £2 per mile are based. One suggests that "Wing Adjutant" has under-estimated the depreciation of an extremely costly machine. The reasoning in the remainder of the article reminds one of the Peace of God (to quote from Mark Twain) inasmuch as it passeth understanding.

A Royal Air Force Volunteer Reserve.

The formation of a Royal Air Force Volunteer Reserve suggested by THE AEROPLANE early in 1914, and since then recommended on many occasions, has been proposed (as an entirely novel idea) by a correspondent who wrote to "The Times" on July 3rd. The following is his letter :—

Sir,—Have the Government fully grasped the outstanding lesson of the struggle now happily concluded—namely, the superlative value of aircraft in war? The country which can command an overwhelming air force, trained and ready, will, at the outbreak of hostilities, be able to deal such blows to its enemy as will positively determine the issue of the campaign. And this within a week of the declaration of war. Do the



The H.Q., R.A.F., at Archangel.

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The WORLD of AERONAUTICS (continued)

Government propose to throw the onus of maintaining such a force on the League of Nations, or will they undertake it themselves?

May I, as an ex-flying officer and R.A.F. instructor, offer a suggestion? The average life of the flying man is at present about four years; therefore, to enlist an enormous number of young men as pilots in the Regular Air Force would, at the end of a few years, land the force with a big proportion of these young men, useless for war flying and with few vacancies for employment on the ground. In other words, these young men, mostly under thirty, would be "scrap." The present intention is, I believe, to offer temporary commissions, say, for five years. This, whilst ridding the country of any trouble in caring for its scrapped flying officers, offers but a poor outlook for the flying officer. Having given five of the most momentous years of his life to the service of his country, he is cast forth to earn a livelihood against competitors who have had that much start of him.

My suggestion is that a reserve of the R.A.F. be formed with aerodromes adjacent to convenient large towns. Individuals accepted for service in the reserve to attend the aerodrome every week and put in a minimum of three hours' flying and three hours' ground instruction. Two weeks a year to be devoted to annual training. Such a scheme would appeal to every athlete and adventure-lover in the country. To be taught to fly, provided with a machine, and allowed to "aviate" for three hours a week free—why, the authorities would have more young men than they would know what to do with. They could have 20,000 flying officers, the cream of the youth of the country, always in training, at the bare cost of the maintenance of the instructional staff and its equipment. So soon as a pilot or observer showed signs of becoming "dud" and thus failing to pass regularly-held tests his engagement would terminate.

Such a scheme would give to the Government a huge flying *personnel*, ready for instant use in emergencies, at a minimum cost and without interfering with the civilian careers of those it employed.

(Signed) A. W. PHILLIPS, Capt.

A Gift to the Nation.

According to the "Times" "It is understood that Messrs. Vickers, Ltd., who built the aeroplane in which Sir John Alcock successfully flew the Atlantic, are willing to consider the proposal that the machine should be given to the nation. The aeroplane is at present at the Weybridge works undergoing repairs. She has lost her propellers, her nose is bent, and part of her fuselage broken. The engines are intact, but some of the instruments, including the main compass, were taken away at Clifden by souvenir hunters."

The R.38.

The "Evening Standard" announced last week that the Admiralty has embarked on an ambitious programme of airship construction.

"Of the six approved types which have been ordered, the R.38 is already assuming skeleton form, but of the remaining five the plans have just been finally passed. It is expected that R.38 will be launched this year, and that her sister ship will be completed next year.

"The airships, we understand, are to be built by Messrs. Vickers at Barrow; Messrs. Armstrong, Whitworth and Co., at Barlow, Yorkshire; and by Messrs. Beardmore, on the Clyde.

"While the constructional details of the new aerial giants are, for the moment, being officially kept secret, it is known, for example, that the R.38 will be a third as large again as R.33. Her capacity will be three million cubic feet, as compared with the two millions of R.33 and R.34.

"Then, again, R.33 has a total length of 670 ft., and a diameter of 80 ft. R.38, it is expected, will be at least 1,000 ft. long, with a diameter of 90 ft. to 100 ft., with a lifting capacity of 60 tons, as compared with the 30 tons of her earlier prototypes.

"While the R.33 and R.34 have five engines of 250 h.p., R.38 will have seven or eight of 400 h.p., known as the Sunbeam 'Cossack' type. Her speed is expected to be at least 10 knots greater than the 60-70 knots of R.33.

"The R.34 has started on the Atlantic voyage with 18 tons of fuel—sufficient for the double journey. R.38 will be able to carry 30 tons, sufficient for a range of over 8,000 miles. Her lifting capacity will be 60 tons, as compared with 30 tons of the existing types.

"The later ships may be even larger than R.38, and will also differ probably in important constructional details dictated by the experience gained from the performances of R.33 and R.34

"The total cost of each vessel is expected to exceed half a million, with a correspondingly heavy maintenance charge."

Provision of Landing Grounds.

The Air Ministry issued the following on June 25th:—

"Statistics collected by the Air Ministry show that a considerable proportion of the accidents caused by forced landings due to engine trouble or other circumstances might have been avoided if suitable landing grounds had been within sight and gliding distance of the aircraft at the moment of the occurrence of the accident.

"In his speech at the luncheon at the House of Commons, on the 5th instant, the Under Secretary of State for Air referred to this and to the desirability of the provision of numerous emergency landing grounds; General Seely has since addressed a personal letter on behalf of the Air Council to all Lords Lieutenant, Lord Mayors and Governors, on the subject of the selection and allocation by private individuals and public bodies of suitable sites as such landing grounds, with a view to their being inspected, marked out and appointed for this purpose. In this matter, as an interim measure, and until further and permanent arrangements of the nature indicated can be made, Chief Constables of counties can, it is thought, in conjunction with land-owners and farmers, render great assistance.

"A personal letter has also been addressed to the Chairman of the Board of Directors of the various Railway Companies in regard to the painting of the names of places on the roofs of railway stations or other suitable spaces."

A Junior Biplane.

The "Aerial Age," of America, publishes an account of an aeroplane fitted with an ordinary "Indian" motor-cycle engine which was built by H. P. Christofferson, of San Francisco, California.

The standard "Indian" engine is fitted with deflecting plates to eliminate overheating, and its speed is reduced by gearing from 3,000 to 1,200 r.p.m.

The wing spread is 25 feet, the length 10½ feet, the chord 4 feet, and the gap 4 feet 3 inches. The fuselage is built of plywood.

It weighs only 275 lbs., has a speed of 40 m.p.h., a landing speed of 20 m.p.h., and was built to sell at about £80

The Flying Gimlet.

According to an American paper:—

"Lieut. Alan Clark, late of the Royal Air Force, thrilled throngs with the stunts he performed with a Sopwith 'Camel' scout machine, tearing through space at 130 miles an hour as one of the final tests of different type machines for commercial adaptability of the Second Pan-American Aeronautical Convention. . . . The machine spun around like a giant top for a full minute, then dipped suddenly into a nose-spin for a 2,000-foot gimlet towards earth, from which level it was permitted to go through all the stunts that made such wonderful records for the scouter on the Italian and French fronts."

What a lot of interesting facts have been suppressed by the Censorship! Until now, one has heard nothing of these gimlet stunts at the level of the earth.

43 Squadron, R.A.F.

A Dinner will be held for all members of 43 Squadron, R.A.F., at the Criterion Restaurant, Piccadilly, at 7.30 p.m., Friday, July 18th. Those who wish to attend should communicate with Captain John Trollope, Banstead, Surrey, before 15th instant, enclosing cheque for 50s. Beds will be arranged for country members.

Coming Events.

JULY.

The Royal Naval, Military and Air Force Tournament at Olympia open until July 12th.

Saturday, July 12th.—R.N. Air Station Eastbourne Dinner.

Saturday, July 12th.—Summer meeting at Hendon.

Sunday, July 13th.—Special Flying Displays at Hendon.

Friday, July 18th.—43 Squadron dinner.

Saturday, July 19th.—Martinsyde Recreation Club Sports at Woodbridge Road, Guildford.

Saturday, July 19th.—Victory Meeting at Hendon. Speed Contest for Victory Trophy.

Sunday, July 20th.—Special Flying Displays at Hendon.

Friday, July 25th.—The Amsterdam Aircraft Exhibition opens.

Saturday, July 26th.—July Meeting at Hendon.

Sunday, July 27th.—Special Exhibition Flights at Hendon.

AUGUST.

Tuesday, August 5th.—Handley Page Social and Athletic Club's Sports. Starting at 12 midday at Cricklewood Lane.

Thursday, August 21st.—R.A.F. Annual Athletic Meeting at Stamford Bridge.

Sunday, August 24th to Sunday, August 31st.—The "Avenir's" Tour de France Aérien.

DATES TO BE ANNOUNCED LATER.

Hendon—Birmingham—Manchester Air Race.

Hendon—Paris—Hendon Air Race.

Hendon—Brighton—Hendon Air Race.



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PARIS NOTES

No Feminine Records.

The sensation of the week, mild though it may seem to the ininitiated, has been the announcement that the Aero Club here, acting on instructions from the F.A.I., does not recognise women's aviation records—only world records. As France possesses quite a few active women aviators, the announcement has been received not only with consternation but with very bad grace. Thus spoke Mlle. Jane Hervieu when interviewed on the subject: "Do you think under such conditions I should waste time to attempt a record? It would be perfectly useless, and I have not hidden my opinion or my thoughts from the Aero Club, immediately I heard that the commission refused to homologate the latest record of Mme. de la Roche. I am very indignant, and you may say so."

As was to be expected, Mme. de la Roche is even less content to see her latest exploit so ill recompensed. "Nothing would ever have made me believe that such a decision was possible," she said. "The Aero Club knew of my attempt, sent me a 'commissaire-controleur,' and even gave me an official baragraph. After the flight these instruments were sent for verification, and—three weeks later, I received a letter informing me that they cannot homologate my record because I 'have not beaten the record of Casale!' Did they seriously think, when they sent me the baragraph, that I should attempt, or that it would be possible to beat the record of Casale with my little G3 Caudron?"

Certainly there would seem to be need for a little more sympathy and encouragement for aviatrices on behalf of the authorities who control the sport.

The Ligue Aeronautique Prize.

From July 15th this prize will be competed for every six months, and will be given to the French aviator making the longest flight from Paris to a French colony.

A Novel Arrangement.

The Breguet firm compete steadily with the Farman firm in new types of machines or novel modifications or adaptations to existing ones. Thus the latest development is the Breguet, type 14, 300 h.p. Renault, called the "Sanitaire," and which is so arranged that it can carry two passengers in a lying position in the fuselage on a stretcher. Entrance is obtained by means of a lateral door. The arrangement is rather crude, and one notices the absence of any compensating bracing where the entrance has been made.

The Goliath No. 2.

The Farman Frères productions are simply amazing. Surely the Goliath is the machine de luxe in the aviation world at the moment. A look at its lines invites confidence, whilst a look at the interior arrangement sets all the ladies' hearts fluttering, which accounts for the popularity of it for "joy ride parties." Goliath No. 1 is now being overhauled. Meanwhile Goliath No. 2 passed its trials satisfactorily taking up several lots of fifteen passengers; it is a trifle bigger than its predecessor. In honour of the victory fête and the decoration that will be given to Marshal Foch at Versailles, Farman is organising aviation fêtes in the neighbourhood of Versailles on July 6th, 13th, 14th, and 16th.

The Roumanian adjudant Patetif has obtained his civilian brevet at the Farman school at Toussus-le-Noble. This is the third obtained since the Armistice. In spite of war—and peace—prices the condition attaching to Farman's school remain the same as before the war. Pupils learn on a dual control machine of the latest type, and lessons are given over the country.

British Audacity.

"In honour of the Peace," as the French say, a large number of aeroplanes of all makes, sizes, and h.p. evoluted over Versailles at the moment that peace was being signed. According to the French papers the British aviators were well to the fore on account of the audacity of their evolutions: flags, streamers, oriflammes, and toy parachutes were dropped from the machines. It is expected that there will be a repetition of it on the Fourteenth, but on a more grandiose scale!

Latecoere Enterprise.

The big Toulousian firm of Latecoère have at last all their plans and organisation ready for the opening of the postal and air service between Toulouse, Barcelona, Alicante, Malaga, and Rabat (Morocco), foreshadowed in these notes some weeks back. The opening date is given as August 1st.

From Paris to Lake Chad.

It is a far cry, or, rather, a far fly, from Paris to the centre of the Dark Continent; nevertheless, the Adjudant Delalée, a remarkable war pilot, is going to attempt the trip, including the crossing of the Sahara desert. He proposes to do it in stages of 800 kilometres, each varying only according to the situation of the oases. The preliminary organisation, which is considerable for such raids, is proceeding.

Paris to Casablanca.

It is more than probable that ere these lines appear seven aviators, with Adjudant Papcil at their head, will have flown seven Breguet machines from Paris to Casablanca. It is in the nature of a trial trip, because if succesful and the landing risks are not too great to jeopardise the project, the balance of 154 will be sent by air, and possibly another 50 after that. The northern Spanish route will be used. Although at first intended to be done in one day, it is probable that three days will be occupied, so as not to fatigue the pilots too much. Each pilot successful in flying to Casablanca is to receive 2,000 francs for each machine flown and 400 francs towards his return expenses—quite a good proposition for everyone concerned, especially as, at the moment, there are only seven pilots.

Paris-Melbourne.

Poulet, some weeks hence, will attempt to fly from Paris to Melbourne on a Caudron machine in order to avenge the death of Védrines, his particular friend. This was to be Védrines' next flight, had he succeeded in his Paris-Rome-Paris trip.

A Fonck Rumour.

A rumour, spread abroad by the Paris "Daily Mail," to the effect that Fonck had issued a challenge to all British aviators to a race, the choice to be the privilege of the accepter, is without foundation. Fonck is at the moment in Spain, taking delivery of an automobile.

Paris-Madrid.

Romanet's Paris-Madrid excursion ended prematurely at Montmorillon (Vienne) owing to fog. He was carrying also his mechanic and a Spanish journalist.

BELGIUM.

The consulting committee of Belgian aeronautics met on June 24, under the presidency of Colonel A. E. M. Van Crombrugge, commanding the military side. The president read the reply made by the Minister of the Colonies concerning the creation of an aerodrome at Elizabethville, and of a note, saying that aeronautical material seized in Germany by the Inter-Allied Commission of Control will be considered as spoils of war and will not be discounted from any indemnities due.

The committee agreed on the principle of the creation of a single organisation for civilian aviation.

The subscription opened by M. A. Michant to buy Willy Coppens a car has already reached 10,000 francs.—F. T. N.

FRENCH PROGRESS.

The Director of Aeronautics of France has issued a report on certain aerial expeditions now under contemplation by the Military Authorities. These expeditions are destined to link Paris with the capitals of Europe and with the French Colonies in Northern Africa. The routes are as follows:—

Paris-Madrid, Paris-Prague-Warsaw-Vienna, Paris-Brussels-Amsterdam, Paris-Cairo, *via* Constantinople, Paris-Tunis and back, and Paris-Dakar.

The following machines have been adopted:—

A Nieuport one-seater of 300 h.p.; an S.E.A. two-seater battleplane of 400 h.p.; a Spad one-seater battleplane of 300 h.p.; a two-motor Caudron; a two-motor Farman; a Bréguet 400 h.p., a veteran of the 1918 campaign, on which type Roget made the Paris-Rabat flight.

The following six pilots are indicated as possessing exceptional qualities:—Major Vuillemin, and Lieuts. Fonck, Marinovitch, Flachaire, de Romanet, and Lemaître.

ITALIAN NOTES.

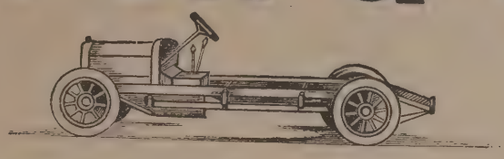
The greatest regret is everywhere expressed at the news of the death of Major Magaldi's brother, a naval pilot, while testing the Magaldi-Rabbeno amphibious chassis on an F.B.A. at Leghorn. Naval Lieut. Magaldi, with a seaman motorist from the Venice station on board, apparently side-slipped at a very low altitude, not being accustomed to the type of machine he was flying. One hopes this sad accident will not tempt the inventors to stop further experiments.

As well as the Rome-Naples route, which has had a regular mail service with four trips a day ever since early in May, the daily service between the capital and Pisa is being run with great precision, as is also the Padua to Vienna mail. The Goia del Colle-Bari to Constantinople via Avlona and Salonica is being prospected too. The other day four Svas and a Ca made an experimental trip, the former in six, the latter in eight and a half hours, the distance being 1,200 kilometres. Major Mercanti, O.C., considers the Avlona-Salonica a most difficult section for want of landing-places. Owing to the great heat at midday at Salonica, where they stopped for an unexplained reason, the motors could not cool down, and a much longer halt had to be made than was intended.—T. S. H.

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THE CROSS-ATLANTIC FLIGHT OF R.34.

On July 1st the Air Ministry made the following announcement:—

"Permission has been given by the Air Ministry for His Majesty's airship R.34 to start during the night on her flight across the Atlantic, subject to the present weather conditions remaining unchanged."

The following day the Air Ministry announced that R.34 had left East Fortune that morning at 2.48 (British summer time) to cross the Atlantic.

Everything was ready at Roosevelt Field, near Mineola, L.I., on July 2nd, for the reception of R.34, and three new wireless stations had been erected in order to get into touch with the airship. She will be moored at Hazlehurst Field (where she landed) until ready to return to England.

Two British cruisers, "Renown" and "Tiger," patrolled part of the course, thus proving that the flight was not merely arranged to give satisfaction and copy to the sensational Press, but was in accordance with Admiralty routine.

On July 5th, H.M.A. R.34 passed over Newfoundland and dropped the mails she was carrying over St. John's. Mr. Raynham, on his Martinsyde, went up from St. John's, to meet the airship.

Unfortunately later in the day she was compelled to call for assistance, and the following message was sent to the U.S. Navy Department at Washington:—

"Could a destroyer proceed, if required, to the southern end of the Bay of Fundy to take H.M.A. R.34 in tow?—(Signed) Commander Lansdowne, U.S.N., for the commander of the dirigible."

Two American destroyers were sent. But R.34 was able to proceed to New York under her own power, and finally landed at Mineola at 2 p.m. on July 6th.

R.34 was in wireless touch with land during the whole of the flight. Ponta Delgada (Azores), St. John's (N.F.), and Clifden (Ireland), besides East Fortune, were the stations in touch on July 2nd, and on July 3rd H.M.Ss. "Tiger" and "Renown" picked up her signals.

The weather during the flight was not good. The airship, encountering bad fogs and head-winds, was forced to make a detour to avoid bad weather.

R.34's SIGNALS.

The following signals were received from or issued concernnig H.M.A. R.34 during the voyage. The times given are G.M.T.:—

July 2nd, 5.30 a.m.—The British airship R.34 passed over Rathlin, County Antrim, at 4.30 G.M.T. (5.30 British summer time) this morning.

9 a.m.—R.34, at 8 a.m. G.M.T. (9 a.m. British summer time), was 10 deg. 40 min. W., 55 deg. 20 min. N. The airship was then taking a course due west at a speed of 40 knots.

11.5 a.m.—Going through thick fog. Everything doing well Time of dispatch 10.5 G.M.T. (11.5 a.m. British summer time).

1 p.m.—R.34 is reported by wireless to have reached at 1 p.m. to-day (British summer time) the position 55 deg. 07 N., 14 deg. 50 W. She was then proceeding at a speed of 32 knots in a thick fog. The officer in charge reports all well.

3.15 p.m.—A wireless message from R.34, at 3.15 p.m. (British summer time), gave the airship's position as 53 deg. 50 N., 17 deg. 50 W. The course then being taken was west true and the speed 31 knots.

5.30 p.m.—The following signal has been received from R.34: "Position at 4.30 p.m. G.M.T., 53.50 N., 18 W.; all well." The Air Ministry adds:—"The position given in the previous signal is probably incorrect, and may possibly have been wrongly transmitted. The position indicated in the above message is very probably correct."

7.23 p.m.—The Air Ministry announced at 6.23 p.m. G.M.T.: "In answer to a wireless message sent from East Fortune this afternoon to R.34, asking whether she was getting sufficient weather reports, the following reply has been received: 'Yes, thanks. We are in touch with Ponta Delgada (Azores), with St. John's (N.F.), and with Clifden (Ireland).'"

8 p.m.—The s.s. "Suffern" reports having sighted the R.34 at 7 p.m. G.M.T. in the position 54.30 N., 18.20 W., steering S., 80.00 W. true.

9.15 p.m.—The Air Ministry announces that Major Scott reported that at 8.15 p.m. G.M.T. R.34 was flying westward at 30 knots and at a height of 2,000 ft.

July 3rd, 4 a.m.—The Air Ministry states this morning that the British airship R.34 wirelessed at 3 a.m. G.M.T. position 52.50 N., 28.10 W.

7.11 a.m.—R.34 reported her position at 6.11 a.m. G.M.T., 52.30 N., 30 W. (Just more than half-way.)

10 a.m.—A wireless message radiated by the R.34 at 10 o'clock (British summer time) indicates that her position at that hour was approximately 52 deg. 50 min. N. and 34 deg. 30 min. W. The airship was then cruising above the fog.

1.14 p.m.—The Air Ministry announces: "The Commander-in-Chief of the Atlantic and Home Fleet has communicated the following message by wireless to the Air Ministry: 'H.M.S. "Renown" heard R.34 wireless signals strength 7 (that is, fairly loud and readable signals) at 12.14 G.M.T.'"

7.30 p.m.—A wireless station on this side of the Atlantic reports having heard H.M.S. "Tiger" speaking with R.34 in the position 54.20 N., 40 W. All apparently O.K at 6.30 p.m. G.M.T.

July 4th, 3 a.m.—48.40 W., 51.20 N.

7 a.m.—49.30 W., 48.40 N.

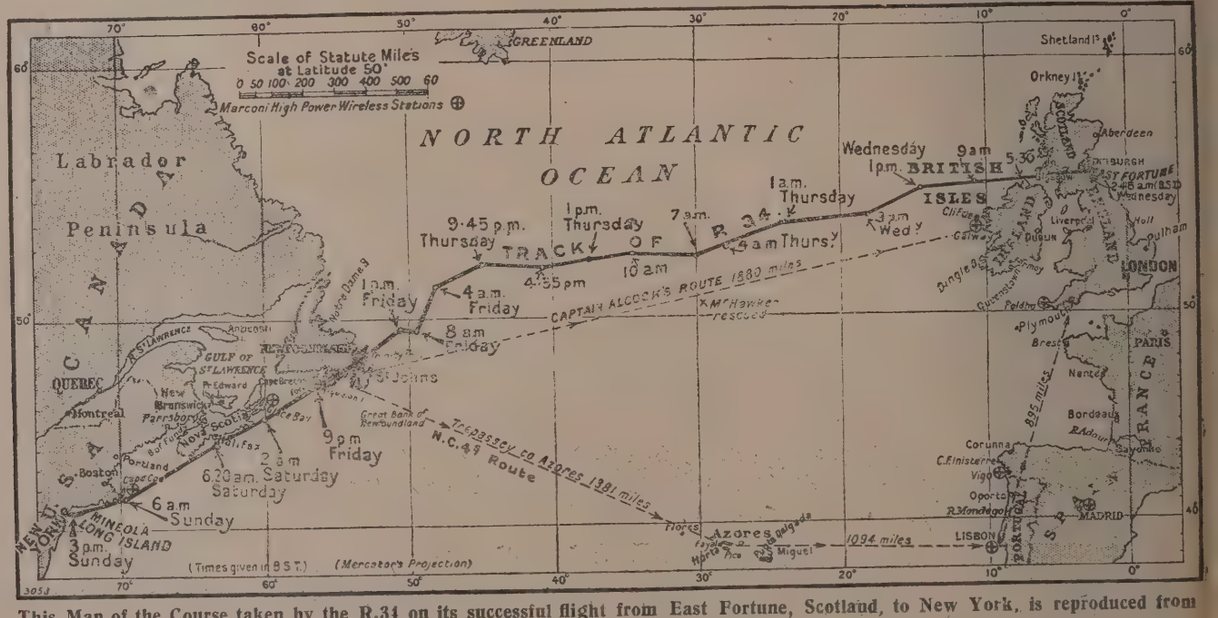
Noon.—50.25 W., 49.05 N. Clear sky, low fog. (Doubtful message; verification asked for.)

1.2 p.m.—Message from R.34, *via* St. John's: "Flying 3,000 ft. above mist. Sun shining. All O.K."

1.17 p.m.—"2,900 gallons of petrol. All engines running well. 50.20 W., 49.04 N." (Received *via* Western Union Cable Co.)

Untimed.—From R.34 *via* St. John's: "Probably be over St. John's at 4 p.m."

Untimed.—From St. John's, R.34, after making land at Notre Dame Bay, changed her course to the south, and was expected to pass at low altitude over St. John's at 5.30 p.m.



This Map of the Course taken by the R.34 on its successful flight from East Fortune, Scotland, to New York, is reproduced from the "Times" by the courtesy of the proprietors.

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8 p.m.—From R.34. 55.14 W., 46.55 N. Course west, 45 knots. All well.

Midnight.—59.40 W., 45.45 N.

July 5th, 5.20 a.m.—Going well near Halifax.

Morning.—R.34 encountered heavy electrical storms over Newfoundland and Nova Scotia.

9 a.m.—R.34 sighted over Parrsborough, Nova Scotia.

2.59 p.m.—Signal from R.34 asking for assistance received. Destroyers detailed and R.34 informed accordingly.

6.50 p.m.—R.34 sends the following wireless message:—"Position 45.21 N., 64.00 W. Course true south-west. Running out of fuel after flight (from) Britain. Please tell me if your destroyers coming."

11.9.—R.34 170 miles north-east of Boston.

11.40.—United States destroyer "Bancroft" established contact with R.34 and accompanied her across the Gulf of Maine.

July 6th, 4 a.m.—R.34 sends following wireless message: "Position of R.34 67.30 W., 43.20 N. Course S.W.S. Flying at 1,500 ft. Come and meet us. Making for Boston. Very short petrol."

5.10 a.m.—Message from R.34: "Position now approaching Martha's Vineyard."

5.30 a.m.—Message from R.34: "We are sticking it. Think we will be O.K."

5.38 a.m.—"Will land Montauk and take on petrol."

12.35 p.m.—"Passed Montauk Point; making for Hazlehurst Field, Mineola. Expect land 2, Greenwich time."

2 p.m.—R.34 landed at Mineola, Hazlehurst Field, Long Island, with only 40 minutes' petrol left.

The Arrival.

The Air Ministry issued the following report on July 6th:—

R.34 landed safely at Hazelhurst Field (Mineola, Long Island), at 3 p.m., British summer time, to-day (10 a.m. New York time).

She has thus accomplished her voyage of over 3,100 nautical miles, the longest flight ever made by any aircraft, in 108 hours 12 minutes.

R.34 completed the distance under her own power.

The destroyers which the U.S. Navy authorities dispatched to her assistance as a precautionary measure, in view of her petrol supply being nearly exhausted, were not utilised to take R.34 in tow.

His Majesty the King has sent the following message to the crew of R.34 through Major-General Sir Frederick Sykes, K.C.B., Controller-General of Civil Aviation:—

"Heartiest congratulations to yourself and crew of R.34 on your splendid achievement, and best wishes for a safe return. Your flight marks the beginning of an era in which the English-speaking peoples, already drawn together in war, will be even more closely united in peace."

The crew of R.34 were given a very good reception by the American people, and were entertained to lunch at the Garden City Hotel, Mineola, Admiral Cleaves, U.S.N., being present.

Six hours after the ship left East Fortune a stowaway was discovered. The man, whose name is Ballantine, was until two hours before the airship's departure a member of the crew, but he was then informed that it was necessary to reduce the load and that he would be left behind. He succeeded in hiding between two balloonets until forced to give himself up. It is stated that he will be court-martialled.

R.34, which was moored in the open at Mineola, very nearly met with an accident, but the damage was not serious.

At about eight o'clock on the morning of July 7th the heat of the sun had caused such an expansion of gas that the airship became almost unmanageable in the moderate wind blowing. At times the men of the landing party were lifted off their feet, and at last an urgent call was sent to the neighbouring camps to turn out all available men to man the mooring ropes.

Shortly after, the strain grew so great that the mooring ring in the nose of the vessel tore out. The nose shot straight up in the air, the airship being only held by the after-gondola. Some members of the crew climbed up through the after-gondola and succeeded in making their way forward with a rope, which was lowered to the men on the ground, who were able to pull the vessel's nose down again and make her fast.

Concerning the return of the airship there are conflicting reports, for Reuter's Agency states that the ship is leaving between midnight, July 8th, and 8 a.m., July 9th, and will fly direct to Great Britain. But the U.S. Navy Department state that the ship will go *via* Washington. The times for leaving Mineola are the same in both accounts.

General Maitland's Log.

General Maitland, the official British observer on the R.34, issued the following log history of the airship's voyage from Scotland on July 6th:—

The distances covered were as follows:—East Fortune to Trinity Bay, 2,050 sea miles; Trinity Bay to New York, 1,080 sea miles.

It was originally intended that the flight should take place at the beginning of June, but owing to the uncertainty as to the Germans signing the Peace Treaty the British Admiralty decided to detain the airship for an extended cruise over the Baltic and along the German coast. This flight occupied 56 hours under adverse weather conditions, during which time an air distance of roughly 2,400 miles was covered.

At the conclusion of this flight the ship was taken over from the Admiralty by the Air Ministry and quickly overhauled for the journey to the United States. The date and time of sailing decided upon were 2 in the morning of Wednesday, July 2nd, and Press representatives were notified by the Air Ministry to be at East Fortune the day previously. At 1.30 in the early morning of July 2nd the airship was taken from her shed, and actually took the air 19 minutes later, starting on her long voyage exactly 18 minutes in advance of the scheduled time.

The Flight.

The story of the flight itself is entered in the log as follows:—

1.42 a.m., Wednesday, July 2nd.—R.34 slowly arose from the hands of the landing party and was completely swallowed up in low-lying clouds at a height of 100 ft. When flying at night, possibly on account of the darkness, there is always a feeling of loneliness immediately after leaving the ground. This sense of loneliness was on this occasion accentuated by the faint cheers of the landing party coming upwards through the mist long after all signs of the earth had disappeared.

The airship rose rapidly to 1,500 ft., at which height she emerged from the low-lying clouds and headed straight up the Firth of Forth toward Edinburgh. A few minutes after 2 o'clock the lights of Rosyth showed through a break in the clouds, thus proving brilliantly that correct allowance had been made for the force and direction of the wind, which was blowing 20 miles an hour from the east. It should be borne in mind that, when an airship sets out for a long-distance voyage carrying the maximum allowance of petrol, she can only rise to a limited height at the outset without throwing some of it overboard as ballast, and that, as the airship proceeds on her voyage, she can, if so desired, gradually increase her height as the petrol is consumed by the engine.

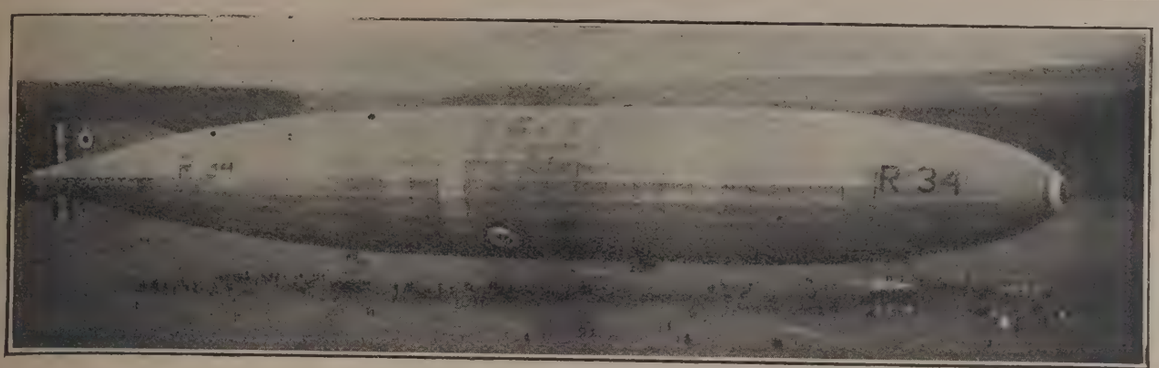
An airship of this type, when most of its petrol has been consumed, can rise to a height of about 14,000 ft. For this reason the next few hours were one of the most anxious periods of the flight, for Major Scott, who, owing to the large amount of petrol carried—4,900 gallons, weighing 15.8 tons—had to keep the ship as low as possible and at the same time pass over Northern Scotland, where the hills rise to a height of over 3,000 ft.

Owing to the stormy nature of the morning, the air at 1,500 ft., the height at which the airship was travelling, was most disturbed and bumpy, due to the wind being broken up by the mountains to the north and causing violent wind currents and air pockets. The most disturbed conditions were met at the mouth of the Clyde and south of Loch Lomond, which is surrounded by high mountains, and looked particularly beautiful in the grey dawn light. The islands at the mouth of the Firth of Clyde were quickly passed. The North Coast of Ireland appeared for a time, and shortly afterwards faded away as we headed out into the Atlantic.

The various incidents of the voyage are set down quite simply as they occurred, more or less in the form of a diary. No



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attempt has been made to write a connected story. It is felt that by recording each incident in this way, most of them trivial, a few of vital importance, a truer picture of the voyage will be obtained.

Time, 6 a.m., July 2nd.—The airship is running with four engines at 1,600 revolutions, the forward engine being given a rest. Air speed 38 knots. Land miles per hour made good 56.7. Course steered, 298 degrees N., 62 W. Course made good 39 N., 71 W. Wind N.E., 15⅛ miles per hour. Height, 1,500 ft. Large banks of fleecy cloud from the Atlantic gradually blotting out view of the sea. At first we were above these clouds, but gradually they rose higher and we ploughed our way into the middle of them.

7 a.m.—Nothing but dense fog. I intimated to Harris (Captain Guy Harris) that he should go down to within 50 ft. of water and up to a height of about 5,000 ft. Suddenly we catch a glimpse of the sea through a hole in the clouds, and it is now easy to see that we have a slight drift to the south, which was what was estimated by both Scott and Cooke. A few minutes later we find ourselves above the clouds. Our height is still 1,500 ft., beneath a sky with clouds of about 800 ft.

We are therefore between two layers of clouds, a condition in which Alcock and Brown found themselves on more than one occasion in their recent flight. An excellent cloud horizon now presents itself on all sides, of which Cooke at once takes advantage. These observations—if the cloud horizon is quite flat—ought to prove valuable enough to guide, but they cannot be regarded as accurate unless one can also obtain a check on the sun by day or the moon and stars by night. Cooke reckons it easy to make as much as a 50 min. error in locating one's position when using a cloud horizon as a substitute for the sea horizon.

7.30 a.m.—Breakfast, which consisted of cold ham and a hard-boiled egg each, bread and butter, and hot tea. We breakfast in two watches, generally about fifteen in each. Conversation during breakfast reverted to the recent flight up the Baltic, and in the adjoining compartment was a gramophone entertaining the crew to the latest Jazz tunes, such as the "Wild, Wild Women."

Bad Weather Encountered.

General Maitland here gives a list of the *personnel* of R34, and continues :—

11 a.m.—Still ploughing our way through fog at 1,300 ft. The sea is completely hidden by clouds, and there is no visibility whatsoever. I stopped the forward and two aft engines, and am now running only the two wing engines at 1,600 revolutions, thus giving us an air speed of 30 knots, or 33.6 miles, per hour. This is the airship's most efficient speed, as she only consumes on two engines 25 gallons of petrol per hour. The wind is blowing east at seven miles per hour, and so we make a good 40 miles per hour and are resting three engines.

Major G. G. H. Cooke is now on top of the airship taking observations from the sun and using the cloud horizon with the sextant. The sun is visible to him, but not to us, the top of the ship being 85 ft. above us down in the fore control cabin.

Our position is reckoned to be long. 55.10 N., lat. 14.40 W., which is equivalent to 400 miles from the starting-point at East Fortune and 200 miles out in the Atlantic from the north-west coast of Ireland. We are in wireless touch with East Fortune, Clifden, and Ponta Delgada, and messages wishing us good luck are received from the Air Ministry, H.M.S. "Queen Elizabeth," and others.

11.45 a.m.—Excellent lunch—beef stew and potatoes, chocolate, and cold ——? The talk as usual was mainly "shop," dealing with such problems as the distribution of air pressure on the western side of the Atlantic, and what winds were likely to be met with, what fog we should run into, the advantage of directional wireless for navigational purposes, cloud horizons, and the like. Scott, Cooke, and Harris in comparing their experiences and expounding their theories were most interesting and illuminating.

12.0 noon.—The watch off duty turned in for their routine four hours' sleep before coming on for their next period of duty, which is two hours in this case as it is the first of the two dog watches. The sleeping arrangements consist of a hammock for each man off watch suspended from the main ridge girder of the triangular internal keel which runs from end to end of the ship. In this keel are situated the 81 petrol tanks, each of 71 gallons capacity, living quarters for officers and men, storage arrangements for lubricating oils for the engines, water-ballast, food and drinking water for the crew. The latter is quite a considerable item, as will be seen from the following table of weights :—Petrol, 4,900 gallons, equal to 35,300 lbs. or 15.8 tons; oil, 2,070 lbs., equal to nine-tenth of a ton; water, equal 3 tons; crew baggage, equal 4 tons; spares, equal to two-tenths of a ton; drinking water, equal to 800 lbs. or .42 tons, making a total of 24.32 tons.

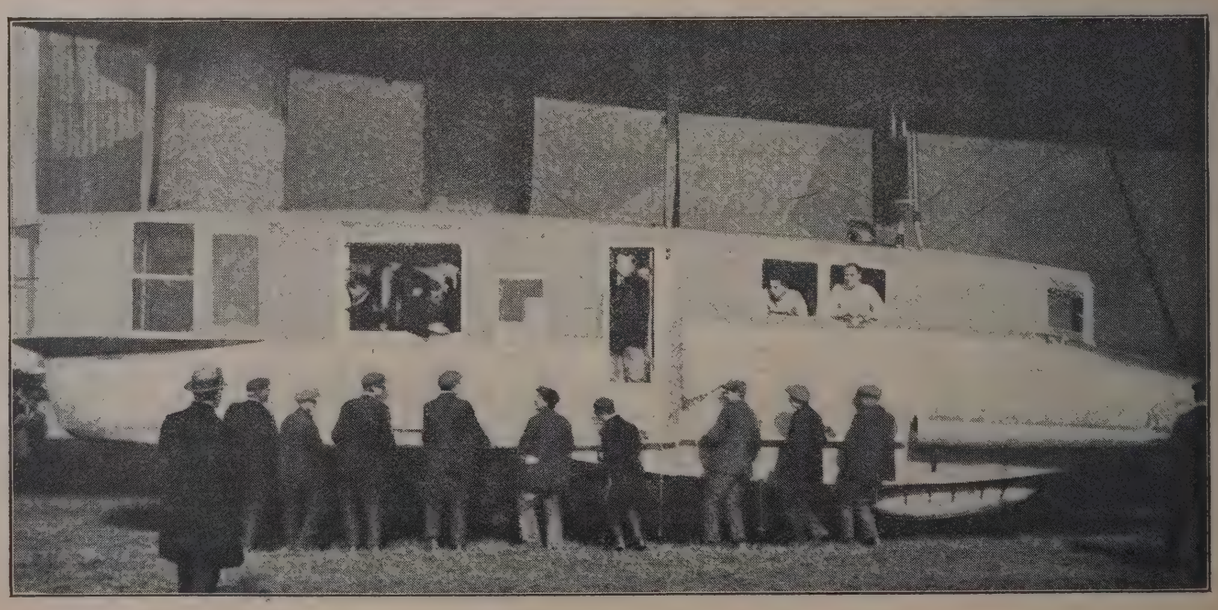
Life in the keel of the large rigid airship is by no means unpleasant. There is very little noise and vibration except directly over the engines, and also a total absence of wind, and, except at the early hours of dawn, greater warmth than in the surrounding atmosphere.

Getting into one's hammock is rather an acrobatic feat, especially if the hammock is slung high, but this becomes easy with practice. Preventing oneself from falling out is the thing one must be careful about. In a Service airship like the R34 there is only the thin outer cover of fabric on the underside of the keel on each side of the walking-way, and the luckless individual who tips out of his hammock would, in all probability, break right through this and find himself in the Atlantic.

It is surprising the amount of exercise one can get on board an airship of this size. The keel is about 600 ft. long, and one is constantly running about from one end to the other. There are also the steps in the vertical ladder to the top of the ship for those who feel energetic or have any duty up there. By the time it comes to one's turn to go to bed one generally finds that one is very sleepy, and the warmth of the sleeping bag and the hum of the engines soon bring sleep.

3.15 p.m.—The sea is now visible at intervals through the clouds. It is of a deep blue colour, with a big swell. Our shadow on the water helps us to measure our drift angle, which both Scott and Cooke worked out to be 21 degrees.

Running the forward and two aft engines and resting the two wing engines, we are making good a speed of 49 miles per hour. Durrant, the wireless officer, reports just speaking to St. John's, rather faint but quite clear signals, and we are still in touch with East Fortune and Clifden, and have been exchanging



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signals with the Azores since reaching the Irish coast. Our communications seem quite satisfactory. We are seeing some remarkable rainbow effects on the cloud. One complete rainbow encircled the airship itself and another encircled the shadow. Both are very vivid in their colouring.

3.45 p.m.—Tea: consisting of bread and butter and greengage jam and two cups of scalding hot tea, which had been boiled over the exhaust pipe. Fruitarian cake was also tried for the first time. Rather sickly taste, but is very nourishing. The whole is being assisted by Miss Lee White on the gramophone. We would one and all give anything for a smoke. Greenland, the first officer of the ship, is vainly trying to discover the culprit who used his toothbrush for stirring the mustard at lunch

4.30 p.m.—Still in fog and low clouds, and the sea is not visible. We have hardly seen any sign of the Atlantic since leaving the Irish coast, and we are beginning to wonder if we shall see it at all the whole way across.

5.0 p.m.—Tramp steamer "Ballygally Head" outward bound from Belfast, destination Montreal, picked up our wireless on their Marconi spark set, which has a range of 30 miles only. She heard us but did not see us, as we were well above and completely hidden by the clouds. She gave her position as Lon. 54.30 N. Lat. 18.20 W., and reported as follows. Steering South-south-west true. Wind north, barometer 30.10 overcast clous low. Suffren, master. They were very surprised and most interested to hear we were R.34 bound for New York and wished us every possible luck.

5.30 p.m.—Messages have been received from both H.M. Battle Cruisers "Tiger" and "Renown," which were previously sent by the Admiralty to assist us with weather reports and general observation. They reported respectively as follows:—"Tiger": Position 36 degrees 50 min. North, 36 degrees 50 min. West: barometer 1,027 millibars, falling slowly; thick fog." "Renown": "Position 60 degrees North, 25 West; barometer 1,027 millibars, falling slowly, cloudy, visibility four miles." Harris's deductions from these reports are to the effect that there was no gradient, and therefore no likelihood of any strong wind in that part of the Atlantic.

6.0 p.m.—Scott increased height to 2,000 ft., and at this height we find ourselves well over the clouds and with a bright blue sky above the view is an enchanting one. As far as one can see a vast ocean of white fleecy clouds ending in the most perfect of cloud horizons. Two particularly fine specimens of windy cirrus clouds, of which Pritchard promptly obtained photographs, appeared on our port beam, also some cirrus-ventos clouds, little curly clouds, like black cocks' tail feathers, all of which Harris interpreted as a first indication and an infallible sign of a depression coming up from the south. We hope that this depression when it comes may help us, provided we have crossed its path before it reaches us. If we can do this we may be helped along by the easterly wind on the north-westerly side of the depression. It is interesting to note that as yet we have received no notice of this depression coming up from the south in any weather reports.

6.40 p.m.—Put back the clock half an hour to corrected Greenwich mean time. Now 6.10 p.m. Position, longitude 53 degrees 50 min. North, latitude 20 degrees West. We have covered 610 sea miles, measured in a direct line, in 17 hours, at an average speed of 36 knots. The depth of the Atlantic at this point is 1,500 fathoms. At this rate, if all goes well, and if that depression from the south does not interfere, we should see St. John's—if visible and not covered with fog as it generally is—by about midnight on July 3rd.

6.55 p.m.—A wireless message from the Air Ministry *via* Clifden states that the conditions are unchanged in the British Isles. The anticyclone is persistent in the Eastern Atlantic, and a new depression is entering the Atlantic from the south. This confirms Harris's forecast, and is admirable proof of the value of cloud forecasting.

7 p.m.—The clouds have risen to our height, and we are now driving through them with no sign of the sky above or the sea beneath. Scott reckons that the wind is north-east by east, helping us slightly. The airship is now very heavy, owing to the change of temperature, and is 12 degrees down by the stern. We are running all five engines at 1,600 revolutions, and our height is 3,000 ft.

8 p.m.—We are just on the top of the clouds, alternately seeing the sun and then plunging through thick banks of cloud. The sun is very low down on the western horizon, and we are steering straight for it, making Pritchard at the elevators curse himself for not having brought tinted glasses. Ship now on a more even keel.

8.30 p.m.—Scott decided to go down underneath the clouds, and increased the speed on all engines to 1,800 revolutions to do so. It is dark, cold, and wet in the clouds, and we have shut all the windows. We see the sea at 1,500 ft. between patches of cloud. It is rather bumpy. We now find ourselves between two layers of clouds, the top one 1,000 ft. above us, and the lower layer 500 ft. below us, with occasional glimpses of the sea.

9 p.m.—Sun now setting and gradually disappears below the lower cloud horizon, throwing a wonderful pink glow on the white clouds in every direction. Course steered 320 degrees, course made good 299. Air speed 45 knots, speed made good 55 miles per hour. All through this first night in the Atlantic the ordinary airship routine—navigating, steering, elevating, and also maintaining the engines in smooth running order—goes on watch and watch as in the day time. The night is very dark.

The airship, however, is lighted throughout, a much enlarged car lighting system having been fitted. All instruments can be individually illuminated as required, and in case of failure of the lighting system, all figures and indicators are radiumised. The radium paint used is so luminous that in most cases the lighting installation is unnecessary.

The Second Day.

8.20 a.m., 3/7.—Clock put back another hour to correct time to Greenwich. Position, longitude 35 degrees 60 min. West, latitude 53 degrees North. Cooke got the position by observation from the sun and on cloud horizon. He considers it accurate to within 30 or 40 minutes. Our position is over the westbound steamship route from Cape Race to the Clyde, and we are momentarily crossing the eastbound route from Belleisle to Plymouth. We are well over half-way from Ireland to Newfoundland, and are back again on the great circle route, having been slightly south of it owing to the drift effect of the northerly wind. Good weather report from St. John's.

12.45 p.m.—Durrant is speaking to steamship "Canada" on our spark wireless. There may be a chance of our seeing her shortly, as the sea is temporarily visible. The second wireless operator obtains directions on our directional wireless, so we may know in what direction to look for her. All we know at the moment is that she is somewhere within 120 miles. Captain Davis, the commander, wishes us a safe voyage. We gaze through our glasses in her direction, but she is just over the horizon.

2 p.m.—Slight trouble in the starboard midships engine. Cracked cylinder waterjacket. Shotter made a quick and safe repair with a piece of copper sheeting and the entire supply of the ship's chewing gum, which had to be chewed by himself and two engineers before being applied.

4.30 p.m.—Now on the Canadian summer route for steamers bound for the St. Lawrence *via* Belleisle Strait and the well-known Labrador current. There are already indications of these cold currents in the fog which hangs immediately above the surface of the water. Scott and Cooke spend much time at the chart table, with protractors, dividers, stop watches, and many navigational text-books, measuring angles of drift and calculating the course made good. Aerial navigation is more complicated than navigation on the surface of the sea, but there is no reason why, when we know more about the air and its peculiarities, it should not be made just as accurate.

5 p.m.—Harris unwisely shuts his hand in the door of the wireless cabin. Injury painful, but not serious. Flow of language not audible to me as forward engine happened to be running.

6 to 7 p.m.—We are gradually getting farther and farther into the shallow depression reported yesterday coming from the South Atlantic. For the last four hours the sea has been rising. Now the wind is S.S.E., velocity 45 miles an hour. Visibility only half a mile. Very rough sea and torrents of rain. Despite this the ship is remarkably steady. At 8 p.m. Scott decided to climb right through it and we evidently came out over the top of it at 3,400 ft.

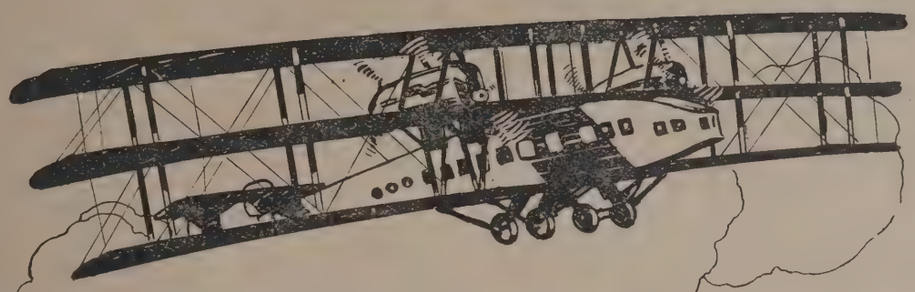
8.30 p.m.—We have now passed the centre of the depression exactly as Harris foretold. Rain has ceased and we are travelling quite smoothly again.

To the west the clouds have lifted, and we see an extraordinarily interesting sky, black, angry clouds giving place to clouds of grey mouse colour, then bright salmon pink, and a clear sky changing lower down on the horizon to darker clouds with a rich golden lining as the sun sinks below the surface. Sea is invisible, and is covered with a fluffy grey feather bed of clouds slightly undulating and extending as far as the eye can reach.

The moon is just breaking through the black clouds immediately above us. On the east we see the black, ominous depression from which we have just emerged, while away to the south the cloud bed over which we are passing seems to end suddenly and merge into the horizon. We are getting some valuable meteorological data on this flight without doubt, and each fresh phenomenon as it appears is instantly explained by the ever-alert Harris, who has a profound knowledge of his subject.

9 p.m.—One of the engineers has reported sick. He complains of feverishness. A stowaway has just been discovered, a cat smuggled aboard by one of the crew for luck. It is very remarkable that nearly every member of the crew has a mascot of some description, from the engineer officer who wears one of his wife's silk stockings as a muffler, to Major Scott, the captain, with a small gold charm, called "thumbs up."

We have two carrier pigeons on board, which it has been decided not to use. Anyhow, whether we release them or not they can claim to be the first two pigeons to fly the Atlantic.



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THE THIRD DAY.

FRIDAY, July 4th, 4.30 a.m.—A wonderful sunrise, the different colours being the softest imaginable, just like a wash drawing.

7 a.m.—Height 1,000 ft., bright blue sky above them, fog partly obscuring the sea beneath. . . . Sea moderate, with a big swell.

The fog bank appears to end abruptly ten miles towards the south, where the sea appears clear of fog. It is a very deep blue, and standing out conspicuously we see enormous white icebergs. The sun is shining brightly on its steep sides, and we estimate roughly that it is 300 yards square and 150 ft. high. As these icebergs usually draw about six times as much water as their height, we wondered whether he was aground, as the depth of water at that point is only about 150 fathoms. Another big iceberg is seen in the dim distance. These are the only two objects of any kind we have yet seen on this journey.

8.15 a.m.—The fog is still clinging to the surface of the water. Evidently very cold. There is an extraordinary crimpy, wavelike appearance in the clouds which are rolling up from the north. Harris has never seen this before. Pritchard took photographs. Underneath on the port beam there is a long stretch of clear blue sea sandwiched between wide expanses of fog on either side, looking just like a blue river flowing between two wide snow-covered banks. This is caused by a warm current of water, which prevents the cloud from hanging over it. This illustrates the rule that over cold currents of water the clouds cling to the surface.

9 a.m.—We are now over a large icefield, and the sea is full of enormous pieces of ice, small bergs in themselves. The ice is blue-green under the water, with frozen snow on top.

LAND SIGHTED.

12.50.—Land in sight, first spotted by Scott on the starboard beam. A few small rocky islands were visible for a minute or two through the clouds, but were instantly swallowed up again. Altered course to south-west to have a closer look. Eventually made them out to be the north-west coast line of Trinity Bay. Our time from Rathlin Island, the last piece of land we crossed off the shore of the north coast of Ireland, to the north coast of Trinity Bay, Newfoundland, is exactly 59 hours.

2.30 p.m.—We are crossing Newfoundland at 1,500 ft. in thick fog, which gradually clears as we get further inland. Very rocky country, with large forests, lakes, and for the most part no traces of habitation anywhere. Message from St. John's to say that Raynham was coming in his machine to greet us. We replied giving our position.

3 p.m.—Again enveloped in dense fog. Message from H.M.S. "Sentinel" giving us our position. We are making good 38 to 40 knots, and heading for Fortune Harbour.

4.30 p.m.—We have passed out of Fortune Harbour with its magnificent scenery and azure blue sea dotted with little white sailing ships, and are now over the two French islands Miquelon and St. Pierre, and steering course for Halifax, Nova Scotia. The French flag was flying at St. Pierre and was duly dipped as we passed over.

7.45 p.m.—Passed over tramp steamer ss. "Seal" bound for Sidney, Nova Scotia, from St. John's, the first we have seen.

8.15 p.m.—Clear weather, sea moderate; making good 30 miles per hour on three engines. Northern point of Cape Breton Island, Nova Scotia, just coming into sight. We should make Sambre Head 2.38 a.m.

Saturday, July 5th, 2.30 a.m.—Very dark, clear night; the lights of Whitehaven show up brightly on our starboard beam and we make out the lights of a steamer passing us to the east. Strong head wind against us; making no appreciable headway.

7 a.m.—Scott decided to turn inland to avoid S.W. wind barrage blowing off the coast. Crossed coast at Goose Island Country Harbour. Miles and miles of forest. Here and there a clearing with a hut or two; a few cows and an acre or so of cultivated land; any number of small rivers and lakes.

10.20 a.m.—We are down as low as 800 ft. over huge forests. A lovely resinous smell of pines, which we inhale with delight. Stacked tree trunks look like bunches of asparagus from above. Put the wind up a big brown eagle. We all agree we must come to Nova Scotia for shooting and fishing.

12.30 p.m.—Lunch. The petrol question has become a distinctly serious matter. We have been totalling up our available petrol resources with anxious care. We have 500 miles to go to New York, and if we do not get any wind or bad weather against us will do it all right with two engines, assisted occasionally by a third engine. We cannot afford to run all five at once owing to the petrol consumption. Lieut.-Commander Lansdowne, U.S. Naval Airship Service, sends signal on behalf of R.34 to U.S. Naval Authorities at Washington and Boston to send destroyer to take us in tow in case we should run out of petrol during the night. The idea is, we would then be towed by the destroyer during the hours of darkness and at dawn cast off and fly to Long Island under our own power. Let us hope this will not be necessary. It is now raining and foggy, which is the kind of weather that suits us now, as rain generally means no wind.

3 p.m.—Passed Haute Island in Fundy Bay.

3.30 p.m.—For some little while past there had been distinct evidences of electric disturbance. Atmospherics became very bad, and severe storm was seen over Canadian coast moving south down the coast. Scott turned east off his course to dodge the storm, putting on all engines. In this, fortunately for us, he was successful, and we passed through the outer edge of it. We had a very bad time indeed; it is quite the worst experience from a weather point of view that any of us have yet experienced in the air. During the storm some wonderful specimens of cumulus mamatus were seen and photographed. These clouds always indicate a very highly perturbed state of the atmosphere, and look rather like a bunch of grapes. The clouds droop into small festoons.

7.30 p.m.—Now in clear weather again, and have left Nova Scotia well behind us and are heading straight for New York. Particularly fine electrical disturbance type of sunset.

9.0 p.m.—Another thunderstorm. Again we have to change our course to avoid it, and as every gallon of petrol is worth its weight in gold it almost breaks our hearts to have to lengthen the distance to get clear of these storms.

July 6th, Sunday, at 4 a.m.—Sighted American soil at Chatham.

4.5 a.m.—South end of Mahoney Island, Scott is wondering whether petrol will allow him to go to New York or whether it would not be more prudent to land at Montauk.

5.30 a.m.—Passing over Martha's Vineyard, a lovely island and beautifully wooded. Scott decided he could just get through to our landing ground at Hazelhurst Field, but that there would not be enough petrol to fly over New York. Very sad, but no alternative. We will fly over New York on start of our return journey on Tuesday next, weather and circumstances permitting.

Landed 1.54 p.m., G.M.T., Haselhurst Field, Long Island, or 7.54 U.S.A. summer time. Total time on entire voyage, 108 hours 12 minutes.

THE TRANS-ATLANTIC HANDLEY PAGE.

It was stated on July 3rd that Vice-Admiral Mark Kerr, M.V.O., had decided to abandon the idea of flying the Atlantic on the Handley Page, and on July 4th the machine left St. John's for Atlantic City.

The firm had received several invitations to exhibit the machine in the States, and it was decided to take advantage of these offers. The machine carried 1,300 gallons of petrol, Admiral Mark Kerr, Major Trygve Gran, and Mr. Frederick Wyatt. Food for twenty-four hours was taken.

A message from Halifax, N.S., on July 5th stated that the machine had been forced to descend at Parrsborough that morning through engine trouble. The crew were uninjured, but the under-carriage was badly damaged in the landing.

The following cablegram has been received by Rolls-Royce, Ltd.:—

"Engines were splendid when oil feed pipe broke engine worked for at least two hours.—ADMIRAL KERR."

AMERICAN METHODS.

It is stated that the War Department will transport cotton by aeroplane from Americus, Georgia, to Lowell, Massachusetts, a distance of 1,100 miles.

THE LONDON FLYING CLUB.

The Earl of Lonsdale is President, and many distinguished people are Vice-Presidents, of the London Flying Club which it is intended to open at Hendon in July.

A Club House has been erected containing a ball-room and concert-hall to hold about 2,000 people, a dining-room, a lounge, a library, and many other small rooms, with 50 bedrooms for the use of male members.

The kitchens and offices are large, and M. R. Nobile, of Claridge's and the Hotel de la Plage, Ostend, will be responsible for the catering, which should be very good. A Hawaiin band has been engaged, and is coming over from America.

Instruction will be given by professionals in many sports, for which facilities will be afforded.

A flying school has been established on the club aerodrome, which is of about 80 acres. Members can garage their aeroplanes on the grounds, and have them kept in running order. The club will have passenger, two-seater and single-seater machines, and cars will be provided there and at the Ritz Hotel, the West End headquarters.

The ordinary members' annual subscription is £10 10s., members of the Royal Aero and Sussex County Aero Clubs £8 8s., and R.A.F. members £5 5s. At present there is no entrance fee.

The Proved Best.

NAPIER

British Built.

AERO ENGINES.



FIRST AGAIN!

¶ The Victory Aerial Derby

OPEN TO ALL COMERS

was won by a **NAPIER** Engined Airco Aeroplane, piloted by Capt. Gathergood, A.F.C.

¶ Distance covered, 189 miles in "bumpy" weather, at an *average* speed of

129.3 MILES PER HOUR.

Twelve machines started. Only one with Napier Engine.

SEVEN FINISHED;

Result—**NAPIER FIRST.**

¶ The reliability, speed, and endurance of the 450 h.p. Napier Aero Engine is thus further proved.

¶ The Napier was also

THE FIRST ENGINE TO REACH SIX MILES UP IN THE AIR.

Full particulars on application.

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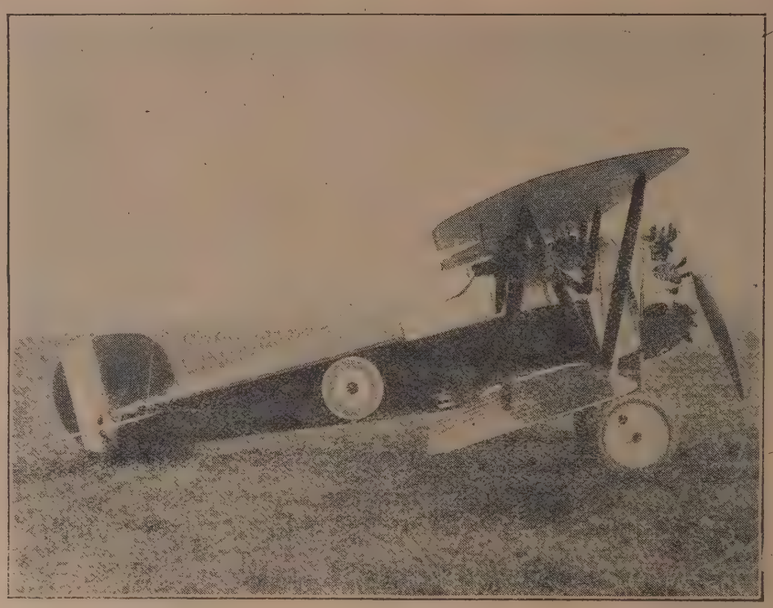
14 New Burlington Street, London, W.1.

Works: Acton, London, W.3.

10,000 FEET IN 5 MINUTES 25 SECONDS

AT FARNBOROUGH IN APRIL, 1919, A BRISTOL SCOUT FITTED WITH A "MERCURY" ENGINE CLIMBED 10,000 FEET IN 5 MINS. 25 SECS., & 20,000 FEET IN 16 MINS. 15 SECS., SPEED AT 10,000 FEET 143 M.P.H. OFFICIAL CORRECTED BAROGRAPH FIGURES.

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The Cosmos Engineering Co., Ltd.

ENGINES FOR AIRCRAFT,

JUPITER (UNGEARED)	450 H.P.	WEIGHT 636 LBS.
MERCURY	300 H.P.	WEIGHT 587 LBS.
LUCIFER	100 H.P.	WEIGHT 220 LBS.

CONTRACTORS TO THE AIR MINISTRY.

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Telephone: 1476 REGENT

20,000 FEET IN 16 MINUTES 15 SECONDS

Nothing can be better than the best
Nothing can be better than "Cellon"
Therefore "Cellon" is the best.

The above is a self-evident truth which requires no proof; Nevertheless:

CELLON WITH **DOPE**

CELLON
EASILY
LASTING
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EFFICIENCY

AND

AEROPLANES AND SEAPLANES PROVED ITS SUPERIORITY

Before and during the War and continues to do so to-day.

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22, Cork Street, London, W.1.

Telegrams—AJAWB, REG, LONDON. Telephones—GERRARD 440 (2 lines.)

THE MANCHESTER GUARDIAN
Aviation Supplement.

ISSUED WITH THE MANCHESTER GUARDIAN OF JULY 9th.

A survey of the present.
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Articles and interviews with the highest authorities on aviation and the navigation of the air.

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CENTRAL AIRCRAFT COMPANY'S

SCHOOL of AVIATION

The most modern and best method of Instruction in Flying is now being given at the Company's Aerodrome at Northolt.

This Flying Ground covers an area of about 350 acres, and forms probably the Finest Training Aerodrome in the country. Sleeping accommodation available.

Commence your Training NOW.

The School is under the personal supervision of Mr. HERBERT SYKES, O.B.E., the well-known Test and Exhibition Pilot, assisted by a large staff of qualified and experienced instructors.

Tuition on 80 H.P.

DUAL CONTROL "C.A.C." Tractor Biplanes,

the Finest Training Machines yet produced.

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Every type of Engine
Overhauled & Repaired

During a period of twelve months we overhauled and repaired 2,000 Engines, amongst which were the **Hispano-Suiza, B.H.P., Beardmore, R.A.F., Rhone, Clerget, Gnome,** etc., etc., and gave satisfaction in every case.

The High Quality and Reliability of our work are guarantees that you will get the highest service and satisfaction.

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AERONAUTICAL ENGINEERING

SUPPLEMENT TO "THE AEROPLANE"

INCORPORATING AIRCRAFT ENGINEERING, AERODYNAMICS, AIRCRAFT FINANCE AND COMMERCIAL AERONAUTICS AND MATTERS PERTAINING TO THE AERONAUTICAL ENGINEER AND THE AIRCRAFT TRADER.

THE WEEKLY COMMENTARY.

The inquest upon the deaths of Capt. Rawlings and Capt. Dunn in the accident to the Tarrant triplane at Farnborough on May 26th is the subject of a leading article in this issue.

The evidence given and certain facts which incidentally appeared at that inquest seem to have suggested to some people that the Technical Department of the Air Ministry is attempting to keep to themselves technical information which it is essential—in the interests of the British Aircraft Industry—should be freely published. It is not clear whether the Technical Department itself gained any information.

The products of the Blackburn Aeroplane and Motor Company, Ltd., of Olympia, Leeds, are described in this week's instalment of the series on "Modern British Aeroplanes."

An article on the methods adopted by the French Aviation Service for the prevention of fires caused by bursting or perforated petrol tanks will be found on page 153.

The devices are separated into two main divisions, *ea sunt* methods for getting rid of all the petrol carried by emptying or dropping the fuel tanks, and methods for preventing leakage caused either by bullet-holes or by damage in a crash.

It appears that such precautions have been carried to much greater lengths in France than in this country, and it is to be hoped that British manufacturers will now make an attempt to bring their practice at least into line with that of France.

THE TARRANT ACCIDENT.

The evidence given at the coroner's inquest upon the deaths of Capt. P. T. Rawlings and Capt. F. G. Dunn, who were both killed at Farnborough in the accident to the Tarrant "Tabor" triplane on May 26th, brings to light a number of curious points. On the point of the actual incidents of the accident itself two witnesses only—Mr. Tarrant himself and Brigadier-General Brooke-Popham, the Director of Research, Air Ministry—gave evidence.

Their evidence was in general agreement on the point of fact that all six engines were started up, that the machine taxied some few hundred yards with the four lower engines running fairly fast and the upper pair ticking over. It turned and taxied at an increased speed, and the top engines were opened up, the tail rose to an unusual extent, and the machine turned on its nose.

The only novel fact which appears is that, according to Mr. Tarrant, the machine was loaded with about 1,000 to 1,200 lbs. of lead shot in the nose of the fuselage.

No one of the four surviving members of the crew gave evidence as to the occurrence.

General Brooke-Popham stated that there had been an official inquiry into the accident, and that he was instructed to claim privilege for that report.

From the questions asked of various witnesses by Mr. Walter Frampton—acting on behalf of Messrs. Ogilvie and Partners, who acted as consulting engineers to Mr. Tarrant—and from the answers given to those questions, there arise a number of rather important deductions.

It appears that tests had been made on a model of the machine in the wind tunnel at the R.A.E., and the results of the test were forwarded to Ogilvie and Partners.

On the strength of these tests the consultants wrote to Mr. Tarrant stating that the machine was not safe to fly if the figures of the test were to be accepted as they stood. These tests indicated that the machine was tail heavy, to the extent of requiring 20° adjustment (query incidence) on the top elevator to trim at a reasonably high speed—which would leave insufficient adjustment for errors and would entail a severe strain on the pilot.

Upon the strength of this report from his consultants Mr. Tarrant apparently drafted a letter to the Technical Department, on May 23rd, asking to be allowed to postpone the trials until confirmation by the National Physical Laboratory of the correctness, or otherwise, of the R.A.E. tunnel tests.

If the N.P.L. tests confirmed the calculations and experience of his experts—presumably Ogilvie and Partners—he would like to make the tests as the machine stood; but if not—that is, apparently, if they agreed with the R.A.E. tests—he was afraid that further model tests would be absolutely necessary, and whilst these were being made he would like to change the engines and also the undercarriage.

This letter was never sent, and the Director of Research was not informed of its contents—apparently because Mr. Tarrant on the day after drafting this letter called at the Technical Department and discussed the matter with certain officials, who had apparently received the results of the N.P.L. tests to which Mr. Tarrant referred in the draft letter, and who satisfied Mr. Tarrant that the conclusions derived from the R.A.E. tests were false, and who arranged to test the machine on the following Monday morning.

Messrs. Ogilvie and Partners were not informed of the results of the N.P.L. tests or of the decision to fly the machine on that day.

It further appears from the evidence that a civilian employee of the Royal Aircraft Establishment of the name of Grosset formed part of the crew for the special purpose of watching the behaviour of the undercarriage whilst the machine was taxying. Examined on this point Mr. Tarrant explained that there was some question of there being too much elastic on the axles, and thus making the chassis too rigid. There had been no

question as to the strength of the undercarriage to his knowledge.

Lieut.-Col. the Master of Sempill gave evidence that on examining the undercarriages after the accident he had concluded that they had not failed until the machine turned over.

From this evidence the following points seem fairly clear :—

1. That the machine as built was in proper aerodynamic balance according to the calculations both of Mr. Tarrant's design staff and of his consultants, Messrs. Ogilvie and Partners.

2. That tests made on a model at the Royal Aircraft Establishment indicated, on the contrary, that it would be dangerously tail heavy, and that both Mr. Tarrant and his consultants desired to postpone the trials till these tests could be checked by the National Physical Laboratory.

3. That the National Physical Laboratory tests did not confirm those made by the R.A.E., although the fact of 1,000 lbs. of lead ballast being placed in the nose of the fuselage would seem to indicate that there was some suspicion of tail heaviness still undispelled. One thousand pounds in the nose of the machine would be far from sufficient to counterbalance the degree of tail heaviness indicated by Messrs. Ogilvie's report on the results of the R.A.E. tests, so that it may be assumed that only a minor degree of tail heaviness was expected.

4. That on the receipt of this report the responsible officials of the Technical Department decided to test the machine in its then condition, and persuaded Mr. Tarrant to take their view.

5. That whatever the cause of the accident may have been, it was not due to tail heaviness on the part of the machine.

It will thus be seen that in spite of the large volume of evidence produced, and the number of curious facts disclosed, no explanation of the accident has been allowed to emerge.

It has been publicly stated by General Seely that the machine was built for Military Service and that it would not be in the interest of the public services to disclose the results of the official technical investigation into the cause of the accident.

If this is the case, it is distinctly unfortunate that the veil of secrecy was not drawn a little closer.

As the matter stands at present, it is fairly obvious that the Royal Aircraft Establishment's model tests were erroneous and worthless.

Apparently the N.P.L. tests gave widely different results, but the conclusions drawn from them were not allowed to appear. Whether they were equally wrong, or whether they were proved to be correct by the accident but were erroneously interpreted—or merely ignored—by the responsible officials of the Technical Department cannot be known.

But it is difficult to avoid a suspicion that the public interest which is to be served by refusing to disclose the results of the official inquiry is that of maintaining some fragments of a reputation for the departments and officials implicated in the affair.

The failure to inform Messrs. Ogilvie and Partners either of the receipt of the N.P.L. report or of the decision to carry out the test does not in any way dispel these suspicions.

It may safely be surmised that Mr. Tarrant did not employ that firm as his consultants out of pure philanthropy. On the other hand, no sane man would employ a consultant in whom he had no confidence, nor act in a sense directly opposed to the last advice of his consultants without further consultation, unless there were very urgent reason for that course.

Was that reason—by any chance—the refusal of the Technical Department experts to allow important technical data to pass into the possession of civilian engineers?

In this connection it may be noticed that to their verdict of "Accidental death" the jury added the following rider :—

"But we all of us feel unanimously of opinion that something has not come out which should come out. We have not had the evidence of anyone in the machine, and we feel that something has been kept in the background which we should know."



A German Giant Seaplane fitted for commercial passenger-carrying. One of the recent products of the Zeppelin Company's Works at Staaken. This machine is generally on the lines of the four-engined Zeppelin Staaken Giant, described some time ago by M. Jean Lagorgette in this paper, but is fitted with seaplane floats, and has had the nose of the fuselage extended to form a passenger cabin. The power plant consists of four 250 h.p. Maybach engines.

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THE TRANSATLANTIC FLIGHT.

VICKERS-"VIMY"-ROLLS

The first direct flight from Newfoundland to Ireland was accomplished by this Aeroplane in 15hrs 57mins.



Trials at Weybridge before proceeding to Newfoundland.

AEROPLANES for COMMERCIAL & MILITARY use.

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AIRCRAFT CONTRACTORS TO H.M. GOVERNMENT.

The following Accessories and Material were used—

Tyres and Wheels—Palmer Tyre Co.
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MODERN BRITISH AEROPLANES.

VII.—The Blackburn Aeroplane and Motor Co., Ltd.



Three-quarter Front View of the Blackburn "Kangaroo" (two 250 h.p. Rolls-Royce Falcon Engines).

Mr. Robert Blackburn—the head of the Blackburn Aeroplane and Motor Co., Ltd.—is amongst the earliest of the successful British constructors of aeroplanes.

His first aeroplane was produced in 1910, and a very successful monoplane, fitted with a 50 h.p. Gnôme engine appeared in time to compete in the "Daily Mail" Circuit of Britain race in 1911.

In 1913 the Blackburn firm produced an 80 h.p. two-seater monoplane of very graceful appearance which was extensively flown during 1913, '14, and '15.

During the earlier part of the late war the firm was engaged in building aeroplanes and parts to official design, but during 1916 they recommenced original design work by producing the twin-engine seaplane which eventually developed into the Blackburn "Kangaroo."

THE BLACKBURN TWIN-ENGINED SEAPLANE.

This machine, as built in 1916, was a central fuselage twin-engine folding wing seaplane, with two floats, each beneath one engine nacelle and each carried on an entirely independent chassis.

The first example was engined by two 160 h.p. Sunbeam engines, and, with this power plant, it was successfully flown at the R.N.A.S. Experimental Station at Grain.

A second and improved edition, fitted with two 190 h.p. Rolls-Royce engines, was delivered to the same establishment, and gave—for those days—an extraordinary performance.

Apart from the presence of floats instead of wheels the machine was practically identical with the "Kangaroo" hereafter described.

SPECIFICATION.

Type of machine	Blackburn Twin Seaplane.
Name or type No. of machine	S. P.
Purpose for which intended	Long Range Bomber.
Span	74 ft. 10¾ in. top; 27 ft. 9½ in bottom plane.
Gap	7 ft. 3 in.
Overall length	44 ft. 2 in.—46 ft.
Maximum height	16 ft. 10 in.
Chord	7 ft. 3 in.
Total surface of wings	880 sq. ft.
Span of tail	17 ft. 6 in.
Total area of tail	143 sq. ft.
Area of elevators	63.5 sq. ft.
Area of rudder	22.5 sq. ft.
Area of fin	25 sq. ft.
Area of ailerons	166.3 sq. ft.
Maximum cross section of body	12 sq. ft.
Horizontal area of body	105 sq. ft.
Vertical area of body	115 sq. ft.
Engine type and h.p.	Falcon-Rolls, two 250 h.p.
Weight of machine empty	5,840 lbs.
Load per sq. ft.	9.78 lbs.
Weight per h.p.	17.2 lbs.
Tank capacity in hours	8 hours.
Tank capacity in gallons	230 petrol; 18 oil.
PERFORMANCE—	
Speed low down	87 knots.
Disposable load apart from fuel	1,710 lbs.
Total weight of machine loaded	8,600 lbs.

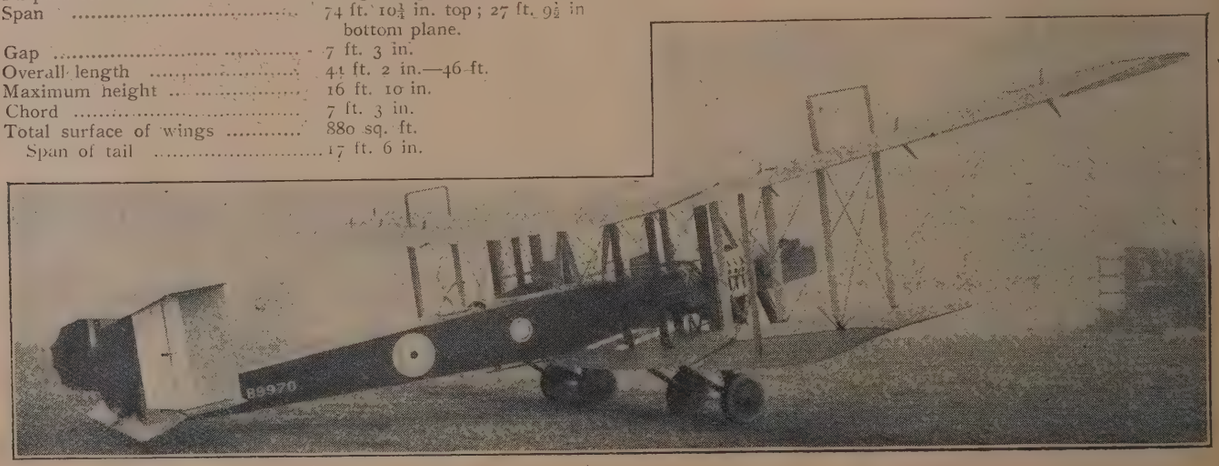
THE BLACKBURN "KANGAROO."

As may be seen from the illustrations this machine is upon the now accepted lines of twin-tractor biplanes.

The most noticeable features are the extreme overhang of the upper plane, and the extreme projection of the front end of the fuselage.

Generally, the construction is on conventional lines.

One point of interest is the design of the metal fittings. Instead of the usual form of fitting built out of steel sheet welded, brazed or riveted together, all the main fittings on this machine are machined from forgings. A typical example, the hinge fitting for one of the lower rear spars, is shown in one of the illustrations.



Three-quarter Rear View of the Blackburn "Kangaroo."

We are informed by
Messrs. Vickers, Ltd.,
the Makers, that

THE WINNER OF THE ATLANTIC RACE

was constructed throughout
with "CROID" Liquid Glue.

We have supplied Messrs.
Vickers, Ltd., with many
tons of "CROID" as we have
practically all the
British Constructors.

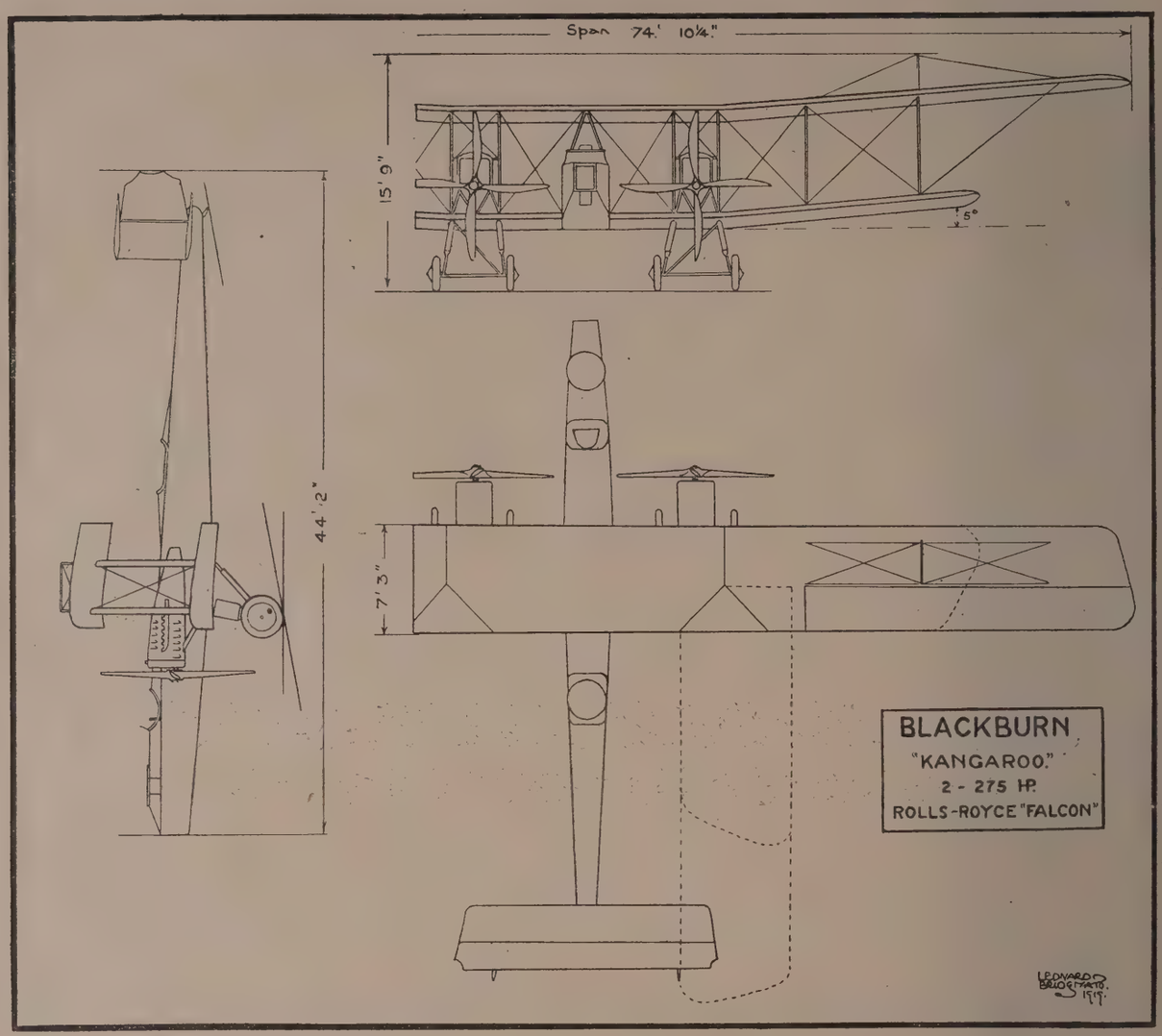
If good enough for such a test
it should be

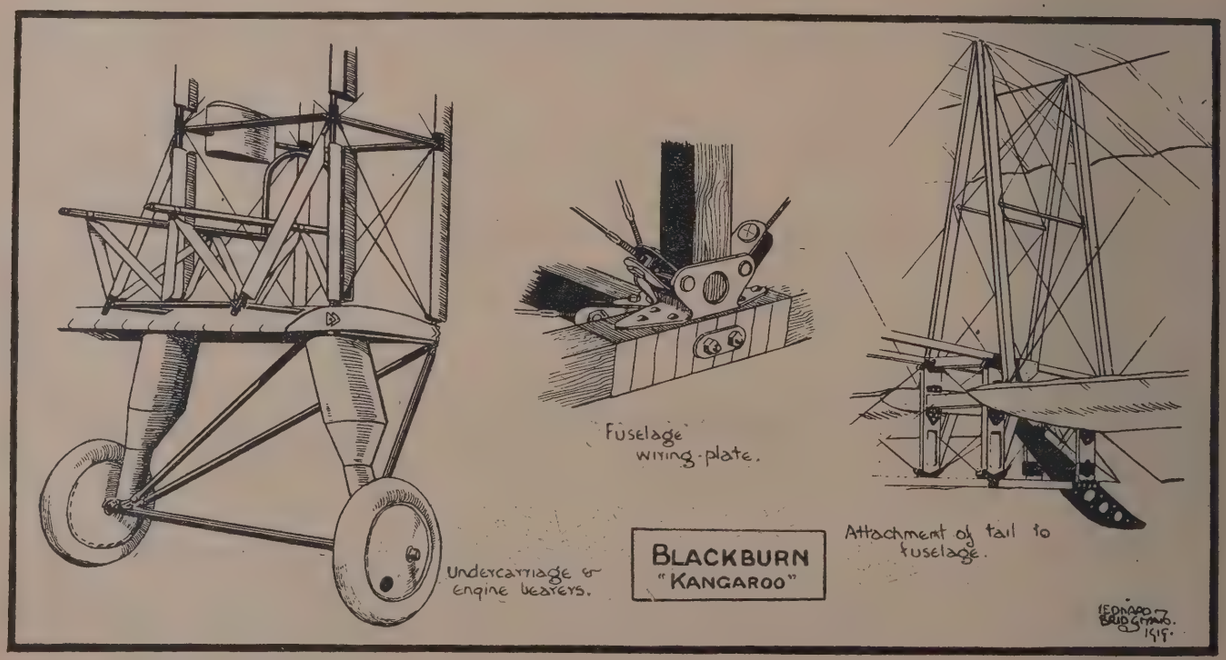
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(See advertisement on page 185.)

THE IMPROVED LIQUID GLUES CO., Ltd., Gt. Hermitage Street, London, E.1.

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.


Span 74' 10¼"
15' 9"
5°
44' 2"
7' 3"
BLACKBURN
"KANGAROO."
2 - 275 H.P.
ROLLS-ROYCE "FALCON"


Undercarriage & engine bearers.
Fuselage wiring-plate.
Attachment of tail to fuselage.
BLACKBURN
"KANGAROO"



The rear spar hinge joint of a lower wing of the Blackburn "Kangaroo."

SPECIFICATION.

Type of machine	Blackburn Twin Tractor.
Name or type No. of machine	"Kangaroo."
Purpose for which intended	Long Range Bomber.
Span	74 ft. 10¼ in. top; 47 ft. 9½ in. bottom plane.
Gap	7 ft. 3 in.
Overall length	44 ft. 2 in.—46 ft.
Maximum height	16 ft. 10 in.
Chord	7 ft. 3 in.
Total surface of wings	880 sq. ft.
Span of tail	17 ft. 6 in.
Total area of tail	143 sq. ft.
Area of elevators	63.5 sq. ft.
Area of rudder	22.5 sq. ft.
Area of fin	25 sq. ft.
Area of ailerons	166.5 sq. ft.
Maximum cross section of body	12 sq. ft.
Horizontal area of body	105 sq. ft.
Vertical area of body	115 sq. ft.
Engine type and h.p.	Falcon-Rolls, two 250 h.p.
Weight of machine empty	5,150 lbs.
Load per sq. ft.	9.21 lbs.
Weight per h.p.	16.2 lbs.
Tank capacity in hours	8 hours.
Tank capacity in gallons	230 petrol; 18 oil.

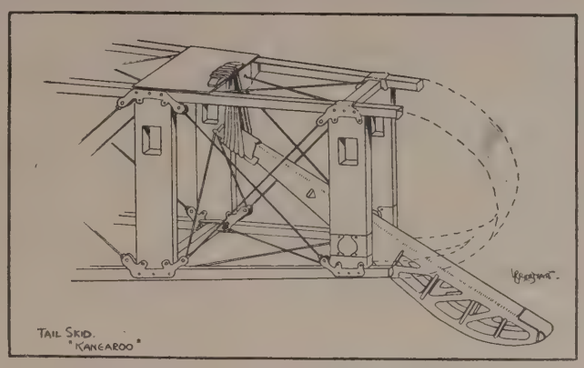
PERFORMANCE—

Speed low down	87 knots.
Disposable load apart from fuel	1,710 lbs.
Total weight of machine loaded	8,100 lbs.

THE BLACKBURN "BLACKBURD" TORPEDO CARRIER.

A large single-engine torpedo carrier designed to operate from either land or the deck of an aeroplane carrier ship.

This machine is of normal tractor biplane type, fitted with folding wings and a chassis consisting of two independent units, with no cross-axle, permitting the slinging and dropping of an 18 ins. torpedo from beneath the centre of gravity.



The intervention of the Armistice prevented this—with other equally interesting machines—from passing beyond the experimental stage.

SPECIFICATION.

Type of machine	Tractor Biplane.
Name or type No. of machine	"Blackburd."
Purpose for which intended	Torpedo carrier, for use from ship or land.
Span	52 ft. 6 in. top plane; 17 ft. bottom.
Gap	7 ft.
Overall length	36 ft. 3 in.
Maximum height	12 ft. 4½ in.
Chord	7 ft.
Total surface of wings	709 sq. ft.
Span of tail	17 ft.
Total area of tail	82 sq. ft.
Area of elevators	34 sq. ft.
Area of rudder	9 sq. ft.
Area of fin	18 sq. ft.
Area of ailerons	85 sq. ft.
Maximum cross section of body	11 sq. ft.
Horizontal area of body	80 sq. ft.
Vertical area of body	126 sq. ft.
Engine type and h.p.	"Eagle" Rolls-Royce; 350 h.p.
Weight of machine empty	3,080 lbs.
Load per sq. ft.	7.53 lbs.
Weight per h.p.	15.3 lbs.
Tanf capacity in hours	3 hours.
Tank capacity in gallons	69 petrol; 9 oil.

PERFORMANCE—

Speed low down	92 m.p.h.
Speed at 10,000 feet	84½ m.p.h.

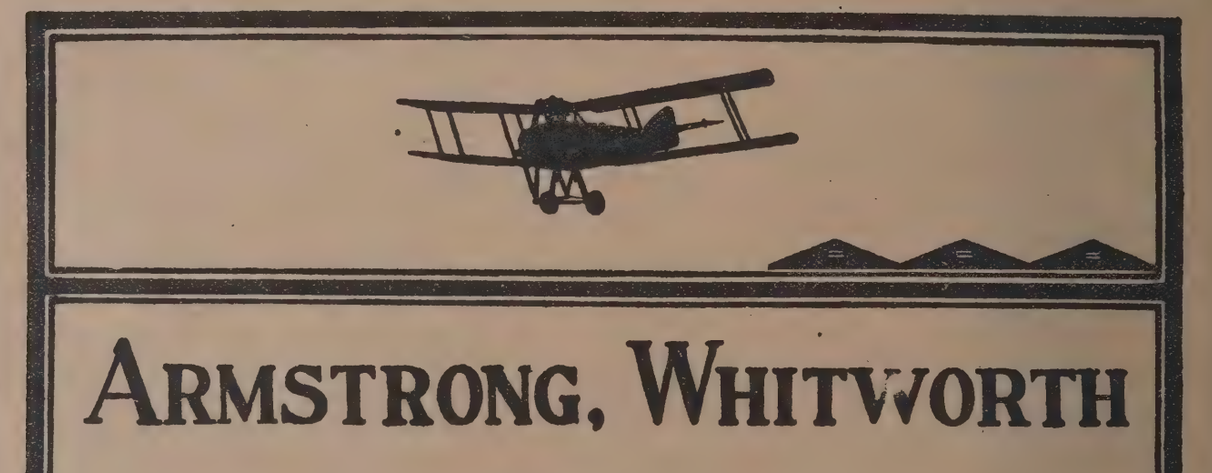
Climb—

To 5,000 feet in minutes	11⅓ minutes.
To 10,000 feet in minutes	33⅓ minutes.
Disposable load apart from fuel	1,680 lbs.
Total weight of machine loaded	5,340 lbs.



Three-quarter front view of the Blackburn "Blackburd" (350 h.p. "Eagle" Rolls-Royce engine).





ARMSTRONG, WHITWORTH

NEWCASTLE-UPON-TYNE.

TELEPHONE:- 500 GOSFORTH.
TELEGRAMS:- ARMSTRONG AVIATION,
NEWCASTLE-ON-TYNE.

HOW FIRE IS AVOIDED ON FRENCH AIRCRAFT.

By JOHN STRONG.

French design was always far in advance of that of other Allied countries in regard to fire-avoiding devices on aeroplanes, and all machines had either detachable or protected petrol tanks, or tanks fitted with rip patches.

In addition, great care was taken with the petrol, oil and water installations to ensure that installation failures should not provoke disasters. All air intakes have to be carried outside the engine fairing and so arranged that communication with the interior of the cowling is impossible, so that the risk from back fires is reduced to a minimum.

Pressure fed petrol delivery is forbidden. Ignition wires are not allowed within one inch of any hot parts of the engines, and must pass under and not over the petrol pipes.

RIP PATCHES.

Rip panels or patches are used as an emergency measure, and consist of a panel sweated over a cut-out portion of the petrol tank. One end of the patch is attached by a cable to a lever which, when operated through its full stroke, entirely rips off the sweated patch. In actual practice, however, considerable difficulty has been experienced, because the strength of the sweated patch is variable and often more than that of the pull exerted by the lever.

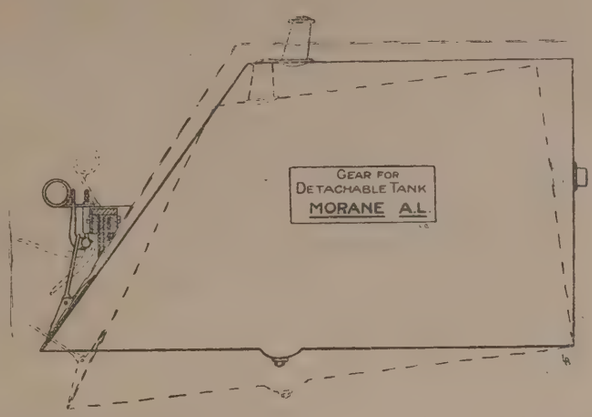
This had led to a modification recently approved by the French Authorities for use on the "Spad VII" Fighter. A large opening is provided in the bottom of the tank and covered with a plug or cap which is held in place by an encircling brass band with flanged edges, and made petrol-tight by the use of the conventional washer-packing in a manner similar to the method used on glass fruit jars, where the cap is released by ripping off the band.

DETACHABLE TANKS.

The problem of designing and constructing a petrol tank that could be detached and released from the machine at the will of the pilot has received considerable attention, and actual performance tests have been successfully carried out, first in England and later in France.

Lieut. Lloyd Lott, of the Canadian Expeditionary Force, has obtained basic British patents on such a device, which, in theory, at least, is applicable to most machines, and he worked out designs for several French machines.

Briefly, he depends on a one point suspension of the tank and holds it rigid by employing a fuselage construction into which the tank is wedged so as to have a surface-bearing on several sides. The bottom of the tank has a panel affixed which conforms to and fits into the bottom bay of the fuselage and takes the place of the cross-bracing wires which have necessarily been removed. Initial impetus at time of release is increased by the use of tensioned elastic bands extending over the top of the tank and fastened on either side.



Lieut. Bernard, of the French Aviation Service, has improved the manually operated releasing mechanism and worked out a design particularly suited to the Spad. His method of construction has been officially approved by the French Government, and the device is now being installed on the Spad XIII.

In this design the rear cross-bracing wires on the landing gear are detached simultaneously with the tank. The tank drops down and is carried by gravity through the space previously covered by the bracing wires and then clears the machine. The whole operation functions from one lever in the cockpit. The same operation shears all the pipe connections. Petrol pipes coming from the gravity tank are previously closed off by a pet cock, or else automatically prevented from wasting fuel by a ball check valve.

The above description applies in a general way to the detachable tank devices in use on other machines, such as the Caudron and the Morane, of which sketches are given here.

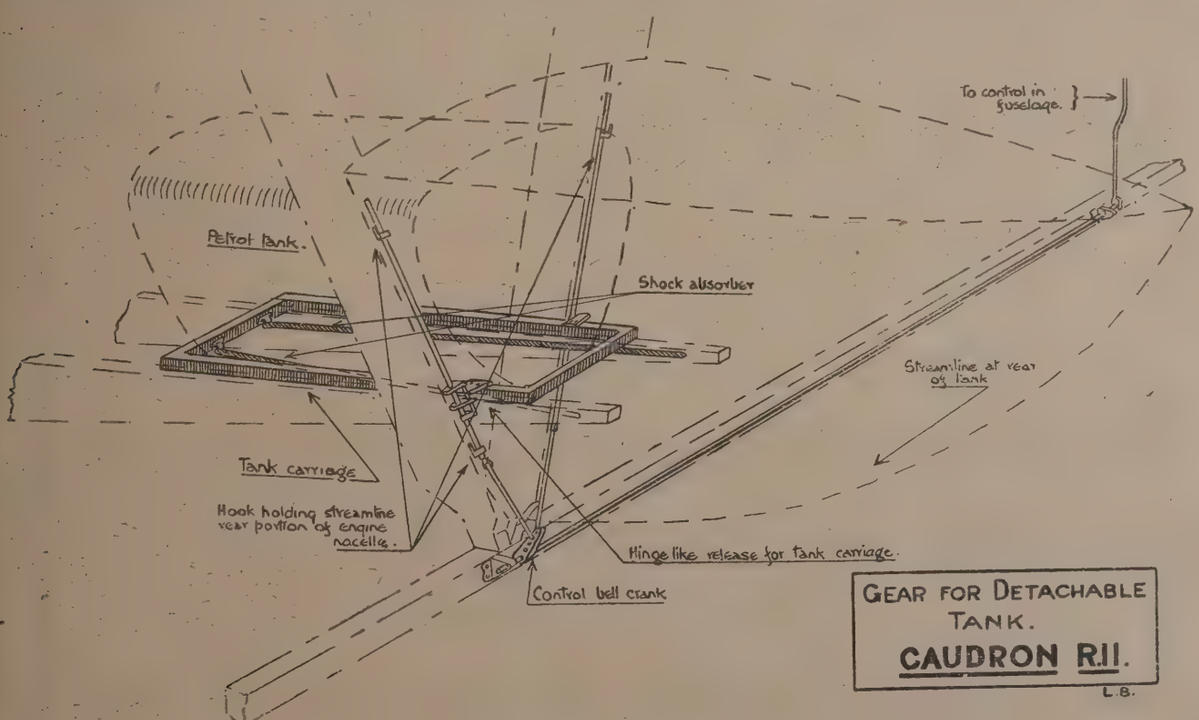
OBJECTIONS.

There are several objections to this practice:—

1.—Alterations or interference with the design of the machine.

2.—Possible weakness due to the substitution of the mechanical device for previously designed parts of the machine.

3.—Necessity for cutting all petrol pipes with consequent difficulties.



4. Necessity for an instantaneous and complete detachment of tank from the machine.

5.—Necessity of bringing the machine under control and levelling out before releasing tank.

6.—Danger of fire to the machine as the burning tank drops.

7.—Failure of mechanical parts to function at critical moment due to previous disuse, etc.

8.—Danger of pilot releasing tank without cause, due to nerves resulting probably in a forced landing in enemy territory.

9.—Danger of tank becoming loose due to vibration. (This has happened frequently on the Bréguet with the result that temporary repairs are made at squadrons which render releasing device inoperative.)

10.—In a crash the tank is just as likely to take fire as an ordinary tank, and this has already happened to three postal machines during the last few months.

PROTECTED TANKS.

The idea of covering a petrol tank with India rubber originated with a Mr. Russell, who took out a British patent in 1909, but allowed it to lapse.

Various improvements have been suggested by Thompson, Daigre, Perignon, Lanser, Neal, Imber and other inventors, and the result has been a reservoir which will take 20 or more incendiary bullets without leaking, and the Neal, Sacana and Imber tanks do not take fire even in a bad crash.

Mr. Daigre became interested in protected tanks as a result of some protective armour that he made for the French Government. This material was a light hardened steel upon which a mechanical hard rubber composition was moulded.

For his sample tank Mr. Daigre employed an inner and an outer steel shell and filled the intervening space with a glycerine and gelatine composition apparently similar to that which was at one time used as a filler for so-called puncture-proof automobile tyres. This material was forced in under pressure, and in theory, at least, would close and fill the hole made by the bullet in passing through either tank wall.

In actual practice it gave a tank excessive in weight and inferior to the Imber and Sacana types. This major fault and other minor ones led to a complete abandonment of this method of protection.

Mr. Daigre has, however, built a petrol tank for armoured fighting "tanks" that has proved very successful, withstanding the burst of a French 75 mm. shell explosion two feet away.

In the summer of 1917 Messrs Lanser and Marbais started to build experimental protected petrol tanks for aircraft. These eventually took the form of a steel tank of ordinary construction covered by a layer of felt ¼ in. thick, and six or more layers of sheet rubber, all of the same kind.

Usually, the inner layer of rubber was about 2 mm. thick and the others 1 mm. thick. One or more of the rubber sheets were separated by coarsely interlaced hemp cord, and the whole structure bound in place by a galvanised wire netting—⅛ in. mesh and finished by twisting the loose strands together and tightening. This development occupied the interval up to the spring of 1918. A funnel was provided at the bottom and escaping petrol percolated down between the sheets and escaped through the funnel clear of the aeroplane. Tests showed the tank to be, on the whole, fairly satisfactory, but heavy.

About this time the French became interested in the possibilities of detachable tanks, and the Daigre and Lanser experiments were stopped. The result up to that date was a very heavy protected tank, but not a leak-proof one, and the weight of three or more pounds to the gallon capacity on tanks of about 50 gallons proved an effective limiting factor to their adoption.

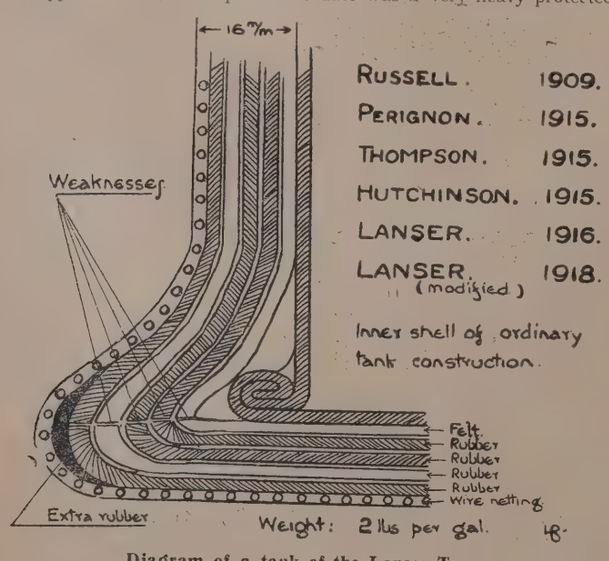
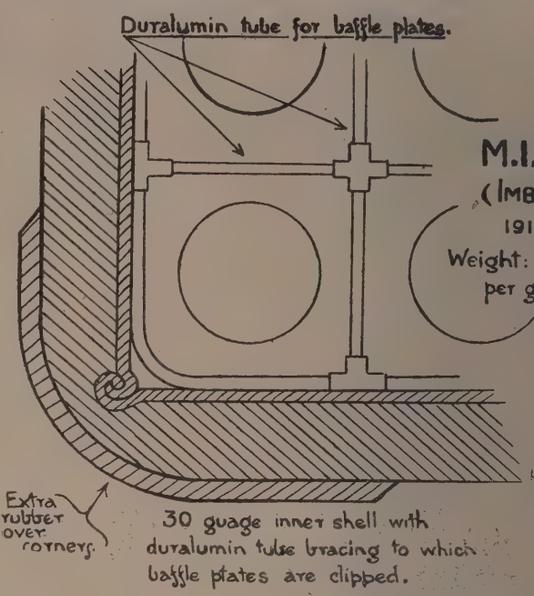


Diagram of a tank of the Lanser Type.



In March, 1918, the Société de Constructions Aéronautiques et de Navigation Aérienne, known as the "Sacana," attacked the problem afresh, and in an intelligent and scientific manner, rather than by the trial and error method heretofore employed. The system of protection, as described in detail later on, overcame the difficulties experienced by Messrs. Thompson, Lanser and Daigre respectively, and a satisfactory fireproof tank weighing about 1 lb. per gallon was produced.

In May, 1918, the Dunlop Rubber Company produced a tank covered with a thick layer of very slightly vulcanised rubber which gave very successful results under machine-gun tests, but the fact that the rubber was so slightly vulcanised rendered it liable to freeze and become brittle at temperatures slightly below 0 deg. C., and the French Section Technique soon realised that it was unsuited to aeroplane conditions.

The next step taken was a so-called "Modified" Lanser tank, which embodied the general principles worked out by the Sacana Company, but with the use of wool shoddy blanket material instead of the canvas used by the Sacana Company, or the wool felt previously used by Lanser. The drain was omitted from this tank, but the wire mesh covering was still retained. It was this composite tank which was thoroughly tested and approved by the Section Technique and adopted by the French Government. Its weight was just over 2 lbs. per gallon. The "Sacana" tank is also being adopted.

The United States Technical Section kept in touch with the French and British developments, and, as a consequence, recommended the "Sacana" tank for installation in the Sopwith Dolphins with 300 h.p. engines built in Paris for them. The Dolphin was arranged for a non-pressure system.

They also ordered "Sacana" tanks for DeH.4s and Nieuports and "Modified Lanser" tanks for their Bréguets.

It is to be noted that owing to the outer shell certain designs of tanks that cannot be built by the "Lanser" System, can be by the "Sacana." (See detailed descriptions of the respective tanks.)

It is also to be noted that the French Authorities are planning to continue the protection of tanks on their aeroplanes for peace conditions, both military and commercial, both as a means of reducing the fire risk in case of a crash and to obtain lower insurance rates, and from the latter point alone the protected tank should more than pay for the increased cost.

THE "SACANA" FIREPROOF TANK.

The "Sacana" tank may be best described as a semi-rigid type. Essentially, it consists of an inner metal shell of medium gauge covered by fabric and layers of vulcanised rubber of varying degrees of elasticity and of outer layers of fabric and a metal covering. The general purpose is to make the tank sufficiently rigid to:—

(a) Be borne on ordinary bearers, and so to be interchangeable with tanks of ordinary design. This permits dispensing with the use of special cradles, etc.

(b) To offer so much resistance to the bullet that, though it enters the tank, it will not merge on the far side. This actually occurs in most cases, and thus avoids the serious injury more apt to occur with the exit bullet hole.

(c) To keep the tank intact and leakproof in case of a crash.

All rubber is vulcanised before being applied to the tank, and the



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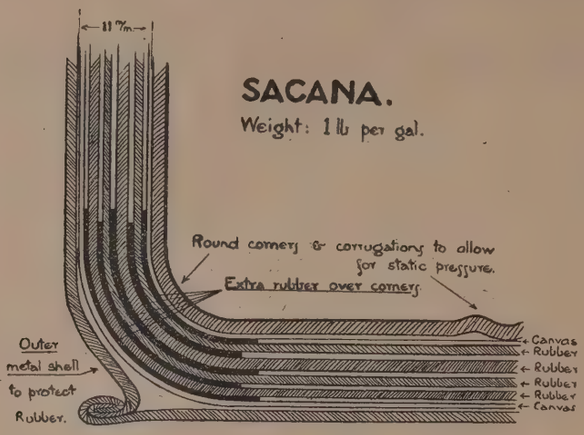
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Each sheet of rubber of different elasticity
(This was afterwards copied by Lanser)

vulcanisation is sufficient to keep it from freezing at high altitudes. British tests have shown such rubber to be satisfactory at a temperature of 30 deg. below zero Fahr.

The inner shell is made of aluminium or plain sheet steel. All corners are given as large a radius as possible—at least 2 ins.—and the sides are corrugated sufficiently to allow for the liquid pressure set up when the first shot enters, and the shock in a crash.

Joints are preferably welded, but can be lapped and riveted and soldered. Baffle plates are made in the ordinary way, and spot welded to the shell, but are given a small radius at the sides, so that they "give" in a crash.

Large tanks for bombers and passenger machines can have several small inner shells instead of using one large tank and baffle plates. Tanks have been built for the Caproni after this method. The several inner shells are bound together by the covering and the outer metal envelope. This gives a quick production job.

The covering consists of the following layers :—

1. Strong canvas as used for motor tyres.
2. Fine ramie cloth or discarded aeroplane fabric.
3. 1½ mm. of well vulcanised rubber.
4. 1½ mm. of rubber lightly vulcanised or Dunlop rubber.
5. 1 mm. of rubber well vulcanised.
6. 1½ mm. of rubber well vulcanised (for bottom of large tanks only).
7. Thick ramie cloth or discarded (rejected) aeroplane fabric.
8. Outer metal envelope of thin aluminium.

Note.—One layer of thick ramie cloth can be used instead of No. 1 and 2 together. The strong canvas takes up the burrs made when the shell is pierced and the fine cloth prevents the canvas from forming a wick of broken fibres through the rubber. Chemical action between the metal shell and the rubber is also prevented.

The rubber sheets are cut to shape from patterns and applied to the shell by women. The edges are lightly drawn together by sewing. The main joint is along the top of the tank and the others along the round corners. Joints on successive sheets must not coincide. When the sheet is in place the sewn edge and two inches each side of the edge are given a good coat of rubber solution, and the reinforcing strips are then applied to the corners. This amounts to thickening up the corners by a cold vulcanisation process, and the operation is repeated for each successive sheet.

There is a distinct advantage in using thin sheets of rubber previously vulcanised both for inspection and application. This advantage is still further increased by using sheets of different elasticity (by the use of different rubber gums or by varying the vulcanisation), for when the bullet has passed through, the fracture takes a somewhat different course for each sheet with a resultant overlapping of the different rubber sheets, and the tank is immediately sealed.

A light coat of soft soap, with a certain amount of salammoniac, is applied to each layer before putting on the next to prevent self-vulcanisation, and permit a slipping of one sheet upon the other. Paraffin wax has the same effect and can be used if desired.

The fabrics are soaked in any approved fireproofing solution and dried before using.

The heavy cloth is applied outside the rubber before putting on the outer shell in order to evenly distribute the stress set up by the static liquid pressure when the tank is pierced. This prevents the often-experienced tendency of a tank to leak on the first or second shot, and then catch fire from the exuded petrol.

The outer shell is made of aluminium because it is lighter than wire mesh, takes the shock better, makes a more rigid tank and holds the rubber firmly in place around difficult contours impossible with wire netting, affords a secure method of attachment and makes a cleaner-looking job.

The outer shell should always be of a softer metal than the inner shell. If desired the exterior shell may be dispensed with and the outer fabric given a coat of metallic dope or paint instead.

The finished tank can be provided with standard fittings, and the tanks do not require special packing for shipment. The finished weight of the tank is approximately 1 lb. per gallon capacity, the total thickness of the covering being ⅜ in. only.

The Lanser Protected Tank.

This is a development of the Russell and Thompson patents and of Lieut. Perignon's tank, which was made and tested in February, 1914. The method of manufacture is the same.

The inner shells of the Lanser tanks are made exactly like ordinary unprotected tanks without any special study in design or manufacture. This probably accounts for their early production tanks being unsatisfactory, and led to the introduction of a modified type.

The covering originally consisted of one layer of ¼-in. thick felt, 4 to 7 layers of rubber of the quality used for inner tubes of cycle tyres, and iron wire netting outside to hold all in place. A soft soap composition was applied between each layer of rubber to prevent self-vulcanisation.

In building up, no care was taken to thicken the protection of the corners. The edges were lightly drawn together by sewing only. On only the last layer was any proper joint made, and this with a strip of rubber only 1 mm. thick, so that instead of being reinforced at the corners there was only 1 mm. of rubber in all.

The Modified Lanser Tank.

This is the tank made to the Section Technique specifications, and was very satisfactory for war machines, though heavy.

The layers used are :—

A.—5 mm. sheet of baize or similar fabric
B.—1 mm. of well vulcanised rubber.
C.—4 mm. of non-vulcanised Dunlop rubber
D.—1 mm. of well vulcanised rubber.
E.—1 mm. galvanised iron wire netting.

12 mm. total thickness of covering.

Weight, 2 lbs. per gallon.

The corners were not thickened up, and although these tanks gave good results under French tests, they have not withstood the more severe British tests. This is only natural, as the known principles of inner shell construction were not applied.

Existing Patents.

1. Russell (British), 1909.—Rubber-covered ordinary shell patent lapsed in 1913.

2. Perignon (French Lieut.), February, 1915.—Original patent, merely suggests covering an ordinary tank with rubber, which is the Russell invention. Two additions were taken out, making it quite similar to the Lanser and Hutchinson patents.

3. Thompson (British), 1915 and 1917.—Double shell with rubber between. Walls made to move to close leaks.

4. Daigre (French).—Several patents, all in 1915. The principle covered is that of a double metal wall with synthetic rubber forced under pressure between the walls. Effective but far too heavy. Mr. Daigre also experimented with an inner wall of celluloid.

5. Hutchinson (French), November, 1915.—By the Hutchinson Rubber Co., provides a rubber-covered tank with a space between the cover and the tank which might be an air space or a sheet of felt, cork, cotton wool, or any light material.

6. Lanser (French and Belgian), November, 1916.—Lanser specifies laminated rubber with felt directly on the inside shell. In addition, he specifies a double wall of rubber with a space between created by a thick cord net and a drain cock at the bottom of the tank from which the petrol can be led outside the fuselage. The outside layer is one of wire mesh for binding purposes. The inner shell is of ordinary construction.

7. Loretan (Swiss), 1916.—Taken out by Joseph Carrier and L. M. Loretan for a tank covered with rubber or similar material inside or outside the metal shell—or both.

8. Neal (British), February, 1918.—A flexible but not flabby inner shell of special construction with laminated fabric and non-freezing rubber covering; each sheet of rubber to be of a different elasticity with an outer covering of metal.

9. M. I. D. Imber (British), February, 1918.—A specially constructed inner shell covered with a thick layer of special rubber vulcanised in place.

10. Dunlop Company (French), May, 1918.—A special rubber for covering self-sealing tank combined with fabric and non-vulcanised, so that it is likely to freeze at comparatively low altitudes but otherwise is very effective.

11. Sacana (French and British), 1918.—Various additions by the Sacana Co.; to the Neal and Daigre patents, affecting improvements in tank construction and the manner of applying the rubber covering.

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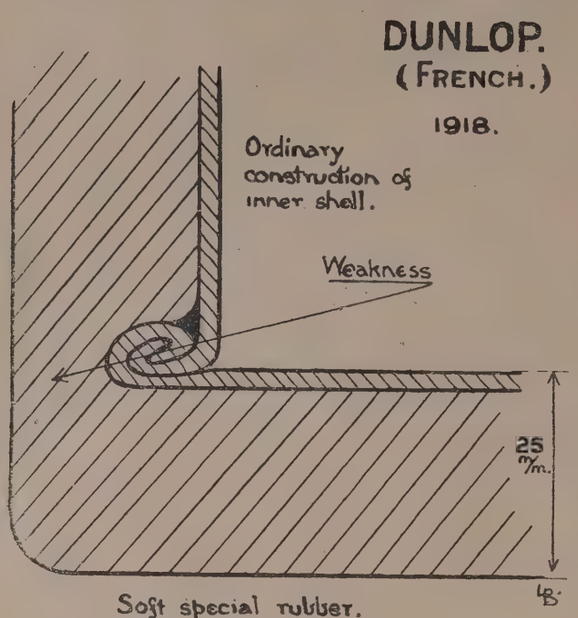
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12.—Several other variations have been made by various inventors, including a double metal shell with a fire-extinguishing liquid between the walls and a number of these patent specify that the materials capable of fire-proofing shall be saturated with any one of several fire-proofing compounds.

It will at once be apparent that continental differs from British practice in one very essential point affecting production.

The British Imber tanks have a flabby inner shell, on to which raw rubber is moulded, and the whole is then put into a large oven for vulcanising. The difficulty of this process for large tanks for commercial machines is immediately apparent.

In the Sacana construction, which is now coming into general use, for instance, the rubber is already vulcanised, and can be inspected and tested before application, and the covering process does not require the large space demanded for the British type.

The finished tank, though sufficiently flexible, is rigid enough to be carried on ordinary bearers without special cradles, and the outer aluminium sheathing protects the rubber from humidity, petrol and oil, so the tank is equally protected after some months of service, whereas with the rubber exposed it is necessary to change the tank about every four or five months.

It is already known that a tank with a large bore air pipe is less likely to take fire than one with a small bore pipe. This is because a slight depression is caused in the tank by the suction of the slip stream passing across the top of the ventilation pipe. If a small Badin trumpet is fitted the effect is increased, and it has been suggested by the Sacana Company that this would be a temporary precaution to take with all existing unprotected tanks until proper fire-proof tanks can be fitted.

By the adoption of these fire-preventing devices, the Continental Aerial Transport Companies are not only gaining the confidence of the public, but reaping the benefit of lower insurance premiums

POWER ALCOHOL.

The report of the Inter-Departmental Committee on Alcohol for Power and Traction Purposes, issued on June 30th, is of very great interest and importance in view of the present price of petrol and the unlikelihood of that price dropping appreciably.

It may be doubted whether alcohol, or any mixture containing a large proportion of alcohol, will ever become a satisfactory fuel for aero engines, because, owing to the large oxygen content of alcohol, a considerable amount of useless weight has to be carried with such a fuel.

A fuel largely composed of alcohol can be used with quite satisfactory results for road transport however, and the production of such a fuel in quantity at a lower price than that of petrol will at least check the rise in the price and release larger supplies of suitable fuel for aeroplane engines.

The report points out that the petrol and benzol now in use are derived from deposits of definite extent which cannot be renewed, and there is, therefore, a definite limit to the amount of such fuels which can be produced.

The raw material from which alcohol is produced on the other hand can be grown as a crop and renewed indefinitely, and there is practically no limit to the amount which can be manufactured.

The only weak point in the argument in favour of extensive fuel-alcohol production is—as was pointed out in this paper some weeks ago—that the question as to whether a better fuel cannot be produced by distillation from equally easily produced crops has not yet been properly investigated.

At the moment the argument for alcohol stands thus:—

The demand for petrol has increased at a rate far in excess of that which the petroleum deposits can maintain for very long The extent of this increased demand in the United States of America is shown in the following table:—

Year.	Total Consumption. Imp. Gals.	Increase over previous year. Imp. Gals.
1914	1,200,000,000	—
1915	1,400,000,000	200,000,000
1916	1,680,000,000	280,000,000
1917	2,320,000,000	640,000,000
1918	2,680,000,000	360,000,000

The Committee's report discloses the fact that the London General Omnibus Co. are at the moment running a fleet of their 'buses on such a fuel. This trial is to extend for about 26 weeks, and the difference between the cost of the fuel and that of petrol is being borne by the funds of H.M. Petroleum Executive.

The present price of alcohol prohibits commercial use—but the price is due in the main to the properties of alcohol as a beverage, and to the excise restrictions upon its manufacture and sale.

The process of denaturing at present insisted on in this country to render methylated spirits unpotable is costly, and not entirely effective, and the excise restrictions on fermentation and distillation, together with other restrictions regarding transport and distribution, add greatly to its cost, and the Committee's recommendations are mainly confined to the desirability of the removal —as far as is consistent with safeguards to the Revenue, and against the improper use of power alcohol—of all restrictions tending to increase this cost.

THE NAPIER-ENGINED DeH.9 IN SPAIN.

The accompanying photograph taken at Quatros Vientos Aerodrome at Madrid shows the DeH. machine with the 450 h.p. Napier "Lion" engine which has been flown in Spain by Major de Havilland.

The machine is, apart from the engine, a standard Airco DeH.9, and according to Major de Havilland the engine has done everything asked of it.

In addition to flights from Madrid to Seville and Madrid to Barcelona and return, Major de Havilland has given numerous demonstration flights before H.M. the King of Spain and the Spanish Military authorities.



THE AIRCRAFT TRADER

MARKET TOPICS.

PRICES ARE FOR QUANTITIES ON USUAL TERMS.

JULY 3rd, 1919.

COPPER.—This market continues active, but it is not in a very healthy condition, as there is a great deal of uncertainty; consequently, the market tends to be sensitive. The recent advance in prices was undoubtedly operated from America, and although prices have been easier this week, the present level does not reflect the real state of the market. Actually, consumers are showing very little interest in the metal.

The American market is still being influenced by expectation of large purchases from the Central Powers; it remains to be seen whether the demand will come up to expectations. The general opinion here is that it will be some time before appreciable orders are received from that quarter.

COMPARATIVE PRICES.

	Per Ton. £ s. d.
To-day, July 2nd	80 0 0
Last week	88 2 6
Last month	76 17 6
Average price, 1918	115 11 0

TIN.—There is not much activity at present, although prices keep steady. The demand is dull, and consumers are not showing any interest whatever. Although the embargo on the importation of Tin to U.S.A. has been lifted, it is not yet certain that there will be a big demand from American buyers, there are various reports being made as to the possibility of a big business being done. The situation is obscure, and the reports referred to should be received with a great deal of reserve.

COMPARATIVE PRICES.

	Per Ton. £ s. d.
To-day, July 2nd	240 0 0
Last week	240 15 0
Last month	232 7 0
Average price, 1918	329 11 0

LEAD.—There has been a fairly brisk demand recently, but dealers are well to the fore; consumers are not showing much interest. It does not look as though the Government are disposing of their stocks as was expected, and the demand for Government stock is likely to be less, as Spanish holders appear to be pressing for orders, and it is quite probable that they will sell at a lower figure than the Government.

Further, it is reported that Germany is selling Lead in Holland at a lower level than the price ruling here. The present price is certainly not unreasonable, considering the present level of costs, but the features referred to above, also the huge stocks held by the Government here, do not create confidence among consumers.

STEEL.—The Steel market at present is in a very unsettled condition, and firms who are compelled to buy are merely covering themselves for their immediate requirements. There is very little confidence in the market, and consumers show no disposition to buy ahead. Steel makers have recently informed their customers that commencing July 1st, Billets will be advanced 20s.

The continual advance in price is primarily responsible for the unsettled state of the market, and it is no use disguising the fact that American competition is becoming still more severe. Furthermore, there does not appear to be much hope of any fall in the prices which are being charged by British makers: in fact, some of the makers still insist upon quoting an indefinite price, i.e., their quotations include a "rise in price" clause.

Glasgow Corporation recently placed an order with America for 5,000 tons Steel Rails at a price 32s. 3d. per ton cheaper than the best British quotation. It is also quite possible that American firms will shortly be able to quote even cheaper prices, as there has been a recent reduction in freight charges.

There is still a slump in the High Speed Steel market; in fact, it will be some time before the huge stocks, which are held in various parts of the country, have been used.

TIMBER.—The demand for all kinds of Timber is fairly active, and undoubtedly has shown much improvement during the past month. Unfortunately, there does not appear to be much improvement in the shipping problem, and it is quite probable that it will become much more serious now that Peace has been signed, as the demand for shipping will undoubtedly increase.

When the control of Timber ceased about three months ago, there was hardly any Yellow Pine in the country, and the shipments which have arrived since that date have been divided up among several merchants. The quantities were not large, and there is a big demand for the Wood; consequently, some firms have taken advantage of the position, and have been charging outrageous prices. The Controller is determined to stop this, and the attention of buyers is called to a notice which has been issued by the Board of Trade, and is inserted in this paper.

The Hardwood market is in a fairly healthy condition. The demand is quite active, and prices are showing an upward tendency. There is at present a shortage of Silver Spruce suitable for Aeroplane work, and there is still no sign of shipments coming forward.

FABRIC.—There are no further developments in this market at present.

BOARD OF TRADE ANNOUNCEMENTS.

The following announcements have been made by the Board of Trade:—

EXCESSIVE PRICES OF YELLOW PINE.

The Board of Trade announce that the Controller of Timber Supplies has had brought to his notice the fact that excessive prices have been asked for yellow pine in spite of the announcement made on May 20th last that there is no reason why the maximum prices which were in force up to March 31st last should be exceeded.

The Controller of Timber Supplies gives notice to all concerned that in the event of these excessive prices being continued he will have no option but to dispose of Government stocks direct to consumers at prices no higher than the late maximum prices.

No further notice will be given should this action be found necessary.

The Controller requests any firms who are asked for yellow pine prices higher than the late maximum prices to send full particulars to the Assistant Controller Timber Supplies, Branch 5, 80 Newman Street, Oxford Street, London, W.1. The late maximum prices for yellow pine were as follows:—

YELLOW PINE.

(Per standard of 165 cubic feet.)

	1st. £ s.	2nd. £ s.	3rd. £ s.	4th. £ s.
3 in. by 12 in. and up	67 0	55 0	50 10	44 0
3 in. by 11 in. and up	64 0	53 0	48 10	44 0
3 in. by 10 in. and up	58 0	48 0	44 0	42 0
3 in. by 9 in. and up	57 0	47 0	43 0	41 0
3 in. by 8 in. and up	55 0	45 0	42 0	39 0
3 in. by 7 in. and up	55 0	45 0	42 0	39 0
3 in. by 6 in. and up	52 0	42 0	40 0	37 0

PIN SIDINGS AT SAME PRICES AS DEALS AND PLANKS.

In case of timber stored by retail yard keepers there is no objection to the above prices being raised by not more than £4 per standard.

The following specific instances of offers made at excessive prices to timber merchants have already been brought to the Controller's notice:—

1. 3rd quality pine at £57 15s. for 3 by 7 by 8 to £66 for 3 by 11. 4th quality pine at £55 12s. 6d. for 3 by 7 by 9 to £59 for 3 by 10. These prices included short railway carriage.
2. 3 by 11 3rd quality, £55, ex quay Liverpool.
3. 3 by 7-10 in. 3rds £53 12s. 6d. free on truck at port.
   3 by 11 3rds £61 17s. 6d.
   3 by 7-10 in. 1st quality £70 2s. 6d.

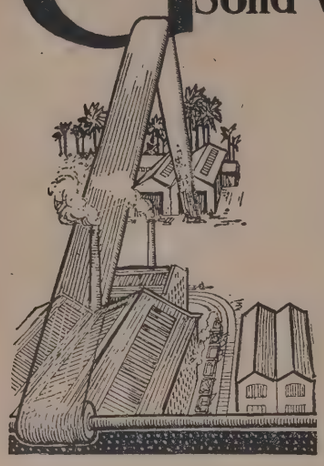
Board of Trade, June 19th, 1919.

AN AERONAUTICAL INTELLIGENCE BUREAU.

The Aeronautical Intelligence Bureau, Ltd., was incorporated on June 13th. The chief objects are: (A) To unite and combine aeronautical firms for the purposes of mutual advancement and protection. (B) To protect the members of the Society from financial risks by obtaining and distributing information concerning firms undeserving of mercantile credit. (C) To keep a register of bankrupt persons and those in winding up or liquidation. (D) To procure the amendment or repeal of legislation injurious to the members. (E) To procure information as to the standing of firms.

Other points are:—(1) That members are entitled to unlimited investigations. (2) That no member's interests are divulged to another without his written assent. (3) That ordinary letters will take the place of the usual stereotyped inquiry forms. The offices are at 30, Bedford Row, W.C.

GRIPOLY
Solid Woven Belting



"GRIPOLY" Solid Woven Belting is made from Camel Hair Yarns, with a small percentage of cotton and woven by a patent process which insures the greatest possible strength and evenly consistent wear.

"Gripoly" has a triple twisted edge interwoven with the belting which effectively resists fraying caused by guide forks.

"Gripoly" Solid Woven Belting is flexible, non-slipping, stretchless, impervious to heat and moisture and variations of temperature. It is the best all round belting.

Let us know your requirements and we will advise you as to the best type of "GRIPOLY" for your needs.

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and
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THE BAKER AIR SEXTANT
The perfection of this instrument is a triumph of British science and mechanical skill and accuracy.

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REGD. TRADE MARK

The great reputation which "Husun" aeronautical instruments quickly gained surprised nobody who knew the fame that "Husun" instruments have had for generations among the world's navigators.

We claim for our instruments the highest possible accuracy and reliability. We can offer quick delivery of the

Latest Improved Nautical and Aeronautical Instruments of Navigation

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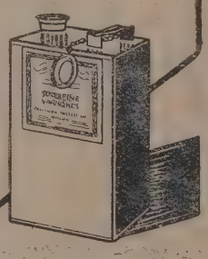
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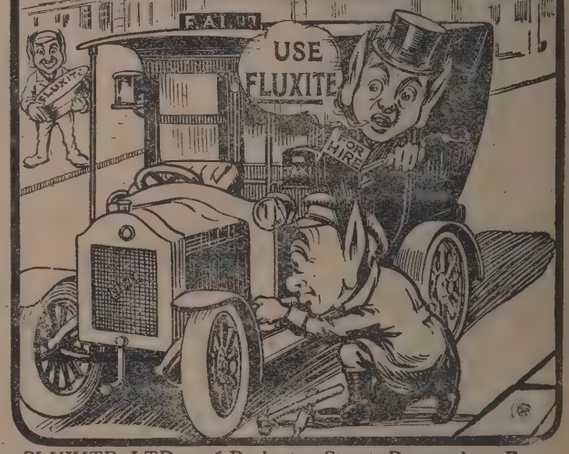
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You don't even need to hire a man to do it for you. FLUXITE simplifies soldering so that any handy man or woman can easily and quickly do all kinds of little repairs at home—it's just as easy as that, if you use FLUXITE. Mechanics will have FLUXITE, t

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Get a tin to-day. Of all Ironmongers, in tins, 8d., 1/4, *and* 2/8.



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COMMERCIAL AERONAUTICS & CIVIL AERIAL TRANSPORT

ON ADVISORY COMMITTEES.

By "MEDWAY."

When the time comes for an official return to be made of the products of Great Britain during the year 1919, the list assuredly will, or ought to be, headed by Advisory Committees, of which about two millions have been constituted or are in process of constitution. The Advisory Committee, if not an actual invention of the War, is a device the popularity of which has been established in the past four years. It serves as a means of shuffling official responsibility onto the shoulders of independent experts, whose advice may or may not be taken.

The new Standing Advisory Committee on Civil Aviation appears to be composed of the right type of man. Also, it has an advantage over many such organisations, inasmuch as it is definitely required to advise and report on at least one subject—viz., the best method of organising Imperial Air Routes. For the rest, it shares with similar Committees the privilege of being allowed to advise on those matters submitted to it by the Secretary of State.

The Right Air of Dignity.

There is seldom any difficulty about giving the right air of dignity to an Advisory Committee. It is a compliment to be asked to serve on one, and consequently good names are fairly easily secured. The only trouble is that, of the many Advisory Committees formed during the last year or so, only about one in a hundred manages to get any appreciable quantity of its advice accepted.

The majority of Advisory Committees labour in the dark, and the representatives of various interests upon them report hopefully to those interests that things are going well, and that the Committee bids fair to produce a really intelligent and useful report. Probably in due course it does so. The report is, however, addressed to the Minister as a private document, and as such is not published. The chances are that, in the meanwhile, various political considerations are maturing, as a result of which either the Minister to whom the report has gone ceases to hold office, and is superseded by someone with quite different views, or else the Minister who has received the report finds there are good party reasons for pigeon-holing it and taking no action whatever upon it.

The Disposal Board.

Let us take one or two recent instances, sufficiently near to the aeroplane business to be more or less instructive. We had, for instance, a number of admirable Advisory Committees formed to recommend the course of procedure to be adopted by the Surplus Government Property Disposal Board in respect of the sale of various sorts of Government stores. These Committees gave a lot of time and consideration to their jobs. Each tackled its own particular branch with a reasonable amount of inside knowledge, and honestly tried to work out a scheme which, while good for the taxpayer, was also not injurious to the manufacturing industry concerned. I presume that these reports were handed in, but I am also forced to the conclusion that not one of them was ever taken out of its envelope.

In short, the Disposal Board gave the public the impression that it was going to act upon expert advice. It thus obtained a reasonably good Press and a fair degree of public confidence. The Advisory Committees were mere window-dressing. In the background were the people who had probably decided what they were going to do before the Advisory Committees met, but who knew they would be open to a good deal of criticism if they obviously acted on their own initiative and did not make a show of consulting expert opinion.

The history of the Slough depot is not dissimilar. Roughly speaking, it is a long record of people being asked for advice which was never taken, and which, in fact, nobody ever intended to take. All that was wanted was to be able to say that the advice was being asked, and therefore that everything must be all right. It was only when pressure of public opinion made an inquiry necessary that it really came out that experts had been flouted from first to last. Also, it was only at that stage that Mr. Churchill, speaking for the Government, said quite candidly that the Committee could hold its inquiry, but that the Government did not care in the least at what findings it might arrive, but was going on with its own policy, quite regardless of any interference or opinion—expert or otherwise. It became necessary to admit this, because the nature of the inquiry was bound to be such that a certain number of the facts would become public.

To Make the Official Dish Look Palatable.

The job of the average Advisory Committee is, therefore, to serve as a dressing to make the official dish look palatable. The contents of the dish are settled in advance. The dressing may disguise, but does not alter, its character. It is only when the public get exceptionally excited over some peculiarly stupid exhibition of official ineptitude that it becomes necessary to admit that the process of taking advice was merely formal. By that time it is generally possible to complicate the issue to such an extent that the general public never really finds out what has happened.

The main job of an Advisory Committee is therefore to get terms of reference and powers such that it can, when it chooses, make its reports public, and such that it can advise and report on a good variety of cognate subjects, whether invited to do so or not.

Objections to the Expert.

In the Ways and Communications Bill we see the same tendency of the Government to shield its officials behind powerless Advisory Committees. Directly it is suggested that the Minister *must* ask for advice on certain subjects and that the Committee may make public the nature of the advice that it has given, the Government promptly turns stubborn and is up against the whole principle of the introduction of the expert. The expert is, in fact, only wanted because his name looks well in print, and gives the idea of good democratic control as opposed to bureaucracy.

I am not prepared to say that this new Advisory Com-

mittee on Civil Aviation will be treated as badly as most of its kind. It may become a real power in the land. It may be allowed to do very valuable work, but I suggest that the members of the Committee who are not tied by reason of holding official positions will have to watch things very carefully from the start in order to make sure that they are not being merely used so long as they will endorse a ready-made policy, only to be turned down and carefully silenced if they show the slightest signs to developing a policy of their own.

FRENCH PROGRESS IN CIVILIAN AVIATION
with Particular Reference to Aerial Posts.

Recently, what the French call a "Committee of Action" (which approximates to a sub or working committee in England) submitted a long report on aeronautical problems in general to the President of the Council

The report was arranged under seven headings and is at the moment receiving the attention of the Aeronautical Branch of the War Ministry, personified by Col. Dhé. France just now is well equipped with bureaucratic machinery for studying this subject in all its varied phases; there are in constant session six sets of authorities, each engaged in recording its own particular wishes and resolutions. Tabulated, they are as follows:—

1. Military Aeronautics (under the War Ministry), and its offshoot Civilian Aeronautics, with offices in the Boulevard St. Germain.
2. The Inter-Ministerial Commission on Aviation, of which M. d'Aubigny, Deputy, is president.
3. The Committee of Action formed to develop aviation, and composed of members of the Aviation Commission of the Aero Club de France, delegates from the Chambre Syndicale de Industries Aeronautiques, plus certain Deputies.
4. The commission of delegates from the Inter-Allied Conference, discussing the details of the International Air Code: president, General Duval, in charge of aviation at Foch's headquarters.
5. Research Department of the Ministry of Commerce (Posts and Telegraphs Departments), charged with aerial post problems.
6. The Aeronautical Service of the Ministry of the Marine.

In addition to these, Mr. Chassaing, Deputy, has laid before the Chamber, in the form of a motion, an invitation to the Government to commence organising principal and secondary areo-gares over the whole of France and her colonies.

The seven heads under which the Committee of Action's Report was made are:—

1. The Establishment of Airways.
2. Aerial Postal Services.
3. Aerial Transport Services.
4. The Centralisation of Aeronautical Services, i.e., co-ordinating same.
5. Rules for Regulating Inter-Allied Aerial Navigation.
6. Centralisation of Material (i.e., pooling resources).
7. Organisation and Distribution of Meteorological Services and Intelligence.

MANY COUNSELS LEAD TO CONFUSION.

One sees daily that the presence of many counsels tends to confuse an issue and causes delay. Such is the position here at the moment. Notwithstanding that the Postal Administration was last month in possession of figures relating to buying and hiring prices of material, salaries of personnel, special tax to be imposed on mail and packages, the sinking fund required, and the profits that would eventually accrue, they cannot make up their minds as to whether they ought to run the service themselves as a State affair or whether it should be exploited by a company or companies assisted with a State subsidy.

The Inter-Ministerial Commission and the Civil Aeronautic people are of opinion that it should not be a nationalised transport but that concessions should be given to certain approved companies. In support of their views they note that the Postal Authorities do not possess trains and boats, but hire accommodation, and that they certainly ought not to involve themselves in unknown expenses, also that they ought not to own aircraft of any kind, nor pilots, but that they ought to enter into working arrangements with concessional groups to carry mails, etc., at certain rates.

STATE SERVICE.

The people in favour of State service argue that there is no comparison between aero-mails and those hitherto sent by train and boat and that, if taken up at the beginning, the service will be for the benefit of the State. To which the other side reply, and it must be admitted in good reason, that without a subsidy for mail-carrying the prospective aerial transport companies will not be able to pay their way. The Committee of Action, without committing themselves, have intimated that they think that a reservation of ten per cent. of the useful load carried for postal matter would meet the case to the satisfaction of all concerned. At this point the Maritime League steps in: they are quite willing to be relieved of their obligation in regard to carrying mails—and for a very good reason. Although the State subsidises the Compagnie Transatlantique and the Messagerie Maritime it reserves to itself the right to compel other lines to carry mails when required; thus a ship, having mails, may have to go a long way out of her route to land them, when she has no other business in that direction.

VIEWS ON AERIAL POSTS.

It is an accepted maxim here that aerial posts have no raison d'être unless they can show a great saving in time when in competition with the established means of locomotion, especially is this so when competing with the night mail service during which, it is pointed out, letters are sorted—this, of course, cannot yet be done "en l'air." Further, authorities here still regard with affection the idea of sending the mails from dusk to dawn by train and picking them up by aeroplane in the early morning.

REGULAR AEROPLANE SERVICES.

Week by week I have to note progress made by the aeroplanes engaged in provisioning the Northern and liberated provinces, but their trips are becoming so regular now that I shall soon no more think of chronicling the event than you would the departure of the 8.25 from Finsbury Park to King's Cross. Rather will it be my duty to note the case when any untoward event occurs that results in an interrupted service.

Here is an interesting suggestion as to how an aerial post might be run: the idea, though novel, is not mine, but has come to me from an official quarter, from which one presumes it is receiving due consideration, and stranger things have happened than that this might be the system selected. Qui sait?

At the moment, the only sort of post that Lille receives is by air, and under existing arrangements this will cease when the railways are linked up in through communication and it is possible to use the normal service. It is now proposed to augment the service by a kind of (for want of a better description) "return telegram" service, the telegram being a cross between a letter and a wire, the main idea being to get written replies the same day. Shortly, the scheme is as follows:—

AN AERO-POSTAL SYSTEM.

It is proposed that all such letters shall be enclosed in envelopes of a special hue—blue, for example—they would then be known as the "petits bleu." Certain post-boxes will be disposed in certain quarters of Paris, into which the population will drop their "petits bleu." Each morning at a stated hour a car will collect from these boxes and take the correspondence to a central depot and from there to Villacoublay or any other aerodrome selected. An aeroplane will leave at 12 noon and, ordinarily, arrive at Lille at 2 p.m. From the aerodrome at Lille motor cyclists will distribute the letters. Lille will be provided with post-boxes in various parts of the town into which the "petits bleu" (which may be the replies to the letters received at 2 p.m.) may be dropped. The collection will be made and taken to the aerodrome. The machines will leave at 4 p.m., arrive at 6 p.m., and distribution will be made in Paris during the evening. Of course, by advancing the whole project a couple of hours, one would be able to attend to such replies during the normal hours of business. However, I am but a scribe, and I give you the idea as it was given me.

If the weather makes it impossible for the machines to start, a cyclist will chase around posting notices to that effect on each box. The only point upon which agreement has not yet been reached is that of the tax to be imposed. The State, who fear competition with their telegraphic service, are of opinion that two francs (1s. 8d.) per letter is necessary. Messrs. Bréguet, Blériôt, and Morane (who at present run the provisioning service), on the other hand, think the 60 centimes per letter (about 6d.) would meet the case and that the cost of the voyage does not warrant a greater charge, and they point out further that an aeroplane carrying 50 kilos. of "petits bleu" (how would "letter-grams" do in English?) could also carry 200 to 250 kilos. of small postal packets. A small extra tax on each of these and the State would again benefit.

It seems to me that a service on similar lines would be welcomed between London—Birmingham, London—Manchester, London—Glasgow, etc., or any big manufacturing town, if only because it would enable them to send and receive samples of goods, or obtain signatures to contracts, the same day.

If time flies, so does the aeroplane, and, as time is money, there may be some liaison between the two saws.

In conclusion, the general opinion here is that, apart from the Goliath-type machines, civilian aviation will be developed by means of the aerial postal services.—F. T. M

Pleasant Motoring

The A.A. has won its pre-eminent position as a Road Organisation by reason of its efficient services, the energies of the Association having always been concentrated on giving skilled assistance to its members in any part of Great Britain.

The patrol system—the chief feature of the Association's work—extends over

thousands of miles of main road

so that the khaki-clad A.A. patrol is one of the best known figures on British highways. The duties of the patrols are to give members information of interest concerning the road, warn them of any dangers on the highways and render all possible assistance in case of need.

They are specially selected for their ability to undertake minor roadside repairs and render first aid when necessary.

The patrols report all cases of wilful obstruction and other abuses of the highway likely to lead to accidents, delay, and inconvenience to users of the road.

Each patrol is required to know

where the nearest doctor lives, and the nearest A.A. Agent, and in urgent cases at once goes for help.

Patrols are acquainted not only with the condition of roads of which they are in charge but with those in the surrounding neighbourhood. They are provided with a map of the district and are familiar with all local features.

They also report any obstruction, unrolled metal, floods, roads "up," and indicate alternate routes to members. The registered number of every car, motor cycle, and cycle car is, as far as possible,

recorded by patrols on their number sheets

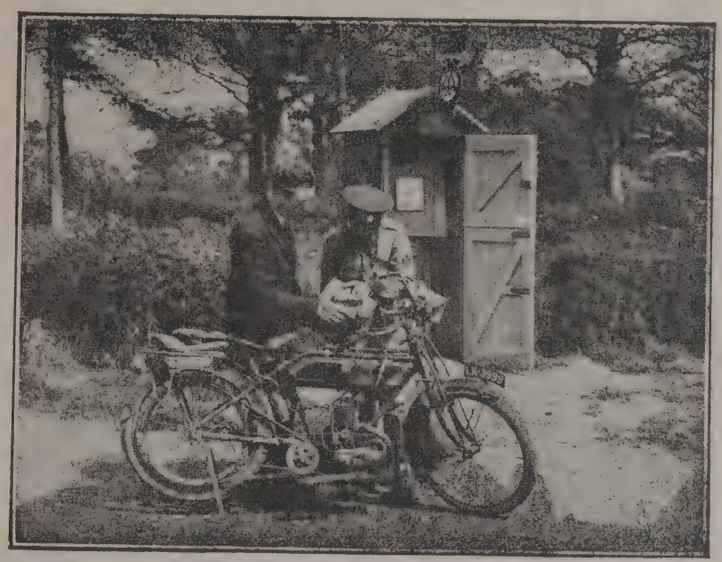
on the road, also the time and place at which they pass, and the direction in which travelling. These reports often prove useful in tracing stolen cars or "joy-riders."

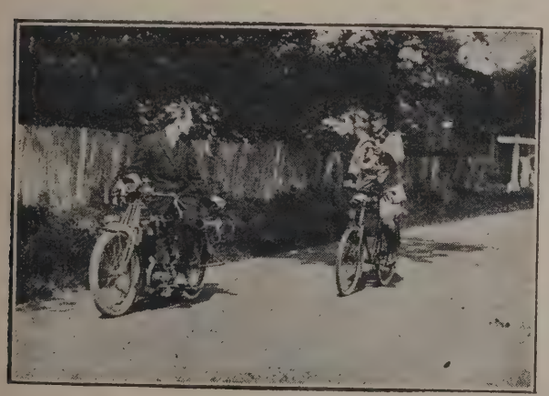
All property found on the road by a patrol is sent to the office to which he is attached and full particulars to the London Office. If the article is of any value a full description is given to the local police and advertised in the motoring press.

The patrols report upon all matters likely to affect the relations between

motor cyclists and the general public.

Their reports give the date, time, and place, number of cycle, name and address of owner, names and addresses of all persons present, with any information they are prepared to give, particulars of road, situation, condition, etc.





Patrols are forbidden to ask for gratuities. Nor are they permitted to ask for or receive, directly or indirectly, any sum by way of commission or allowance from the Association's Official Repairers or others, for the introduction of business.

Each patrol is supplied with a packet of telegraph forms for the convenience of members who may wish to send telegrams.

In addition to being entitled to the services of the A.A. patrols in the above connections, members of the Automobile Association

enjoy other privileges,

including Free Legal Defence and Advice, Special Insurance Facilities, Engineering Assistance, the Preparation of Tours (home and abroad), Appointed Repairers and Hotels throughout the United Kingdom, etc.

Every motor cyclist who desires information as to all the privileges enjoyed by members of the Automobile Association should read the booklet, "The Key to the Open Road," a copy of which can be obtained from the Secretary, A.A. & M.U., 41, Fanum House, Whitcomb Street, London, W C.2.

Send a post-card to-day.

CIVIL AERIAL TRANSPORT NOTES.

United Kingdom.

The Crown Prince of Roumania, accompanied by Lady Mainwaring, made his first flight on July 1st in a Handley Page, piloted by Lieut.-Col. Douglas. The machine flew over London at a great height.

WESTON-SUPER-MARE.

Two aerodromes are to be built at Weston-super-Mare, one on the sands. The promoters expect to run a passenger service to Cardiff, Barry and Bristol. There is difficulty in securing a suitable landing ground at Cardiff.

LIVERPOOL.

The formation of a flying club at Birkdale is under consideration. The beach is a fine expanse of hard and level sand, suitable for an aerodrome. The objects would be to enable ex-Service pilots to continue their flying, to organise competitions and to encourage aerial transport. Correspondence should be addressed to Major W. G. McMinnies (late R.A.F.), 18, Gloucester Road, Birkdale, Lancs.

AVRO JOY RIDES.

If an average of 100 people, paying something over £1 each, are flown every day in three Avro machines, one would think that the owners of the machines ought to pay a dividend. The proprietors of the machines, A. V. Roe and Co., Ltd., certainly did during the war, and are now doing their best, to make money out of civil aviation. They have obtained the services of Lieut.-Col. G. L. P. Henderson, M.C., and have put him in charge of the flying, and have started their first passenger-carrying at Hounslow, a good spot, but terribly inaccessible. They have hired a hangar from the Government, who, helping Civil Aviation all they can, charge 5s. for each landing made, and require the engines to be overhauled as soon as they have nicely recovered from the last overhauling.

Major A. G. Taylor, A.F.C. (late R.F.C. and R.A.F.) is in charge at Hounslow, and has four or five ex-R.A.F. pilots as his assistants.

At present there are seven machines in flying order, two 5-seaters, two 3-seaters, a two-seater with dual control, a Baby Avro, and the limousine 3-seater, in which the honeymoon couple recently went down to Cornwall.

Some 250-300 passengers are carried on Saturdays, and on Mondays about 60, which is certainly not bad for the worst day of the week. More than half the ladies want to be stunted, and one of 78 years of age appears at the aerodrome regularly, and says that her health is much better now she has taken up flying—perhaps it is the castor oil.

Business men who wish to go anywhere in a hurry can hire a machine at any time, and tickets for joy-rides may be obtained at all the London theatre agencies.—G. L. D.

The Avro Flight Aerodrome near Manston, Kent, is under the direction of Captain Duncan Davis, A.F.C. (late R.A.F.). Seventy-four passengers, including the Baroness Campbell, were taken up during the week ending July 6th. The Managing Director of John Barker and Co., who is staying in the district, intends to fly to London this week.

The Ladies Mile Aerodrome at Brighton, under the management of Captain D. I. M. Kennard, will be opened on Saturday, July 12th.

The following interesting flights were made during the week ending July 6th:—

On Thursday, July 3rd, representatives from the Palladium flew over London in a five-seater Avro machine, dropping Joy Loan leaflets.

On Saturday, July 5th, a three-seater machine made a cross-country flight to Woburn Sands and return.

Since Thursday, July 3rd, the "Evening Standard" has been delivered daily to Southsea.

The Rev. A. W. R. Little made use of an aeroplane on Sunday, July 6th, in order to fulfil his engagements.

In the morning he preached at the Blackpool Parish Church; in the afternoon he travelled to Blackburn by train and preached there, and directly afterwards he flew back to Blackpool in an Avro, arriving in time to preach at the Peace Thanksgiving Service on the Princess Parade.

India.

The Government is considering a definite project for an aerial mail service between Cairo and Karachi, *via* Baghdad.

France.

M. Henri Deutsch de la Meurthe, President of the Aero Club of France, has given £80,000 to the club for the purpose of organising flying meetings.

Germany.

An advertisement in the "Deutsche Zeitung" states that an air service has been started by the Luft Fahrzeug Ges. m.b. H. from Stralsund to Sassnitz, Binz, Sellin, Gohren and connections with the air line, Berlin-Stralsund of the aviation traffic company, Sablatnig.

The rates for passengers from Stralsund to any of the above seaside resorts is 150 marks; from Berlin to any of the above, 750 marks, and from Berlin to Stralsund 600 marks.

The Hamburg-Amerika Line advertises regular air services, daily, for passengers and freight, between Berlin-Leipzig-Weimar, Berlin-Hanover-Gelsenkirchen, Berlin-Hamburg.

Rumpler Werke A.G. Berlin. In the general meeting held recently a dividend of 15 per cent. was voted, and it was decided to wind up the company. The liquidation will not be done at once, but will take several years. The Board is of opinion that it is impossible to make machines for peace or civilian uses without heavy loss. Directors Rumpler and General Oschmann have been re-elected. Director Aumer of the Bavarian Rumpler Works has been elected liquidator of the company.

According to the "Nieuwe Rotterdamsche Courant" of June 29th, the Hanseatische Flugzeugwerke Karl Caspar A.G. of Hamburg have decided to wind up.

According to the "Hamburg Correspondent" of June 18th, the "Deutsche Luft Rhederei" has introduced a tariff in order to increase the use of the aerial packet. The freight is 5 marks per kilogram (minimum 10 marks with a maximum weight of 10 kg. per parcel). Parcels are accepted every day up to 2 p.m. for that day's journey, starting at 3 p.m., in the office of the Hamburg-Amerika Line, 25, Alsterdam, Hamburg.

According to the "Hamburg Nachrichten" of June 17th, owing to shortage of raw materials the aerial postal services will be discontinued.

Although the first account is the more detailed, it is difficult to say which paper is less given to untruthfulness.

During the Kiel week (regatta) the train service will be relieved by special air lines.

Aeroplanes will be ready in Hamburg to collect travellers coming by air from Berlin, and take them to Kiel. At the same time, from Kiel, aeroplanes will connect with the regular Hamburg-Berlin service. Further, aeroplanes will be available at Kiel for short flights. If successful, the new Kiel-Hamburg service will be maintained.

Holland.

Mr. A. H. Fokker is conducting a series of lectures on the use of the aeroplane for surveying and topographical purposes.

Fokker, who is making great efforts to popularise aviation in Holland, has now decided to run an aeroplane with no motor. This will be trailed in the air by a Fokker machine and will then be released. The builder has secured the services of Serjt. Van der Drift to do this highly risky and needless flight.

From July 1st a passenger and goods service will be undertaken by Fokker, starting from the beach at Scheveningen. Various Dutch authorities have promised their assistance. In the former Scheveningen power house, the aeroplane will find both a repairing shop and shelter. This makes an aerial port of The Hague. On June 27th the chief pilot, van der Drift, brought the first aeroplane from Amsterdam to Scheveningen. This is the first machine for the new service.

In order to examine the possibility of creating a postal Air Service, Amsterdam-Groningen, a hydroplane left Amsterdam on June 17th to fly to Paterwoldscke Meev. The crew was composed of a naval officer and a corporal.

The city of Amsterdam has granted a subsidy of 130,000 guilders to the E.L.T.A. (aeroplane exhibition).

Italy.

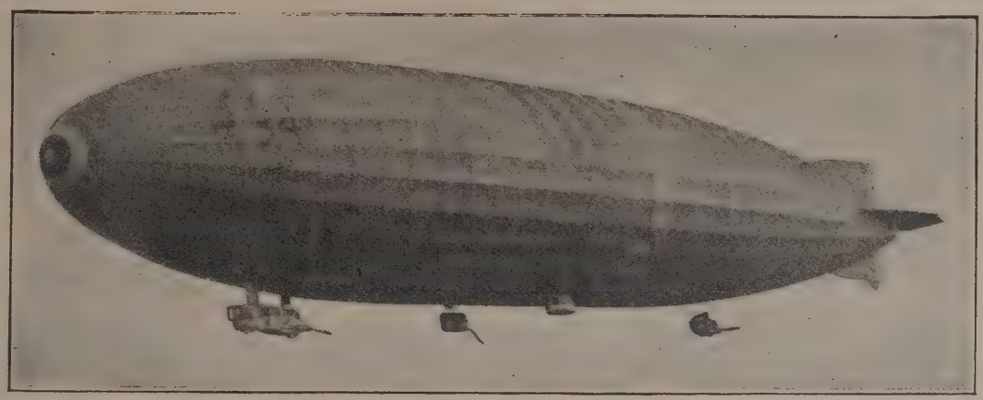
The Fiat Company of Turin, Italy, are arranging a non-stop flight from Rome to Kenley, near Croydon, a distance of 1,100 miles, early in July.

The machine, a two-seater biplane, type B.R., fitted with a 650-700-h.p. 12-cylinder engine, is entirely Fiat built. The maximum speed is 160 m.p.h., and it is expected that an average speed of 145 m.p.h. will be attained.

After the arrival in London the machine will continue its flight to Copenhagen, and from thence to Amsterdam for the Aeronautical Exhibition.

Denmark.

The aviation experience of Copenhagen has shown that Denmark is taking a lively interest in the new industry, and that the country will probably be a fine market for all aviation industries. There is no reason to wonder at it since several interested nations have been working Denmark as a prospective client. The Hamburg pilot, Thiele, is trying with Swedish and Danish capital to realise a plan whereby a regular aerial service could be maintained from Copenhagen to Germany. Fifteen Fokker machines are to be sent from Germany for that purpose. With these aeroplanes, each of which can carry four paying passengers,



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An unbroken record of successes on all types of Aeroplanes and Airships.

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it is expected to establish regular aerial connections all over Denmark.

Further, it is proposed to establish an aviation works near Copenhagen together with a flying school. To realise these plans, all that is needed now, is the official authority. Meanwhile both from the Austrian and the English side there is very lively competition. The Phœnix works in Vienna has sent two of its star flyers, Spermann and Perrini, to Copenhagen, and expects to find a ready market there for these machines.

From the English side Vickers have sent a machine to Copenhagen of the same type as the one which accomplished the trans-Atlantic flight.

The machine is able to carry, besides its crew, 11 to 17 passengers as well as fuel for a 5 hours' journey.

As regards postal or other parcels 2,900 kilos. can be carried. Major Jullerot, of Vickers, Ltd., is expected to examine the possibility of establishing a London-Copenhagen service.

SCANDINAVIA.

A Scandinavian Committee is negotiating with the newly founded Luftfartsrederei in order that Bergen be made a starting point of new aviation routes and, further, in order that an aviation ground and school be established there.

The conference held a few days ago in Christiania, between the Scandinavian accident insurance companies, has decided to syndicate all Scandinavian companies in respect of risks resulting from aviation. Fourteen Danish, four Finnish and four Norwegian companies are joining the syndicate.

SWITZERLAND.

From Interlaken comes the news that an English concern of aerial transporters are engaged in pourparlers with the authorities and the Verkehrsvereine for the hire of an aerodrome on l'Allmenda Unterseen. It is stated that their idea is to start a passenger service between London and Paris, and Interlaken, Lucerne, and Lausanne with super machines carrying thirty to forty persons!

It took Bider exactly 7 hours 28 min. to accomplish the Tour de Suisse. His stages were as follows:—Bale-Geneva, 1 hr. 54 min.; Geneva-Lausanne, 21 min.; Lausanne-Bellinzone, 1 hr. 55 min.; Bellinzone-Ems, 53 min.; Ems-Bale, 2 hrs. 25 min.

It is reported that Lieutenant Bider, who was the first aviator to cross the Alps and the Pyrenees, crashed while flying near Dübendorf, and was killed.

U.S.A.

PREPARING THE WAY.

The following is taken from an American official publication:

In the interest of recruiting and for the purpose of charting, laying out an aerial mail route, and collecting data as to municipal and emergency landing fields a special trans-continental flight will be organised by the Air Service of the Army to leave Hazelhurst Field, L.I., N.Y., on or about July 6th, having as its destination Seattle, Washington.

The tentative route will be across the States of New Jersey, Pennsylvania, Ohio, Indiana, Illinois, Wisconsin, Minnesota, North Dakota, Montana, and Idaho. Stops will be made at Philadelphia, Pittsburg, Columbus, Indianapolis, Chicago, Milwaukee, St. Paul, Minneapolis, Fargo, Bismarck, and other points en route. A distance of some 3,200 miles will be covered.

The aircraft used will consist of four Curtiss J.N.4H. planes, and Type R. Obs. balloon.

The feature of the trip will be the observation balloon demonstration. This will be transported on trucks and inflated at several of the places where stops are made. The observation balloon will be the type R. used on the front.

The motor transport equipment will consist of a complete machine shop with all the repairing machinery necessary carried on trucks and lorries.

Special attention will be given to photography so that when the trip is finished no data will be lacking for the laying-out of a perfect aerial lane from New York to Seattle.

The personnel of the party has not yet been decided, but it will consist of 16 officers and 36 enlisted men.

Eighteen to 20 weeks' time will be devoted to the work, and the results will determine the route of the return trip.

PROGRAMMES, PEACE, AND PYLONS.

No one could call the Hendon Peace Meeting, which occurred on Saturday, July 5th, a big event or a success. It was lucky for the public that it was not advertised more, for had it been perhaps more than the few hundreds of people who did go to see it would have been disappointed.

Outside the entrance gates one was set upon by small boys demanding threepence for a souvenir programme, the souvenir part of it consisting of a sparkling account of the Aerial Derby, surely a little stale now. With the programme a sixpenny copy of the Hawker-Grieve souvenir is thrown in, slightly older still, but apparently given to afford some reading matter during the long waits during the heats of the race.

The following is the list of pilots and machines flying in the speed handicap according to the souvenir programme:—

1. Lieut. C. Turner, A.F.C. B.A.T. "Bantam" (170-h.p. A.B.C. "Wasp").
2. Capt. P. R. T. Chamberlayne. Grahame-White "Bantam." (80-h.p. Le Rhône).
4. Lieut. R. S. Park, A.F.C. Avro (110-h.p. Le Rhône).
5. Major R. H. Carr, A.F.C., D.C.M. Grahame-White "Bantam" (80-h.p. Le Rhône).
12. Major C. H. C. Smith, D.S.C. Bristol monoplane (80-h.p. Le Rhône).
14. Lieut.-Col. G. L. P. Henderson, A.F.C., M.C. Avro "Baby" (35/40-h.p. Green).
19. Capt. D. H. Robertson, A.F.C. Avro (110-h.p. Le Rhône).
20. Capt. G. R. Hicks, D.F.C. Avro (110-h.p. Le Rhône).
21 Capt. G. Gathergood, A.F.C. Airco "D.H. VI." (90-h.p. R.A.F.)

On glancing down it one is struck by the fact that there is only one racing machine mentioned, the B.A.T. "Bantam," and that machine did not perform, neither did the Bristol monoplane, so it was impossible for the race to be extraordinarily thrilling.

According to the souvenir programme again, the Hendon Peace Meeting was at 3.30 p.m., and the speed handicap over the aerodrome pylon course at 4 p.m. What was one expected to do between 3.30 and 4—rejoice a little? Except listening to the band or watching the carroty Avros taking up passengers there was nothing else to do, with the exception of getting wet, which was very easy, and getting wet *externally* does not go well with rejoicing.

Eventually four machines lined up with their tails towards the audience: Gathergood on the D.H.6, Park on his Avro, Robertson on a carrot Avro, and Chamberlayne on the G.W. monoplane. The D.H.6 was given 19 seconds' handicap allowance, and the Avros 13 seconds. Before starting the pilots were muddled as much as possible by contradictory rules of the race given by the various officials—strange people.

The D.H.6 went off first, and the Avros having the same handicap were started after 10 sec. interval. Park, in the first Avro, caused a little excitement by sweeping the ground with his right wing tip when taking off. They went round the pylons four times, all flying as close to the ground as possible, the G.W. passing the two Avros and coming in second.

The second heat occurred some time afterwards. Lieut.-Col. Henderson, on the "Baby" Avro, having 19 seconds' start of Hicks and Carr, both on Avros, was passed by them easily.

Then the rain came down in earnest, and there was a rush for the pavilion, and many wished to obtain tea, but the waitresses were insufficient. The rain delayed the final till six o'clock, and no entertainment was provided. Lieut.-Col. Henderson and Lieut. Park wisely departed before the final event.

In the final, Capt. Gathergood, D.H.6, was given 28 secs. handicap allowance, Carr and Hicks, on Avros, 19 secs., and Chamberlayne on the G.W. monoplane was scratch. In the second of the six laps Capt. Gathergood had to land owing to engine trouble, and Capt. Chamberlayne, passing the Avros, came in first, winning the race.

Capt. Chamberlayne went up again after the race, and after doing some stunting struck a hangar support and crashed, but was not seriously hurt.

In the long intervals between the heats no entertainment was provided, no professors did parachute descents, nor did anyone stunt. Perhaps it was intentional, so as to draw attention to Mr. Grahame-White's land-yacht, which ambled slowly up and down the asphalt path. It was very slow.—G. L. D.

THE HENDON SUMMER MEETING.

A 20-mile cross-country handicap for the Hendon Trophy and £30, will be held at the London Aerodrome, Hendon, at the Summer Meeting, on Saturday afternoon next, July 12th, at 4 p.m.

The course, of which five laps must be flown, is round the aerodrome pylons and a point about two miles out, i.e., Bittacy Hill—a distance of approximately four miles.

It is expected that the pilots will include Mr. C. B. Prodger, Major C. Draper, and Mr. C. Turner on B.A.T. machines; Mr. Chamberlayne, Major Carr, Messrs. Hicks and Robertson on Grahame-White biplanes; Mr. Park and Mr. Hammersley on Avro biplanes, the latter flying the Avro "Baby"; Capt. Gathergood and Mr. Manton on Airco biplanes; and Major Smith on a Bristol monoplane.

Entries close at 12 noon on Thursday next, the 10th inst.

At intervals during the day, Special Flying Displays and Passenger Flights will be carried out, and these will be repeated on the following day.

Additional enclosure accommodation has now been provided, and admission to the aerodrome is now from 9d., plus tax. Children half price.

Special Flying Displays will be given on the following afternoon, Sunday.

"CIVIATORY."

It is notified by the Air Ministry for information that "Civiatory" has been registered as the telegraphic address of the Civil Aviation Department, Air Ministry, India House, Kingsway.

Historic Peace Message

Brought to H.M. The King by Airco 4a.

THE aeroplane which brought the historic Peace message on Saturday June 28th from Mr. Lloyd George to the King was one of the famous Airco 4A machines with a Rolls-Royce Motor.

This machine has constantly been selected by the authorities for conveying urgent messages between London and the Peace Conference, while Mr. Bonar Law, General Seely, and other Ministers of State have made numerous journeys in it.

The Airco 4A makes the 250 miles flight from Paris to London in an average time of 2¼ hours, and it is the sheer speed of this machine which renders it an indispensable means of communication between the two Capitals.

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Lot. S.B.5/15. Standard type—42 American Type Kite Balloons. New and complete with all Spares, packed in crates ready for transport.
15 ditto requiring re-cording. Stored at No. 5. R.A.F. Stores Depot, Earls Court, S.W.

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,, 273 Balloons of various types, condemned for defects. Average weight, 6 cwt. each. Above are stored at No. 5. R.A.F. Stores Depot, Earls Court, S.W.

CANVAS (Secondhand).

,, Canvas secondhand--In fair condition about 20 tons repairable Covers, Walls and Curtains, etc., for Aircraft Hangars—Packed in bales ready for transport—suitable for use as Tarpaulins. Stored at Midland Railway Granary Stores, St. Pancras.

AIRSHIP GASBAG MATERIAL (Secondhand).

Lot. S.B.5/15. Rubber proofed Cotton Fabric lined with Goldbeater's skin—quantity about 7,000 square yards—weight about 2½ tons, now lying at R.N. Store Depot, White City, W.12.

BALL BEARINGS.

Lot. S B.6/16. Hoffman, Skefko, Volvo, R.B.F., S.R.O., M.A.B. and other makes, about 6,900 in various sizes.

Tenders are requested for any or all of the above, and permits to view and all particulars and forms may be obtained from :—

The Controller, Aircraft Disposal Department, Kingsway, W.C.

Tenders are returnable by July 21st, 1919.

For Detailed List of all Surplus Government Property for Sale apply at the nearest Bookstall for "Surplus," Price 3d., the official organ of the Surplus Government Property Disposal Board.

AIRCRAFT FINANCE

THE POSSIBILITIES OF A REGISTRY.

There is some inspiration to be derived from the appointment of the Standing Advisory Committee on Civil Aviation. This inspiration springs not so much from the specified objective of the Committee, but rather from the personality and qualifications of the Committee itself.

NAMES TO CONJURE WITH.

First of all there is Lord Inchcape of the P. and O., who is pre-eminent in the shipping industry and has a very considerable and an active interest in other things, including banking. Then there is also the Chairman of Lloyd's (Mr. Charles Irving de Rougemont). The combination of these two authorities may result in appreciable benefits to the aviation industry. The remainder of the Committee are excellent in their particular spheres, but one is inclined to attach more significance to the conjunction of the leader of shipping and the head of Lloyd's.

PATIENCE WILL BE REWARDED SOON.

In the opinion of some people the question of a Registry of Aircraft and also of Pilots and Navigators generally, on the lines of Lloyd's Shipping Register, is not advancing so promisingly as one would wish in the interests of aviation and the immediate future of the industry.

This is a pity. Perhaps some people, however, are inclined to be just a little impetuous, forgetting not only the natural obstacles inseparable from the creation of a new scheme, but also the fact that aviation, as a commercial proposition, has not yet reached puberty.

ESSENTIAL FACILITIES.

When everything is taken into consideration, the impatience is justifiable. No one can deny that a Register of Aircraft and of Navigators, on similar lines to Lloyd's system in connection with shipping, is positively essential for the proper and efficient development of commercial aeronautics. The matter was fully discussed herein a few months ago, and was considered premature in several quarters.

A START IS NEEDFUL.

In taking the parallel of shipping one must confess that the Registry grew up with the progress of that particular industry, and only attained its present perfection by years of strenuous work and unremitting care. Likewise must the Aircraft Registry grow. It is, as a matter of fact, growing coincidently with the increase in insurance facilities and the expansion in that business.

CENTRALISATION IMPERATIVE.

But it is not growing on centralised lines. On the contrary, each Office necessarily considers that the knowledge collated through its individual experience of aviation insurance is its own private property and is not for the benefit of any competing Office. This attitude is quite justified. But it is obvious that development on such lines necessarily vitiates the general utility of the scheme.

There must be centralisation to begin with, and the principles laid down for the standardisation of aircraft must be determined by a representative and competent body of experts fully conversant with all that pertains to practical aeronautics and aircraft construction. Without such a representative body there will be the idiosyncrasies of faddists and the disabilities of incompetents to fight against.

THE INITIAL EXPENDITURE IS AN OBSTACLE.

The initial cost of the elaboration of such a scheme is an obstacle of some difficulty. Frankly, in the course of time a Registry must come. It will grow concurrently with the development of commercial aviation, but in a case like this it would be better to anticipate events with a view to accelerating progress rather than allow matters to drift along normally.

THE PARALLEL OF SHIPPING.

In these circumstances it would appear to be the soundest policy for the State to take a participating interest in the elaboration of the scheme. The State has enacted certain regulations with the object of safeguarding the public. It is but a small step to collaborate with the pioneers of commercial aviation, and for the State to enlarge its interest so as to enable the industry to start its career with some degree of standardisation.

The benefits would be reciprocal. The cost of the pioneering, if divided between the State and the industry (through the agency of the insurance world) would be whittled down appreciably.

Those who are impatient at the absence of any definite development on these lines may take heart from the appointment of the Committee. Already there exists a scheme of registration for navigators. The State, through the medium of the Board of Trade, puts the hall-mark of efficiency in navigation and seamanship on mariners. Similarly Lloyd's acts as a sort of deputy for the State in branding ships. It is up to the State to do likewise with the next industry, commercial aviation.

W. J. DAVIES.

CURRENT TOPICS.

PROPOSED WHITEHEAD AIRCRAFT LIQUIDATION.

The affairs of the Whitehead Aircraft (1917) seem to be developing rapidly. A voluntary liquidation is now proposed. With this object in view an extraordinary meeting is called for the 11th at Cannon Street Hotel, E.C. The resolution to be submitted is: "That the company be wound up voluntarily, and that Oliver Sunderland, of 15, Eastcheap, accountant, and chairman of the Creditors' Committee, and Charles Furley Oldham, of Feltham, representing the shareholders, be and they are hereby appointed liquidators for the purpose of winding up."

Should the resolution be passed by the requisite majority, it will be submitted as a special resolution to a second extraordinary meeting to be subsequently convened. But why voluntary liquidation?

NEW COMPANIES.

BISHOP-BARKER AVIATION CO., LTD. Private company. Registered May 31st. Capital, £10,000 in £1 shares (5,000 participating preference). To carry on in the United Kingdom, the U.S.A., France, Canada, and elsewhere, the business of carriers by air, flying school owners, proprietors and compilers of registered aircraft, aerial cinematographers, manufacturers of aircraft and spare parts, etc. The subscribers (each with one preference share) are:—J. F. Seacombe, 18, Finch Lane, E.C.3, clerk; H. J. Gay, 18, Finch Lane, E.C.3, clerk. First directors: Lt.-Col. W. A. Bishop, V.C., etc., Lt.-Col. W. G. Barker, V.C., etc., and Capt. R. L. Lott. Solicitors: Simmons and Simmons, 18, Finch Lane, E.C.

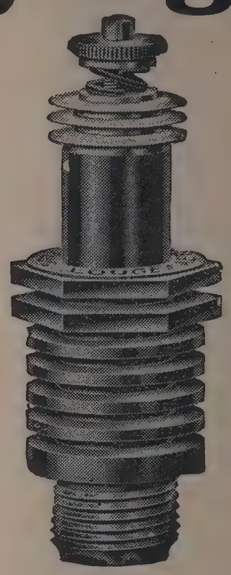
AVIATION TRANSPORT INTERNATIONALE, LTD. Private company. Registered June 5th. Capital, £1,000 in £1 shares. Manufacturers of and dealers in aircraft (including flying boats), operators of postal, passenger and freight services in the United Kingdom and elsewhere, etc. The subscribers (each with one ordinary share) are:—T. F. Cowan, 15, Duke Street, Adelphi, W.C. aero engineer; J. G. Freeman, 18, Eldon Street, E.C., solicitor. T. F. Cowan is permanent governing director. Registered office: 15, Duke Street, Adelphi, W.C.

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NAVAL & MILITARY AERONAUTICS

GREAT BRITAIN.

NAVAL.

ADMIRALTY APPOINTMENTS.

The following appointments have been made :—

July 1st.—Art. Engr.—F. W. M. May, to "Vindictive," June 20th.

* * *

It was reported from Kem on June 30th that British seaplanes operating with the Royal Navy had bombed the Bolshevik positions. Damage was done to various buildings and a train was destroyed. Two of the seaplanes were shot down by machine gun-fire, but the crew contrived to reach the British lines. There were no casualties.

During the end of June or the beginning of July the Naval seaplanes took part in an action on Lake Onega, and succeeded in sinking a Bolshevik paddle steamer which was conveying troops.

* * *

It was stated in the Press on July 5th that a detachment of the Royal Navy will take part in the Peace Celebrations at Southend on July 19th. A Flying Squadron will be included in the detachment.

MILITARY.

FROM THE "LONDON GAZETTE."

WAR OFFICE, July 2nd.

REGULAR FORCES.—ROYAL REGIMENT OF ARTILLERY.—R.H. and R.F.A.—Maj. V. A. H. Taylor to be secd. for service with the R.A.F., Aug. 22nd, 1918.

WAR OFFICE COMMUNIQUÉ.

The War Office made the following announcement on July 2nd :—

MURMANSK.—Our seaplanes have bombed the station of Kyapeselga, 15 miles south of Medvyega Gora, and secured a direct hit with a heavy bomb on a moving train. A portion of the train was demolished, and the engine is reported as lying in a crater. Enemy A.A. guns and machine-guns have been very active against our planes, several of which have been hit. One machine brought down by machine-gun fire crashed in the forest, both pilot and observer found their way back to camp.

The R.A.F. have done splendid work, both along the railway and against the enemy's flotilla. After an attack by bombs and machine-guns one of the enemy vessels ran ashore. Successful bombing by seaplanes and also observation of gunfire has been rendered very difficult by forest fires.

The following casualty was announced on July 2nd :—

CANADIAN FORCES.—WOUNDED.—Neil, Lt. D., Can. For. Corps, attd. R.A.F.

* * *

A message dated June 15th states that during the recent fighting to relieve Jandola, Afghanistan, aeroplanes were used to assist in the dispersal of the tribesmen.

* * *

It is now reported by Bolshevist wireless that the two British aviators taken prisoners in the Astrakhan district are Col. Van der Spuy and Mr. Ingram (rank unknown). They have been taken to Moscow. A third aviator was killed while attempting to escape.

AIR FORCE.

FROM THE "LONDON GAZETTE."

AIR MINISTRY, July 1st.

R.A.F.—The following temp. appts. are made at the Air Ministry :—Staff Officer, 2nd Class (P.).—Paymr. Lt.-Comdr. H. L. Jackson (R.N.), Feb. 13th, and is granted a temp.-commn. as Maj. (T.).—Lt. J. G. N. Clift, April 1st, 1918, to Sept. 1st, 1918, and to be actg. Maj. whilst so empld.

Staff Officer, 3rd Class (T.) —Lt. (actg. Maj.) J. G. N. Clift, Sept. 2nd, 1918, from S.O., 2nd Class, relinquishing the actg. rank of Maj., and to be actg. Capt. till April 30th.

The following temp. appt. is made :—Staff Officer, 3rd Class (P.) —Capt. R. R. L. Thom, June 1st.

FLYING BRANCH.—Maj. R. B Ward to be actg. Lt.-Col. whilst empld. as Lt.-Col. (A. and S.), June 16th.

Capt. L. P Paine, D.S.C., to be graded for purposes of pay and allces. of Capt. (S.), and to be actg. Maj., without the pay and allces. of that rank, March 25th.

Capts. to be graded for purposes of pay and allces. of Capts. whilst empld. as Capts. :—L. C. W. Trend (A. and S.), Feb. 3rd; L. G. Le B. Croke (O.), May 1st; Lt. R. P. M. Whitham to be actg. Capt. whilst empld. as Capt. (A.), from April 30th, 1918, to April 30th.

Lt. T. A. Warne-Brown, D.S.C., to be graded for purposes of pay and allces. of Capt. whilst empld. as Capt. (A.), May 1st.

Lt. S. W. Symons to be Lt. (A.), from (T.), Dec. 31st, 1918.

Sec. Lts. to be Lts. :—(Hon. Capt.) A. A. J. Poole, May 31st, 1918; (Hon. Capt.) F. R. Ashmead, Aug. 23rd, 1918 (substituted for notification in "Gazette," March 7th); F. Coxen, Nov. 2nd, 1918; A. E. N. Ashford, April 25th.

R. E. Shears (temp. Lt., Glouc. R.) is granted a temp. commn as Sec. Lt. (O.), Oct. 27th, 1918, and to be Hon. Lt. (substituted for notification in "Gazette," Dec. 10th, 1918).

The following relinquish their commns. on ceasing to be empld. :—Lt. (Hon. Capt.) J. Hirschberg (Capt., N.Z. A.S.C.), Dec. 28th, 1918; Sec. Lt. S. Hodgson (Sec. Lt., Suff. R.), April 2nd; Capt. I. C. Barclay (Capt., Seaforth Highrs.), April 16th; Lt. E. F. J. Bull (Lt., Worc. R.), June 12th; Sec. Lt. (Hon. Capt.) H. R. Dennison (Capt., Brit. Col. R.), Lt. C. R. Hall (Lt., Quebec R.), June 13th; Sec. Lt. (Hon Lt.) J. W. Grant (Lt., E. Ont. R.), Lt. E. T. Lough (Lt., actg. Capt., Manitoba R.), June 19th.

Transferred to the unempld. list :—Lt. H. H. Howard, Jan 28th; Sec. Lt. J. D. Ford, Feb. 15th; Lt. G. G. Newbury, Feb. 19th; Lt. J. Chapman, March 1st; Sec. Lt. L. S. Davis, March 17th; Lt. A. G. Fletcher, March 18th; Lt. A. S. Rawlinson, March 30th; Sec. Lt. L. A. Holley, April 1st; Lt. W. Hall, April 2nd; Sec. Lt. R. J. H. Ganson (Gordon Highrs.), April 9th; Capt. R. H. Hood, April 10th; Sec. Lt. A. J. C. Gormley, Sec. Lt. A. J. McGoldrick, April 11th; Sec. Lt. C. S. Lammiman, April 12th; Sec. Lt. L. J. Emerton, Lt. R. I. Fowler, Lt. J. L. Haight, Sec. Lt. W. N. Harrison, Sec. Lt. J. John, April 13th; Sec. Lt. W. R. Gatewood, Capt. C. S. Hay, A.F.C., Capt. (actg. Maj.) J. McKelvie, April 15th; Sec. Lt. S. F. Morice, April 17th; Sec. Lt. R. A. P. Johnson, Lt. G. F. Metson, April 18th; Sec. Lt. J. U. Eddy, Lt. F. W. McCarthy, Sec. Lt. G. L. Winterbottom, April 19th; Sec. Lt. S. Horne, Sec. Lt. C. T. R. John, April 21st; Sec. Lt. O. F. Harrison, Sec. Lt. (Hon. Lt.) C. J. Paterson, April 22nd; Sec. Lt. J. H. Mitchell, April 23rd; Sec. Lt. C. E. Jackson, Sec. Lt. C. W. Jones, April 24th; Sec. Lt. E. Havers, Sec. Lt. J. A. Howard, April 25th; Sec. Lt. (Hon. Lt.) C. G. R. Lewis, April 26th; Sec. Lt. L. Edwards, April 27th; Capt. E. de C. Halifax, D.S.C., Sec. Lt. R. C. Howken, April 28th; Lt. E. R. Haines, Lt. C. H. Harrison, April 29th; Lt. J. C. H. Hartley, May 1st; Lt. C. A. W. Gallagher, Maj. J. W. Jardine, May 5th; Sec. Lt. N. Little, May 6th; Sec. Lt. (Hon. Capt.) B. R. Collison (Capt., King's Lpool. R., T.F.), Sec. Lt. T. Jones, Sec. Lt. M. R. Jordon, May 8th; Sec. Lt. A. Hawthorn, Lt. R. S. Warwick (substituted for notification in "Gazette" of May 20th), May 9th; Sec. Lt. A. C. Harper, May 13th; Sec. Lt. K. Stafford-Langan, May 14th; Lt. H. A. Hannay, Capt. J. Hodson, Lt. W. E. Watts, May 15th; Lt. D. R. MacLaren, D.S.O., M.C., D.F.C., May 16th; Lt. C. W. Browne, Sec. Lt. J. D. Hall, Lt. G. S. L. Hayward, Sec. Lt. T. R. Lole, Lt. R. Wallace, Lt. F. H. Webb (R. War. R.), May 17th; Lt. J. G. Prestwich (R.A.S.C.), Sec. Lt. J. Wallis, May 18th; Lt. E. I. Cummings, Sec. Lt. H. Eckley, Sec. Lt. B. F. Hale, Sec. Lt. A. P. Hancock, Sec. Lt. D. C. Hay, Sec. Lt. H. Northrop, Sec. Lt. W. B. Richardson, Lt. F. W. Scriver, Sec. Lt. G. J. C. Tigar, May 20th; Lt. G. R. Hake, Sec. Lt. F. Wilde, May 21st; Capt. W. C. Gage (substituted for notification in the "Gazette" of March 21st), Lt. E. S. C. Sen, May 23rd; Sec. Lt. E. D. Cowdery (R.F.A.), May 25th; Lt. F. H. St. C. Sargaut, D.F.C., May 26th; Lt. R. A. Nunn (Middx. R., T.F.), Sec. Lt. W. H. Taylor, May 27th; Lt. B. J. Bevan, Sec. Lt. F. L. Collison, Lt. T. H. Formby (R.G.A.), Lt. C. C. Miller, Lt. D. H. Montgomery, Lt. F. P. Turner, May 28th; Lt. T. J. Arthur, Lt. T. G. Rae, May 29th; Sec. Lt. A. H. Allardyce, Sec. Lt. J. D. Dick, Sec. Lt. C. C. Fisher, Sec. Lt. (Hon. Capt.) H. H. McColl, M.C., May 30th; Sec. Lt. G. R. B. Dixon, Sec. Lt. J. B. Erskine, Sec. Lt. G. D. Green, Sec. Lt. W. O'Brien, May 31st; Sec. Lt. R. Cookson, Lt. C. Curtis, Maj. S. T. Dockray, Sec. Lt. K. L. Gomm, Capt. D. L. Ingpen, Sec. Lt. R. H. Taylor, June 1st; Sec. Lt. F. A. L. Addison, Sec. Lt. R. Clarkson, Sec. Lt. F. T. Edwards, Sec. Lt. A. G. Harris, Sec. Lt. D. Miller, Lt. C. M. Mortimer (R.E.A.), June 2nd; Lt. L. E. Edmunds, Sec. Lt. A. H. Fraser, Sec. Lt. W. Geary, Sec. Lt. B. W. Hammond, Lt. J. T. Rymer, June 3rd; Lt. (Hon. Capt.) C. G. Bellord, Lt. W. H. Jackson, Lt. E. Squire, Capt. S. J. Woolley, June 4th; Sec. Lt. G. G. Creusen, Sec. Lt. W. L. Field, Sec. Lt. W. George, Lt. R. V. Jennings, Lt. (Hon. Capt.) W. J. Mostyn, Lt. H. S. Newman (Welsh R.), Capt. C. R. H. Stewart, Lt. C. E. Stuart, June 5th; Lt. D. F. Evans, Lt. H. J. C. Spencer, Sec. Lt. A. Wroot, Lt. G. Ezard, June 6th; Lt. H. L. Jones, Sec. Lt. W. D. Moffatt, June 7th; Sec. Lt. W. D. Brownlee, Lt. A. S. Selby, Sec. Lt. I. J. Whittal, June 8th; Lt. F. R. Walpole, June 9th; Lt. E. R. Bruce, Lt. H. Burns, Sec. Lt. C. F. D. Evans, Sec. Lt. A. E. Griffiths, Sec. Lt. V. H. Lawrence, Lt. R. R. Macintosh, June 10th; Lt. N. McN. Beaton, Sec. Lt. H. Carding, Sec. Lt. W. F. C. Cooper, Sec. Lt. M. de Verteuil, Sec. Lt. S. I. Foster, Capt. J. Gamon, D.S.C., June 11th; Sec. Lt. L. S. H. Bartlett, Capt. H. C. Morris, Sec. Lt. W. H. Morris, Lt. F. V. Webb, June 12th; Sec. Lt. R. P. S. Davidson, Lt. R. A. Fawcett, Lt. D. Gardiner, Lt. L. S. V. Gedge, Sec. Lt. C. B. S. Gilliat, Sec. Lt. P. A. C. Gillies, Capt. H. Meintjes, M.C., Lt. H. C. M. Nangle, Sec. Lt. J. F. Stringnell, June 13th; Sec. Lt. E. G. Barnes, Sec. Lt. L. C. Ellis, Sec. Lt. E. Glaholm, Lt. B. L. Norton, Lt. A. Simmons, Sec. Lt. R. F. Thesen, June 14th, Lt. K. K. F. Bonnerjee (Capt., R. Sussex R., T.F.), June 15th; Lt. H. W. R. Banting, Capt. F. Billinge (Manchester R.), Sec. Lt. D. A. McGregor, Lt. R. E. Mansfield, Lt. D. W. M. Miller, D.F.C., Lt. J. G. W. Saulez, Lt. R. H. Stainbank, June 16th; Lt. G. Bainbridge, Lt. H. B. Cumming, Sec. Lt. F. G. W. Gough, Sec. Lt. W. R. Foster, Sec. Lt. G. F. Morse, June 17th; Lt. J. C. Akester, Capt. H. V. Knox, Sec. Lt. S. A. Lane, Lt. G. C. Mumford, June 19th; Lt. T. Chilton (R.F.A., T.F.), June 21st; Lt. C. H. F. Nobbs, June 22nd; Lt. G. H. M. Colyer, Capt. E. J. Garland, Lt. A. C. Macvie, Lt. C. Miller, June 25th; Lt. J. K. Finlay, Lt. A. G. Mel. Jennings (substituted for the notification in the "Gazette" of March 14th), Sec. Lt. J. M. Loggie, June 26th; Lt. A. MacDonald, June 28th.

Lt. W. H. Gibson relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, June 18th.

Lt. D. J. Allen (Manitoba R.) relinquishes his commn. on account of ill-health contracted on active service, May 3rd.

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank :—W. S. Winter, contracted on active service (substituted for the notification in the "Gazette" of Feb. 7th), M. S. Dickinson (substituted for the notification in the "Gazette" of March 18th), S. J. Bolitho, June 12th (substituted for the notification in the "Gazette" of March 14th), May 20th; H. T. Watts, June 19th.

The rank of Lt. T. M. Cornish is as now described, and not as stated in the "Gazette" of May 9th.

The initials of Sec. Lt. C. D. Neill are as now described, and not "C. W." as stated in the "Gazette" of May 2nd.

The initials of Sec. Lt. I. L. Wood are as now described, and not "T. L." as stated in the "Gazette" of May 9th.

The initials of Sec. Lt. A. Sykes are as now described, and not "Arthur A." as stated in the "Gazette" of May 23rd.

The surname of Lt. E. R. Trendell is as now described, and not "Tundell" as stated in the "Gazette" of May 13th.

The surname of Capt. C. Gordon-Davis is as now described, and not "C. G. Davis" as stated in the "Gazette" of May 20th.

The surname of Lt. B. F. Smith-Clebourne is as now described, and not "B. F. S. Clebourne" as stated in the "Gazette" of May 20th.

The name of Lt E. F. Van der Luet, D.F.C., is as now described, and not as stated in the "Gazette" of May 23rd.

The notification in the "Gazette" of Sept. 6th, 1918, concerning Sec. Lt. W. E. Baxter is cancelled.

The notification in the "Gazette" of Jan. 24th concerning Sec. Lt. G. J. C. Tigar is cancelled.

The notification in the "Gazette" of March 21st concerning Sec. Lt. E. J. Norris is cancelled.

The notification in the "Gazette" of April 1st concerning Lt. E. N. MacDonald is cancelled.

The notification in the "Gazette" of April 29th concerning Sec. Lt. (Hon. Lt.) A. E. Overton is cancelled.

The notification in the "Gazette" of May 13th concerning Sec. Lt. A. G. Middleton is cancelled

The notification in the "Gazette" of May 16th concerning Lt. R. J. Marshall is cancelled.

The notification in the "Gazette" of June 10th concerning Lt. R. B. Wainwright is cancelled.

The notification in the "Gazette" of June 20th concerning the following officers is cancelled:—Sec. Lt. J. Martin, M.M., Sec. Lt. T. E. Winckworth.

The notification in the "Gazette" of June 24th concerning Sec. Lt. L. C. Phippen is cancelled.

ADMINISTRATIVE BRANCH.—Maj. K. L. Buist to be Maj., from (S.O.), June 2nd.

Capt. A. M. Wilson to be actg. Maj. whilst empld. as Maj., May 1st.

G. N. F. Powell (Maj., London R.) is granted a temp. commn. as Capt., and to be Hon. Maj., April 1st, 1918.

Sec. Lt. F. T. L. Avis to be actg. Capt., whilst empld. as Capt., May 1st.

Lt. H. W. Sidley to be Lt., from (S.O.), May 23rd

Lts. (A.) to be Lts.:—D. H. Bell, M.C., C. A. Ombers, June 11th; G. D. Daly, June 12th.

The following are granted temp. commns. as Sec. Lts.:—C. A. Maddams, H. E. Philip, June 28th

The following relinquish their commns. on ceasing to be empld.:—Lt. Lord H. Cecil, Jan. 18th (substituted for notification in "Gazette," April 18th, 1918); Lt. (Hon. Capt.) W. C. Sharpe (Capt., R.W. Surrey R.), April 15th; Capt. (actg. Maj.) D. G. F. Darley (Capt., Dragoon Guards), April 24th; Capt. J. T. Waller, M.C. (Capt., Leic. R.), June 4th; Lt. N. A. Arthur (N.Z. Wellington R.), June 11th.

Transferred to unempld. list:—Sec. Lt. P. Hammond, Jan. 20th; Sec. Lt. A. H. Durand, Jan. 25th; Lt. F. Crossley, Feb. 7th; Lt. E. N. MacDonald, Feb. 27th; Sec. Lt. R. S. Maitland-Edwards (Coldstream Grds.), April 12th; Sec. Lt. J. Mellor, April 15th; Sec. Lt. (Hon. Lt.) A. E. Overton, April 16th; Sec. Lt. T. W. Hopley, April 25th; Maj. W. B. Crossley (Lanc. Fus., T.F.), May 1st; Sec. Lt. E. A. North, May 15th; Sec. Lt. A. W. Jennings, May 18th; Sec. Lt. L. C. Phippen, May 19th; Lt. W. H. Steele, May 2nd; Lt. A. S. H. O'Brien, Sec. Lt. J. R. Wilson-Haffenden, May 23rd; Lt. H. E. Tee (Glouc. R., T.F.), May 25th; Lt. E. R. Rudling (R.W. Surr. R., T.F.), May 28th; Sec. Lt. W. E. Cotton, Sec. Lt. A. W. Mann, June 2nd; Lt. E. St. T. W. Freer (Suff. Yeo.), June 3rd; Sec. Lt. J. W. A. Wymark, June 8th; Lt. (Hon. Capt.) W. H. Charlton (Capt., Northumb. Yeo., T.F.), June 9th; Lt. (Hon. Capt.) J. S. Flanagan, Lt. A. Mackenzie, June 11th; Capt. J. R. Fox, June 12th; Capt. E. W. M. Wheldon, Sec. Lt. A. G. Groom, June 13th; Lt. (Hon. Capt.) P. V. G. Van der Byl, M.C., June 15th; Sec. Lt. (Hon. Lt.) G. Newton, Sec. Lt. F. C. Walker, June 18th; Lt. H. S. Brackenbury, Capt. M. L. Fitzgerald, June 19th; Lt. W. A. Dewhurst, June 25th; Sec. Lt. L. P. Kirk, June 27th.

Lt. (Hon. Capt.) J. W. Holdsworth relinquishes his commn. on account of ill-health, and is permitted to retain the rank of Capt., May 14th.

Capt. H. T. Holdstock, M.C., relinquishes his commn. on account of ill-health, and is permitted to retain his rank, June 19th.

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—J. D. Dalzell, June 19th; I. C. Bannister, June 27th (substituted for notification in "Gazette," March 11th); C. M. de L. Norman, July 2nd

The rank of Lt. F. D. Owen is as now described, and not Sec. Lt. as stated in "Gazette," June 20th.

The notifications in "Gazette," May 23rd and June 6th, concerning Lt. J. W. Houldsworth are cancelled.

The notification in "Gazette," March 14th, concerning Lt. H. Townsend is cancelled.

The notification in "Gazette," May 13th, concerning T. W. B. Hill is cancelled.

The notification in "Gazette," May 16th, concerning Lt. M. R. Helliwell is cancelled.

TECHNICAL BRANCH.—Capt. W. C. Broadhead to be Capt., Grade (A), from Grade (B), from Aug. 12th, 1918, to April 1st.

Capt. R. N. Spence to be Capt., Grade (B), from (Ad.), April 1st, 1918.

Lts. to be Lts., Grade (A):—L. J. Anstey, from (O), April 1st, 1918 (substituted for notification in "Gazette," Oct. 4th, 1918); E. G. Taylor, from (Ad.), Feb. 26th.

Sec. Lt. (actg. Lt.) F. S. Stokes to be Lt., March 8th (substituted for notification in "Gazette," April 11th).

Sec. Lts. to be Lts., without pay and allowances of that rank:—T. H. Evans, April 2nd, 1918; S. Empsall, Dec. 16th, 1918; L. C. Sewell, May 7th.

Sec. Lt. (Hon. Lt.) B. T. Hood to be actg. Lt., whilst empld. as Lt., Grade (B), from Oct. 17th, 1918, to April 30th

The following relinquish their commns. on ceasing to be empld.:—Capt. E. Graham (Lt.-Col., R.E.), May 9th; Lt. H. Marsden (Lt., Manchester R.), June 6th; Maj. H. C. Tweedie (Maj., N. Staffs. R.), June 20th.

Transferred to unempld. list:—Capt. J. A. Holder, Jan. 14th; Sec. Lt. R. S. MacD. Salt, Feb. 8th; Lt. J. A. H. O'Hynes, Feb. 13th; Capt. E. H. Marsh, April 6th; Capt. W. F. Higgs, April 17th; Sec. Lt. (Hon. Lt.) W. E. Jones, April 20th; Sec. Lt. C. S. Hadley, April 22nd; Sec. Lt. A. A. Jones, April 26th; Lt. H. R. Hassé, May 3rd; Sec. Lt. H. M. Frederick, May 6th; Lt. J. Hooper, May 20th; Maj. T. B. Lloyd, Lt. E. T. Scale, May 25th; Capt. N. Lea, May 28th; Sec. Lt. J. Rowley, May 30th; Sec. Lt. (Hon. Lt.) T. R. Gilby, Capt. T. H. Harkness, Capt. K. H. McLean, May 30th; Capt. W. G. Gledhill (Norf. R.), June 1st; Capt. G. G. R. Fraser, June 3rd; Lt. J. H. Fletcher, Lt. W. H. Scanlan, June 5th; Lt. J. H. B. Foss, Lt. A. N. Meier, June 6th; Lt. A. W. Phillips, M.C. (R. Fus.), June 7th; Capt. S. E. Neal, June 8th; Sec. Lt. W. H. Miles, June 9th; Lt. W. G. Cooke, Sec. Lt. H. N. Farmer, June 12th; Sec. Lt. A. E. Mills, June 14th; Lt. W. B. Brett, June 15th; Lt. C. M. Denny, June 16th; Sec. Lt. D. H. W. Alexander, Sec. Lt. W. A. Baker, Lt. J. Burden, June 17th; Capt. P. H. Holder, Sec. Lt. W. F. Hendry, Lt. N. H. Mackrow, June 18th; Lt. H. F. Groves (North'd Fus.), June 20th.

The notification in "Gazette," March 18th, concerning Lt. T. W. Cave, M.C., is cancelled.

MOTOR-BOAT BRANCH.—Capt. H. Howard is transferred to unempld. list, March 28th.

MEDICAL BRANCH.—Lt. G. A. S. Madgwick is transferred to unempld. list, June 17th.

The initials of Lt. G. O. Roper are as now described and not G. A. as stated in "Gazette," April 1st.

DENTAL BRANCH.—Lt. H. H. Chapman is transferred to unempld. list, June 11th.

CHAPLAINS BRANCH.—The Rev. P. C. Barber is transferred to unempld. list, June 13th.

MEMORANDA.—The following Overseas Cadets are granted temp. commns. as Sec. Lts.:—178138 L. H. Allen, 178139 F. G. Allpass, M2/152634 R. B. Anderson, W. A. Allsopp, W. S. Armitage, 183979 J. H. Adler, 178141 C. R. Bowker, 178147 C. B. Bousfield, 178150 R. F. Bairdow, A. Blaikie, 178154 J. Balsille, 178142 E. W. G. Barty, 178149 W. H. Bousfield, 178151 M. A. B. Banfield, 178148 S. C. Botha, 178143 E. F. Biddulph, 184889 J. R. Burness, 292362 L. W. Burns, 2003532 H. A. Bullock, 6647 H. Bouts, 536031 R. W. N. Burroughs, 460471 G. Blythe, 178145 C. R. Brickhill, 16106 G. Blagrove, 11562 J. S. Butler, 2064 J. Bowie, 183982 F. E. Blackwell, 2862 G. G. Biddington, H. Brophy, 178150 M. Carlisle, 178160 L. E. Carter, 184991 A. E. Coote, 183992 G. W. Cruikshank, 183988 H. G. E. Clark, 452046 A. F. Cook, 316149 A. J. Cook, 117188 A. H. Church, 183990 M. E. Collier, K. Campbell, 183987 H. F. Chick, 183989 C. A. Colepepper, J. E. Colepepper, 138994 E. M. Davis, 110695 H. Dawson, 316122 P. W. Douglas, 109321 W. M. Dynes, 966521 E. Dawe, 183996 J. L. Didcott, 6927 R. C. Doyle, 183995 D. Deeves, 183997 E. W. M. Driver, W. E. R. T. Duff, A. E. Dale, V. A. Evans, G. G. Edwards, 442374 R. J. Eades, 178165 L. N. Estment, 178164 K. L. Ellis, W. F. Erickson, 184912 W. Francis, 178168 E. H. Fitt, 178167 J. G. Forbes, 178169 C. E. Freeman, 184002 T. L. Flindt, 13985 R. H. Ferguson-Brown, 94 E. C. Fey, 332828 A. J. Fisher, 316140 J. H. Fee, 183004 F. C. L. Furse, 184001 L. H. Field, 178171 A. H. Gale, 178170 J. H. George, 178466 D. R. Garrett, 184004 W. G. E. Gale, 1412 J. M. Gie, S. H. Green, 213364 P. A. Gammill, 184007 C. L. Godwin, 184006 F. M. Geerdts, 184008 J. L. Goldsmith, 184009 B. R. Gordon, 178170 C. F. Heyns, 176174 S. R. Hogan, 178173 M. C. Henry, D.C.M., 178177 K. A. Hodgson, 184016 A. T. Henderson, 178172 R. A. Heydenrych, 184013 L. G. Harling, 2143 R. Hughes, M.G.C., 33 C. W. Hooper, 184114 R. Hawthorne, 184015 A. C. Hellawell, 184016 V. S. Henderson, 184020 G. N. Hornby, 184019 G. W. Holey, S/8355386 B. S. W. Holden, 52640 H. H. Hutchings, 184012 N. F. Hanbury-King, 184021 H. A. Hoyer, 184018 A. R. Hojem, 184026 C. E. Jones, 107343 E. W. Jones, 184024 G. St. C. James, 184023 L. A. H. Jackson, 4897 G. E. Jobson, 184022 H. C. Jackson, 184025 L. W. H. James, 184026 C. E. S. Jones, 6173 F. W. Kurtz, R. R. Kelly, 184029 W. L. King, 184028 H. G. King, F. Kingsley, 178186 R. F. Lister, 178187 R. V. Lotz, 178184 G. Lewis-Williams, 184032 T. L. De R. Labistour, 229299 J. Laberge, 178185 G. T. Loser, 184036 C. Lowe, 184033 R. C. Lambson, 184034 E. C. Leach, 184053 P. J. Le Roux, 184037 J. E. Lyons, 178193 K. A. McLeod, 178191 R. G. F. Murgatroyd, 178190 K. McQuade, 184039 H. Maguire, 184048 G. W. C. Moxley, 184038 S. M. McDonald, 316128 L. McCammon, 316135 F. McInnes, 316106 R. T. McFarlane, 316126 K. F. Munroe, 184042 L. P. McGuire, 316129 C. Marshall, 690370 W. E. May, 184047 J. Morton, M2/152754 R. H. Murdoch, M2/157729 C. H. Melville, 184043 B. K. Menne, 184044 D. M. Millar, 184046 L. A. E. Moon, 184045 A. E. Mitchell, 184041 E. Martindale, W. F. Nelson, 178198 J. O'Reilly, 178197 T. J. Oliver, 178199 H. A. Oxenham, 176195 W. W. Olver, 316002 H. B. O'Heir, 178196 C. P. Orpen, 184050 H. C. Oates, A. L. Povall 178204 D. H. Paxton, 178200 C. F. J. Povall, 184059 H. A. Penfold, 316132 F. F. Porter, 198649 G. R. Pinkard, 316118 R. F. Prentice, 576 W. W. Phillips, 316133 A. Peirce, 178201 H. R. Poulton, 171091 H. C. Pitman, 832298 H. E. Petipas, 177072 F. G. Pursell, G. H. Prevost, 184053 L. J. Poley, T. J. Phillips-White, 184051 G. Payn, 171379 P. W. E. Read, 178206 E. B. Robson, 178207 N. McL. Robertson, S. M. Riddell, 541247 R. P. Richardson, 513027 N. I. Reed, 778161 R. B. Rae, 1260947 B. C. Rochester, R. S. Rachmann, 148056 K. A. Rawlinson, 184058 T. A. S. Ross, L. Ramville, 550222 C. G. Roe, 178210 C. R. Sparkes, M2/153041 J. F. Stephen, M2/153410 G. P. Spackman, 184063 R. E. Sherriffs, 103432 J. Stewart, 184061 L. L. Shearer, 117154 C. A. Schjolsseth, 500713 W. C. Spettigue, 523767 D. M. Strachan, 69139 J. B. Symington, 184059 S. G. Saville, 184061 R. C. H. Schleicher, 184779 J. J. Steytler, 184064 H. L. Somers, 184060 M. Sewell, 184066 J. Straw, 178208 B. R. Spencer, 178216 A. W. H. Tedder, 178217 F. W. Tolbutt, 178215 J. C. Tindall, 178214 C. S. Thorne, 176218 C. Teubes, 793027 T. Troy, 2809 B. Toy, 184081 C. J. R. Taylor, 178229 G. M. Thornhill, 110706 A. Thomson, 184066 J. J. Turnbull, 178221 P. A. Van Der Byl, 184067 A. E. Vaughan, 1476 A. S. Venter, 178222 M. G. Van Renen, A. Watt, M. Wolpert, 178224 F. E. K. Wiener, 178223 L. Wuister, 316115 R. Ware, 476822 T. Williams, 302 H. Watkins, 516 V. E. Williams, 154676 J. J. White, 489753 W. A. Warner, 184071 H. V. Whyte, 2184 A. C. Walker, 184070 C. L. Whitfield, 184068 L. J. Warren, 184071 A. F. Wright, 184072 S. C. Wigginton, 71 A. R. West, 316838 T. F. Wooding, Feb. 15th.

The following Cadets are granted Hon. commns. as Sec. Lts.:—178763 J. M. Rice, Jan. 17th; 117244 F. V. Ames, Feb. 19th; 52390 L. Morris, March 2nd; 190118 W. A. Sharp, March 5th; 157080 C. R. Stainton, March 10th; 249134 E. A. Jerome, March 20th; 33776 W. T. Tredgett, March 26th; 89757 R. S. Munday, March 27th; 66300 E. A. Suter, April 6th; 178012 L. R. Jenkins, April 11th; 27163 A. E. Jones, April 21st; 291067 W. A. Jacobs, 50379 H. Stanhope, April 22nd; 85738 W. H. Coates, April 28th; 176760 F. B. Dickie, 120644 V. L. Taylor, May 4th; 177943 R. J. Santer, May 6th; 30949 T. Simpson, May 11th; 181167 W. C. Hazelwood, July 1st (substituted for notification in "Gazette," June 10th).

Lt.-Col. H. C. H. Hudson, M.V.O. (Capt. (Bt. Maj.), Hussars), relinquishes his commn. on ceasing to be empld., June 17th.

Temp. Hon. Lt. C. G. Whinfrey relinquishes his commn. on ceasing to be empld., June 30th.

Transferred to unempld. list:—Maj. C. L. Baillieu, from (S.O.), March 27th; Lt. C. W. Hogg, from (S.O.), April 23rd; Capt. M. J. Goldring, from (S.O.), May 20th; Capt. J. M. Mitchell, M.B.E., from (S.O.), June 11th; Capt. F. T. Bridger, from (S.O.), June 15th.

AIR MINISTRY, July 4th.

R.A.F.—The following temporary appointments are made at the Air Ministry:—

Staff Officers, 1st Class.—(Air).—Lt.-Col. A. C. Winter, O.B.E., July 1st, vice Maj. H. A. Moore, C.B.E., M.C.

Staff Officers, 2nd Class.—(Air).—Maj. E. J. Hodsoll, July 1st, vice Maj. W. J. C. Kennedy-Cochran-Patrick, D.S.O., M.C. (Q.)—Lt. (Hon. Capt.) H. W. Clarke, July 1st, vice Capt. Lord St. Oswald

Staff Officers, 3rd Class.—(Q.).—Lt. F. J. Cooke, July 1st, vice Lt. (Hon. Capt.) H. W. Clarke.

Staff Officers, 4th Class.—(T.).—Sec. Lt. L. B. Hobgen, Nov. 6th, 1918, and to be actg. Lt. till April 30th.

The following temp. appts. are made:—Area Comdr.—Col. (actg. Brig.-Gen.) C. A. H. Longcroft, C.M.G., D.S.O., A.F.C., March 8th, to retain actg. rank of Brig.-Gen., and to be graded for purposes of pay and allces. of Maj.-Gen. while so empld., vice Col. (actg. Brig.-Gen.) P. W. Game, C.B., D.S.O.

Group Comdr. (graded for pay and allces. as Col., Staff).—Lt.-Col. G. W. P. Dawes, D.S.O., June 25th.

FLYING BRANCH.—Lt.-Col. (actg. Col.) R. H. Clark-Hall, D.S.O., to retain actg. rank of Col. while empld. as Col. (A. and S.), June 5th.

Lt.-Col. C. Bovill to be Lt.-Col. (A.), from (S.O.), May 23rd.

Capt. G. H. Bowman, D.S.O., M.C., to be actg. Maj. while empld. as Maj. (A.), June 7th.

Capt. T. E. Salt, A.F.C., to be graded for purposes of pay and allces. of Maj. while empld. as Maj. (A.), May 1st.

Capt. (actg. Lt.-Col.) C. E. Wardle to be Capt. (A.), from (S.O.), and to relinquish actg. rank of Lt.-Col., March 24th.

Lt. H. O. Long to be Lt. (O.), from (Ad.), June 10th

Sec. Lt. H. J. Ashley to be Lt., April 31st

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Lt. T. W. Morse (Capt., Cent. Ont. R.), Oct. 24th, 1918; Lt. H. Johnson (Capt., Can. Fld. Art.), Dec. 14th, 1918; Sec. Lt. (Hon. Lt.) R. K. Armstrong (Lt., Can. Art.), Lt. (Hon. Capt.) R. A. Boger (Maj., R.E.), April 14th; Lt. H. C. Sootheran (Capt., W. Ont. R.), April 23rd; Lt. F. L. Baker (Lt., W. Ont. R.), April 25th; Maj. P. C. Sheeren (Maj., New Brunswick R.), May 2nd; Capt. P. B. Tabernacle (Capt., E. Ont. R.), May 7th; Lt. J. W. Langmuir (Capt., Can. Local Forces), May 30th; Lt. D. A. Gordon (Lt., Brit. Col. R.), June 3rd; Sec. Lt. E. A. H. Goodwin (Sec. Lt., R. Suss. R.), June 4th; Lt. C. A. S. Bean (Lt., Brit. Col. R.), Sec. Lt. (Hon. Lt.) H. S. Stidston (Lt., Sask. R.), June 5th; Sec. Lt. (Hon. Lt.) F. G. Black (Lt., Cent. Ont. R.), June 23rd; Lt. J. A. Parker (Lt., R. Scots Fus.), July 5th (substituted for notification in "Gazette," June 13th).

Transferred to the unempld. list:—Lt. E. G. Nuding, Feb. 4th; Lt. T. L. Meares, Feb. 7th; Sec. Lt. G. Lamont, March 1st; Sec. Lt. H. V. Peeling, March 14th; Sec. Lt. E. L. McCowan, March 15th; Capt. P. Johnson, March 28th; Capt. R. Leckie, D.S.O., D.F.C., March 31st; Sec. Lt. W. A. Jackson, April 1st; Sec. Lt. C. Butcher, April 3rd; Lt. J. Burness, April 11th; Sec. Lt. J. R. H. Hall (substituted for notification in "Gazette," April 15th), Sec. Lt. P. G. Horlington, April 13th; Sec. Lt. W. O'M. Bedard, April 15th; Sec. Lt. J. A. MacDonald, April 16th; Lt. W. A. Lane, Lt. P. D. Learoyd, April 17th; Lt. C. C. Ivens, Capt. G. P. Powles, April 18th; Sec. Lt. C. S. Casey, Sec. Lt. R. E. Jellison, Sec. Lt. T. I. Roberts, April 19th; Sec. Lt. F. C. Powell, April 21st; Sec. Lt. (Hon. Lt.) J. W. Lunn, April 22nd; Lt. B. S. Chantrill (Glos. R.), April 23rd; Sec. Lt. (Hon. Lt.) J. Edwardes, M.C., Lt. G. D. Jenkins, April 24th; Lt. C. H. Dickins, April 25th; Sec. Lt. D. McN. Livingstone, April 28th; Sec. Lt. J. Longley, April 30th; Lt. A. C. Lester, May 3rd; Lt. S. F. Lydon, May 4th; Lt. R. I. Dines (Lond. R.), Sec. Lt. (Hon. Lt.) C. W. Langdon, Sec. Lt. G. E. Pratt, May 7th; Lt. R. F. Jenyns, Capt. C. N. Jones, Capt. H. J. Lloyd, May 8th; Sec. Lt. H. A. Hamlet, May 10th; Sec. Lt. A. W. Green, Lt. A. E. Lancashire, May 14th; Sec. Lt. R. W. L. Pearson, May 15th; Sec. Lt. G. E. Lewtas, May 19th; Sec. Lt. J. B. Eberts, Sec. Lt. F. J. Griffiths, Sec. Lt. A. D. Hollingsworth, Lt. H. T. Leslie, Sec. Lt. J. B. Jackson, Sec. Lt. L. W. Killeen, Sec. Lt. R. Smith, May 20th; Sec. Lt. P. Marsland, May 21st, Sec. Lt. R. Shillinglaw, May 24th; Sec. Lt. F. W. V. Blommestein (Lond. R., T.F.), Lt. M. Pennycock, Sec. Lt. A. W. Piper, Sec. Lt. H. N. Thornton, May 29th; Lt. (Hon. Capt.) T. E. Laing, May 30th; Lt. A. J. R. Adam, Capt. R. V. James, D.F.C., Sec. Lt. G. B. Nicholas, D.F.C., Lt. S. H. Owens, May 31st; Lt. H. A. Love, Sec. Lt. O. Plant, Sec. Lt. W. F. Woodland, June 1st; Lt. E. Foster, Sec. Lt. C. S. Gordon, Sec. Lt. N. M. Harrison, Lt. J. W. G. Price, June 2nd; Sec. Lt. B. Chadwick, Lt. J. B. Elliott, Lt. H. S. Goodliffe, June 3rd; Sec. Lt. C. L. Henn, Lt.-Col. C. F. Pollock, O.B.E., Capt. B. A. Smart, D.S.O, June 4th; Lt. I. C. G. Simpson, June 5th; Sec. Lt. R. Goldman, Lt. W. P. Lester-Jones, June 6th; Sec. Lt. J. Forsyth, June 7th; Lt. A. E. Watkinson, June 8th; Sec. Lt. G. M. Jeffrey, June 9th; Sec. Lt. H. Dabney, Lt. R. L. Dingley, Sec. Lt. W. Emery, Sec. Lt. R. H. Price, Sec. Lt. W. G. Robinson, June 10th; Lt. K. L. Grant, Sec. Lt. H. T. J. Jagger, Capt. C. H. Pixton, Sec. Lt. R. T. Tarrant, Lt. W. T. Willcox, June 11th; Sec. Lt. W. L. Goddard (Bord. R.), Lt. A. L. Pinkerton, Sec. Lt. G. McG. G. Sloan, June 12th; Sec. Lt. B. C. Gibaud, Lt. W. A. E. Taylor, A.F.C., June 13th; Lt. S. E. Lawrence, Lt. J. S. McNeil (R.E.), Sec. Lt. D. M. Pretorius, Sec. Lt. J. W. W. Probert, Lt. C. R. Thompson, D.F.C., Sec. Lt. S. T. Woodyatt, June 14th; Sec. Lt. V. B. Paré, June 16th; Sec. Lt. T. H. Pearson, Lt. P. H. West (E. Surr. R., T.F.), June 17th; Lt. E. H. Lawford, June 18th; Sec. Lt. T. A. Bowditch, Lt. L. E. Gawthorne, Sec. Lt. H. J. Marshall, June 19th; Lt. F. H. Cave, Lt. G. B. Gates, D.F.C., Lt. A. H. Love, Lt. N. B. Lovemore, Lt. G. P. Morris, Sec. Lt. K. G. Vandervord, June 20th; Sec. Lt. S. B. Atkinson, Sec. Lt. (Hon. Capt.) A. M. F. Hill, Capt. W. G. Pigott, Sec. Lt. M. A. Price, June 21st; Lt. W. E. Gray, D.F.C., June 22nd; Capt. E. R. M. Griffin, Lt. C. W. Peckham, Lt. H. W. Phear (R.F.A.), June 23rd; Lt. H. S. Preston, June 24th; Sec. Lt. J. D. O'Brien-Saint, Sec. Lt. A. B. Williams, June 28th; Sec. Lt. E. J. Addison, July 2nd.

Capt. A. E. Godfrey, M.C., A.F.C., relinquishes his commn. on account of ill-health, and is granted the rank of Maj., June 25th.

Capt. T. G. M. Stephens relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, June 26th.

Sec. Lt. E. H. Fry relinquishes his commn. on account of ill-health, and is permitted to retain his rank, June 24th.

Sec. Lt. W. C. Treen, M.C., D.F.C., D.C.M. (R.F.A.), relinquishes his commn. on account of ill-health caused by wounds, June 20th.

The initials of Lt. (actg. Capt.) E. C. Morris are as now described, and not "E. E." as stated in "Gazette" of May 9th.

The initials of Sec. Lt. F. N. Hargreaves are as now described, and not "F. U." as stated in "Gazette" of May 13th.

The initials of Sec. Lt. I. D. Macintyre are as now described, and not "J. D." as stated in "Gazette" of May 16th.

The initials of Sec. Lt. S. G. Cockburn are as now described, and not "F. G." as stated in "Gazette" of May 20th.

The initials of Sec. Lt. R. E. Barrett are as now described, and not as stated in "Gazette" of May 23rd.

The initials of Sec. Lt. J. H. Perring are as now described, and not "G. H." as stated in "Gazette" of May 20th.

The initials of Sec. Lt. F. N. York are as now described and not "F. W." as stated in "Gazette," May 23rd.

The initials of Lt. J. A. N. Fleming are as now described, and not "J. A." as stated in "Gazette," May 27th.

The surname of Lt. F. W. Trend is as now described, and not "Trench," as stated in "Gazette," May 9th.

The surname of Lt. W. H. Rilett is as now described, and not "Relett," as stated in "Gazette," May 13th.

The surname of E. W. Everiss is as now described, and not "Encriss," as stated in "Gazette," May 20th.

The surname of Lt. A. W. Matson is as now described, and not "Watson" as stated in "Gazette," May 23rd.

The surname of Lt. A. V. Wells is as now described, and not "Wills" as stated in "Gazette," May 27th.

The name of Sec. Lt. J. McRobb is as now described, and not "J. M. Robb," as stated in "Gazette," May 20th.

The notification in "Gazette," March 11th, concerning Sec. Lt. A. R. Giroux is cancelled (substituted for notification in "Gazette," April 11th).

The notification in "Gazette," March 18th, concerning Sec. Lt. F. W. V. Blommestein is cancelled.

The notifications in "Gazette," April 1st, concerning the undermentioned officers are cancelled:—Lt. R. A. Maddock, Lt. W. C. McMurray.

The notification in "Gazette," May 27th, concerning Lt. O. A. Moore is cancelled.

The notification in "Gazette," June 27th, concerning Lt. R. C. F. Nailer is cancelled.

ADMINISTRATIVE BRANCH.—Capts. to be Capts., from (S.O.):—E. R. Whitehouse, April 11th; A. P. M. Sanders (on reduction of estab.), May 1st; E. J. Gray, O.B.E., June 1st.

F. Tuttle, D.C.M. (Capt. and Qrmr., R. Berks R.), is granted a temp. commn. as Capt., April 1st, 1918.

Lts. (A.) to be Lts.:—A. L. C. Hartland-Rowe, Sept. 3rd, 1918 (substituted for notification in "Gazette," Oct. 22nd, 1918); J. D. G. MacRae, June 18th.

Lts. to be Lts.:—A. A. Kennedy, from (S.O.), April 28th; F. D. Wright, from (K.B.), June 19th.

Sec. Lt. (Hon. Lt.) G. Simmers to be actg. Lt. while empld. as Lt., from Feb. 1st to April 30th.

Sec. Lt. H. A. Pippett to be actg. Lt., without pay and allces. of that rank, whilst empld. as Lt., from Sept. 16th, 1918, to April 30th.

Sec. Lt. (Hon. Lt.) G. Dodds to be Sec. Lt. (Hon. Lt.), from unempld. list, March 24th, prec. next below D. H. C. Newth.

Sec. Lt. F. H. M. Francis-Hawkins (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt., Sept. 18th, 1918.

The following relinquish their commns. on ceasing to be empld.:—Lt. S. H. Evans, Sec. Lt., N. Staffs. R.), Aug. 26th, 1918; Capt. H. S. Blockey (Capt., S. Staffs. R.), June 23rd.

Transferred to unempld. list:—Sec. Lt. H. I. Dowell, Jan. 17th; Lt. W. C. McMurray, Feb. 23rd; Sec. Lt. J. Martin, M.M., March 3rd; Lt. W. H. McGee, March 5th; Lt. R. A. Maddock, March 18th; Lt. W. L. Roblon, March 19th (substituted for notification in "Gazette," April 4th); Lt. P. F. Lines, March 26th; Lt. J. B. Jackson, April 11th; Sec. Lt. O. L. Jones, Sec. Lt. A. C. Lamb, April 22nd; Sec. Lt. G. A. Lomas, April 24th; Lt. G. N. Jackson, April 25th; Capt. J. F. Hay, Lt. K. S. Sexton (W. Rid. R., T.F.), May 1st; Sec. Lt. C. E. Haines, May 2nd; Lt. E. C. Haggart, May 6th; Sec. Lt. G. E. Leaman, May 13th; Lt. A. E. Dyer, May 14th; Sec. Lt. R. H. Staines, May 20th; Sec. Lt. D. P. Scott, May 29th; Sec. Lt. L. S. Webb, June 3rd; Lt. T. B. W. Spencer, June 4th; Sec. Lt. W. W. Pritchard, Sec. Lt. H. S. M. Papplewell, June 8th; Lt. (Hon. Capt.) J. I. C. O. Gairdner, June 11th; Sec. Lt. (Hon. Capt.) T. Sutherland, June 12th; Sec. Lt. S. R. Mustoe, June 13th; Capt. E. A. Nash, June 15th; Lt. R. C. F. Nailer, Sec. Lt. H. West, June 17th; Capt. O. C. Purnell, June 20th; Lt. H. W. Piper, June 30th.

The initials of Lt. R. S. C. D. Ashby are as now described and not as stated in "Gazette," May 27th.

The notification in "Gazette" of March 4th concerning Sec. Lt. L. H. Meyer is cancelled.

The notification in "Gazette" of March 25th concerning Lt. S. F. Thompson is cancelled.

The notification in "Gazette" of May 6th concerning Lt. W. U. Hughes is cancelled.

The notification in "Gazette" of May 23rd concerning Sec. Lt. (actg. Capt.) W. Lienard, M.B.E., is cancelled.

The notification in the "Gazette" of June 27th concerning Sec. Lt. J. Dale is cancelled.

TECHNICAL BRANCH.—Lt. (Hon. Capt.) (actg. Capt.) W. E. Smith to be actg. Maj. whilst empld. as Maj., Grade (A.), from Sept. 9th, 1918, to April 30th.

Lt. G. G. Bailey, D.F.C., to be Lt., Grade (A.), from (Ad.), May 24th.

Sec. Lt. H. Nixon to be Sec. Lt., Grade (B.), from (Ad.), June 20th.

Sec. Lt. E. G. Hellard (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt., Grade (A.), May 14th, 1918.

Sec. Lt. (Hon. Capt.) C. B. Dick-Cleland (Capt., N.Z.A.S.C.) relinquishes his commn. on ceasing to be empld., May 2nd.

Transferred to unempld. list:—Capt. (Hon. Maj.) J. G. Y. Delmar-Morgan, Jan. 21st; Capt. S. P. Martin, Feb. 2nd; Sec. Lt. (Hon. Lt.) A. R. Handcock, Feb. 15th; Lt. H. V. Manly, March 28th; Sec. Lt. S. J. Laidler, April 10th; Capt. W. G. Cleghorn (R.G.A., T.F.), April 23rd; Capt. A. H. Hayes, May 21st; Capt. H. M. Lyons, May 30th; Capt. F. D. H. Bremner, Lt. S. P. Dobbs, May 21st; Sec. Lt. (Hon. Lt.) R. P. N. Dunphy, June 2nd; Lt. H. C. Roberts, June 9th; Lt. E. P. Jay, Lt. L. J. Pibworth, June 11th; Sec. Lt. F. C. Layton, Lt. S. S. Tyler, June 12th; Sec. Lt. O. W. Penny, June 16th; Capt. F. J. H. Palmer, June 17th; Capt. A. J. Dreydel, June 21st; Lt. S. F. Feast, June 22nd; Lt. F. W. Helsby, June 24th; Lt. C. J. Pender, June 25th; Capt. J. K. Mountain, June 29th.

Lt. (Hon. Capt.) C. A. E. Lloyd relinquishes his commn. on account of ill-health, and is granted the rank of Maj., June 24th.

Capt. R. C. Gallop (Scottish Rif.) resigns his commn., and is permitted to retain his rank, July 5th.

Capt. B. May (R. W. Kent R.) relinquishes his commn. on account of ill-health contracted on active service, June 1st (substituted for notification in the "Gazette" of April 25th).

The initials of Sec. Lt. R. B. Cherry are as now described, and not "R. O." as stated in the "Gazette" of May 9th.

The initials of Sec. Lt. L. T. W. Sanderson are as now described, and not "L. T. K.," as stated in the "Gazette" of May 20th.

The surname of Sec. Lt. R. G. Wells is as now described, and not "Wills," as stated in "Gazette," May 20th.

The notification in "Gazette," May 13th, concerning Sec. Lt. H. J. Wadkin is cancelled.

The notification in "Gazette," June 13th, concerning Sec. Lt. J. Dale is substituted for the notification in "Gazette," May 27th.

PHYSICAL TRAINING BRANCH.—Lt. G. L. Moss, M.C., is transferred to unempld. list, June 2nd.

MEDICAL BRANCH.—Transferred to unempld. list:—Capt. R. G. Lyster, April 8th; Capt. P. L. Moore, Maj. H. Pritchard, June 1st.

DENTAL BRANCH.—G. F. Charles is granted a temp. commn. as Lt., July 1st.

MEMORANDA.—Sec. Lt. (actg. Capt.) W. Lienard, M.B.E., to be Lt., Feb. 24th, and to retain his actg. rank till April 30th.

The following Overseas Cadets are granted temp. commns. as Sec. Lts.:—316214 R. W. Atkinson, 1082165 T. S. Bailey, 82405 E. C. Braund, 9270 A. O. Bower, 1061 H. S. Cowner, 15463 R. S. Chisholm, 510171 T. V. Cryer, 40546 J. Colling, 767127 B. J. Colin, 28265 E. P. Croll, 316122 P. W. Douglas, 175026 E. T. Everett, 42866 H. B. J. Fenelon, 110088 P. St. Hill, 127640 S. H. Kittker, 463782 W. P. Lund, 154227 K. P. McIntee, 767136 E. McTurk, 156012 H. Newell, 255641 C. G. Smith, 316407 J. A. Trotter, 110671 H. E. G. Upton, V. E. Williams, Feb. 15th.

The following Cadets are granted hon. commns. as Sec. Lts.:—72710 W. H. Whiteside, Feb. 7th; 54215 J. S. Bruce, Feb. 21st; 117522 M. Back, 50889 C. Childs, 117623 J. Haldane, Feb. 22nd; 110350 A. E. Calow, 175694 R. Green-Armitage, 176240 J. W. Hobson, 03481 R. E. Mason, 100913 J. C. Nicholson, 4548 W. E. Orchard, 114320 D. H. S. Sanderson, Feb. 24th; 128707 H. H. McConchie, Feb. 24th; 117766 A. E. V. Barton, 128510 T. W. H. Chichester, 557050 E. J. Morgan, 87068 W. Newton, Feb. 28th; 137658 B. A. Botwood, 205288 R. Giltrow, 55/628 G. Gasches, March 1st; 176206 J. C. Bewick, 64477 C. F. Heath, 176141 G. M. Johnston, 13660 T. Sissum, 10837 W. A. Watson, March 4th; 12666 S. L. Bishop, 54710 A. T. Parsons, 227744 J. C. Wade, March 6th; 13057 L. S. Brewer, 108786 P. F. Cherriman, 97553 G. W. Delaney, 215598 R. Fellows, Z109 E. E. Gardner, 51403 R. M. Hood, 202762 A. Makepeace, 514845 J. H. Mason, 6/38741 J. F. Rosevear, 128086 J. Sparks, March 7th; 137137 W. E. J. Barry, 594658 S. G. J. Googswell, 10/156365 T. S. Hamilton, 26173 P. Lancaster, 170251 J. Pady, 110869 C. Parker, 405882 F. Wilson, March 8th; 214808 R. S. Bestwick, 100636 J. T. Edwards, 137436 F. Prosser, 176206 J. E. Tibbert, 175710 G. R. Mountford, March 10th; 175364 J. H. Barton, 127262 E. V. Grudge, 175582 W. E. Davies, 108811 E. W. Ditchbourn, 38240 F. D. James, March 11th; 117907 L. Balfrey, 202444 J. Crawford, 128783 A. Healey, 110376 E. F. Knight, 52657 N. D. Sellars, 1412 D. Smith, 82616 W. Storr, March 12th; 622536 R. G. Cochrane, 176082 B. W. Cross, 117557 F. Copson, 626033 C. F. Elliott, 137771

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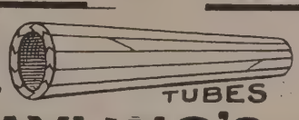
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Temp. Hon. Lt. M. P. Holmes relinquishes his commn. on ceasing to be empld., Feb. 16th.

Transferred to unempld. list:—Lt.-Col. C. H. Meares, May 1st; Sec. Lt. H. M. Piper, from (S.O.), May 24th; Lt. G. E. Moore, from (S.O.), Sec. Lt. A. K. Spens, from (S.O.), May 31st; Capt. H. R. Radford (Lond. R., T.F.), from (S.O.), June 4th; Lt. E. G. Roberts, from (S.O.), June 7th; Lt. (Hon. Capt.) G. W. Rogers (N Staffs. R.), from (S.O.), June 19th.

The notification in "Gazette," March 7th, concerning Sec. Lt. (acta Capt.) W. Lienard, M.B.E., is cancelled.

Sec. Lt. C. W. Kerr to take rank and prec as if his appt. as Sec. Lt. bore date March 22nd, 1918.

The notification in "Gazette," June 6th, concerning 184268 Cadet P. H. Mellet is cancelled.

* * *

The Air Ministry made the following announcement on July 7th:

The Air Council invites applications from duly qualified men for appointment as Commissioned Dental Officers at a salary of one pound per diem, together with a war bonus of 28s. per week, and certain allowances where quarters are not available. Successful applicants will be required to engage under contract for 12 months or until their services can be dispensed with, whichever will happen first, and will be granted an outfit allowance of thirty pounds.

Applications should be made to the Secretary, Medical Department, Air Ministry, London.

* * *

The Home Secretary stated on July 4th that the W.R.A.F. will not be disbanded, as this corps is able to perform duties for which women are better suited than men.

* * *

The London "Evening News" understands that Salisbury Plain has been selected as the peace-time central training depot of the Royal Air Force. The various establishments in different parts of the country are being transferred there as rapidly as possible.

It is believed that only 400 permanent commissions in the R.A.F. will be granted, but about 3,000 officers will be offered commissions for a period of four years.

[This should be taken for what it is worth. It has not, so far, been officially confirmed.—Ed.]

* * *

On July 4th, Lieut. King, R.A.F., met with an accident while flying at Brooklands. His machine, in falling, narrowly missed some cottages and struck a tree, near Plough Bridge, Byfleet. Mr. King was taken to the hospital suffering from bruises.

* * *

The following are the competition results of Royal Naval, Military, and Air Force Tournament:—

July 2nd.—Wheel Changing and Driving Competition by Women Motor Drivers.—1, Women's Legion, marks 21¾, time of wheel changing, 70 secs.; 2, Women's Royal Air Force, marks 20½, time of wheel changing, 85 secs.

Wheel Changing and Driving Competition by Women Drivers.—The Women's Legion and the Voluntary Aid Detachment tied for first place with 22 marks each. The Women's Royal Air Force was second with 21½ marks.

July 3rd.—Wheel Changing and Driving Competition by Women Motor Drivers.—Women's Legion, 20½ marks (time in wheel-changing, 75 secs.), 1; V.A.D. (General Service Section), 20 marks (time, 78 secs.), 2; Women's R.A.F., 18 marks (time, 90 secs.), 3; Women's R.N.S., 16 marks (time, 94 secs.), 4; Q.M.A.A.C., 14 marks (time, 118 secs.), 5.

July 4th.—Wheel Changing and Driving Competition by Women Motor Drivers.—Q.M.A.A.C., 18¾ marks, time of changing, 89 2-5 secs., 1; Women's Legion and W.R.A.F., tied for second place with 17¾ marks, time 87 secs.

July 5th.—Wheel Changing and Driving Competition by Women Motor Drivers.—Q.M.A.A.C., 21 marks, time in wheel changing, 80 1-5 sec., 1st; Women's Legion, 21 marks, time in wheel changing, 74 sec., 2nd; W.R.A.F., 20 marks, time in wheel changing, 75 3-5 sec., 3rd; V.A.D. (General Service Section), 19 marks, time in wheel changing, 83 sec, 4th; W.R.N.S., 13¾ marks, time in wheel changing, 101 sec., 5th.

W.R.N.S. and W.R.A.F., 22 marks each, tied for first place; Q.M.A.A.C. and Women's Legion, 21¾ marks each, tied for 2nd place; V.A.D. (General Service Section), 3rd.

The final of the teams is: Women's Legion, total, 165¾ marks, 1st; W.R.A.F., 163 marks, 2nd; Q.M.A.A.C., 158 marks, 3rd; V.A.D. (G.S. Section), 152¾ marks, 4th; W.R.N.S., 142¾ marks, 5th.

Tug of War (130 stone) by Navy, Army, and Air Force Teams: No. 5 Stores Depot R.A.F. (Earl's Court) beat H.M.S. "Erebus" (Sheerness) by two pulls to nil.

July 7th.—Women's Motor Driving and Wheel Changing Competition.—1, Women's Legion Motor Drivers (Miss S. Egan, Miss G. Garden), 165¾ points, fastest time wheel changing, 74 seconds, by Miss Egan; 2, Women's Royal Air Force (Miss H. Cross, Miss H. Wight), 163 points, fastest time wheel changing, 75 3-5 seconds, by Miss Cross.

FRANCE.

The "Petit Journal" of July 3rd confirms the report that the Government has decided to appoint Aeronautical Attachés to the French Embassies and Legations in Allied and Associated countries.

The first Aeronautical Attaché to Washington is Captain Guy de Lavergne.

The following has been received from our Paris correspondent:

Nungesser, back again in Paris from a little trip to London, is spreading his delight to all his French comrades, anent the maniability of the Bat people's "Bantam," which he flew whilst in England and with which he was extraordinarily delighted. He said it could be handled more easily than any of the 120 different types of machines he had previously flown, and if war broke out again he could think of nothing more amusing than to fly a "Bantam" and get a roving commission from the French Government to go up and down the lines on his own account killing Huns. He reckons that with the Bantam he could collect Huns at twice his pre-Armistice speed.

Contrary to expectation, it is now established that Garros was not killed by a German bullet, but was the victim of his own inventive and perfective instinct. In order to obtain a quicker rate of fire from his guns firing through the airscrew he had made several modifications to his machine. At the moment that he attacked a Boche, nosediving with the motor full on, the synchronisation of the speed of fire and of the airscrew became defective. The propeller was splintered badly, setting up such vibration that the machine broke in the air.—F. T. N.

GERMANY.

A wire from Bremerhavn, dated June 26th, states that on the night of Wednesday, June 25th, at about 12 o'clock, an airship was visible which came from the sea taking a course for Bremerhavn, Geestemunde, and returned to the sea again. For a certain time searchlights were playing from the airship, and the mark H.C.34 could be read on the sides of the vessel.

In other seaside resorts the same kind of visitor has been noticed. Immediately afterwards the H.Q. of the Marine station of the North Sea issued an order whereby every photograph of any such airship is to be sent in at once to Headquarters. It is thought that the airship was English.

HOLLAND.

The Dutch Colonial Office has bought 24 aeroplanes from Great Britain with accessory reserve motors and spare parts.

The machines are intended for use in the East Indies. They are of two types; D.H.9 fighting aeroplanes and Avro machines for training.

U.S.A.

In a eulogy on the American Navy, which was published in the "Times American Supplement" on July 5th, the following appeared:—

In the air the American Navy grew from 50 seaplanes in July, 1917, to 100 seaplanes in the middle of 1918, taking no account of 324 seaplanes used for training. Much coastal patrolling in England, Ireland, and France was done by the United States Naval Air Forces.

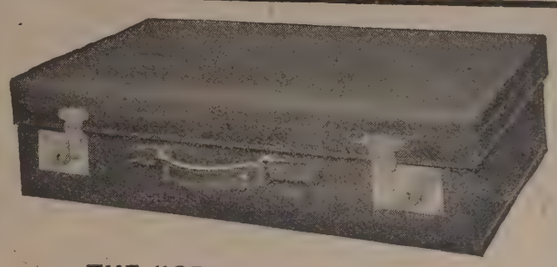
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On July 1st five persons were killed at the Naval Airship Camp, near Baltimore, by the explosion of an airship. The ship had

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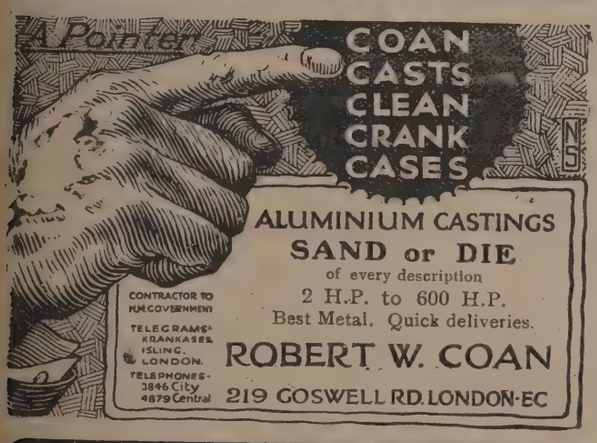
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descended owing to trouble with its steering gear, and a large crowd had surrounded it when it exploded.

* * *

The following regulations as to flying in the U.S. Air Service have been issued by the office of the Direction of Air Service, War Department, U.S.A. :—

I. 1. Flights in aircraft under the control of the Air Service are authorised for all training or war purposes and such other purposes as are set forth below :—

(a) For the proper execution of any approved project of the Air Service or of the Air Service in co-operation with any other branch of the Service or department of the Government—special approval of this office to be secured in each case.

(b) For the demonstration of aircraft and aircraft development to officers of the Executive, legislative, and judicial branches of the Government.

(c) For the rapid transportation of military or civilian officials of the Government, of messages or parcels in cases of urgent necessity and for the convenience of the Government.

(d) For the assistance of stranded civilian aviators or where it is necessary for the saving of human life.

2. The following may be carried as passengers in aircraft under the control of the Air Service :—

(a) Any person necessary to be carried as a passenger to accomplish the purpose of any of the flights authorised in paragraph No. 1, above.

(b) Officers and enlisted men of the Army, Navy, and Marine Corps, both active and reserve.

(c) Officers and enlisted men of foreign armies, as a courtesy when they are visiting the United States.

3. No person will be permitted to pilot aircraft under the control of the Air Service except regularly authorised Air Service pilots or bona fide student-pilots of the Air Service.

II. 1. Persons operating aircraft who are not in the military service or who are not under the jurisdiction of the Air Service will be permitted to use Government facilities at Air Service stations contingent upon their proper observance of the air and ground rules in force at the particular station in question, and subject to the discretion of the Commanding Officer thereof as not interfering with the proper conduct of official business of his station, as follows :—

(a) They may be permitted to land and take off from flying fields.

(b) They may be permitted to place airplanes in Government hangars overnight or for a short time pending repairs.

2. The sale of gasoline, oil, spare parts, etc., or the furnishing of the labour of Air Service mechanics in any form to pilots not in the military service is forbidden.

* * *

An official U.S. Army message from Washington, D.C., dated June 16th, 1919, says that upon the heels of the instructions of the War Department to treble the Air Force on the Mexican border the Director of Air Service late this afternoon issued orders to send three flights of six planes each to Fort Bliss. These flights will probably not be formed into a squadron on account of the large area to be patrolled, as it will require separate bases for operation. These flights were ordered to move from Kelly Field (San Antonio) and Ellington Field (Houston), Texas, at the earliest possible moment. These squadrons will be equipped with De Havilland Liberty planes.

At first a flight of only six planes was ordered, but the General Staff considered the situation of such import to warrant the increase of the Forces, and late this afternoon the necessary telegraphic instructions were issued. The general opinion around the Air Service headquarters yesterday was that the work required would be that of an observation squadron, and that the better plan on account of the rapid demobilisation in the United States and the need of thoroughly trained personnel was to send an arriving overseas squadron immediately, and then relieve it as soon as competent personnel could be mustered from the training schools throughout the United States.

It developed that the Twelfth Aero Squadron, the most famous corps observation squadron in France, and one which formed the first observation group at the Front would arrive at New York to-morrow afternoon from Brest. Brigadier-General William Mitchell, Chief of Training and Operations of the Air Service, requested orders last night from Major-General Charles T. Mencher, Director of Air Service to have the Twelfth Aero Squadron ordered intact upon arrival to El Paso, Texas, and placed at the disposition of the General commanding the United States Forces in Mexico.

As expressed last night by Major E. R. Haslett, assistant to Brigadier-General Mitchell, the object of the contemplated rapid movement of this famous oversea squadron to the border was to take over the operation of the aeroplanes which would be flown from Houston and San Antonio, Texas, and when competent personnel could be gathered in the United States the Twelfth Aero Squadron would be relieved in case the situation did not become too serious.

The Twelfth is in such splendid state of organisation that they can operate immediately, and the personnel is thoroughly experienced, having served throughout the Chateau Thierry, Saint Mihiel and Argonne offensives.

There was much speculation at Air Service headquarters last night as to who would command the new Air Expedition. The Chief of Operations, Lieut.-Col. L. H. Brereton, who was the first Commanding Officer of the Twelfth at the Front, and Major Elmer R. Haslett, who was the Chief Observer of the squadron at the Front, both formally volunteered their services last night for the expedition, and it was considered probable by many that Colonel Brereton would be designated to command the new expedition, and Major Haslett would be designated as Chief Observer and second in command on account of the wide experience of these officers at the Front.

There was some talk that if the situation developed Brigadier-General William Mitchell, who commanded the Air Service at the Front would personally assume command. Major Reed M. Chambers, an American ace, now commanding the Ninety-fourth Aero Squadron, which was the old squadron of Rickenbacker, was in Washington yesterday, and made application to be assigned to the expedition in any capacity should it be necessary to utilise the services of a pursuit aviator. At present, however, it is believed that it will only be necessary to use observation planes which can also be used for firing on the infantry on the ground.

AFGHANISTAN.

The following story, dated June 19th, appeared in the "Times," and, one thinks, the "Times" should have the credit therefor :—

The rumours that four aeroplanes had arrived at Kabul for the Afghans originated in the fact that, in order to reassure the frightened population, the Ameer caused four dummy aeroplanes to be secretly constructed. The people were so much alarmed by our planes that they insisted that Amanulla should procure some. Unaware of the fraud practised on them, they are now being regaled with wonderful stories of imaginary exploits of Afghan airmen.

PERSONAL NOTICES.

NAVAL.

ENGAGEMENT.

TRAVERS—FRASER.—A marriage is arranged between Major Herbert Gardner Travers, D.S.C., R.A.F., second son of Mr. and Mrs. J. L. Travers, of Horton, Warlingham, Surrey, and Hermia Edith Margaretta, younger daughter of Lieut.-Col. E. A. Fraser and Mrs. Fraser, of Bodicote Lodge, Banbury.

MARRIAGE.

DONALD—STACY.—On June 30th, at St. Bartholomew-the-Great, London, E.C., Capt. Graham Donald, D.F.C. (late Flt.-Cmdr., R.N.), elder son of the late Capt. D. P. Donald, of Johnstone, Renfrewshire, Scotland, was married by special licence to Claira Sylvia, third daughter of Lt.-Col. J. H. Stacy, T.D., R.A.M.C. (T.), of Great Yarmouth (late of Norwich).

MILITARY.

DEATH.

LYSTER-SMYTHE.—Captain and Flt.-Commdr. Richard Litton Lyster-Smythe, R.A.F., formerly Lieut. 3rd Gordon Highlanders, was drowned while bathing at Jaffa on June 19th. He was the youngest son of Col. and Mrs. Lyster-Smythe, of Barbavilla, Westmeath, and was 22 years of age.

IN MEMORIAM.

McCUDDEN.—To the memory of our dear son and brother Jim (Major J. T. Byford McCudden, V.C., etc., R.A.F.), killed on his way to duty in France, July 9th, 1918, aged 23 years. R.I.P. From his sorrowing Father, Mother, sisters and brother.

MARRIAGES.

CARTLEDGE—PRITCHARD.—On July 2nd, at Barnes Parish Church, Reginald Arthur (late H.A.C. and R.A.F.), elder son of Arthur Cartledge, 9, Chislehurst Road, Richmond, Surrey, was married to Laura Winifred May, eldest daughter of the late Thomas Pritchard, C.E., and Mrs. Pritchard, of 56, Treen Avenue, Barnes, by the Rev. Bernard M. Kitson, M.A.

CHARTERIS—VALENTINE.—The marriage of Capt. Ronald Charteris (late R.F.C. and R.A.F.) and Mrs. James Valentine took place very quietly on July 3rd at the Chapel Royal, Savoy. The bride, who is the daughter of the late Major-General G. W. Knox and of Lady Sybil Knox, sister of the Earl of Lonsdale, was given away by her brother, Mr. Henry Knox, and Capt. Ellice Sassoon, R.A.F., was best man. Only the nearest relatives were present, these being Lady Louisa Charteris (mother of the bridegroom), Colonel Nigel Charteris, C.M.G., D.S.O., and Mrs. Charteris, Mrs. Drury Lowe, the Countess of Lonsdale, the Hon.

Lancelot Lowther and Mrs. Lowther, Mr. Christopher Lowther, M.P., Mrs. Henry Knox, Capt. Charles Chaplin, and Major A C. T. Veasey.

The bride, who is the widow of the late Major James Valentine, D.S.O., R.F.C., one of the earliest of British aviators, was for three years a French military nurse in France, and was awarded the Médaille des Epidémies and the Palmes d'Honneur by the French Government.

The bridegroom, who was the first officer to join the Special Reserve of the Royal Flying Corps in 1912, holds the 1914 Star, having gone to France with the first detachment of the R.F.C. at the outbreak of war. He is Managing Director of the famous A.B.C. Motor firm, and except for his service with the R.F.C., has devoted himself entirely during the past nine years to the improvement of aero-engines.

Among those most closely concerned with aviation Captain Charteris has always been liked for himself and respected for his pluck in sticking to his self-imposed task of producing a really good British engine, and all who have had to do with him will wish him and his bride every happiness in their future life

PERRIN—GRAZEBROOK.—On June 30th, at Lillington Parish Church, Capt. Eugene Courtenay Perrin, O.B.E. (4th Bn. Cheshire Regt., and R.A.F.), elder son of John E. Perrin, of Hoylake, Cheshire, and Mrs. Perrin, was married to Katherine Arthur Mary Violet, widow of Capt. C. A. Glazebrook, K.R.R.C., and daughter of the late Arthur Hickman and Mrs. Morgan, of Radlett, Herts., by the Rev. Canon Barker, great uncle of the bride, assisted by the Rev. S. B. Williams.

BIRTH.

HILTON.—On June 30th, at the Sarum Road Nursing Home, Winchester, to Phyllis, wife of Capt. R. Hilton, M.C., D.F.C., R.A. (late R.A.F.), a son (Peter).

AIR FORCE.

DEATHS.

FOWLER.—Lieut. Donald Alexander Fowler, R.A.F., who was accidentally killed while flying at Winchester on June 26th, was the son of the late Lieut.-Col. B. W. Fowler, R.A.M.C., and of Mrs. Fowler, 15, St. Minver Road, Bedford. He was 24 years of age.

LATHAN.—At the inquest at Islington on July 7th on the body of Edgar George Lathan, aged 20, lately residing at Kingsley Road, Palmer's Green, who was killed by the collision with a motor-omnibus of a motor-cycle on which he was riding, it was stated that as a lieutenant in the R.A.F. Lathan had been seriously wounded in action at a height of 14,000 ft. or 15,000 ft. His goggles were struck by shrapnel and the bridge of his nose was smashed. While descending he was again wounded by anti-aircraft guns, and fell a distance of two miles. He recovered from his wounds and was bright, vigorous, and active.

The inquest was adjourned in order that the driver of the cycle, who was seriously injured, might give evidence.

ENGAGEMENT.

PERMAN—RICE.—The engagement is announced of Lieut. Ian M. Perman, R.A.F., son of Mr. W. H. Perman, Inchiquin, County Clare, to Norah, only daughter of Major-General Sir Gerald C. S. Rice, of Cliff Court, County Donegal.

MARRIAGES.

BOYS ADAMS—CARNEGY ARBUTHNOTT.—On July 2nd, at St. Paul's, Knightsbridge, Lieut.-Colonel Wilmot Boys Adams, late R.A.F., was married to Enid, second daughter of J. Carnegy Arbuthnott, of Balnamoon, Brechin, and 34, Roland Gardens, S.W.

DICK—WISEMAN.—The marriage took place on July 1st at St. Mary Abbot's Church, Kensington, of Capt. Arnold John Dick, late R.A.F., eldest son of the late Mr. Walter David Dick and Mrs. Dick, of Hillhead, Glasgow, and Miss Margery Elizabeth Wiseman, third daughter of Elizabeth Lady Wiseman and the late Captain Sir William Wiseman, R.N. The service was conducted by the vicar, the Rev. E. Marling Roberts.

PAINE—NORTON.—On June 3rd, at St. Alban's Church, Westcliff-on-Sea, Lieut. James T. Paine, R.A.F., was married to Mabel, youngest daughter of Mrs. Norton and the late Fredk. Norton, of 20, Gordon Road, Lowestoft.

TOLFREE—NASH.—On June 26th, at Cairo, Lieut. H. Norman Tolfree, R.A.F., son of Mr. and Mrs. W. H. Tolfree, of Winsford, Cheshire, was married to Frances Winifred, only child of Mr. and Mrs. Francis R. Nash, of Camelot, Guildford.

BIRTH.

TURNER.—On July 4th, at Wanstead, the wife of Captain Bertrand Turner, R.A.F.—a son.

THE ROYAL AERO CLUB.

TECHNICAL AND COMPETITIONS COMMITTEE.

A meeting of the Technical and Competitions Committee was held on Monday, June 30th, 1919, when there were present: Lieut.-Col. F. K. McClean (in the Chair), Mr. Griffith Brewer, Lieut.-Col. T. O'B. Hubbard, M.C., R.A.F., Major R. H. Mayo, Lieut.-Col. Alec Ogilvie, R.A.F., and Mr. H. E. Perrin, Secretary.

CLASSIFICATION OF AERODROMES.—The Committee considered the draft scheme for classification of aerodromes received from the Air Council. A report was drawn up for submission to the committee of the club.

JACQUES SCHNEIDER MARITIME CUP.—The arrangements in connection with this competition were considered.

FLIGHT FROM ENGLAND TO AUSTRALIA.—The supplementary regulations suggested by the Australian Commonwealth were considered and approved.

COMMITTEE MEETING.

A meeting of the Committee was held on Tuesday, July 1st, 1919, when there were present: Brig.-Gen. Sir Capel Holden, K.C.B., F.R.S. (in the Chair), Mr. E. C. Bucknall, Mr. G. B. Cockburn, Lieut.-Col. T. O'B. Hubbard, M.C., R.A.F., Lieut.-Col. F. K. McClean, Lieut.-Col. Alec Ogilvie, R.A.F., Col. C. R. Samson, D.S.O., R.A.F., Mr. A. Mortimer Singer, and Mr. H. E. Perrin, secretary.

NEW MEMBERS.—The following new members were elected:—Capt. Sir John Alcock, K.B.E., Lieuts. Sir Arthur Whitten Brown, K.B.E., and Douglas Henry Walter Arnot (Argyll and Sutherland Highlanders), Basil Johnson, Major Charles Henry Chichester Smith, R.A.F., Sir Charles Cheers Wakefield.

CLASSIFICATION OF AERODROMES.—The report of the Technical Competitions Committee was received and approved and ordered to be sent to the Air Council.

JACQUES SCHNEIDER MARITIME CUP.

The Jacques Schneider Maritime Cup having been won in 1914 by C. H. Pixton on a Sopwith sqplane, the nominee of the Royal Aero Club representing the British Empire, the race for 1919 will be held in England early in September next, the exact date and place will be announced later.

The race will be over a distance of 200 nautical miles exclusively at sea, in a closed circuit having a minimum course of five nautical miles, and situated outside any port or enclosed harbour. At least two alightings must be made on the water at points fixed by the officials.

The Committee of the Royal Aero Club will select the three competitors to represent the British Empire, and reserves to itself the right to hold eliminating trials.

Entries are to be made at the Royal Aero Club, 3, Clifford Street, London, W.1, not later than July 31st, 1919. Each entry must be accompanied by the Entry Fee of £20.

AVIATION INSURANCE.

The Royal Aero Club has given its official approval to the Aviation Policies of the Aviation and General Insurance Co., Ltd., 56, St. James Street, London, S.W.1, and arrangements have been made for Members of the Club to receive a rebate of 20 per cent. upon all premiums

A feature of the Policy issued by the Aviation and General Insurance Co., Ltd., is that in the event of any difference of opinion arising the same shall be settled by an arbitrator or arbitrators to be appointed by the Committee of the Royal Aero Club, whose decision shall be binding.

GOLD MEDALS FOR CAPT. SIR JOHN ALCOCK, K.B.E., AND LIEUT. SIR A. WHITTEN BROWN, K.B.E.

The Committee at its meeting on June 17th, 1919, unanimously resolved to award the Gold Medal of the Club to both Capt. Sir John Alcock, K.B.E., and Lieut. Sir A. Whitten Brown, K.B.E.

These medals were presented by the Chairman of the Club, Brig.-Gen. the Duke of Atholl, K.T., M.V.O., D.S.O., at the Club's banquet on June 23rd, 1919.

FLYING SERVICES FUND COMMITTEE.

A meeting of the Flying Services Fund Committee was held on Wednesday, June 18th, 1919, when there were present: Lieut.-Col. T. O'B. Hubbard, M.C., R.A.F. (in the Chair), Mr. Chester Fox, and Mr. Harold E. Perrin, secretary.

GRANTS AND ALLOWANCES.—The following Grants and Allowances were made:—

(27) A Grant of £5 to an Ex-Petty Officer in the Royal Naval Air Services who had been incapacitated on active service

(51) An allowance of £2 a month for six months to the widow of a Sergeant in the Royal Flying Corps who had been killed on active service.

(73) An allowance of £2 a month for six months to the widow of a 3rd Class Air Mechanic in the Royal Air Force who had been killed on active service.

(76) An allowance of £3 a month for six months to the father of a Corporal in the Royal Flying Corps who had been killed on active service.

(90) An allowance of £4 a month for six months to a 2nd Lieutenant in the Royal Flying Corps who had been incapacitated on active service.

(106) An allowance of £2 a month for six months to the widow of a 3rd Class Air Mechanic in the Royal Flying Corps who had been killed on active service.

(111) An allowance of £1 10s. a month for six months to the widow of a private in the Royal Flying Corps who had been killed on active Service.

(112) A Grant of £20 to the widow of a 1st Class Air Mechanic in the Royal Air Force who had been killed on active service.

(113) An allowance of £4 a month for six months to the widow of a Flight-Serjeant in the Royal Flying Corps who had been killed on active service.

(121) An allowance of £2 a month for six months to the widow of a 2nd Class Air Mechanic in the Royal Flying Corps who had died on active service.

(122) An allowance of £5 a month for six months to the widow of a 2nd Class Air Mechanic in the Royal Flying Corps who had died on active service.

(197) A Grant of £15 to the mother of a Flight Cadet in the Royal Air Force who had been killed on active service.

(200) A Grant of £10 to an Ex-Corporal in the Royal Flying Corps who had been incapacitated on active service.

(201) An allowance of £2 a month for six months to the mother of a Serjeant Mechanic in the Royal Air Force who had died on active service.

(204) An allowance of £2 a month for twelve months, for the upbringing of her child, to the widow of a 2nd Class Air Mechanic in the Royal Air Force who had been killed on active service.

(211) A Grant of £5 to the widow of a Private in the Royal Air Force who had died on active service.

(212) An allowance of £1 10s. a month for six months to the mother

of a 2nd Class Air Mechanic in the Royal Naval Air Service who had been killed on active service.

(213) An allowance of £2 a month for six months to the widow of a Chief Mechanic in the Royal Air Force who had died on active service.

(214) A Grant of £10 and an allowance of £2 a month for six months to the widow of a Private in the Royal Air Force who had died on active service.

(216) An allowance of £2 a month for six months to the widow of a Private in the Royal Air Force who had been killed on active service.

(218) An allowance of £2 a month for six months to the widow of a Private in the Royal Air Force who had been killed on active service.

(219) An allowance of £1 10s. a month for six months to the widow of a 3rd Class Air Mechanic in the Royal Air Force who had died on active service.

CERTIFIED TRIALS.

GENERAL REGULATIONS.

(Under the Competition Rules of the Royal Aero Club.)

OBJECT.

1.—The object of the Trials is to test the merits of an aircraft as a whole or in part of an accessory under various conditions. The competitor may make a request to have any particular quality or merit tested and certified.

CERTIFICATES.

2.—The Club will give a Certificate of the actual performance during the Trial, and an official observer, or observers, will be provided for the Trial by the Club. The Certificate shall be a record of the Trial, containing such details of the aircraft or part thereof under Trial, and any observations the Club may find desirable. The Club undertakes that a copy of each Certificate shall be published in the Official Organ of the Club.

OBSERVATION.

3.—The Trial shall be under the control and observation of the Club. The Club reserves the right to stop a Trial if, in its opinion, such Trial from any cause would tend to endanger life or limb.

TRIAL VOID.

4.—Should the competitor be prevented from carrying out the Trials owing to the absence of the observer, or from any cause within the Club's control, the Club may issue such Certificate as the occasion warrants, and at its discretion return the whole or part of the entry fees. Should the Trial be postponed or cancelled at the request of the competitor, the entry fee will not be returned.

WITHDRAWAL.

5.—The competitor may, at any time before the completion of the Trial, give notice in writing to the Club that he wishes to withdraw from the Trial, and shall state his reason. In the event of such notification, the aircraft shall, at the discretion of the observer, remain under observation until the cause thereof has been investigated and the aircraft released by the Club.

WORKING HOURS PER DAY.

6.—An aircraft in flight shall not be observed save between the hours of sunrise and sunset, unless particular provision is made therefor in the Regulations agreed to by the Club.

START AND FINISH.

7.—Trials shall start from, and finish at, or be held at, such places as may be agreed to by the Club. The competitor shall give notice to the observer of his intention to commence the Trial, and the observer shall record the moment of starting.

ENTRIES.

8.—Every entry shall be made upon the official Entry Form of the Club, and shall state the nature of the Trial, and the number of days to be occupied.

No entry will be accepted unless accompanied by the entry fee, which is not returnable, except as laid down herein.

The Club reserves the right to refuse any entry without giving a reason, or to limit the length of any Trial at its discretion.

FEES.

9.—Fees for the Trial shall be determined by the Club in accordance with the nature, duration, and venue of the Trial.

ADVERTISING THE TRIAL.

10.—A competitor by entering for a Trial agrees to accept the official records of the Club, and authorises the Club to publish them in such manner as the Club thinks fit. The competitor may publish only the full and complete Certificate issued by the Club. In the event of his desiring to publish, by way of advertisement or otherwise, any other matter relative to the Trial, he shall submit a proof of such matter to the Club before its publication, and he undertakes not to publish any such matter until he has received the written authority of the Club.

UNRECOGNISED TRIALS.

11.—No Trial shall be recognised except such as is officially observed or sanctioned by the Club. Should an unrecognised Trial be held, and should any publicity or advertisement be given thereto, any person taking part in such Trial and/or the manufacturers and/or the machines shall be liable to disqualification and suspension.

RESPONSIBILITY FOR DAMAGE.

12.—A competitor by entering waives any right of action against the Club for any damages sustained by him in consequence of any act or omission on the part of the officials of the Club or its representatives or servants or any fellow-competitor.

The aircraft shall at all times be at the risk in all respects of the competitor, who shall be deemed by entry to agree to waive all claim for injury either to himself, or his aircraft, or his employees or workmen, and to assume all liability for damage to third parties or their property, and indemnify the Club in respect thereof.

13.—In these regulations the word "aircraft" shall be held to mean the aircraft and/or its parts and/or accessories, whether under tests or not; the word "competitor" shall include any person or body making entry for or taking part in any Trial or Competition, except any passenger other than the driver or mechanic; the word "entrant" shall mean the person or persons entering the aircraft for a Competition.

INTERPRETATION OF REGULATIONS.

14.—The interpretation of these Regulations shall rest entirely with the Club, which may from time to time alter, add to, or omit from them, and may in the case of any special Trial modify the Regulations to suit any particular case.

CERTIFIED TRIALS.—SPEED.

(Under the Competition Rules of the Royal Aero Club.)

REGULATIONS (Aeroplanes).

1.—Certificates of speed will be delivered in respect of flights over a straight course of not less than one kilometre. Each Trial shall consist of four flights out and back in quick succession, and the times will be taken at the moment of passing each mark. The speed of the Trial shall be the mean of the speeds of the flights out and back.

2.—The Competitor shall rise from the ground to the height at which he proposes to cover the measured distance, and shall maintain approximately the same level throughout the trial.

3.—All flights must be controlled by one official observer assisted by at least one official timekeeper, both previously approved by the Club, and a mark-keeper approved by the observer, at each mark.

4.—The course over which the flight is accomplished must be certified by a surveyor approved by the Club, and checked by the observer, the surveyor's plan being lodged with the Club.

5.—Entries must be made upon the Entry Form provided for the purpose, and must be accompanied by a remittance of £5 5s., the amount of the fee. The Entry Form, which must be duly filled up as regards the nature of the test and full particulars of the Aeroplane, must reach the Secretary at least seven days prior to the Trials.

If desired by the Competitor the carried weight shall be recorded on the Certificate. For details, see Regulations 1, 2 and 3, Weight carrying.

CERTIFIED TRIALS.—VERTICAL SPEEDS.

(Under the Competition Rules of the Royal Aero Club.)

REGULATIONS (Aeroplanes).

1.—Certificates for vertical speed, *i.e.*, climbing speed, will be delivered in respect of flights recorded by barograph and controlled by an official observer appointed by the Club.

2.—The barograph must be provided by the Competitor, and be provisionally approved, set, and sealed by the observer prior to the start.

3.—The record sheet of the barograph must travel at least 6 inches in one hour.

4.—The test shall be reckoned to have commenced at the time when the Competitor shall have risen 100 feet as registered on the barograph.

5.—The Certificate will state the time taken to rise 1,000 feet, 2,000 feet, and so on per 1,000 feet above the 100 feet starting level. Failure to attain a height of 1,000 feet above the starting level will be recorded on the Certificate.

6.—After the descent the Competitor shall deliver the barograph to the observer, who shall take charge of it and deliver it sealed to the Royal Aero Club for examination. In the event of the Competitor alighting at a distance from the starting point, he shall immediately take steps to inform the observer of his whereabouts.

7.—Entries must be made upon the Entry Form provided for the purpose, and must be accompanied by a remittance of £5 5s., the amount of the fee. The Entry Form, which must be duly filled up as regards the nature of the test and full particulars of the Aeroplane, must reach the Secretary at least seven days prior to the Trials.

If desired by the Competitor the carried weight shall be recorded on the Certificate. For details, see Regulations 1, 2 and 3, Weight carrying.

CERTIFIED TRIALS.—HEIGHT.

(Under the Competition Rules of the Royal Aero Club.)

REGULATIONS (Aeroplanes).

1.—Certificates of height will be delivered in respect of flights recorded by sealed barograph. The ascent must be performed in the presence of an official observer, who will, independently of the barograph, record the time of leaving the ground, and, if possible, alighting.

2.—The barograph must be provided by the Competitor, and be provisionally approved, set, and sealed by the observer prior to the start.

3.—After the descent the Competitor shall deliver the barograph to the observer, who shall take charge of it and deliver it sealed to the Royal Aero Club for examination. In the event of the Competitor alighting at a distance from the starting point, he shall immediately take steps to inform the observer of his whereabouts.

4.—Entries must be made upon the Entry Form provided for the purpose, and must be accompanied by a remittance of £5 5s., the amount of the fee. The Entry Form, which must be duly filled up as regards the nature of the test and full particulars of the Aeroplane, must reach the Secretary at least seven days prior to the Trials.

If desired by the Competitor the carried weight shall be recorded on the Certificate. For details, see Regulations 1, 2 and 3, Weight carrying.

CERTIFIED TRIALS.—WEIGHT CARRYING.

(Under the Competition Rules of the Royal Aero Club.)

REGULATIONS (Aeroplanes).

1.—Certificates for weight or passenger carrying will be delivered in respect of flights where each passenger carried must be at least 18 years of age and not less than 10 stone 3 lb. in weight.

2.—The carried weight shall comprise the weight of the Competitor, passenger (if any) and ballast, but shall not include fuel.

3.—The weight must be verified by an observer appointed by the Club, immediately before and after the flight and all weighing must be done on Government tested machines, provided by the Competitor and approved by the Club.

4.—The attempt shall be for a minimum flight of 15 minutes.

5.—Entries must be made upon the Entry Form provided for the purpose, and must be accompanied by a remittance of £5 5s., the amount of the fee. The Entry Form, which must be duly filled up as regards the nature of the test and full particulars of the Aeroplane, must reach the Secretary at least seven days prior to the Trials.

Should a further Certificate be desired for speed with a given weight, vertical speed with a given weight, or height with a given weight, the Regulations for the respective tests will be followed, in addition to the above, as far as applicable.

CONSULT on all matters connected with Commercial and Pleasure Flying, Aeronautic Design & Manufacture.

10 Years' Practical experience in all Branches.

E.C.GORDON ENGLAND A.F.R.Ae.S

Phone Regent 414

St. George's House, 193, Regent Street, LONDON, W.1.

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ON PREPARING FOR WAR.

Imprimis, let it be understood that this article is not intended to give anybody good advice. It is not a sermon; it is purely an expression of personal opinion which includes a few prophecies. Therefore, by way of a change, I propose to drop for the time being the customary impersonal form of editorial address and to assume the first person singular. If the readers of this paper do not want my personal opinions they need not read any more of this article. They will get excellent value for their money in the rest of the paper, so they cannot complain that they have been done in any way. Let us therefore to our subject.

We are now theoretically at peace. The fact that there are twenty-seven minor wars going on at the moment need not worry us. The more important fact remains that Germany, France, Great Britain, and the United States are at peace—subject only to the ratification of impossible peace terms by various non-representative Governments. Even that need not worry us, for impossible peace terms are very like a life sentence for manslaughter. After a few years people forget about the sentence and the condemned person is let off.

Being at peace, we ought obviously to turn our attention to preparing for war, in accordance with the old injunction, "In time of peace prepare for war," and the old axiom, "The surest guarantee of peace is preparation for war."

If we were governed by an autocracy, or an aristocracy, or even by an intelligent oligarchy, or plutocracy, or bureaucracy, we might reasonably expect such preparations to be made without anybody having to jar the Government into action. But, unfortunately, we happen to be a limited monarchy almost completely in the hands of a democracy tempered by plutocracy.

Now, democracy means government by the "demos" or people. And nobody has seriously disputed Carlyle's dictum that the population of these islands consists of so many millions of people, "mostly fools." Therefore we are actually governed mostly by fools, or, alternatively, by knaves who have humbugged the fools into electing them to the places of government. Nobody who has ever attended a session of the House of Commons or who has read Hansard can have any lingering doubts on that point. Consequently we cannot expect this or any other Government to prepare for war until that war actually breaks out, as was the case in the late lamented European squabble.

But there does happen to be an intelligent minority, fairly evenly spread over all grades of society, among our millions of fools, which realises that we must prepare for war if we are to remain a Nation, let alone an Empire. Before this war the Navy League, by constant agitation, which was made possible largely by the financial and social help of that fine example of the English gentleman, the late Mr. Robert Yerburgh, managed to squeeze enough money out of successive and always reluctant Governments to enable the Admiralty to build the biggest Navy in the world, albeit perhaps not the most intelligently or efficiently organised.

The mere size of that Navy secured this country against invasion, and played a decisive part in ending the war by starving the German people into a low state of moral. For this we have to thank Mr. Yerburgh, and Mr. Pat Hannon, the Secretary of the Navy League during its most active years, more than the British Government or the majority of the British People.

Aircraft in the Next War.

It is evident that in the next war aircraft will play a part similar to, but far more important than, that played by the ships of the King's Navy in this war.

In the first place our anti-aircraft defences—which ought forthwith to be established as a permanent institution on a far larger scale than the coast defences under the Army—will have to assure the immunity of this country from invasion by air.

In the second place, our seagoing aircraft will have to protect our trade routes against attack by enemy submarines and surface ships.

In the third place, our aircraft with the Army in the field will have to do all the air work required by the Expeditionary Force.

And, fourthly, another force of aircraft, bigger than all the other sections put together, will have to carry war into the enemy's country.

Thus it is easy to see that the task of the Flying Services in the next war will be far greater than that of any other of the King's Armed Forces. And to-day it is proposed by our democratic Government, not only to cut down our Navy (which can be spared, if our Air Force is built up to proper strength), and to cut down our Army (which cannot be spared, because an Army of Occupation in enemy territory is the only guarantee that a war is won), but to cut down our Air Force to a size which in the next war will be in pretty well the same proportion to our needs as the historic first four squadrons were to our needs in this war.

The Task of a Territorial Association.

That is what Democracy is going to do for us, if we allow it. There is thus evident need for a strong organisation of the intelligent minority to do for the Air Force what the Navy League did for the Navy. It might be done by a purely propagandist body, such as a reorganised and thoroughly vitalised Aerial League might become. But my personal opinion is that it can be done still better by a practical organisation such as a Territorial Air Force Association may become if it is founded by the right people, if it secures the right patrons, and if it is conducted by an energetic secretariat.

The task of a Territorial Air Force Association would be precisely similar to that of the T.F. Association in connection with the Army, but on a far grander scale, for it would include sea work as well as land work. And one believes that it would ultimately have to deal with greater numbers of men.

It must have men of unimpeachable honesty of purpose at its head. And it must be conducted in a dignified and yet energetic manner. It must use the public Press to the utmost in popularising the movement. But it must not allow itself to be run by the Press for advertisement purposes.

Thus, and thus only, shall we be able to build up an adequate Air Force in preparation for the next war. Volunteer aviation must become a national sport, as archery was in the days when England was becoming a World Power.

How the details are to be organised I leave to cleverer brains than mine, but to those who approve of the general idea I recommend that they read "The Army of a Dream" written by Mr. Kipling some fifteen years ago. Therein they may find inspiration for their task.

Why a Next War?

"But," some people may ask, "why a next war? Have we not formed a League of Nations to ensure that there shall be no next war? Have we not President Wilson's Fourteen Points? Are not small nations to self-determine themselves, and thus remove all possible causes of war? Is not the International Police Force to be formed to stop any threatening war before it begins? Are not national armies to be limited so as to make wars impossible?"

As they say in Parliament, "The answer is in the negative." So long as man is a fighting animal, so long will war continue. Leagues and alliances may avoid or check war for a while, but war must come in the end. History, as I have remarked on several occasions, is the greatest plagiarist in all literature.

An Historic Plagiarism.

Read what a great historian has to say concerning a League of Nations formed for "the mutual preservation of states, so that the more powerful might not oppress the less powerful, and that each should keep what rightly belongs to him."

The League in question was formed in 1495 between Spain, the Holy Roman Empire, the Pope, Milan, and Venice to check the ambition of Charles VIII. of France. The words quoted are those in the assertion of the basis on which the League rested. Do they differ from the pious assertions of Mr. Lloyd George and President Wilson?

Here is what the late Dr. Mandell Creighton, the Bishop of London, had to say on this precious League in his monograph on Cardinal Wolsey, published in 1906:—

"This League marks a new departure in European affairs. There was no mention of the old ideas on which Europe was supposed to rest. There was no recognition of papal or imperial supremacy; no principle of European organisation was laid down. The existing state of things was to be maintained, and the contracting Powers were to decide amongst themselves what rights and claims they thought fit to recognise. Such a plan might be useful to check French preponderance at the moment, but it was fatal to the free development of Europe. The States that were then powerful might grow in power; those that were not yet strong were sure to be prevented from growing stronger. . . . European affairs were to be settled by combinations of powerful States."

Reading Germany for France, is there anything in that statement which does not apply precisely to our present preposterous League of Nations? See, then, what Dr. Creighton has to say as to the outcome of the League:—

"The results of this system were rapidly seen. France, of course, was checked for the time; but France, in its turn, could enter the League and become a factor in European combinations. The problem now for statesmen was how to use this concert of Europe for their own interests. . . . The notion of a maintenance of European equilibrium faded away before such a prospect.

"This prospect, however, was only in the future. For the present there was an opportunity for endless scheming. The European League for the preservation of the existing state of things resisted any expansion on the part of smaller States, but encouraged compacts for aggression amongst the more powerful."—Be it noted in passing that we have just been informed of an alliance between France, Great Britain, and the United States, excluding Italy and our nineteen other Allies.

I recommend the study of the history of this League of 1495 to those who may be so foolish as to believe in the League of 1919, and I recommend the study of Cardinal Wolsey's diplomacy to those who imagine that we of to-day are any different from the Englishmen of four hundred and twenty odd years ago. The chief difference is that whereas Wolsey kept England out of that particular League and used her splendid isolation, as the great Marquess of Salisbury did, to swing the balance of power as he willed, our politicians of to-day, not being statesmen, rush into the League, so that they must either be swung with the rest or, if they wish to maintain our British independence, must withdraw from the League when occasion demands and so give our enemies another charge to throw at "perfidious Albion." In fact, this alliance with France and the United States is already incompatible with the idea of a general League of Nations, though it is an eminently sensible alliance when regarded from the point of view of the older and more practical diplomacy.

However, there you have the League of Nations of 1495. Consider whether it did anything to stop war. So far as history shows, it carried on war with considerable success from 1495 till 1515 in its effort to stop war. And it then produced a Universal Peace, which lasted from 1515 till 1518—three whole years.

Our recent squabble has been shorter and perhaps our peace may be longer, though my personal opinion is that this peace will merely merge in a new series of wars, as I hope to show hereafter. Meantime we are at peace with our late enemies and at war with the majority of the greatest of our former Allies—Russia to wit, which was certainly the greatest of our Allies in point of size of area and population. For, be it noted, Bolshevik means nothing more nor less than a member of the majority (mostly fools—as aforesaid).

With Whom the Next War?

At present we are too near the recent war to see it in quite the right historic perspective. Our ignorant journalists have hailed it as Armageddon, to be followed by Universal Peace, and the Kingdom of Christ upon Earth. In all reverence I wish that such were the truth. But if we wish to attain to something like the right perspective it is necessary to consider the view of a great Chinese mandarin, who, when asked somewhere about the middle of the war what he thought of the Great World War, replied philosophically: "We in China pay but little attention to the tribe-fights of Western barbarians."

I have quoted this saying before, but it seems apposite and necessary to repeat it. For in no sense has this been a race-war. It is true that it began as a race-war between the Slavs and the Teutons, but the Teutons soon held the Slavs at bay. The real fighting developed into a struggle in which the Teutonic tribes of Germany and Austria contended with the Teutonic Franks, Burgundians, Belgicæ, and Anglo-Saxons. There were a few odd Slavonic and Semitic (*id est*, Turkish) tribes forced in as auxiliaries on one side, and there was an assortment of Latins and Kelts, together with a vast variety of coloured races, persuaded, bribed, or conscripted as auxiliaries on the other side.

Be it remembered that Italy has never had any quarrel with Germany, and but little with Hungary. Her

sole desire was to get back certain small patches of territory inhabited by Italians. And Italy has as little love for her Jugo-Slav neighbours to-day, now that they are an independent republic, as she had for them when they were part of the Austro-Hungarian Empire. The purely Latin tribes of Southern France took but little personal interest in the war, as anybody can bear witness who knew that area during the past four years.

The real race-war, when it comes, will be between the Teutonic Race and the Slav Race. There may be many minor wars before that comes, but that will be the first great race-war since the Teutonic tribes began to over-run Gaul in the later days of the Roman Empire.

A Minor Prophecy.

This is by no means a new idea, for in the issue of this paper published on August 5th, 1914, the day after the declaration of war, I wrote:—"Thanks to the machinations of politicians who pose as statesmen, the Powers find themselves grouped quite in the wrong way. Our alliance with France is as it should be, but that the two leading civilised nations should find themselves allied with Russia against Germany and Austria is altogether unnatural. The alliance with Russia is against all reason. 'Scratch a Russian and you find a Tartar' is an ancient proverb. Scratch a Tartar and you find a Chinaman is a logical sequel. The Slav is the real 'Yellow Peril,' for the Slav is at bottom an Asiatic.

"If Russia comes out on top in this present war, does anyone think that her gratitude to us for our support will cause her to keep her hands off India when she can spare men from her German frontier? Those who know the Russo-Indian problem will remember the admonition of the old shikarri in Mr. Kipling's famous allegory—'Make not your peace with Adam-zad, the bear that walks like a man.'"

Already Russia is working out that prophecy. The Bolshevik outbreaks in India, and the Afghan attacks on the North-West Frontier, stirred up by Russian emissaries and encouraged by Mr. Montagu's political imbecilities, show how Russia is working, now that she has nothing to fear from Germany.

In that same article I continued:—"However, nothing on God's Earth can excuse Germany's unprovoked attack on France, and we have got to see France through her trouble on that account. A smashed Germany is not as good a bulwark against the advance of the Slav peoples as a solid Germany backed by France and Italy would be, but perhaps a smashed Germany may be less dangerous than a top-heavy Germany ready to fall at any moment on us and our friends the French. Therefore, in the name of common sense, let us have at it, and smash Germany thoroughly, once and for all."

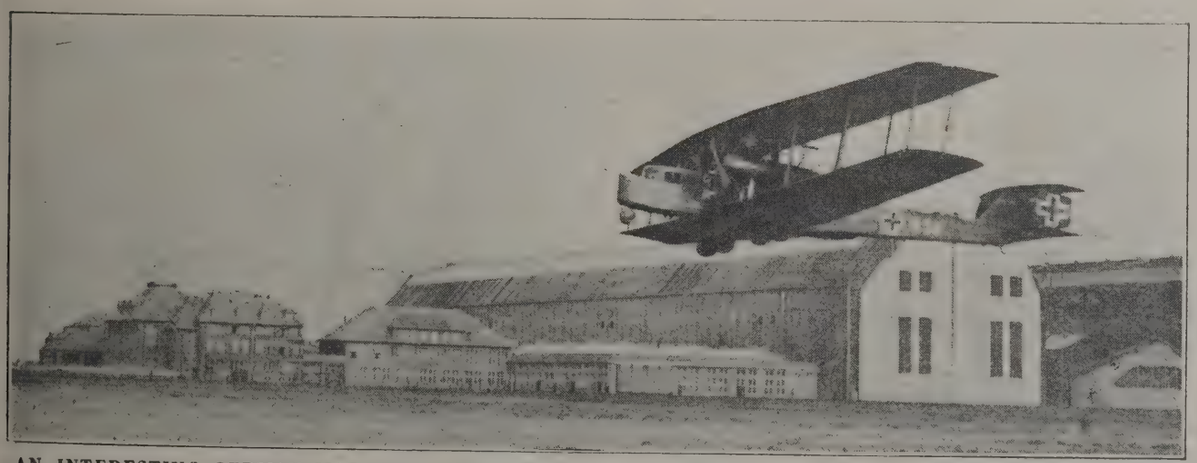
It is true that there was no excuse for Germany's attack on France, but there was a very good reason. France had been drawn into that unnatural alliance with Russia. When Russia and Germany declared war, Germany was open to attack by Russia's Ally France, and it was therefore politic, if not morally right, to hit France hard and keep her quiet while Germany smashed Russia. If Great Britain had kept out of the war, as some of our politicians desired, that is probably what would have happened. But it would have been bad policy in the end, for it would have left the Prussians, a Slav tribe, dominant in Europe. So our muddled policy ultimately worked out for the best.

The War That Had to Come.

We were bound to have a war with Germany, sooner or later. From my earliest days as a kid at school, some thirty-five years ago, I remember that my older relatives and friends in the Navy regarded a fight with Germany as their sole reason for existence, and for several years before the war I knew precisely where the British Expeditionary Force was to be placed in relation to the French Army when the war came. The war just had to come, as a fight comes at school between two boys who have no immediate *casus belli*, but have just been irritating one another for months. And generally they are better friends afterwards.

There were, however, many minor causes for the war. In the issue of The Aeroplane dated August 12th, 1914, I wrote:—"One cause certainly seems to be that the enormous spread of Socialism in Germany, as shown at the last elections, has so scared the Prussian *junkers*, or land-owners, that the war has been forced on in the vain hope that a wave of patriotism will swamp the Socialists.

"Another cause seems to be that German traders throughout the world have so overrun their financial capabilities that they have been going bankrupt by the thousand and so have broken the banks which have been backing them, with the result that the big financiers behind the banks have fostered the war spirit so as to get their money back out of profits on armament and military equipment. In doing so they have plunged their country into a war which is more likely to prove their ruin than anything else."



AN INTERESTING GERMAN MACHINE.—A 4-engined Zeppelin-Staaken "Giant" (four 250 h.p. Maybach engines) converted into a passenger-carrier by removing the fifth engine which was carried in the nose of the fuselage and substituting an enclosed cabin.

One sees little in those paragraphs with which to disagree five years later. But the financiers have been cleverer than was expected. Five years ago we in this country knew less about International Finance than we do now. The wonderful organisation of the great Jewish financiers was less understood.

Financial Pressure.

In the light of present knowledge it would seem that just as the financiers rushed forward the start of the war, so they ended it prematurely for their own benefit. Is it possible that Marshal Foch and the commanders of the Allied Armies would have allowed the Germans an armistice when they did if they had not been ordered to do so by the Allied politicians acting under orders from the International financiers?

When the Armistice was declared the German Army was on the point of breaking, but it had not broken. The Independent Air Force was on the point of bombing Berlin and wrecking the Rhine cities. A month more of war would have seen the victorious armies of the Allies in the wealthiest part of Germany. And not the most rigid discipline would have prevented the looting of the captured towns. The situation was perilous for the German Jew financier and his chief seat, the city of Frankfort.

And so the politicians ordered the Armistice, and the German Army retired into Germany beaten, but unbroken.

All for the Best.

Perhaps it was all for the best. When that great race-war with the Slavs breaks out we shall need the help of the German Army. And then it may be well that the Germans have not altogether lost their moral.

When, after the Battle of Mons, the British Army was in full retreat, Mr. Hamilton Fyfe, in his famous dispatch to the Sunday edition of the "Times," said, "The British Army is a beaten army, but not a broken army." It was the one consolation to the British Nation in the greatest, and most salutary, shock which it has had during the war. Similarly, when the Teuton Race has to array itself against the Slav, it may be well for us to remind the Germans that, though theirs was a beaten army, it was not a broken army.

The Germans will need little reminding, for one remembers that when the Guard returned to Berlin after the Armistice they were received with banners and flowers, as soldiers who had kept the horrors of war from the soil of the Fatherland. And very justly so, for when the Allied Armies set foot in Germany they came in peace, and no actual fighting has taken place in Germany itself.

The Whirligig of Time.

The idea of our needing Germany in the future may seem unthinkable to the narrow-minded, but as an historical fact it is not merely probable, but practically certain. History, as ever, must keep on repeating itself.

One of the most exquisitely humorous episodes in my own experience occurred just a week before the signing of the Armistice when I found myself sitting in a Hun hut in the middle of the devastated area in France, close alongside Velu Wood, between Bapaume and Cambrai, reading the account of the Battle of Waterloo as given in the British tourist's Bible, otherwise known as Baedeker. I read how "our gallant allies the Germans" held this position, how the stout Hanoverian troops held the other, how the brave Brunswickers carried such and such a strong point, and how a very considerable percentage of Wellington's Army were pure Germans. The book was lent me by a British officer, who carted a whole Baedeker library about with him, so that he should know something about the places which our troops were conquering at that period. The idea tickled him hugely.

Germany as It Was and Is.

It is in fact no more ridiculous to think of German troops as allies in a war with the Slav in the future than to think of them as allies in a war with France in the past. As I wrote in The Aeroplane of August 5th, 1914:—"Germany is built up of many incompatible elements. The Schleswiger is a Dane, and quite a good chap. The Alsatian is a Frenchman and hates Germany. The Bavarian is a peace-loving, hard-working, decent poor soul, and cordially dislikes his Prussian master. And the Pole is nothing in particular and loathes German, Russian, and Austrian with beautiful impartiality. The German Empire dissolved into its component parts may still be a useful barrier (against the Slav) and not a danger. It is Prussia, as usual, who is making a beast of herself, and it is Prussia rather than Germany whom we have to fight."

Again, in the issue of August 12th, 1914, I wrote:—"At the moment the German people are in the delirium of war fever, so they are not pleasant to meet, and for years they have been taught to hate the English, but the individual German is an easy-going, kind-hearted individual, singularly like an Englishman in most of his ways—especially in his quiet contempt for foreigners, and his offensive manner to strangers—and one hopes that when this affair is over, with all its waste of life and national wealth, we shall be better friends with our Germanic relatives. Meantime, Germany as an Empire has to be crushed out of existence, and the sooner it is done the better."

Was I very far wrong in what I wrote nearly five years ago, and before *any* news of any kind had come in from the war areas? If it seems that I have overestimated the decency of the Western German ask any of our people who has lived in Germany for the last few months with the Army of the Rhine.

If you remind me that German civilians, men and women, hooted and spat at our men when they were marched as prisoners through German towns early in the war, I ask you to explain why the good gentle people of Oswestry a week or two ago hustled and threw rotten eggs at a German officer whom they imagined to be Admiral von Reuter? The Germans acted in the heat of rising war fever. The people of Oswestry presumably acted the part of the noble and magnanimous conquerer to a beaten but gallant foe. Is that the explanation? Perhaps the kindest thing one can say about the Oswestry incident is that the place is nearly in Wales, and that the people are not typically English. One might perhaps find equally plausible excuses for various unpleasant incidents in Germany if one tried.

East Is East and West Is West.

Personally I do not like the average German. I can never forgive him for the fact that restaurant bands had to be invented to drown the noise of the Germans eating soup. But he is not half so black as he is painted, and he is not half so ill-mannered, or savage, or brutal as the Slav. The plain fact of the matter is that the farther East you go the greater is the innate savagery of the people.

German atrocities in France and Belgium were mere child's-play compared with Russian atrocities in East Prussia (although the East Prussians are themselves Slavs) during the temporary advance of the much advertised "Russian steam-roller" in 1914-15, or compared with Russian atrocities in Poland at any time in the last hundred years, or compared with the atrocities committed by the Bolsheviks on the minute percentage of decent

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people in Russia ever since the rebellion against His Imperial Majesty the Czar in 1917.

Brutal crimes are common to all nations, but you will find a higher percentage in England than in Ireland, a still higher percentage in France and Belgium than in England, a higher percentage still in Germany, and the highest of all in Russia. Which again is no excuse for the German. It is merely an explanation, and an ethnological fact which cannot be altered.

So far one has merely endeavoured to show that there must be a next war, with whom that next war must be, and why it is necessary for us to maintain a big Air Force in readiness for that war. Next week I hope to hazard a few prophecies as to the manner and time of coming of that war and the part which the Air Force must play therein. The subject is one which deserves careful thought, for on it depends our future existence.

(To be continued.) C. G. G.

THE JACQUES SCHNEIDER INTERNATIONAL RACE.

The race for the Jacques Schneider International Trophy will be held on Wednesday, September 10th, 1919, at Bournemouth. The course will be over a circuit of about 30 miles, starting from Bournemouth and taking in Swanage and Christchurch.

S. E. Saunders, Ltd., the well-known yacht and aircraft builders, of Cowes, Isle of Wight, have kindly placed their new erecting shops and slipways at the disposal of the Royal Aero Club for the accommodation of the competing machines.

Machines representing the British Empire must be ready not later than September 1st, 1919.

The Committee of the Royal Aero Club will select the three competitors to represent the British Empire, and reserves to itself the right to hold eliminating trials.

Entries are to be made to the Royal Aero Club, 3, Clifford Street, London, W.1, not later than July 31st, 1919. Each entry must be accompanied by the entry fee of £20.

This affair seems to have been arranged with all the ineptitude which one associates with Government Departments and elected bodies generally.

Bournemouth is a difficult place to reach by road, and is a hopeless place in which to find lodgings during the holiday season. Swanage is still less accessible and less habitable. As against these places there are far more attractive sites for the starting and turning points. Dover, Folkestone, Hastings, Eastbourne, and Brighton are all infinitely preferable. They are easier to reach from London, and there are more places in the vicinity in which people can live while preparing for the race.

The idea of housing the competing machines at Cowes is purely imbecile. One acknowledges that Mr. Sam Saunders has excellent accommodation, and his action in placing his shops at the disposal of the Club is worthy of his reputation for sportsmanship. But, apart from this, Cowes is about as suitable for the job as Scapa or Skibbereen.

The place is utterly inaccessible. The boat service is vile, and consequently competitors who want to get spares or material from London in a hurry will be hampered in every possible way. The housing problem in Cowes in September is as bad as it can be. And furthermore Cowes Harbour, in the yachting season, is the last place one would have chosen for the testing of racing seaplanes.

Also, the idea of housing the competing machines at Cowes and asking them to fly all the way to Bournemouth, with the attendant risks of collisions with boats in the Solent, and so forth, is as foolish as could well have been conceived. In fact the Royal Aero Club seems to be doing its best to make the event a failure instead of a success.

The only argument which one can discover in favour of the arrangement is that the house-boat of some motor-boat club or other—one forgets its name—is moored in Southampton Water, and so can, presumably, be towed round to Bournemouth if the weather is fine, so that the Committee of the Aero Club can "do" the race in ostentatious luxury, regardless of the convenience of British or Foreign competitors, heedless of the best interests of British aviation, and ruthless as to the ultimate results to the machines and those concerned with them.

It is quite bad enough to have the Department of Civil Aviation putting its hoof into it every time it awakes from its chronic lethargy and takes a step in any direction. There is some excuse for that Department, because nearly all the people who might have made it a success have been demobilised from the R.A.F. But it is a trifle too much when the Committee of the Royal Aero Club, the self-appointed Governing Body of the Sport of Aviation, joins the ranks of those who seem to be inspired to wreck Civil Aviation.

Quos Deus vult perdere prius dementat. It seems either that it is the will of Providence that Civil Aviation should be destroyed, or, which is what one hopes, that those who are misgoverning Civil Aviation should destroy themselves and thus leave room for competent people who think more about the progress of British Aeronautics than about either holding down their jobs or doing a little imitation yachting with the great International Seaplane Race as a kind of secondary consideration.

The Committee of the Royal Aero Club has not distinguished itself in the past by its intelligence in handling matters of real importance to British Aeronautics. One had hoped that the election of several practical aviators to the Committee might have brightened its collective intellect a trifle. It seems, however, that it still maintains the mental level and the angle of outlook of a parish council.—C. G. G.

ROYAL AERO CLUB

TECHNICAL AND COMPETITIONS COMMITTEE.

A meeting of the Technical and Competitions Committee was held on Tuesday last, July 8th, 1919.

JACQUES SCHNEIDER CUP.

The arrangements for the Jacques Schneider Cup were discussed, and it was decided to hold the race on Sept. 10th, 1919, and that the British competitors must have their machines ready not later than Sept. 1st, 1919, in case it is necessary to hold eliminating trials for the selection of the three competitors to represent the British Empire. The course for the race will announced later.

PRESENTATIONS TO THE CLUB.

The following framed prints have been presented to the Club by Capt. C. E. Bagram:—"Globe Aérostatique le Charles et Robert, 1783"; "A Consultation Previous to an Aerial Voyage from London to Weilburg in Nassau, Nov. 7th, 1836."

The following map has been presented to the Club by Miss Lockyer: "Time Map of the World."

The following books have been presented by the publishers to the Club library:—"Airy Nothings," by H. Barber (McBride, Nast and Co.); "Aerobatics," by H. Barber (McBride, Nast and Co.); "In the Royal Naval Air Service," by Harold Rosher (Chatto and Windus); "Guynemer: Knight of the Air," by Henry Bordeaux (Chatto and Windus); "All About Aircraft" (Car Publishing Co.); "Aircraft in War and Commerce" (Car Publishing Co.); "The Kingdom of the Air" (Car Publishing Co.); "V.C.s of the Air" (Car Publishing Co.); "The World's Air Routes" (Car Publishing Co.)

PEACE CELEBRATIONS.

In order that the House Staff may have a holiday, the House Committee has decided that no meals shall be served in the Club on Saturday, July 19th, 1919.—(By order) HOUSE COMMITTEE.

July 15th, 1919.



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"Pray for an eye that sees spots in every sun and for a nose that smells carrion in every rose-bush," wrote Charles Kingsley in "Westward Ho!"

It is many years since one read it, but one remembers the injunction to "worship at the shrine of the great Goddess Detraction" and to "prove thyself wiser than the wise by pointing out the fool's motley that peeps from the rents in the philosopher's cloak." "Thus," wrote Kingsley, "shalt thou be clothed in purple and fine linen and sit in kings' palaces and fare sumptuously every day."

Few people read "Westward Ho!" nowadays, but a very large number see so many spots in every sun and smell so much carrion in every rose-bush that they miss entirely the glory of the one and the beauty of the other.

Incredulity and cynicism are characteristics of mediocre minds, and it is against the negative influence of such minds that the positive forces of progress are forever at war. Every man who has ever followed a line of original thought, and every inventor, has felt the weight of opposition and the prick of that very keen weapon, ridicule.

One feels that the first man who consumed a living oyster must have been regarded by his fellows as a person of most unpleasant habits. The hero who braved the derision of the mob by producing the Adam of all umbrellas was, quite naturally, pelted with every kind of missile from the *passé* egg to the feline in the process of dissolution.

In some dim period when our gentle ancestors did not know how to hurl each other into Hades with T.N.T., or assist their brothers to the happy hunting-grounds with poison gas, in that distant era, in short, that antedated the age of savagery in which we live, one may feel sure that the originator of a new fashion of wearing fig-leaves was outlawed by the orthodox followers of the prevailing mode.

THE UNION OF LOG ROLLERS.

In later times one supposes that if it were desired to move a heavy object, such as an invitation to dinner carved on stone, the postman would place rollers under the invitation and trundle it laboriously. Imagine the indignation of the union of log-rollers when the inventor of the wheel hit upon the idea of attaching the rollers to the object to be transported! Probably they allowed a love-letter to fall upon and crush the inventor of this labour-saving device.

And in the millions of years that have passed we have not greatly changed our mental attitude. All races are alike in this respect, for, as a French philosopher has pointed out, the only real difference between the nations is in the uniform of their police. In one's own lifetime one can recall the days when the harebrained scorcher who dashed madly about the country at the fear-inspiring velocity of twelve miles an hour was condemned to "twenty shillings or two days" as a danger to the public. One can remember boroughs that paid off the rates by persecuting cyclists and continued so to do till it was discovered that the invention of the motor-car had introduced a new and more lucrative industry for the police-courts.

One remembers a murky morning in November 1896, outside the Hotel Metropole, and the start of the historic run to Brighton which was arranged to celebrate the emancipation of motorists from the regulations that a mechanically propelled vehicle must be preceded by a man carrying a red flag.

How the mob jeered! How the Cockney satire flowed! . . . "Gawd, wot a 'eavenly smell!" . . . "Tie a moke to it, guv'nor!" . . .

And with what delight the reeking mob read that practically every one of the derided buzz-wagons had broken down! How they laughed over the efforts of the "Evening News" poet:—

"Forty little motor-cars drawn up in a line;
One blew up in Whitehall Place, leaving thirty-nine."

And so on. One quotes from memory. (No offer for a testimonial for Pelmanism will be considered.)

One remembers one's own efforts to nurse those early motor-bicycles, quadricycles, and cars that were continually "decanting their innards," to use the phrase of the immortal Mr. Pyecroft, and very vividly does one recall the cheap jeers of "the low-down whites" whenever one had trouble—which was all the time.

Yet a few enthusiasts carried on, and far-seeing people organised competitions. It was those long-distance races—Paris-Vienna, Paris-Petersburg, and so on—that first made the mocking mob realise that neither the undisciplined forces of interested enemies nor the organised opposition of the British Government could prevent the progress of an industry that would be of such vast value to the country.

And now we fly, and, glancing backwards, one sees that we are up against the *"pons asinorum"* that confronted us in the early days of motoring. Thanks to the blessing of the recent scrap, which has sharpened what little wit we have, the development of aeronauties has been more rapid than it would have been in the beer-bemuddled slackness of soul-destroying peace. But one may well ask, "What now?"

Everywhere one sees the negative forces of organised apathy opposed to progress. Our Postmaster-General states in Parliament that "aeroplanes are of only 60 per cent. efficiency," and that in consequence it is not proposed to establish aerial mail services.

A writer, and an R.A.F. officer at that, in the "Daily Mail" describes civil and commercial aviation as "a wash-out." The Air Ministry, blind to the lessons of history, scratched all the fastest machines that had been entered for the Aerial Derby. Miracle of incompetence!

A CRIME AGAINST HUMANITY.

Can it not be seen that by competition, and by competition only, can progress be made. If we have not the Germans to compete with then for God's sake let us have a little healthy competition among ourselves. To have limited the manufacture of aircraft by the Germans is a crime against human progress, as deep a blot in the history of the Allies as it would have been to say that the scientific investigation of disease must cease for fear that our late enemies should become a sounder race than we.

Among scientists there should be no petty tribal feelings. Nothing would be better for this country than to see Germany embark on a policy of aircraft construction that would show the world that she intended to make a bid for Admiralty in the Air.

Man is a fighting animal. The competitive instinct is the only good quality he possesses. If that instinct be repressed, he is little better than the beasts. In the animal kingdom man has only one friend, the dog, and he loves the dog chiefly because that high-spirited beastie fights for the sheer joy of fighting and kills inferior creatures at man's bidding.

THE ROAD TO RUIN.

In the industrial era which may be beginning, if the strikers do not bring about civil war, we need competition. If the Government and the Air Ministry pursue


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SPEEDY
AND
RELIABLE
No other weight-carrying aeroplane yet constructed can travel at 125 miles per hour as does the giant "BRISTOL" Triplane, whilst its excellence of design and the four powerful engines with which it is fitted ensure complete reliability.
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their present policy, we shall find that France or the United States of America will have beaten us in the element that is destined to be of more importance to us than the sea.

France is subsidising aerial mail services while our Postmaster-General burbles about "60 per cent. efficiency," and America is proving to her people the value of aeronautics by official demonstrations of the possibilities of the machines she produced for war.

Commercial aviation is not a "wash-out" because it has not yet been washed in. We are very much in the same position as we were a few months after the historic day in November, 1896, when the motoring restrictions were withdrawn. We want the driving force of competition, the official encouragement of international races, Governmental subsidies for mail and passenger carrying services, and the creation of a strong Volunteer Air Force Reserve.

Incidentally we need a body that would prove itself more enterprising than has either the Royal Aeronautical Society or the Royal Aero Club. When one remembers all that was accomplished by the motoring societies in early days, the masterly inactivity of the R.Ae.S. and R.Ae.C. forms an unpleasing contrast.

AN AIR MINISTRY RESIGNATION.

The Secretary to the Air Ministry announces that Sir John Hunter, K.B.E., administrator of works and buildings in the Air Ministry, has tendered his resignation to the Secretary of State for Air, and that this resignation has been accepted in view of the progress made in clearing up the war work of the Ministry and the desire of Sir John Hunter to return to Sir William Arrol and Co., Ltd., of Glasgow, as soon as possible.

An intimation of the cordial thanks of the Air Council has been conveyed to Sir John Hunter for the eminent services rendered by him from December, 1917, to the present date, in dealing with the very heavy programme of works necessitated by the rapid expansion of the Royal Air Force.

FLYING BETWEEN LONDON AND PARIS.

The Air Ministry announces that:—

For the purpose of taking part in the Peace Celebrations during the forthcoming week, in Paris and London, arrangements have been made with the French Government for the opening of Civil Communication by air between London and Paris, from July 13th-20th inclusive.

British machines visiting Paris will land at Le Bourget only, and French machines visiting London at Hounslow only, except in emergency.

All machines will cross the French coast between Calais and Boulogne, and the English coast between Folkestone and Dungeness.

All machines taking advantage of these facilities must be provided with, and carry, certificates of airworthiness, issued by their respective Governments.

Passports will be carried by all civilian personnel.

A full list of passengers showing their destinations will be carried by the pilot in charge of the machine.

No goods or merchandise may be carried.

It is to be clearly understood that during the week this temporary arrangement is in force, no machine will, in any circumstances, fly over Paris.

TELLING THEM ALL ABOUT IT.

According to the "Observer," an American aviation mission, which has spent the last six weeks in studying aerial affairs in France, Italy, and England, sailed from Southampton on July 12th on the return journey to America.

It is said that the mission was sent to Europe by the United States Government to gather information on the whole subject of aviation development. In conversation with members of the party, a representative of the "Observer" was given the impression that in matters connected with flight America is considerably behind European developments, and the mission was sent over to collect particulars which may help the progress of the new industry and guide the Government in legislating for it.

The curious thing about the whole affair is the fact that comparatively few people in the Aircraft Industry knew anything about the visit of this "Mission," and one is left with the impression that either the members of the Mission went about their work in a very perfunctory way and did not trouble to go to all available sources for knowledge and information, or else that they were very carefully and skilfully "shepherded" during their visit. Perhaps it is well that our trans-Atlantic relations should not know all about our latest aircraft developments, but, on the other hand, perhaps it would be better that they should know. In the first case they might copy us too successfully, and in the second case they might be scared off trying to compete. It would be interesting to know what actually happened in this case.

It is further stated that the party included Mr. Crowell, Assistant Secretary for War; Mr. Keys, the vice-president of the Curtiss Aeroplane and Motor Company; Mr. Howard Coffin, of the Hudson Motor Car Company; and Lieut.-Colonel James Blair, of the General Staff of the American Army. Arriving in Europe on June 1st, they paid visits to France and Italy, and then came to England, where they spent a busy fortnight in examining our various aerial enterprises and in consultation with officials of the Air Ministry.

The "Observer" says that one of the most important parts of their work was to ascertain details of the laws of the air which are now being framed. "We haven't any legislation about the air yet," said one of the delegates. "Our regulations for the licensing of pilots are more of a joke than anything else. We have everything to learn in these matters, and that is why our party was sent over."

One would hazard a guess that the American regulations cannot be more of a joke than is the administration of the British regulations, and the Mission can scarcely have learned much in this country on this point except what to avoid.

The misguided delegate is said to have continued:—"But we have quite a few other things to learn as well as the way to make laws for the air. Europe is ahead of America in the commercial development of aviation, and we have had to find out what you are doing over here and get ideas. We have a few regular mail services running, but America has been more inclined to look at the sporting side of aviation than at its business aspects, and I do not think the possibilities of air transport have been properly grasped yet.

"In time, of course, we shall get a trans-continental route organised but the project has not got far beyond the stage of talk as yet. Our visit to Europe is bound to have a big effect, however, for we have been seeing what is done over here, and we are going back to tell our people all about it."

One would give a great deal to hear them tell their people all about it. One recalls the story of the little girl who came in from a walk and told her mother that she had seen a sack of coals fall off a cart onto the coalman's head. "And was he hurt?" asked her mother. "No!" said the little girl, "he just sat on the road and told God all about it."

Perhaps the American Mission's report may be something like that when they come to understand our particular method of heaping coals of fire.—C. G. C.

THE PUBLIC AND "JOY FLYING."

An article was recently published in the "Daily Mail" by Captain William Pollock, saying that civilian flying was "a wash-out."

The following letter in reply appeared in the "Daily Mail" of July 15th:—

To the Editor of the "Daily Mail."

Sir,—Capt. William Pollock's statements regarding the lack of interest in seaside flying are so opposed to my experience here that I feel that I must reply to them

On May 17th I began civilian flying at Porthcawl, a small seaside resort in South Wales. Up to date I have taken up more than 700 passengers, and, with one or two exceptions, the "wind up" has been conspicuous by its absence.

The same people come over and over again to be taken up, each time increasing their time in the air, until now I can almost say with certainty that twenty or thirty people will come for a joy-ride some time during the week, and will bring friends with them.

What has surprised me most is the number of women who bring their children to go for a flight. Last week an old lady of 68 arrived at the aerodrome with four children. She went up four times, accompanied by a child on each occasion.

To establish a connection of this sort two things are very necessary. One is to give absolute confidence to your passengers and prospective passengers, and the other is *do not "stunt."*

In common with other pilots flying at seaside resorts, I charge a guinea for five minutes. When I am coming down at the end of the time I invariably turn to my passengers and ask, "Would you care for another five minutes?" The answer is nearly always in the affirmative.

As for the machines being rarely in the air, if my engine would stand the work and I could stand the strain of the responsibility, I could keep going twelve hours a day. As it is, I am flying about five hours a day, and there is nearly always a queue waiting when I stop.

E. D. C. Herne, Capt., R.A.F.



B.T.H. Magnetos

all-British in design and workmanship, were used **on the first Airship to cross the Atlantic, the R. 34,** on the aeroplanes which secured the British altitude record, and the first and second prize-winners of the Victory Aerial Derby at Hendon.

The above performances add to the record of B.T.H. Magnetos, and support the high opinion in which they were held by pilots during the war for reliability in service.

The British Thomson-Houston Co., Ltd.,
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B T-H

The WORLD of AERONAUTICS

NEWS OF THE WEEK FROM ALL QUARTERS

The Aerial Chaperone.

According to the U.S.A. War Department News Bureau :—"Major T. Ord Lees, A.F.C., who, during the war, was in charge of the development of parachutes for the British Air Force, has arrived in Washington with several assistants for the purpose of demonstrating the latest British parachutes to the American Government. With Major Lees is Lieut. R. A. Caldwell, D.F.C., who jumps from airplanes to demonstrate the adaptability of the parachute. The interesting feature of the party is the presence of Miss Sylvia Boyden, a young lady of 20, who also jumps from an airplane. According to Major Lees, the jumping of this young lady has a wonderful effect on the public in that when they see a lady land safely they have more confidence in parachutes than when a man descends. Miss Boyden is accompanied by Mrs. A. M. Thomas as chaperone."

One would like to know whether the chaperone leaps from the machine with another parachute or descends with her ward by means of a Guardian Angel fitted with a dickey seat.

From Officer to Airman.

"Wing Adjutant" has been writing in the "Daily News" about the temporary officers in the post-bellum R.A.F. He says :—"In four years' time the Aircraft Industry will have settled down, aerial post, goods, and passenger services will have started, and posts will be available for men with special knowledge. The temporary R.A.F. officer, having received a thorough technical training at the expense of the country, and after four years' practical flying and work on aeroplanes, will in all probability find that there is a long waiting list of firms anxious to obtain skilled airmen, aero engineers, and air administrative men, all of whom will be included in the temporary R.A.F."

One suggests that the officer who has completed his term of four years would not be greatly interested in a firm that wanted merely "a skilled airman" or an "air administrative man"—a rating of which one has not heard. The article is sub-headed "Government openings at end of their four years' service," but no mention is made of Government appointments. Had it not been signed one might have thought these discrepancies indicated official origin.

A Miss as Good as Many Miles.

The following news has been issued by the Director of Air Service, U.S.A. :—

"Lieut. Clyde V. Finter, Pilot, with Lieut. Robert H. Stell, Radial Officer, in a Curtiss H, and Lieut. Bernard J. Tooher, Pilot, with Lieut. Robert H. Best, Radial Officer, in a Curtiss H, directed 12-inch gun-fire on target 26,000 yards at sea from Fort Hancock, N.J.

"The flight began at 1.40 p.m. and lasted 1 hr. and 50 mins. Altitude, 4,000 feet. Observation very good. Thirteen shots were fired, the first shot two miles from target; later shots bracketed the target at 140 miles. If the target had been the size of a battleship it would have been completely destroyed."

But to have ensured it being hit it would have been necessary to make the target of the size of a very large battleship indeed—one of about 125 miles in length, in fact.

The English-Speaking Races.

The following appeared in the official Air Service News Letter published at Washington :—

"Mr. J. C. Shields, news editor of the 'Houston Chronicle,' was a passenger in a flight Saturday, piloted by Lieut. C. F. Bell. Mr. Shields was permitted to handle the controls and given the usual acrobatic feats.

"Describing the acrobatics, Mr. Shields said the spiral was utterly distracting. Immelan, bowl of goulash. The loop as kaleidoscopic somersault. The zoom as two gulps and the cutting gun as a repriever."

And yet people still refer to Americans as being among the English-speaking races.

There Have Been Others.

According to the "Daily Express," "M Jean Galmot has just made a 3,700-mile trip round France in an aerial limousine, carrying six passengers. The pilot was M. Constantin. This is the first aerial circular tour ever made. The machine descended at many of the historic show places of France."

The news that the flight has been completed is interesting, but one cannot agree that it is the first aerial circular tour ever made. One heard rumours of a tour round Britain in the distant days before the war

The R.34 and Prohibition.

One of the daily newspapers stated that the R.34 hissed loudly while waiting to start, but that as soon as the rum ration was taken on board the hissing ceased and she started on her long return voyage.

Mr. Pussyfoot should have a talk with the R.34.

The Boudoir Flying Helmet.

The "Daily Express" is to blame for the following :—

"Although boudoir toilettes could hardly be adapted in the catalogue of flying fashions, some ideas in flying outfits are borrowed from the boudoir. Among these is the flying cap with the side-lapels over the ears.

"Boudoir caps of this shape are being made, and very fascinating little bonnets they appear to be. The models I notice in the West End shops are not trimmed with ribbon as other boudoir caps are generally, but retain the plain outline of the leather flying headgear."

The first paragraph is incomprehensible. One has hardly ever noticed any ideas in flying outfits borrowed from the boudoir unless the writer is thinking of the ladies' silk stockings that certain aviators have worn as mufflers. It is certainly news that the "flying cap," usually called a "helmet," but referred to in the next paragraph as a bonnet, originated in the boudoir. The designer is to be congratulated upon his/her clever idea of placing the lapels over the ears at the sides of the cap-bonnet-helmet.

Barbarous.

An American journal remarks :—

"It is strange to note how the war has affected persons in regard to the wearing of special uniforms or insignia.

"Firms and public service corporations here and there are encouraging the use of insignia and service stripes. Motormen and conductors on cars and trains, who never bothered with service marks, are now to be seen with bright gold stripes. Employees of large manufacturing companies and public service corporations are in many instances being supplied with distinctive buttons, which include some form of marking to indicate the length of service. Such insignia, so it is reported, serves to encourage long service in a company."

One trusts that ex-R.A.F. airmen employed by civil aviation companies in Britain will not be encouraged to adopt this barbarous practice.

One shudders at the prospect of seeing tweed suits decked with bright gold stripes and distinctive buttons, or bowler hats with badges. An even more ghastly thought is that if the custom became general it is almost certain that the terrifying effects produced would give the fashion department of the Bolo some new ideas for R.A.F. uniforms.

Instinct.

At the Victory conference of the North-East Coast Institution of Engineers and Shipbuilders at Newcastle on July 10th, Brig.-General R. M. Groves, C.B., D.S.O., A.F.C., said that "the unbreakable machine was hardly necessary, because pilots were developing an instinct which prevented them breaking machines in the air."

One realises the truth of the Brig.-General's statement. Often one's instinct has prevented one from indulging in the sport of breaking machines in the air.

Scroungers.

The Royal Air Force Detachment at Thetford published on July 1st the first number of their fortnightly paper, the "Scrounger." A contributor to its pages suggests a "scrounging" competition. He writes :—

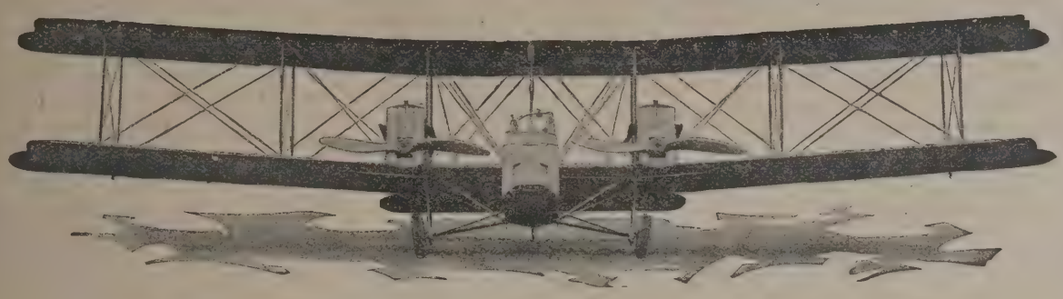
"N.C.Os. would of course be barred from entering the competition, as they would possess an unfair advantage on account of their greater experience. The cook-house staff would also be barred, as they always spend their day 'off' planning how best to 'scrounge' when they are 'on' the following day.

"Another suggestion whereby 'scrounging' might be established on a properly recognised basis would be the appointment weekly of an Orderly Scrounger. Decency forbids me suggesting names of likely candidates."

A Matter of Head Resistance.

A reader wishes to know whether the "Kangaroos" which have been described as hurtling through the air at Hendon could not reduce their head-resistance by hiding their heads in their pouches. The answer is in the negative. Judging by appearances the aerial "Kangaroo's" neck is too stiff to permit of it putting its head into its pocket. The passengers, however, put their hands into their own pockets.

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The WORLD of AERONAUTICS (continued)

A Sporting Offer.

The father of the late Major J. B. McCudden, V.C., D.S.O., M.C., M.M., has in his possession a bulldog named Bruiser, which was the property of his son while serving in the R.F.C. The dog is rather too much of a responsibility for Mr. McCudden's household, and he would therefore be glad to give him to an R.A.F. squadron—preferably to one in which the late Major McCudden served—if the squadron would care to have him as a mascot and in memory of his former master.

Any correspondence on the subject may be addressed to Mr. W. H. McCudden, care of this office.

The New Method.

From the "Morning Post" of July 14th:—Dirigible required for Peace Day by Mr. Charles Gulliver. Price for hire should be sent to him at the Palladium, London, W. The machine on Peace Day is to fly over West London (the Palladium) distributing bags of sweets on parachutes to children in the parks, also in the districts of his suburban theatres, viz., Kilburn, Willesden, Islington, Ilford, Lewisham, Poplar, Camberwell, Putney, Hammersmith, Shoreditch, Croylon, Clapham.

A Balloon Cloth Mystery.

The "Daily News" of July 10th stated that Mr. Brock, of Summerseat, Ashton-on-Mersey, on the previous evening had admitted buying 12 million yards of balloon cloth on behalf of a client. He appeared to be uncertain of quite how much he gave for it, but said that £1,000,000 was as near as one could say at present. It is also stated that the sale was carried out by the Disposal Board of the Ministry of Munitions, that negotiations were opened in April and completed in London on July 9th.

The "Daily Mail" of the same date stated that the report that the cloth had been purchased was premature, but that competition was very keen.

Since July 10th no other announcement appears to have been made.

A Pure Fabric-ation.

The following spasm has reached this office from an unknown source:—

Ladies call for bits of rag,
A thousand times a day
To make up frocks, or p'raps a flag
To celebrate "The Day."
For Women's wants, *They* care no jot,
They sell to Martin the bally lot.
Which seems a lot of Tommy Rot,
Opposed to all fair play.



It was announced that the Figure of Victory which formed part of the Decorations for the Paris Peace Celebration were to be fitted with wings from actual aeroplanes. An irresponsible artist has endeavoured to illustrate his entirely incorrect impression of the effect produced.

A Prosecution.

The "Daily Express" of July 14th stated that summonses arising out of an alleged serious breach of the Defence of the Realm Act have been issued against the secretary and five employees of Messrs. W. S. Laycock, Limited, Sheffield.

The ground on which the Director of Public Prosecutions has advised action to be taken is that certain spare parts for aeroplanes were used after they had been examined and rejected by Government inspectors.

Investigations into the matter by officers of the Criminal Investigation Department have been proceeding for weeks, and on July 12th the summonses were served.

The prosecution will be opened before the Sheffield justices on Thursday, July 17th, and may be followed by interesting developments.

Past Progress and Future Developments.

Some important and interesting statements and views were propounded at the resumed Victory Conference of the North-East Coast Institution of Engineers and Shipbuilders at Newcastle on July 10th.

Lord Weir, in a paper on the development of aircraft design and construction during the war, mentioned that in August, 1914, the Royal Naval Air Service possessed 93 machines and the Royal Flying Corps 179. In October, 1918, just before the Armistice, the Royal Air Force possessed over 22,000 effective machines.

During the first twelve months of the war the average monthly delivery of aeroplanes for British or foreign sources was 50; during the last year of war it was 2,700, and at the Armistice there were facilities in this country for 3,500 per month.

Lord Weir expressed the view that it was now possible to design a machine that would not break in the air, except under certain conditions, against which the pilot could be warned.

Immediate possibilities were in front of flying boats for inter-island and coastal traffic, as in the West Indies and New Zealand. The Government and large transport companies, he thought, might collaborate in their early efforts.

Sir Dugald Clerk said that the Germans standardised in aircraft engines early in the war, and it was one of the worst things they did.

Brigadier-General Groves, of the Royal Air Force, said that he agreed that there was a great future for the flying boat, the chances of which overland in a forced landing were greater than those of an aeroplane over the sea. In one case in Yorkshire a flying boat was towed by horses to some water and actually got off again.

Eight rivers of over 4,000 miles' length passed through the world's markets for flying boats. The Air Department would shortly send one of the largest and latest types for a progressive trial by short stages thorugh Egypt, the Nile, the Great Lakes, the Zambesi, and the Congo, to the Cape. If it were still going then it would return.

The Trans-Atlantic Flight.

Mr. F. P. Raynham, the pilot of the Martinsyde machine, has been ready to make the Atlantic flight for some time past, but so far has been prevented by bad weather. On July 13th an attempt was made to start, the weather being favourable, but a tyre burst as the machine was being brought out of its shed.

Nerve.

The following letter from a British pilot explains itself. When one considers the wholesale mess which is being made by the Air Ministry of civil aviation in this country one begins to understand, though one may not commend, the attitude of the writer:—

"I note from your issue of this week that Germany appears to be taking up aeroplane transit on a much larger scale than England at the present time, and as it is next to impossible to obtain a position in an English aviation firm unless one happens to be an ex-field officer, I am considering the advisability of offering my services to a suitable firm in Germany.

"I am fairly well acquainted with the language, and, judging from the general attitude of the German people during the period after the Armistice and up to the day of my repatriation, I am of the opinion that they would be only too pleased to foster anything in the way of friendly relations to this country.

"I am quite aware that my attitude would appear to the majority of English people as absolutely deplorable and unpatriotic, but one has to look after oneself, and I am becoming more and more convinced that the young men who have given the best part of five years in the service of the country cannot expect to receive much consideration from the Government and employers in England."

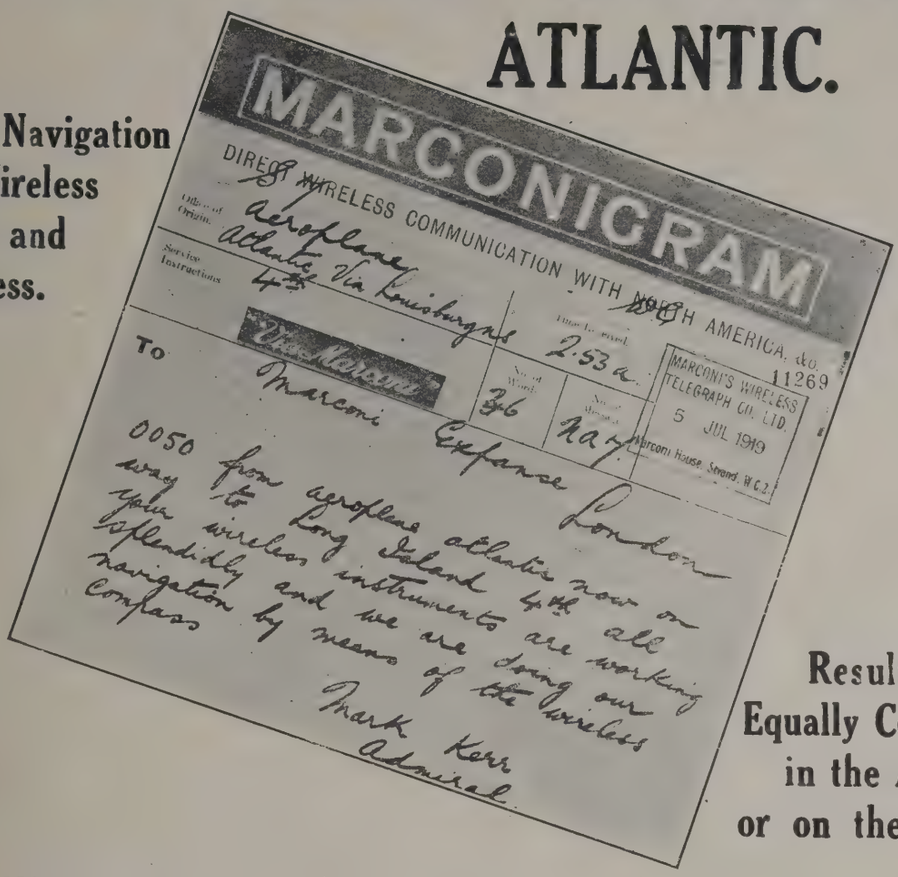
A Revised Proverb.

Apropos the many deferred attempts to leave Newfoundland, and the effects on the machines of those who do start, a correspondent suggests that there is at any rate some satisfaction in knowing that the longer the starts are deferred the longer the machines remain in flying condition.

In other words:—"Start deferred maketh the dope stick."

MID-AIR MESSAGE FROM WESTERN ATLANTIC.

Aerial Navigation by Wireless in Fog and Darkness.


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DIRECT WIRELESS COMMUNICATION WITH NORTH AMERICA, &c.

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To Marconi London

Marconi Expense

0050 from aeroplane atlantic now on way to Long Island 4th all your wireless instruments are working splendidly and we are doing our navigation by means of the wireless compass

Mark Kerr Admiral

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This UNSOLICITED message speaks for itself.

It was transmitted to MARCONI'S WIRELESS TELEGRAPH Company Ltd. from the Handley Page machine during its flight over the Western Atlantic from Newfoundland to Nova Scotia on July 4.

THE MIDNIGHT S. O. S.

sent out from the same machine was received by several wireless stations considerable distances apart on the Western Atlantic seaboard.

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The WORLD of AERONAUTICS (continued)

To 49 Squadron.

Will any officers and men who were serving with 49 Squadron, R.A.F., in May, 1918, please communicate to the Editor of this paper any facts within their knowledge concerning the loss of Lieut. George Cuttle, M.C., of "C" Flight? He was brought down on the morning of May 8th just east of Bray while returning from bombing Peronne, and it is believed that Lieut. Leckie was his passenger at the time.

Ex-R.A.F. Officers' Luncheon Club.

The following letter has been received:—

Sir,—As your readers will doubtless have seen from paragraphs appearing from time to time in the daily Press, the Ex-R.A.F. Officers' City Luncheon Club has now been operating for some weeks, and, owing to rapid growth and need for larger room accommodation, recently transferred from Messrs. Pim's Restaurant in Threadneedle Street, where the Club members were very well looked after indeed, to larger premises at Messrs. Spiers and Ponds Restaurant, top floor, Mansion House Underground Railway Station.

I am constantly meeting ex-Royal Air Force Officers in the City, however, who still seem unaware of the existence of the above Club, and even go so far as to opine that there are many more similarly ignorant of such an institution.

It is for this cause I crave the hospitality of your valuable paper, feeling sure that there must be many old Royal Air Force Officers, readers of your paper, who would like to join our Luncheon Club.

We are at present 70 strong, and have our own Lunching Room, with separate tables and Smoke Room adjoining. Prospective members are always welcome, and the Club extends honorary membership to all serving officers of the Royal Air Force, and the latter appear to find it very convenient when attending the City on business from time to time.

Our Club is in no way in competition with the Royal Air Force Club, to which, in fact, most of our members also belong; but has been instituted to provide a Luncheon meeting place in the City of London for those old Air Force Officers who desire to keep up old associations and "Mess atmosphere," but are unable to spare the time to run up to the West End for lunch.

O. MODIN, late Major, R.A.F., Chairman.

Air Impotency.

An editorial article, entitled "Aircraft Impotency," in the American "Aircraft Journal," is of interest. The author writes:

"Cutting down the Army and Navy appropriations for aviation to $15,000,000 for each Service by the House Military and Naval Affairs Committees means, unless the Senate replaces some of the desired amounts, making the United States impotent in the air, crushing the airplane industry, and scrapping all experimental development begun during the war.

"The argument that these sums are enough to 'keep the Services going' until a reorganisation of the Army and Navy takes place is so fallacious that it should controvert itself. The Army needs $31,000,000 for airplanes and engines alone. Without this equipment there is nothing to 'keep going,' because all combat machines in service now would be obsolete against a first-class Air Power. Just to have the officers and men is worse than a waste of Government money.

"If money were appropriated now for the purchase of equipment which will take about a year to build, then when the Air Services are consolidated, reorganised or left as they are, this country would at least have some protective aircraft.

"The whole situation is clearly an effort to force on the country a united Air Service. Whatever arguments may be made for and against a single independent Air Force, they should be free from appropriation coercion and rest solely on their own merits.

"America's 'splendid isolation,' viewed in the light of recent aeronautic achievements, soon will be only a memory. A country that is less than a day distant from Europe and Asia cannot well rely upon the Atlantic and Pacific oceans for protection in time of stress. No longer can the Congress of the United States ignore the fact that if we are to maintain our independence and position as a first-class nation we must have aircraft inferior to no other Government. If the predominating idea on Capitol Hill is to reduce this country to the level of China, or Korea, no fault can be found with the policy now being pursued—but the plan of spending one billion dollars, too late to be of use, rather than one hundred millions, when advantage may be taken of the vast expenditures for aviation already made, will appeal to few persons outside of the House of Representatives."

Demobbed Officers and the R.A.F. Reserve.

Sir,—As a Lieut-Observer with almost three years' service with the R.F.C. in France, I have been transferred to the unemployed list of the R.A.F. Can you please enlighten me as to what this will really mean in the future.

Does it mean that when the R.A.F. Territorial Force or the R.A.F. Reserve is formed that I shall be automatically transferred to one or other of those branches or will it be necessary to make application for it?

Within the next few days I am sailing to take up a civilian position in South America and as you may easily imagine it would be a source of the greatest satisfaction to me (and doubtless to hundreds of other ex-R.A.F. men) to feel that the old country had some direct claim on us in the event of any further wars or national emergencies.

I have just studied General Trenchard's outline of the future R.A.F. in THE AEROPLANE of a week or two ago, but his remarks seem only to apply to those still with the R.A.F. and not to those who have been demobilised and placed on the "Unemployed List."

Surbiton, 19/6/19. (Signed) LIEUT.-OBSERVER.

[Perhaps the Information Department of the Air Ministry can oblige with an announcement on this point.—ED.]

A Dangerous Practice.

The following letter has been received:—

Sir,—I am writing to you, as I consider that a note in your paper *re* the following might, in the future, save several really bad accidents.

On Saturday afternoon last a red-nosed Handley Page continually "got off" from the Cricklewood Aerodrome and laboured into the air over Golders Green.

This machine flew over the closely-packed streets and houses at a height of certainly not more than 200 feet—steering into the wind, which was approximately from the north.

It was perfectly natural for the machine to be low and to climb slowly, as it was obviously well loaded; but it was only natural to expect that in such cases the pilot would have kept to the edge of the "populated area" and thus within landing distance of the aerodrome or adjacent fields.

Having been flying for five years, I know to my cost the unhappy knack that even the best engines have of stopping at the most awkward times, and if this had happened on the occasions I speak of above the result would have been appalling.

No pilot could have had the least chance of landing successfully, or in any direction except that in which he was heading, and in all probability a machine of such calibre would have obliterated four or five of the closely-built houses that this locality is made up of.

While in no way blaming the H.P. Co.—who have an aerodrome and surroundings of ample size—I cannot help considering that the pilot was not paying sufficient attention to eventualities.

An accident of this nature is going to do immense damage to flying, and also to the companies who propose to licence aerodromes which are in proximity to dwelling-houses. Town Councils will not give their consent to this, however much it is urged that "previous accidents of this nature were only caused by other firms' carelessness"!

From my own point of view I have a house which seems to be directly in the "line of attack" of these machines, and I have at present no desire to see it, my wife and family, and my neighbours, gently cleared away by an H.P. which has had momentary trouble with its petrol supply or some other "trivial" detail.—"MAJOR."

Coming Events.

JULY.

Friday, July 18th.—43rd Squadron dinner.

Saturday, July 19th.—Martinsyde Recreation Club Sports at Woodbridge Road, Guildford.

Saturday, July 19th.—Victory Meeting at Hendon. Speed Contest for Victory Trophy.

Saturday, July 26th.—July Meeting at Hendon.

Saturday, July 26th.—The Airship Officers' Club Dinner at the Connaught Rooms.

AUGUST.

Friday, August 1st.—The Amsterdam Aircraft Exhibition opens.

Saturday, August 2nd, Sunday, August 3rd and Monday, August 4th.—Tenth London Aviation Meeting at Hendon.

Tuesday, August 5th.—Handley Page Social and Athletic Club's Sports. Starting at 12 midday at Cricklewood Lane.

Thursday, August 21st.—R.A.F. Annual Athletic Meeting at Stamford Bridge.

Sunday, August 24th to Sunday, August 31st.—The "Avenir's" Tour de France Aérien.

DATES TO BE ANNOUNCED LATER.

Hendon—Birmingham—Manchester Air Race.

Hendon—Paris—Hendon Air Race.

Hendon—Brighton—Hendon Air Race.

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THE RETURN FLIGHT OF R. 34.

H.M.A. R.34 left Mineola at 11.55 p.m. on July 9th (3.55 a.m., July 10th, Greenwich mean time) for England. The start was somewhat hurried owing to the approach of bad weather, and the ship left Mineola some hours earlier than was originally intended. The airship carried forty pounds of mails.

Some alterations were made in her crew. Lieut.-Commander Lansdowne was replaced by Lieut.-Col. Hemsley, U.S. Army, Aviation Department, and Sergts. Turner and Anders replaced Wireless Operator Edwards and the stowaway Ballantyne.

The original intention was that R.34 should land at East Fortune, but owing to bad weather the Air Ministry decided on July 12th that she would land at Pulham, Norfolk, where she eventually did land at 7.57 a.m. (6.57 a.m. G.M.T.) on July 13th. Her time was 75 hrs. 3 min., according to the ship's chronometer.

The ship was met by a motley crowd dressed in all the possible varieties of Air Service uniforms—and they are many. There were men in R.N.A.S. and R.F.C. and R.A.F. uniform, others in civilian clothes, and some partly in uniform and partly in mufti.

Hereafter follows the Air Ministry Communiqué recording the return voyage of H.M.A. R.34 from Mineola, L.I., U.S.A., to Pulham, Norfolk, England. The report is given verbatim, and any eccentricities in style or statement may be set down to the fact that it emanates from the Air Ministry after transcription from General Maitland's original :—

THE AIR MINISTRY COMMUNIQUE.

The Air Ministry state that the airship was first sighted on the north side of Pulham at 5.56 G.M.T., her position being about 15 miles away and her course almost due east. Turning south towards the Airship Station she circled over Pulham about 6.22, flying at 800 feet, landing safely at 6.56 G.M.T., exactly an hour after she was first sighted.

OFFICIAL LOG.

GENERAL MAITLAND'S STORY

The Air Ministry issued the following official log of the voyage an hour after the ship landed :—

It is a dark night and a gusty wind is blowing from the S.W., strength about 30 m.p.h. We steer straight for New York and stop as promised to fly over the city before heading out into the Atlantic. It was an extremely good "get-away" considering the gusty wind and difficult conditions generally. We find we have 4,600 gallons of petrol for the return journey.

New York at midnight looks wonderful from above. Miles and miles of tiny bright twinkly lights—a veritable fairyland. The searchlights at first make a very unsuccessful search for us, but finally get us fair and square. We are over Fifth Avenue. The "Times" Square and Broadway presents a remarkable sight. We distinctly see thousands of upturned faces in spite of the early hour, 1 a.m. of the morning, and the whole scene is lit by the gigantic electrical signs which seem to concentrate about this point—one in particular, the Overland Tower, illustrates the enormous importance of aerial advertisement. From 2,000 feet above we see its wheel revolving and the mist rising in a cloud behind it, presumably an illustration of its speed.

The air over New York feels very disturbed, partly owing to the approaching cyclone from the Great Lakes, of which we have already had warning, and partly also to the heat rising upwards from the city itself. The airship, however, rides out very steadily under the circumstances.

July 10th, Thursday, 1.10 a.m.—We head for home with 3,000 miles of sea between us and our Scottish base. The wind is now well behind and our speed makes good; it is estimated at 65 knots or nearly 74 miles per hour. Our weather at time of starting is decidedly favourable for a flight from America to England. There is a depression west of Newfoundland and then a large one centred to the north of Iceland; also an anticyclone over the East Atlantic and Great Britain. The inference from the above is that a strong south-west or west wind will prevail over the greater part of the Atlantic. We have got away on the outskirts of the depression which is centred west of Newfoundland, and are getting the full benefit of the 35-knot S.W. wind on its southerly side. At this speed we are travelling considerably faster than the depression which is probably moving eastward at about 35 m.p.h., and it may well be that we shall run right out of it by the time we reach mid-Atlantic. We then expect (it may be only a pious hope) to get into touch with the still bigger depression centred to the north of Iceland and benefit by the south-west wind which we ought to find on its southerly side.

2.17 a.m.—We are crossing the American coast with four out of our five engines running, the fifth engine resting. Some hot coffee from the Thermos flask presented us by our kind American friends is very nice and warming.

9.15 a.m.—We have already covered 430 miles from New York and are going strong. Our mails are now sorted, and this takes some time. We find we have quite a large collection of parcels and letters of all descriptions, including some for H.M. the King, the Foreign Office, Admiralty, Postmaster-General, and a large number of copies of the "Public Ledger" for the editor of the "Times." This journey we hope will prove the fastest newspaper delivery between New York and London yet accomplished, and will be the forerunner of regular interchange of mails between East and West—the Old World and the New.

10.45 a.m. G.M.T.—We are now making good 72 knots or 83 m.p.h. on four engines. The forward engine stopped. If all goes well Major



R.34 AT HOME.—The trans-Atlantic Airship Landing at Pulham. It may be noticed that her fabric looks as bulged and battered as that of the six-year-old "Hansa" Zeppelin, which was illustrated in this paper a year or more ago.

Scott will go straight for London, and we will see how long it takes us to cross the Atlantic from Broadway, New York, to Piccadilly Circus, London—from the heart of one capital to the heart of the other.

10.45 a.m.—Cooke asleep under the dining room table. (Note.—This may take our thoughts back to the days of our ancestors, but the cause of this slip and the position selected are from quite a different reason.)

12 noon.—Lunch. Cold Bologna sausage and pickles and stewed pine-apple, and a ration of rum. This latter was much appreciated, as the weather had turned much colder and lunch centred entirely. The conversation turned on the subject of obtaining secondary meteorological information in the Atlantic. Scott, Greenland, Luck, and Harris all agree that one good method of getting information at small cost would be to equip all cable repair ships with a meteorological observer and a suitable outfit of kites and instruments. These cable repair ships work in all parts of the world and are often at sea for days at a time.

Moreover, the cable routes are ready in every case on the shortest and most direct route between the countries they link up.

1.5 p.m.—We have averaged 56.3 knots per hour ever since leaving Broadway. Weather fine, visibility 15-20 miles. Wind 40 knots S.S.W., sea very rough. It is difficult from above to measure the height of waves, but it is easy to see that in a very heavy sea like this one surface ships would be having an extremely bad time. Up here we are as steady as a rock, and unless one looks out of the windows we would hardly realise we were travelling at all.

Lieut.-Col. Hemsley, U.S. Army, Aviation Dept., is steering and is taking opposite watch with Pritchard, while Lusk has relieved Greenland in the fore car, Corporal Burgess being on the elevators. We are in very good wireless communication with Sable Island, and many messages wishing us success are received from America and Canada. We send our grateful thanks to the U.S. Naval and Military Authorities for their very efficient and kind assistance in looking after the airship at Mineola during four days of difficult and unpleasant weather conditions.

4.50 p.m.—Position 42.15 N., 54 05 W., course 140 degrees steered, 110 degrees made good, 86 degrees true, 48 knots. We have covered 900 miles from New York in 16 hours, and are 1,850 miles from South Coast of Ireland, exactly one-third of the distance between the two countries.

Our petrol consumption works out at about 1 gallon an hour. Weather clear, sea deep blue; very good visibility, 35-40 miles according to the dip, and distance horizon tables at this height (1,500 feet) should be 45 miles. Cooke determined his position by observation on the sun and sea horizon. It is interesting to note that there were only two occasions when he was able to do this on the outward journey owing to clouds and fog.

6.15 p.m.—A five-masted schooner under full sail on starboard beam about five miles away was an interesting contrast between the old and the new—the sailing ship and the airship. We are now over the main east-bound summer route of steamers from New York to Queenstown. The ss. "Adriatic," due New York on 13th, should be somewhere near us, and we are on the look-out for her on the wireless. Getting much colder.

8 p.m.—Position 42.40 N., 50.30 W., making good 55 knots. Harris give most interesting explanation of the clouds formationed to the N. and S. of us, and compares the clouds as we see them with the illustrations in a different cloud text-book we have with us. It is now time for supper. Soft boiled eggs and cocoa, and we all discussed at great length our impressions of American men and American women. I wish our newly-made American friends could have heard the delightful things that were said about them. Pritchard goes to sleep under the dining-room table while the second watch comes in for their supper. This position under the dining-room table seems to be the most-sought-after point of vantage in the ship.

July 11th, Friday, 3.20 a.m.—Position 45.03 N., 42.57 W., estimated by observations on stars and sea horizon. Visibility good.

4.20 a.m.—The foremost of the two engines in aft car breaks down on connecting-rod fractures owing to bolts spearing, with the result that the crank-case gets badly notched and the engine is consequently quite beyond repair. Course making good 115 degrees or 87 degrees true. At 26 knots with forward and two wing engines. Weather clear, sea moderate.

6.40 a.m.—Altered course to N., 30 degrees E.; come down to 600 feet to get under clouds which are now appearing and threaten to block out all view of the sea completely. We now find by accurate measurements that below the clouds is a northerly wind, and above them at 3,000 feet the wind is from S.W. The reason for this is an interesting one. We are over the Gulf Stream on a north-easterly course. The air over this Gulf Stream is warmer than the air over the sea immediately to the north of it. This warm air rises and its place is naturally taken by the cold air from the north, resulting in a 12-knot convertional wind from north extending from the surface of the sea up to a height of about 2,000 feet. Having made this discovery we accordingly keep at 3,000 feet, when we have a steady wind from S.W.

8 a.m.—Cloud formations in so far as they indicate weather are like an open book profusely illustrated with a plot that changes all the time. On our port beam away to the N.W. we see the depression centred over Newfoundland written plainly in the sky in fantastic and streaky cirrus ventosus, a certain and sure indication of what is going on over there some hundreds of miles away.

9.15 a.m.—Clocks have now been put forward one hour.

10.30 a.m.—Scott and Harris are agreed that the wind is stronger in our favour the higher we go up, but in spite of that Scott decides to keep on a 3,000 ft. level to avoid necessity of losing gas from expansion which to-day is precious. To-morrow he can afford to go much higher, and the airship will be so much lighter on account of having burned another 24 hours' petrol.

12 noon.—Weather report from Air Ministry tells us of an anticyclone off S.W. of Ireland, and so we change course more to the north with a view to getting round into the westerly wind which we know must be blowing on the northerly side of it.

12.30 p.m.—Lunch. Mealtimes are always most welcome and give the more responsible members of the crew a much-needed interval. Our new gramophone is a vitally better instrument than the one we endured on the outward voyage, and as I was descending the ladder down into the fore car after lunch I just caught a glimpse of Luck and Harris doing quite a nice one-step together.

1.30 p.m.—Air Ministry sent a message to say that they had made provision to land us in Ireland if necessary, and that destroyers with steam up were available at Berehaven if required. We replied: "Propose to land at East Fortune. One engine completely broken down."

3.30 p.m.—Still at 3,000 feet in and out of the clouds at intervals. We have not seen the sea since 8.30 a.m. this morning; 1,600 revs., three engines, our speed 32 knots. Another weather report from London to say that the depression north of Iceland has moved easterly, and that as a result the wind is from south-west over North of Ireland and whole of Scotland. This strengthens Scott in his decision to give up going to London and going East Fortune instead. It is sad not to take in London on our return route, but with one engine lost and weather in South of England not very favourable the decision is a wise one.

4.30 p.m.—Scott brings ship down to try and see water and get an indication of our speed, but at 900 feet it is still very thick, so he abandons the attempt. In coming down from 3,800 ft. to 900 ft. we pass through no less than five distinct and separate cloud stratus. In these thick clouds (we have been in them now since 3.30 a.m. this morning) we have no means of telling our speed, as they extend right down to the water. We assume from general weather observations that the wind is with us, the worst condition we think fair to assume being no wind at all. There certainly ought not to be a head wind against us. There is no alternative but to keep pegging away through the clouds until other weather conditions appear.

4.45 p.m.—We appear above the clouds for a few blissful moments and see a beautiful cloud panorama. Range upon range of alternate white and slate coloured mountains with wide, deep valleys, and an occasional glimpse of bright blue sky immediately above. The glare is almost blinding, and we can only look at the sun for a moment or two at a time.

5 p.m.—We are back again in the clouds with no visibility. Picked up H.M.S. "Cumberland" on our Marconi Spark set. She gave her position, and when plotted on the chart Cooke thinks her to be almost due north of us, and from the strength of her signal she should be within 30 miles. Durrant tried to get her with our directional wireless, but without success.

7.5 p.m.—Passing through wet rain clouds. It has been raining very heavily since 5 o'clock. Scott goes up to 5,000 feet to get out of it, but with no success, and reduces height to 3,000 feet again. Very cold and dark. All windows and doors are shut.

7.35 p.m.—We ask H.M.S. "Cumberland" for a weather report. She replies giving her position and reporting wind at N.N.W., 18 m.p.h., overcast, passing showers, and clouds above 1,000 feet.

8.0 p.m.—Supper, and a very good one too. We are well equipped with little luxuries on this return voyage, having learnt a thing or two on the outward journey about what is necessary and what isn't.

8.30 p.m.—Still pouring with rain. Height 4,000 feet. The wind whistles round the forward car. Very dark and no visibility. Scott reduces height to 3,000 feet and an extraordinary sight suddenly presents itself beneath us. Thousands and thousands of little round clouds like tiny white puff balls packed closely together, with a blue sea just visible in between them, forming a layer of cloud between us and the sea. This cloud formation is called "ball cumulus."

8.45 p.m.—Dropped a calcium flare which floated away, burning brightly, straight astern, enabling Cooke to get our direction and a good idea of the speed at which we were travelling.

8.50 p.m.—Again thick clouds and heavy rain. Clifden Wireless Station sounds very loud and on the wireless, which showed we are getting nearer home, and Durrant has just succeeded in getting East Fortune 1,100 miles away. He could just faintly hear them say the words "Saturday evening."

9.15 p.m.—S.s. "Dominion" speaks us and gives her position and barometric readings. She reports us as being quite near her, though of course she cannot see us or even hear our engines owing to rain clouds.

12 midnight.—Still pouring with rain. Dropped flare; drift estimated as 10 degrees to southward. As we lay in our hammocks we listened to the rain beating pitilessly down on the outer cover of our trusty ship of the air, and our feelings, despite the weather, are those of complete confidence and security.

July 12th, Saturday, 12.45 a.m.—Weather clearing. Sea visible at 2,500 feet.

3.0 a.m.—Magnificent sunrise. The sun appeared above the clouds in a blaze of clouds, much impressing those of the crew who happened to be on duty at the time.

6.0 a.m.—Position 52.20 N., 22.35 W., 760 miles from East Fortune. Running on three engines, aft engine having broken valves. Storings changed. Air speed 32 knots. It is interesting to note that Cooke has not been able to get a single observation for plotting his position for the last 24 hours, and it is quite fair to assume that yesterday's weather with S.W. wind is quite an average day in mid-Atlantic. Clouds beneath



THE CREW OF R.34.—Major Scott, the Commanding Officer, is the central figure. The variety of R.A.F. and R.N.A.S. Uniforms is noteworthy.

us look just like a gigantic, soft, springy, fleecy white feather bed, and they fill one with a strange, irresistible feeling of wishing to jump down into them, probably a similar sort of feeling which some people feel when they are climbing a steep mountain face.

8.0 a.m.—H.M.S. "Tiger" gives her positon and reports wind N.W.-N., 15-20 m.p.h.; sky overcast with low stratus, visibility five miles. Breakfast this morning is quite a festive meal, as we reckoned it should be our last breakfast on board, and we are not quite so economical with our issues as usual. Message received from Mr. G. Constantinesco, the brilliant Rumanian inventor of Sonic transmission, welcoming us back to England.

10.55 a.m.—Height 5,000 feet. We are now over big gap in the clouds about 26 miles across, and will soon be in the clouds again. Clear blue sky and sea. No signs of a ship Making good 35 knots, which should enable us to make East Fortune at daybreak to-morrow.

11.25 a.m.—Durrant succeeds in getting a wireless out on Clifden with directional finding apparatus. Weather has turned very cold.

12 noon.—Lunch. We are all rather anxious to get to our journey's end. Perhaps it is the strain that is beginning to tell, and it is now rather disappointing to find that a N.E. wind is preventing us from making more than 28 knots. We shall be breakfasting in the air again to-morrow after all.

12.30 p.m.—The clouds have all cleared away, but only temporarily I feel certain. Height 5,000 feet, perfectly clear blue sky and deep blue sea. Visibility is at its maximum, and at this height, according to our text-books, we can see 81 miles. This means that we can see 162 miles from right forward to right aft, and the area we can see over works out at 19,200 square miles, and not a ship to be seen. My ambition to see a steamer at close quarters in this gigantic Atlantic will, I am afraid, never be realised.

3.50 p.m.—Clouds rolling up again. Some very fine examples of cumulus major are to be seen. One particularly interesting cloud formation on our port beam takes the eye. It is a huge vertical column of cloud joining a lower stratus of cloud to a higher stratus, and is about 500 feet high. It is carried by an upturned vertical current.

5.30 p.m.—Great excitement Two trawlers are sighted on our starboard beam. They look very tiny. We try and speak the near one with an Aldis lamp, but as she has no wireless we cannot get reply. We are now down to 3,000 feet, and the difference in temperature between this height and 5,000 feet is most marked, 8 degs. F. Making slightly better headway at this height, 32 knots. Wind N.N.W., 25 degs. drift, Cooke considers that an accuracy of more than 20 miles in estimating a position in mid-Atlantic cannot be guaranteed in an airship even in clear weather. Directional wireless, however, should, when perfected, make this much more accurate.

6.50 p.m.—We ran into a sudden squall from N.W. Low black clouds and a rough, confused sea all in the space of a few minutes. Ship very steady; 1,600 revs on four engines.

6.57 p.m.—Passed out of squall. Got Clifden on directional wireless. 96 degs. M.G., 75 true. We are not very far from the coast of Ireland.

7.15 p.m.—Another squall, but not a big one.

7.25 p.m.—Land in sight on our starboard bow. Great enthusiasm on board. First spotted by Lieut.-Col. Hemsley, U.S. Army Aviation Dept., seven to ten miles away. Scott alters course to make the land. Cooke gets the large chart of the west coast of Ireland, and there is keen competition to see who will fix on the exact spot when we cross the coast. Two little islands lay right ahead of us. With our glasses we see the wireless mast of Clifden. These two islands are almost certainly the same two little islands that appeared out of the fog to the delighted gaze of Alcock and Brown at the conclusion of their historical flight. A strange and happy coincidence

8.0 p.m.—At 8 o'clock precisely we crossed the coast-line a little to the north of Clifden, County Mayo, and our time from crossing the American coast at Long Island to crossing the Irish coast is exactly 61 hours 33 minutes.

8.15 p.m.—We head right in over the mountains, which at this spot are 2,900 feet high. What a wild and rugged coast-line! A magnificent cloud panorama now appears. Huge white cumulus clouds of weird and fantastic shapes surround us on all sides, and over the top peep out the tops of the mountains, while through the gaps we see lakes, harbours, islands, and green fields—quite the prettiest picture we have seen on the entire voyage. It seems as if the elements have reserved their best cloud shapes to welcome us as we cross over British soil.

9.10 p.m.—Two-seater aeroplane from neighbourhood of Castlebar flying past us and under us waving a welcome. We are now well away from the mountains over the flat country inland, heading right across to Belfast and finally East Fortune. Height 2,000 feet, making good 38 knots. Bright full moon.

Crew of R.34 on return journey:—Officers: Major G. H. Scott, A.F.C., captain; G. S. Greenland, first officer; Sec. Lt. H. F. Luck, second officer; and Lieut. J. D. Shotter, engineer officer (ship's officer); also Brig.-Gen. E. P. Maitland, C.M.G., D.S.O., representing the Air Ministry; Major J. E. M. Pritchard, O.B.E., Admiralty; Lieut.-Col. W. H. Hemsley, U.S. Army Aviation Dept.; Major G. G. H. Cooke, D.S.C., navigating officer; Lieut Guy Harris, meteorological officer; 2/Lt. R. D. Durrant, wireless officer; W. B. Mayes, coxswain; H. J. Robinson, flt. serjeant., coxswain; H. M. Watson, serjeant; R. T. Burgess, corporal; F Smith, corporal; J. Forteath, leading aircraftsman; F Borowdie, A.M., 1st Grade (last five riggers)

Engineers M. E. Gent, Flt.Sgt.; E. Ripley, Flt.Sgt.; F. A. Scull, Flt.-Sgt.; J. Shirlwell, Sgt.; B. Evenden, Sgt.; P. Cross, Cpl.; G. Gray, Cpl.; G. Graham, 1st A.M., F. Mort, 1st A.M.; J. Hortheast, 1st A.M.; R Parker, 1st A.M.; E. E. Turner, Flt.-Sgt.; W. Angers, Flt.Sgt.; H Powell, Wireless Cpl.

As things have turned out (though one could have foreseen this) it would have been wiser if we had kept a more northerly course after getting away from helpful influence of the Newfoundland depression. We would then have been helped by this N.N.W. wind instead of being hindered by it, and might have saved some time. Undoubtedly the captains of the big aerial liners of the future will become wiry and cunning masters of the art of selecting the right way and the right height, and often by making wide detours will by means of their air knowledge alone save many hours on long sea and land passages.

11.20 p.m.—Message from Air Ministry to say we are to land at Pulham. We ask if we may land at East Fortune, as that is our original objective and the weather is reported good for landing. The reply is to land at Pulham, so we assume there is some special reason and we alter our course accordingly.

Sunday, July 13th, 7 a.m.—Scott increases height to 5,000 feet, and course is steered over Isle of Man and Liverpool 2.45 a.m., Derby 3.55 a.m., and Nottingham 4.15 a.m., direct to Pulham.

5.0 a.m.—A wireless message is received from His Majesty the King: "I congratulate you all on your safe return home after completion of your memorable and indeed unique trans-Atlantic voyage."—(signed) G. R. Wireless messages of congratulations were also received from Major-Gen. Seely, Under Secretary of State for Air; Major-Gen. Sir H. M. Trenchard, Chief of Air Staff; Major-Gen. Sir F. H. Sykes, Controller-General of Civil Aviation, and Sir A. Robinson, Secretary of the Air Council.

6.20 a.m.—Over Pulham Airship Station, and 6.57 landed. Total time of return journey from Long Island to Pulham, Norfolk, 75 hours 3 minutes, or 3 days 3 hours 3 minutes

The mail safely brought by the R.34 from America was in a crash on Sunday, July 13th, whilst being conveyed to London in a motor-car. The car contained, among others, Lieut.-Commander Ramsey, of the U.S.N.A.S. It collided with a horse and trap at the village of Capel St. Mary, near Ipswich, killing the horse, and injuring all the travellers except Lt.-Com. Ramsey.

General Maitland, Major Scott, and Lieut. Shotter arrived in London during the morning of July 14th, and were met at Liverpool Street Station by representatives of the Air Ministry.

Mrs. Winston Churchill was present with Lady Drogheda. The War Minister was represented by Colonel Scott, General Sykes by General Swinton, and General Trenchard by Colonel Chamier. Among others on the platform were General Masterman (chief representative of the Airship Service), Commander Perrin (secretary of the Royal Aero Club), Commander Ramsey (of the U.S.A. Navy), and a number of R.A.F. officers who were connected with the arrangements for the flight.

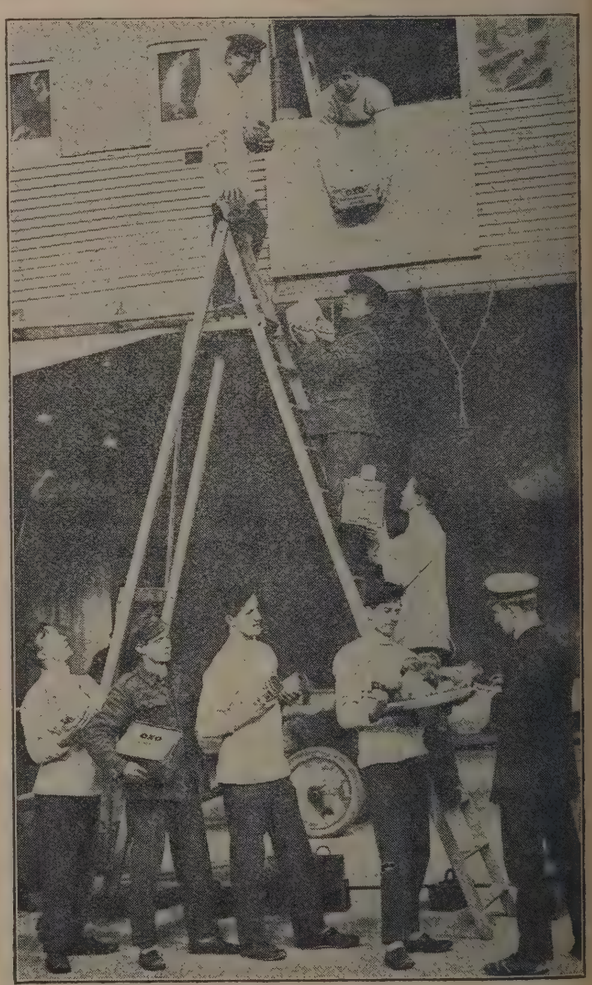
Afterwards General Maitland and Major Scott were entertained at luncheon at the House of Commons by General Seely.

SLEEPY AMERICA.

According to the New York correspondent of the "Daily Telegraph," "there is a summer rush of patriots in the correspondence columns of the American newspapers, protesting against what is called by most of them the 'supineness of the naval authorities in allowing other countries to eclipse the United States in regard to aviation.'

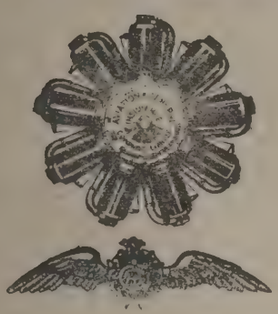
"After allowing for the flying-boat's success in reaching Europe *via* the Azores and Portugal, it is declared that we here are lagging behind England very seriously, and, though the aeroplane is an American invention, we permit you to ride over us roughshod.

"The British proposals to establish lines of commerce and passenger-carrying dirigibles are studied here, and the 'New York Times,' which is not a sensational paper, comments to-day: 'John Bull is hard-headed and business-like. He is set on being master of the air. What is Uncle Sam going to do about it?'"



VICTUALLING R.34.—The scene and the variety of comestibles somehow remind one of Chu-Chin-Chow, and the Steward's song of "Sardines stewed in honey, Also fricasseed sturgeon roe,"—or words to that effect

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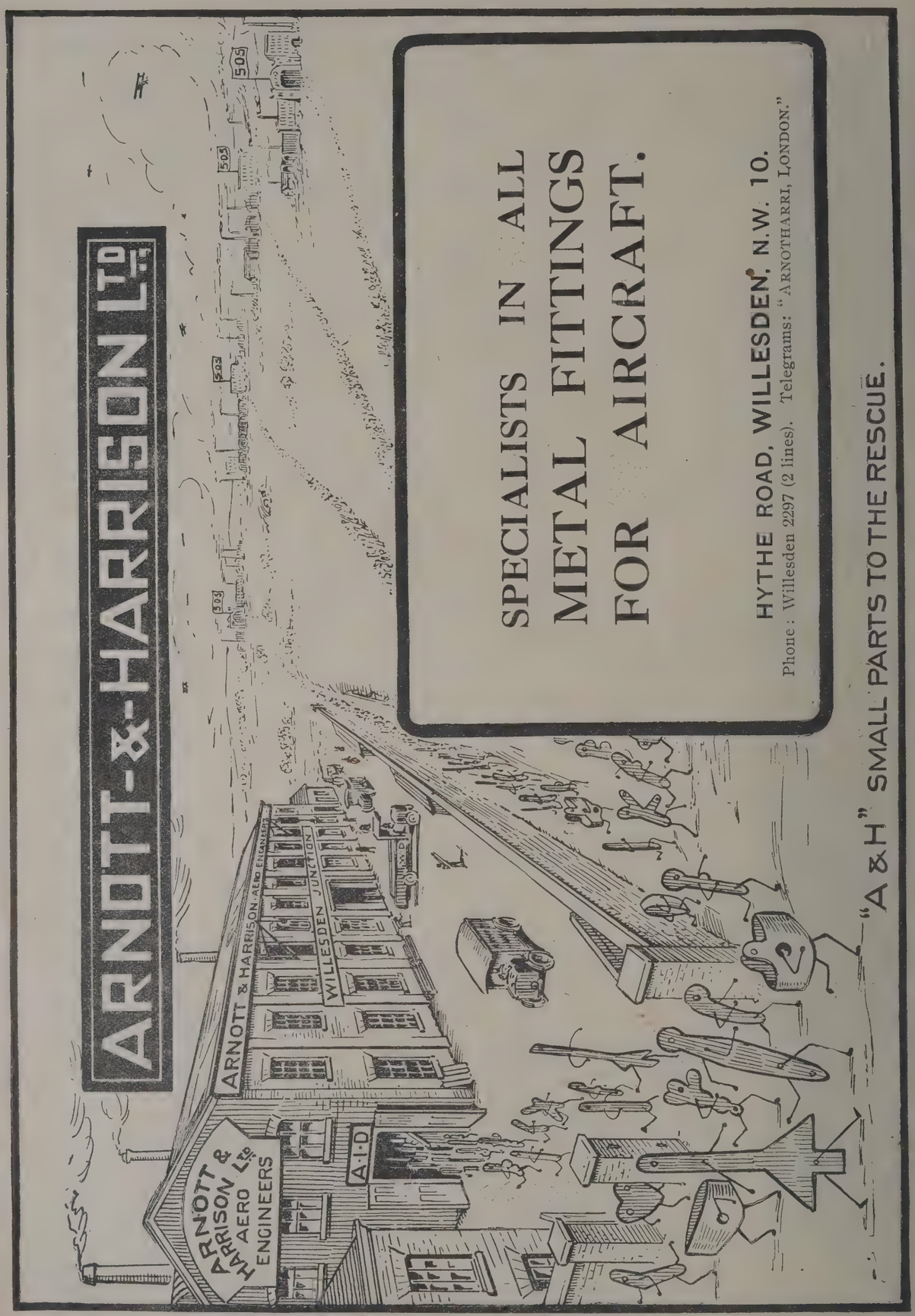
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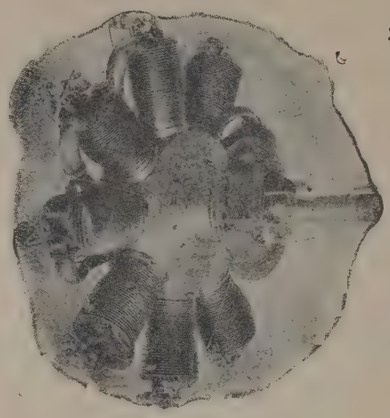
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THE WEEKLY COMMENTARY.

A contributor, "Strasbourg," whose articles on the "Influence of Official Control on Aeroplane Design" attracted considerable attention early in this year, contributes to this number a rather depressing article concerning the probable effect of continued official control upon the future prospects of aeronautical engineers in this country.

It seems fairly clear either that "Strasbourg" has suffered somewhat at the hands of more than one Government, or that he possesses the Irish characteristic of being always "agin the Government."

At the same time his advice to the younger generation of aeronautical engineers to fill in the interval between the present time and that time to come when they can be reabsorbed into the aeronautical industry by widening their experience of general engineering is very sound.

The more recent machines designed and built by the British and Aeroplane Company, Ltd., of Bristol, are the subject of this week's instalment of "Modern British Aeroplanes."

Mr. C. W. Tinson replies briefly to Mr. J. D. North's criticism of the articles on "Longitudinal Stability" (p. 248).

THE AERONAUTICAL ENGINEER AND THE FUTURE.

By "STRASBOURG."

Aeronautical engineering is the most recent of the branches of the engineering profession.

Six years ago the aeronautical engineers of Britain might almost have been counted on the fingers—if one confined oneself to those whose training gave them a right to be called engineers, and whose achievements gave them a place in the world of aeronautics.

Wild and woolly inventors there were, of course—numberless as the sands of the seashore—and many of them would have described themselves as being both aeronautical and engineers (of sorts), presumably basing their claims to the substantive part of the title on the ground that an engineer was merely an ingenious person.

But the real aeronautical engineers of those early days were all enthusiasts, working for the love of the craft and for no visible material reward. Many of them are still with us, and many of them by the unlikeliest of chances have reaped a reasonable and richly deserved reward for the labours and struggles of those early and very lean years. Some of them have not yet received any other reward than that of seeing some of their dreams realised, and some have passed beyond the hope of earthly reward.

But there are now in this country some thousands of people, all more or less rightly to be considered as engineers, who either through service with one or other of varied forms which His Majesty's Aerial Forces have assumed, or by virtue of a connection with the war-expanded Aircraft Industry, can claim also the prefix "aeronautical."

The war-time activities of the Air Force, and with them those of the Aeroplane Industry, have ceased—for a time at least.

The Commercial Aviation Industry of the future is not, as yet. Its destinies lie largely in the hands of a Government Department—a department closely allied with that Bolo House which is, and largely deserves to be, a by-word for all that is inconsequent and impedant—though in places pedantic—in a system of government notorious for its incapacity efficiently to perform any function.

This department is without funds—£500,000 per annum is practically nothing wherewith to lay the foundations of Civil Aerial Transport in the British Empire—and apparently without power, since apparently the least word of the most incompetent jackass in office of the Military Branch of the Air Services suffices to immobilise it.

In Britain it has ever been thus. The public supply of gas, of electricity for power and lighting, the installation of electrical tramways, and the development of road motor transport have all in their turn been subject at their birth to hampering restrictions imposed by a Government Department improvised to that end, ostensibly for the protection of a public too stupid to take care of itself, and in practice to retard in every possible way those developments of applied science which pass beyond the comprehension of the average member of Parliament.

Thus it occurs that the British public services—gas, water, electricity, telephones, telegrams, and the like—are to some very considerable extent the laughing-stock of the engineering world, and are only saved from utter futility by that genius for attaining, by hook or by crook, some sort of useful result under the most unpromising conditions which is now and ever has been the distinguishing feature of the British professional classes, and upon which alone, despite all the efforts of politicians, lawyers, and the trading class generally (politicians and lawyers being merely traders in credulity), the prosperity and power of the British Empire depends.

As it has been in the past so is it likely to be in the future. It is unthinkable—we being by our works proclaimed a nation of fools—that we should depart from our foolishness in this one matter alone, and it must be

accepted that the progress of commercial aviation in this country will be retarded by official action and regulation based upon every possible plea as to the safety of the public, the rights of property, the interests of local authorities, *et hoc genus omne,* and that its future will depend entirely upon the efforts that are made by those who may properly be classed as aeronautical engineers to overcome the ill effect of these artificial handicaps to the growth of what is destined to become one of the main channels of the civilisation of the future.

The conditions under which British engineers have had to do their work, particularly in those branches which have been more directly subjected to Government interference, have had their indirect advantages. The engineer who can successfully contend with the British Board of Trade, Local Government Board, or the like, and, in spite of their efforts, successfully operate a gas, electricity, tramway, or railway undertaking in this country, can generally rise to eminence and affluence if he betake himself to some region where enterprise is less subject to official obstruction.

This condition will almost certainly recur in the case of Aeronautical Engineering, but it is by no means desirable for the future of the British Industry that any very large proportion of the younger and more enterprising of our aeronautical engineers should be forced out of the country in a search for a bare subsistence.

At the moment the professional prospects of the large number of young men who, during the past four or five years, have been trained either in the Services or out of it to the practice of engineering as it applies to aeronautics are by no means bright.

The commercial side of the Aircraft Industry has no room for them. If they really have the makings of true engineers in them, the Royal Air Force is totally incapable of using them, and, anyhow, does not like that particular brand of human being.

The man who really succeeds as an engineer is usually deeply interested in his profession, and such an interest is often just as incompatible with the cultivation of those social graces and that careful regard for ceremonial which it is understood is now to be cultivated by the Royal Air Force, as it was with that general lack of any order which has characterised that Force in the past.

Therefore one is forced to conclude that there is not at this time and in this country any opening within the Aircraft Industry for a large number of men who have a fairly extensive training which would fit them for such work.

The Commercial Aircraft Industry of the future will need these men, or others to take their place, but it cannot at present support them.

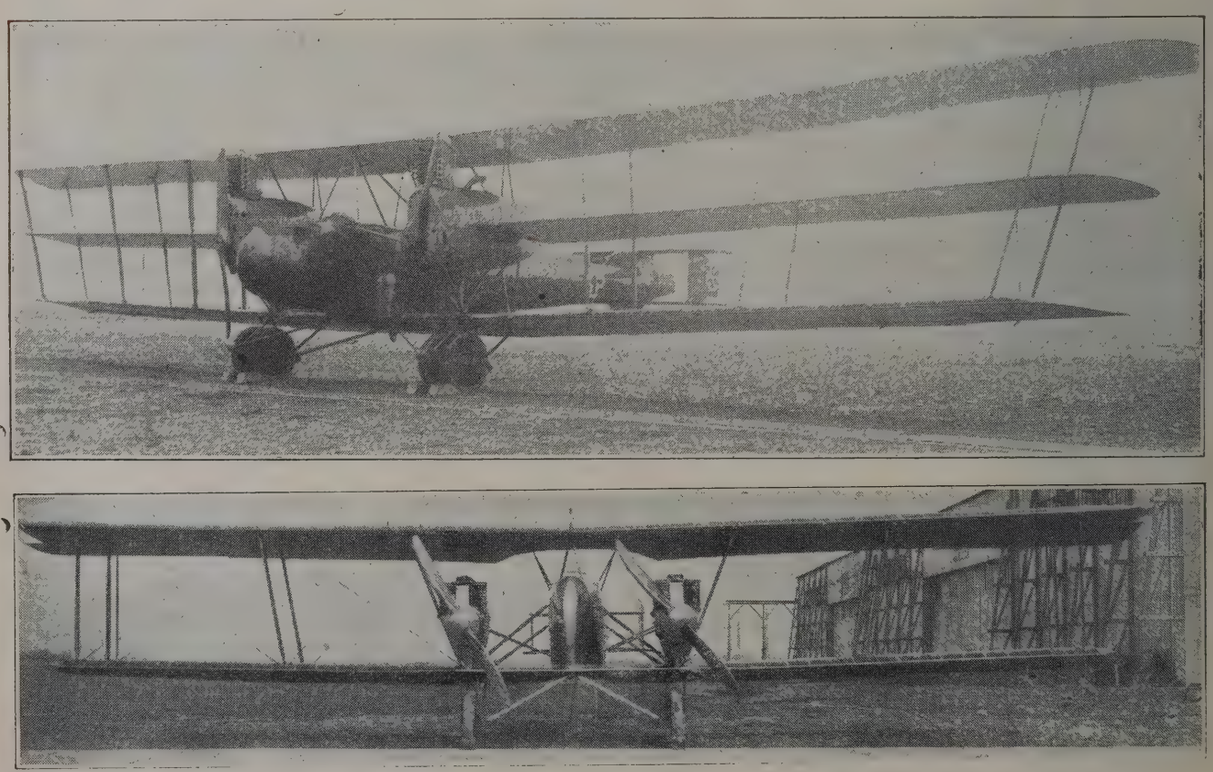
There appears to be but one hope.

Aeronautical Engineering is but one specialised branch of engineering generally, and no man is fitted for a responsible position in any branch of engineering whose practical knowledge is entirely confined to that special branch.

Most of the younger aeronautical engineers are purely war-time forced products of an intensive training system which has confined itself to within very narrow limits.

The general engineering industry of the world is just at the moment slack, but there are unlimited arrears of work to be made up within the next few years, and there will be room therein for every man with any engineering ability who is not afraid of work.

Therefore one would unhesitatingly advise all those of the class referred to above, who wish to play a part in the future of British Aeronautical Engineering, but who cannot find places for themselves in that profession at the moment, to seek for themselves work in any branch of mechanical engineering, particularly in the realm of structural and general transport work, and to look upon such work, not as a temporary break in their aeronautical careers, but as a part of that wider training which is really the true distinction between an engineer and an educated tradesman



TWO MODERN GERMAN MACHINES.—Top: An L.V.G. twin-engined Triplane. Below: An Aviatik with two 230 h.p. Berz engines. The general "cleaning up" of the lines of these machines as compared with the early Gothas and Friedrichshafens is notable.


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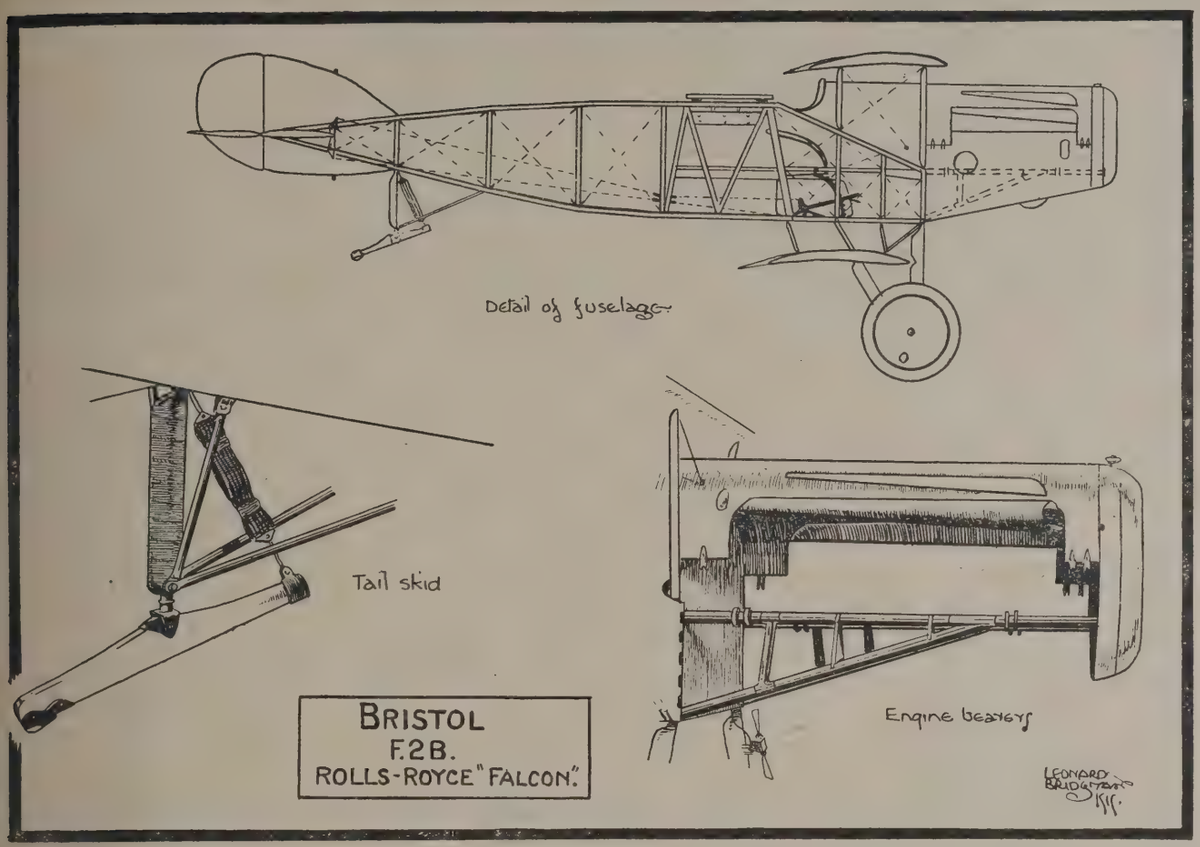
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MODERN BRITISH AEROPLANES.

VIII.—The British and Colonial Aeroplane Co., Ltd.



Founded in 1910 by the enterprise of the late Sir George White, the names of the British and Colonial Aeroplane Co., Ltd., and of their products, the "Bristol" aeroplanes, are indissolubly connected with the development of the British Aeroplane Industry.

Many of the finest of the early British pilots learnt to fly upon Bristol aeroplanes, and the firm has always been noted for the excellence of their workmanship.

At the beginning of the war the Bristol "Bullet" was one of the most serviceable of the small high-speed single-seaters in the Allied Air Services, and the succeeding machines of that mark have signally upheld the firm's reputation

During the whole period of hostilities the design work of the firm has been in the charge of Capt. F. S. Barnwell, R.A.F.

The following illustrations and descriptions relate to those of the firm's products which have made their appearance since the commencement of hostilities.

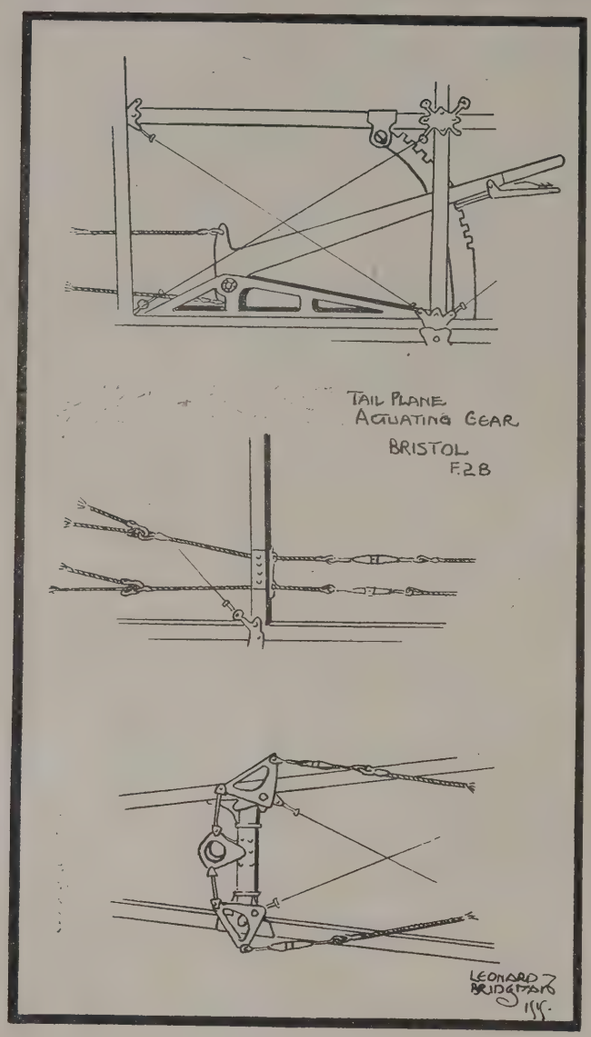
Illustrations of nearly all these machines have appeared in THE AEROPLANE quite recently, and in some cases—as in that of the type F.1 Scout—no new pictures are available.

THE BRISTOL F.2B. BIPLANE.

The Bristol F.2B. biplane, more commonly known as the Bristol "Fighter," was designed as a fighter and reconnaissance two-seater biplane. The fuselage is square section and tapers to a horizontal knife edge aft. A Rolls-Royce "Falcon" engine is carried in the nose of the machine on steel tube engine bearers, with the radiator in front. Metal cowling covers the front of the fuselage as far back as the front top and bottom centre section struts, and the top of the fuselage back to the pilot's seat. The fuselage is slung midway between the planes, there being both top and bottom centre-sections.



A Modified Bristol Fighter fitted with enclosed Passenger Cabin.



The angle of incidence of the tail plane can be altered from the pilot's seat to offset varying weights carried. Partial dual control is fitted, the control column being duplicated in the observer's cockpit, but for the rudder control instead of the rudder bar two hand-grips are fitted to the rudder control wires which pass through the observer's cockpit.

The armament consists of one fixed Vickers gun inside the cowling, firing through the airscrew, and a Scarff mounting round the observer's cockpit which is capable of carrying either the single or twin Lewis guns. The 200-h.p. Sunbeam "Arab" and the 200-h.p. Hispano-Suiza engines have been fitted and used on active service in substitution for the 250-h.p. Rolls-Royce "Falcon."

SPECIFICATION.

Type of machine—Two-seater Biplane.
Name or type No. of machine—F.2b.
Purpose for which intended—Fighting and Reconnaissance.
Span—39 ft. 3 in.
Gap—5 ft. 5 in.
Overall length—25 ft. 9 in.
Maximum height—10 ft. 1 in.
Chord—5 ft. 6 in.
Total surface of wings—405 sq. ft.
Total area of tail—22.2 sq. ft.
Area of elevators—23.2 sq. ft.
Area of rudder—7.2 sq. ft.
Area of fin—10.7 sq. ft.
Engine type and h.p.—Rolls-Royce Falcon III, 260 h.p.

Airscrew	9 ft. 8 in. diam.; 9 ft. 4 in. pitch; 1,220 r.p.m.
Weight of machine empty	1,750 lbs.
Load per sq. ft.	6.92 lbs.
Weight per h.p.	10.6 lbs.
Petrol tank capacity	45 gallons.
Oil tank capacity	4 gallons.
PERFORMANCE—	
Speed low down	125 m.p.h.
Speed at 5,000 feet	122 m.p.h.
Speed at 10,000 feet	113 m.p.h.
Landing speed	48 m.p.h.
Climb—	
To 5,000 feet	5 minutes.
To 10,000 feet	11.5 minutes.
To 15,000 feet	21.5 minutes.
Disposable load apart from fuel	630 lbs.
Total weight of machine loaded	2,800 lbs.

THE BRISTOL MONOPLANE.

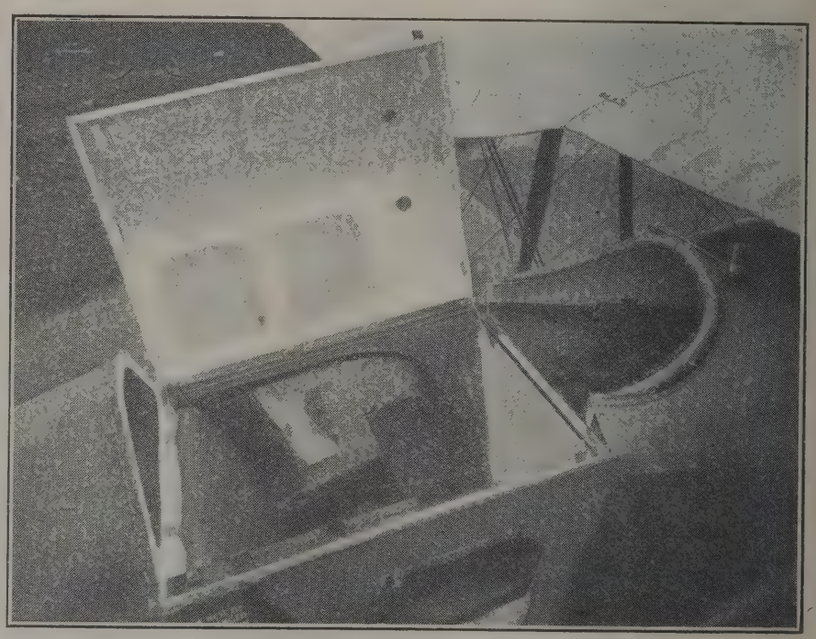
Contrary to the usual run of single-seater fighting machines, the majority of which pertain to the biplane breed, the British and Colonial Aeroplane Co., designed a monoplane which possessed a very good all-round performance, and which was used on active service in the Eastern theatre of war with great success.

The fuselage is of circular section, the shape of the cowling being preserved down to the tail plane by fairing composed of formers and laths covered with fabric. A 110-h.p. Le Rhône forms the power unit and a large circular spinner is fixed to the propeller.

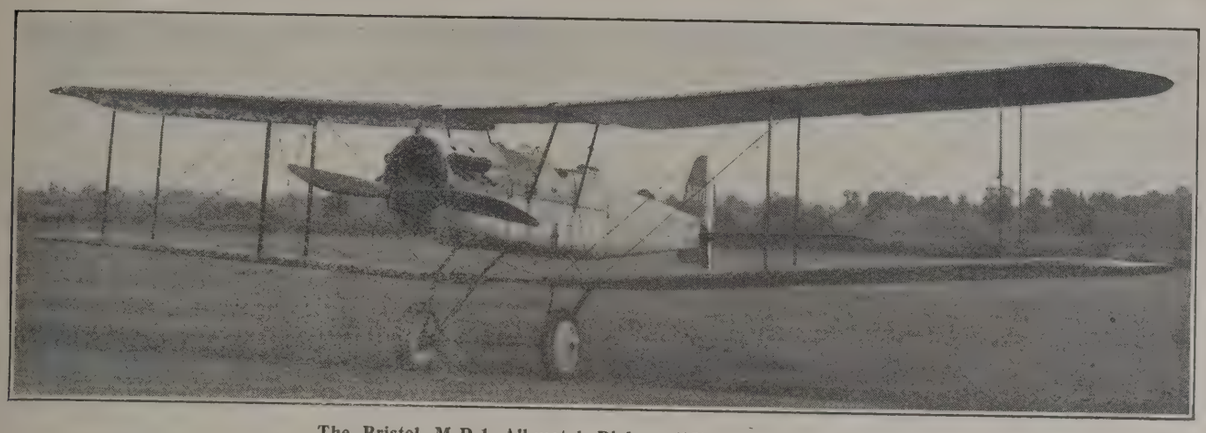
The armament consists of one fixed Vickers gun firing through the airscrew.

SPECIFICATION.

Type of machine	Single-seater Monoplane.
Name or type No. of machine	Bristol Monoplane.
Purpose for which intended	Fighting.
Span	30 ft. 9 in.
Overall length	20 ft. 4 in.
Maximum height	8 ft.
Chord	5 ft. 11 in.
Total surface of wings	145 sq. ft.
Total area of tail	20 sq. ft.
Area of elevators	15 sq. ft.
Area of rudder	4.5 sq. ft.
Area of fin	5 sq. ft.
Engine type and h.p.	110-h.p. Le Rhône.
Airscrew	8 ft. 6 in. diam.; 8 ft. 11 in. pitch; 1,350 r.p.m.
Weight of machine empty	850 lbs.
Load per sq. ft.	8.9 lbs.
Weight per h.p.	10.8 lbs.
Petrol tank capacity	20 gallons.
Oil tank capacity	5 gallons.
PERFORMANCE—	
Speed low down	130 m.p.h.



The Cabin of the "Limousine" Bristol Fighter.



The Bristol M.R.1 All-metal Biplane (170 h.p. Hispano-Suiza engine).

Speed at 5,000 feet	127 m.p.h.
Speed at 10,000 feet	117 m.p.h.
Landing speed	49 m.p.h.
Climb—	
To 5,000 feet	3.5 minutes.
To 10,000 feet	9.0 minutes.
To 15,000 feet	19.0 minutes.
Disposable load apart from fuel	260 lbs.
Total weight of machine loaded	1,300 lbs.

THE BRISTOL ALL-METAL M.R.1. BIPLANE.

The Bristol all-metal biplane is more or less an all-metal Bristol "Fighter" with sundry modifications and was designed primarily for use in countries where extremes of heat and cold might have a detrimental effect on woodwork.

Metal has entirely replaced wood in the construction, and the fuselage being constructed of aluminium and steel can be easily dismantled for transport and storage purposes. The wings, which are unstaggered are of all-steel construction. The fuselage is slung between the planes, as in the Bristol "Fighter," but the lower centre section is completely cut away, leaving the two main spar tubes, to which are attached the two lower centre section struts.

SPECIFICATION.

Type of machine	Two-seater Biplane.
Name or type No. of machine	All-Metal M.R.I.
Purpose for which intended	Fighting and Reconnaissance.
Span	42 ft. 2 in.
Gap	5 ft. 11 in.
Overall length	27 ft.
Maximum height	10 ft. 3 in.
Chord	6 ft.
Total surface of wings	458 sq. ft.
Total area of tail	27.8 sq. ft.
Area of elevators	30 sq. ft.
Area of rudder	8.25 sq. ft.
Area of fin	7.8 sq. ft.
Engine type and h.p.	170-h.p. Wolseley "Viper,"
Airscrew	8 ft. 10 in. diam.; 5 ft. 7 in. pitch; 1,700 r.p.m.
Weight of machine empty	1,700 lbs.
Load per sq. ft.	6.13 lbs.
Weight per h.p.	16.5 lbs.
Petrol tank capacity	50 gallons.
Oil tank capacity	5 gallons.
PERFORMANCE—	
Speed low down	110 m.p.h.
Speed at 5,000 feet	106 m.p.h.
Speed at 10,000 feet	98 m.p.h.
Landing speed	47 m.p.h.
Climb—	
To 5,000 feet	8 minutes.
To 10,000 feet	20 minutes.
Disposable load apart from fuel	630 lbs.
Total weight of machine loaded	2,810 lbs.

THE BRISTOL TRIPLANE "BRAEMAR" MARK II.

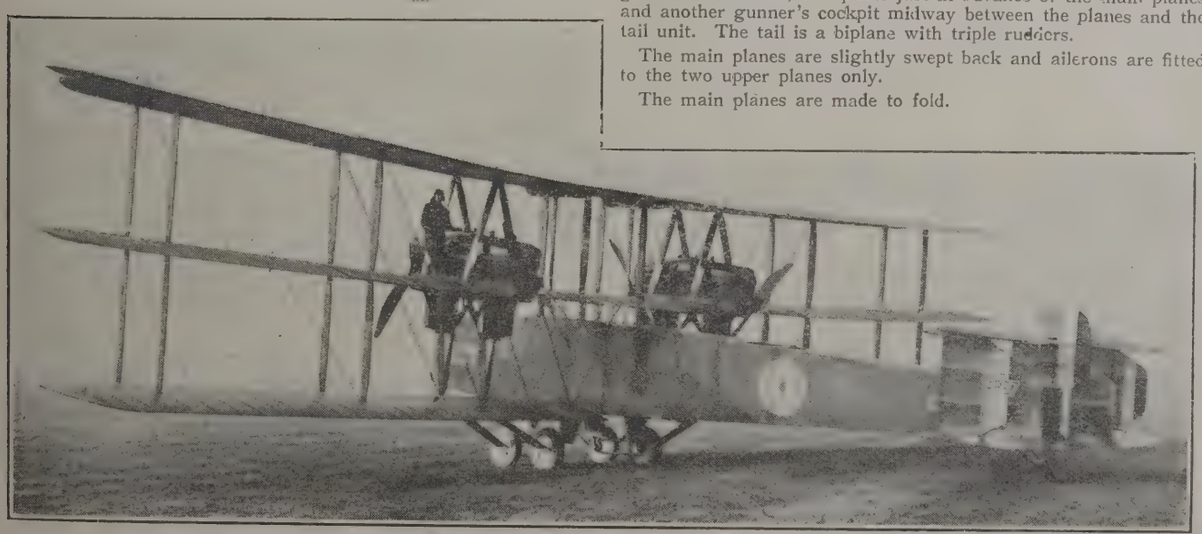
The Bristol "Braemar" was originally designed as a long-distance bomber, but owing to the Armistice coming when it did the machine was never used on active service. It is now being slightly modified to do duty as a passenger-carrier and commercial machine.

It is a four-engined triplane with a single fuselage and with the four engines fixed in pairs tandem-wise driving two tractors and two pushers on either side of the fuselage.

In its original form the fuselage had accommodation for one gunner in the nose, two pilots just in advance of the main planes and another gunner's cockpit midway between the planes and the tail unit. The tail is a biplane with triple rudders.

The main planes are slightly swept back and ailerons are fitted to the two upper planes only.

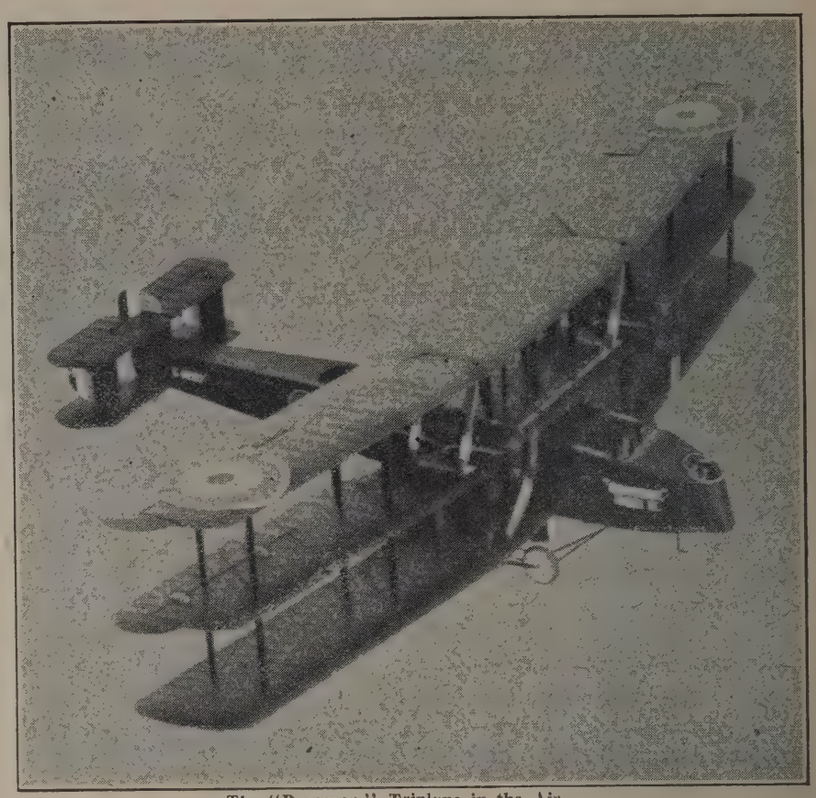
The main planes are made to fold.



Three-quarter Rear View of the Bristol "Braemar" Triplane (four 400 h.p. Liberty engines).

SPECIFICATION.

Type of machine—Four-engined Triplane.
Name or type No. of machine—"Braemar" Mark II.
Purpose for which intended—Bomber or Passenger-carrier.
Span—Top, 81 ft. 8 in.; centre, 81 ft. 8 in.; bottom, 78 ft. 3 in.
Gap—7 ft. 2⅛ in.
Overall length—51 ft. 6 in
Maximum height—20 ft. 8 in.
Chord—8 ft. 6 in.
Total surface of wings—1,905 sq. ft.
Total area of tail—Top, 51.5 sq. ft.; bottom, 45 sq. ft.
Area of elevators—Top, 42.5 sq. ft.; bottom, 42.5 sq. ft.
Area of rudder—25 sq. ft.
Area of fin—28.2 sq. ft.
Engine type and h.p.—Four Liberty engines. 1,640 h.p. (total).
Airscrew—Front (two), 10 ft. 2 in. diam.; 6 ft. 11 in. pitch; rear (two), 9 ft. 2 in. diam.; 7 ft. 5 in. pitch; 1,750 r.p.m.
Weight of machine empty—10,650 lbs.
Load per sq. ft.—8.6 lbs.
Weight per h.p.—10 lbs.
Petrol tank capacity—450 gallons.
Oil tank capacity—40 gallons.
Performance—
Speed low down—125 m.p.h.
Speed at 5,000 feet—122 m.p.h.
Speed at 10,000 ft.—113 m.p.h.
Landing speed—55 m.p.h.
Climb—
To 5,000 ft.—6 minutes.
To 10,000 feet—13 minutes.
Disposable load apart from fuel—1,940 lbs.
Total weight of machine loaded—16,500 lbs.



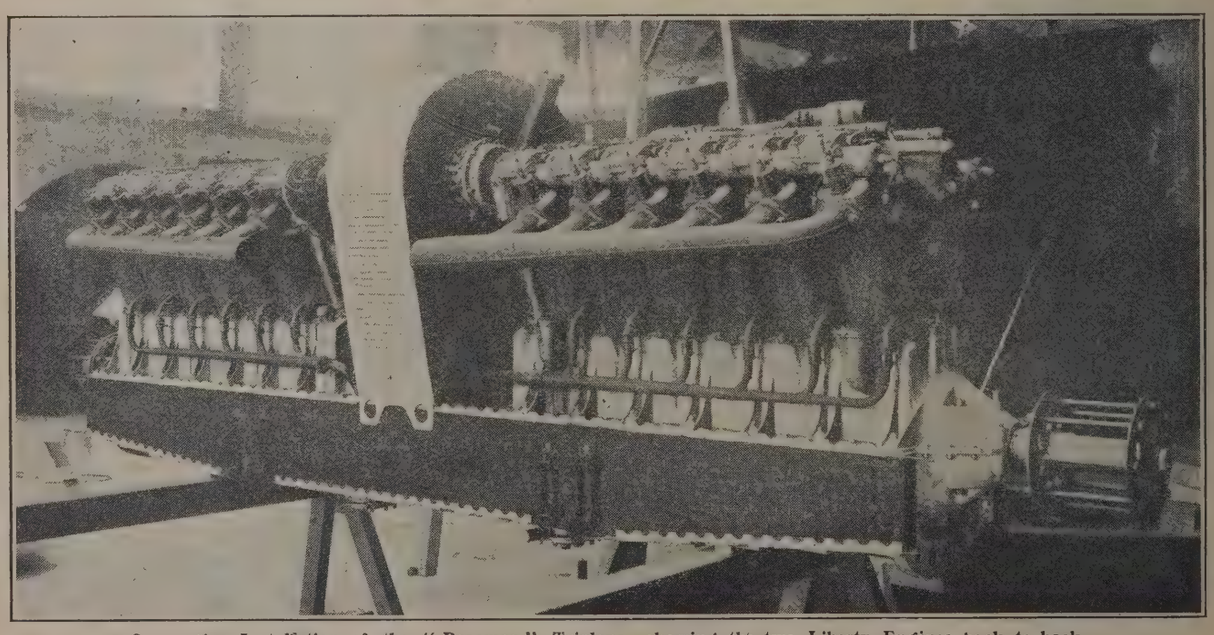
The "Braemar" Triplane in the Air.

THE BRISTOL SCOUT, TYPE F.1.

The Bristol scout, type F1, is a recent production of the Bristol firm and was about to be put in production when the Armistice was signed. The fuselage is very deep and carries in its nose a 200 Sunbeam "Arab." The main planes show the principal departure from standard Bristol practice in that the lower plane is of smaller chord than the upper one so as to improve the pilot's range of vision downwards. One set of three struts, in the form of an N, are fitted on either side of the fuselage and are inclined outwards from the base. Ailerons are fitted to the upper plane only The tail plane and undercarriage are of normal type. Armament consists of two fixed Vicker's guns fitted on top of the fuselage and firing through the propeller with the usual form of fire-control gear. The machine shows a speed of 128 m.p.h. at 10,000 feet, to which height it climbs in 8½ minutes.

SPECIFICATION.

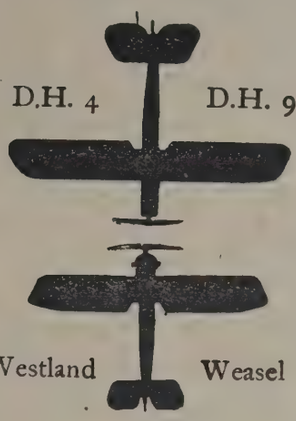
Type of machine	Single-seater Biplane.
Name or type No. of machine	Scout F.1.
Purpose for which intended	Fighting and Reconnaissance.
Span	Top, 29 ft. 6 in.; bottom, 26 ft. 2 in.
Gap	5 ft. 1 in.
Overall length	20 ft. 10 in.
Maximum height	8 ft. 4 in.
Chord	Top, 5 ft. 7 in.; bottom, 4 ft. 11 in.
Total surface of wings	260 sq. ft.
Total area of tail	15 sq. ft.
Area of elevators	14.5 sq. ft.
Area of rudder	5 sq. ft.



One-engine Installation of the "Braemar" Triplane, showing the two Liberty Engines back to back.



Westland Seaplane



D.H. 4 D.H. 9

Westland Weasel



Westland Wagtail

These Illustrations give an idea of the range of our War production, which included machines of Westland design.

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The same design staff and organization will deal with Peace enquiries, and our private aerodrome is available for testing.



Short Seaplane
200 HP. Canton



Short Seaplane
225 HP. Sunbeam



Sopwith 1½' Strutter

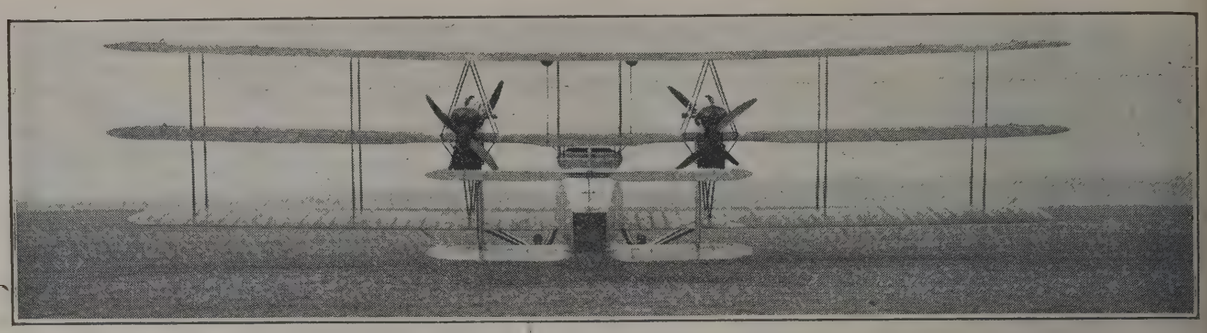


D.H. 9A



Vickers Vimy

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Rear View of the "Braemar" Triplane.

Area of fin—4.1 sq. ft.
Engine type and h.p.—200 h.p. Sunbeam "Arab."
Airscrew—9 ft. 2 ins. diam.: 9 ft. pitch; 1,155 r.p.m.
Weight of machine empty—1,300 lbs.
Load per sq. ft.—8.08 sq. ft.
Weight per h.p.—10 lbs.
Petrol tank capacity—32 gallons.
Oil tank capacity—5 gallons.

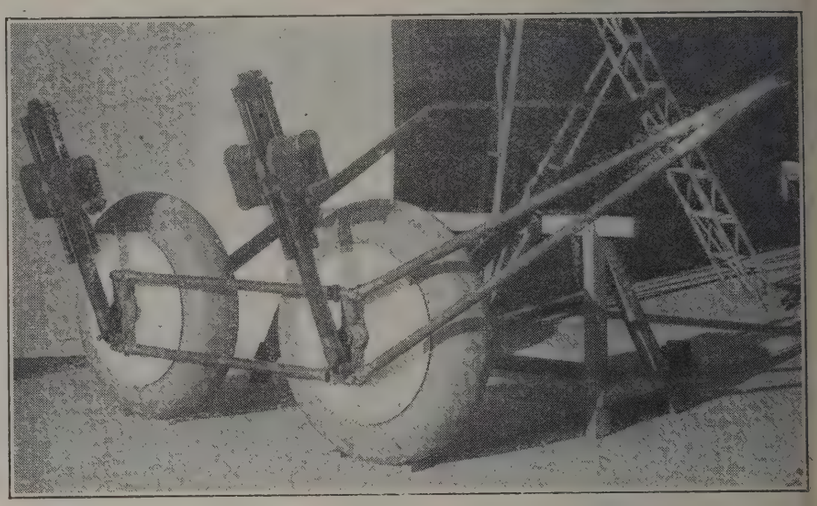
Performance—

Speed low down—138 m.p.h.
Speed at 5,000 feet—135 m.p.h.
Speed at 10,000 feet—128 m.p.h.
Landing speed—49 m.p.h.

Climb—

To 5,000 feet—3.7 minutes.
To 10,000 feet—8.5 minutes.
To 15,000 feet—16 minutes.

Disposable load apart from fuel—450 lbs.
Total weight of machine loaded 2,100 lbs.

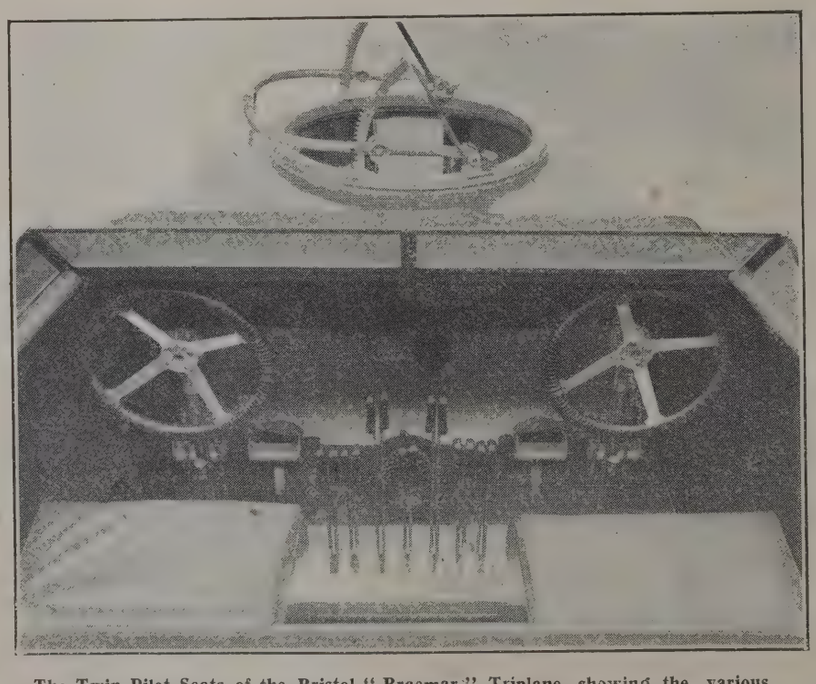


One Side of the Chassis of the "Braemar" in skeleton form.

A later edition of the machine has been fitted with a Cosmos "Mercury" engine of 315 h.p., and has given very fine performances therewith

THE BRISTOL "BADGER."

In addition to the machines described above, the Bristol firm have recently produced a small two-seater of high performance, known as the "Badger," of which no particulars are available beyond the fact that one has been fitted with the Cosmos "Jupiter" engine of 450 h.p.



The Twin Pilot Seats of the Bristol "Braemar" Triplane, showing the various controls for the throttles, switches, altitude regulator, magneto advance and retard, for the four engines.

A photograph of this machine in the air is given on page 248, from which it may be seen that the machine is a small single bay machine generally similar to the type F.1 single-seat Scout.

It is understood that this machine is of roughly 35 ft. span, and that the total weight loaded is a little under 3,000 lbs., and that it has reached a speed of about 140 m.p.h.

It is hoped to describe this machine in detail at an early date

THE STANDARDISATION OF CHAINS.

The demands made by the Allied Governments for driving chains for all purposes during the war made it necessary for the British Driving Chain Manufacturers to collaborate. The benefits accruing from the co-operation were so marked that a permanent Association has now been formed to standardise chains, and to keep down the cost of chain driving to face competition with other forms of transmission.—The members are:—The Alfred Appleby Chain Co., Ltd.; Brampton Bros., Ltd.; the Coventry Chain Co., Ltd.; and Hans Renold, Ltd.



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LONGITUDINAL STABILITY.

The following letter has been received :—

Sir,—In reply to Mr. J. D. North's criticism of my notes on Longitudinal Stability, I quite agree that in a dive at limiting speed a main-plane moment of importance is present, but do not follow his remark concerning equilibrium in this condition.

I think it is perfectly clear that in my treatment equilibrium is maintained at one speed only, a speed initially fixed by the designer, and the object of my investigation was specially to find a way of determining the combination of area and angle of the tail, such that at any other speed, and with the C.G. in any position within reason, there would be a couple present which would tend to restore the machine to the attitude corresponding to this speed of equilibrium.

I rather took it for granted that in a nose dive the case would be O.K. as far as couple was concerned, but I wished to emphasise the fact that a small tail set to a large angle would be subjected to a great increase of pressure, and the loading in a dive might easily be excessive, whilst in each case other than diving the tail might be quite satisfactory.

The opening paragraph in this section of the notes reads: " . . . for if the loading is too high under these conditions a lower value (of loading) will have to be substituted and new value obtained for area and angle."

I should greatly appreciate criticisms from other designers, and if there are points which they regard as misleading, would they please give chapter and verse, as up to the present I have found the method gives very good results.

(Signed) CLIFFORD W. TINSON.



The New Bristol Two-seater " Badger " (450 h.p. Cosmos Jupiter Engine) about to land.

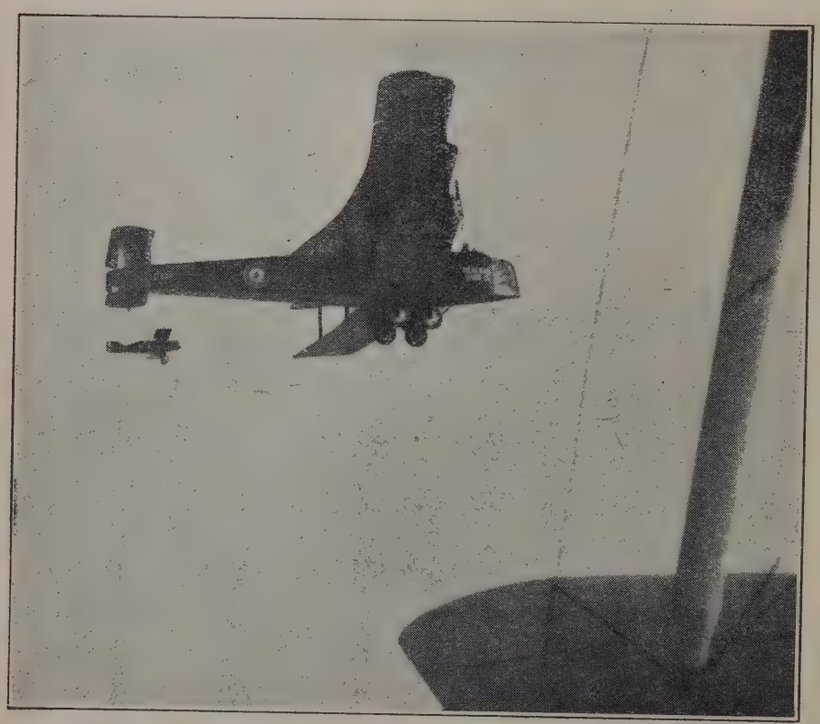
INDUSTRIAL RECONSTRUCTION AND THE POPULACE.

The Industrial Reconstruction Council, the chairman of which is Mr. Ernest Benn, is doing its best to inculcate a proper spirit into both employers and workpeople in these days, in accordance with the policy of the Rt. Hon. J. H. Whitley, M.P., the originator of the famous Whitley Trade Councils.

In support of this policy the Industrial Reconstruction Council is organising a series of meetings at Tower Hill, a locality which has hitherto been devoted either to executions or to agitations. These meetings take place every Monday at 1 o'clock, so as to catch the City workers during their lunch hour. Last Monday, for example, the speaker was Col. Alan Burgoyne, M.P., who has been considerably concerned with aviation.

It is also of interest to note that on the Executive Council of the I.R.C., the chairman is Lieut.-Col. C. L'Estrange Malone, M.P., late Wing Commander R.N.A.S., and among the members are Sir Charles Allom, of the Gosport Aircraft Company; Mr. Wilfred Hill, of the County Chemical Company, Birmingham, who has long been interested in Aircraft; Sir Alexander Roger, formerly of the Ministry of Munitions, who has also done good work for the Flying Services; and Mr. H. V. Roe, late Lieut. R.A.F. and formerly of A. V. Roe & Co., Ltd. So that there is considerable aircraft interest in the Council.

These meetings should be worth attending.



The Bristol " Braemar " and the " Limousine," taken from a Bristol Fighter.

AN AERONAUTICAL CORRESPONDENCE SCHOOL.

A correspondence school dealing entirely with Aeronautical subjects has been opened at Harrow by Capt. Herman Shaw, B.Sc., A.R.C.S., A.F.R.Ae.S., late R.A.F., since his demobilisation from the R.A.F.

In addition to active service work with seaplanes and other machines on patrols over the North Sea, Capt. Shaw was for some considerable time employed as an instructor and lecturer on the theory of Flight and similar subjects by the R.N.A.S.

Capt. Shaw has secured the services of two other ex-R.A.F. officers, Capt. A. H. Munday and Lieut. J. FitzGerald to assist in the operations of the school.

Inquiries relating to the various courses of instruction offered should be addressed to the Harrow College of Aeronautics, Pinner Road, Harrow.

AMERICAN AIRCRAFT IN EUROPE.

Mr. F. G. Diffin, president of the United Aircraft Engineering Corporation, 52, Vanderbilt Avenue, New York, left New York on the " Baltic " on July 1st and should by now be in London. He is making this trip for the purpose of establishing a London branch and of taking up various matters pertaining to commercial aviation with London manufacturers. He will stop at the Savoy Hotel. This information may be of interest to the British Aircraft Industry.

THE PATENTS INDEX.

The subjoined list of recent inventions has been specially compiled by THE AEROPLANE from the Current Official Patents Records :—

PATENTS APPLICATIONS.

Ambrose, J. G. Airships. No. 10703. April 30th.
Benard, H. L. M. J. Flash-lights for aerial navigation. No. 10871. May 2nd.
Benard, H. L. M. J. Signal lights for aerial navigation. No. 10981. May 1st.
Bevan, S. P. Parachute for attachment to aircraft. No. 10461. April 28th.
Bickford, F. W. Spirit levels for aerial machines, etc. No. 10623. April 29th.
Blackburn Aeroplane and Motor Co. Silencing-devices for internal combustion engines for aircraft, etc. No. 10704. April 30th.
Desbleds, L. B. Aerially-propelled watercraft. No. 10635. April 29th.
Donovan, J. Floats for flying-machines, etc. No. 11046. May 3rd.
Fawcett, A. Apparatus for maintaining a camera vertical in aircraft, and apparatus for registering angle at which a photograph is taken. No. 10956. May 2nd.
Grafham, A. J. Aerial Machines. No. 10631. April 29th.
Jarman, C. R. Means for braking aircraft. No. 10641. April 30th.
McIntyre, D. Level-indicators for aircraft. No. 10611. April 29th.
McKenzie, Holland, and Westinghouse Power Signal Co. Control of aerial traffic. No. 10627. April 29th.
McKenzie, Holland, and Westinghouse Power Signal Co. Signalling apparatus for aerial traffic. No. 10628. April 29th.
Payne, A. J. Parachutes. No. 10933. May 2nd.
Payne, A. J. Toy parachutes. No. 10934. May 2nd.
Pinton, C. A. Toy aeroplanes, etc. No. 10752. April 30th.
Sheppard, W. S. Airships. No. 11044. May 3rd.
Wells, T. R. Aerial navigation instruments. No. 11037. May 3rd.
Benard, H. L. M. J. Signal lights for aerial navigation. No. 11798. May 10th.
Bostock, S. H. Hulls of flying-boats, etc. No. 11134. May 5th.
Burdick, H. A. Air brake for aeroplanes. No. 11626. May 9th.
Cuningham, C. L. Making aviators' maps. No. 11810. May 10.
Fielding, H. Auto-mechanical parachute for aircraft. No. 11736. May 10th.
Hopkinson, J. Brewer. Aircraft. No. 11129. May 5th.
McKillop, J. Clinometer for aircraft. No. 11331. May 6th.
Meredith, J. W. Undercarriages of aeroplanes. No. 11699 May 10th.
Paine, H. Scott. Flying-boats, etc. No. 11333. May 6th.
Petch, M. T. Aircraft. No. 11354. May 7th.
Reid, J. Producing signals, announcements, etc., from aircraft. No. 11367. May 7th.
Rossignol, L. Helium-filled airships. No. 11344. May 7th.
Soc. Anon. des Filatures et Tissages d'Angers. Shelter for aeroplanes. No. 11190. May 5th.
Soc. Marion et Cie. Device for indicating angle for correcting drift of aeroplane. No. 11609. May 9th.
Sopwith Aviation and Engineering Co. Internal Combustion engines. No. 11411. May 7th.
Spafford, E. F. J. Aircraft, etc., propellers. No. 11479. May 8th.
Taylor, G. I. Parachutes. No. 11816. May 10th.
Triscott, C. Aircraft. No. 11574 May 8th.
Willans, P. W. Optical systems for aircraft observation. No. 11700. May 10th.
Ximenes, E. Apparatus for maintaining buoyancy of aeroplanes alighting on water. No. 11645. May 9th.

COMPLETE SPECIFICATIONS ACCEPTED, PRINTS OF WHICH CAN BE OBTAINED ON AND AFTER MAY 22ND, 1919.

121,466. Dec. 12th, 1917. Soc. des Mateurs Salmson. Junction-piece for connecting together certain structural members of an aeroplane.
121,467. Dec. 13th, 1917. Soc. des Moteurs Salmson. Metal fitting for aeroplanes for fixing the ribs of the horizontal rudder on the shaft of said rudder.
125,570. Dec. 31st, 1918. Westbury, C. F. Tail skids for aeroplanes.
125,591. Aug. 28th, 1916. Martin, J. V. Aircraft running and alighting device.
125,606. Sept. 5th, 1916. Bentley, H. B., and Blackburn Aeroplane and Motor Co. Engine cut-out switches for aerial machines.
125,613. Sept. 8th, 1916. Anderson, W. J., and Chapman, J. B. Airship shed doors which require ballast or balancing weight to prevent overturning.
125,614. Sept. 9th, 1916. Power, R.F. Device for restraining and releasing aeroplanes in starting.
125,617. Sept. 12th, 1916. Vickers Ltd., and McKechnie, J. Manufacture of fabrics for airships, balloons, and similar craft.
125,620. Sept. 15th, 1916. Royce, F. H., Day, B. I., and Rolls-Royce, Ltd. Structures for supporting outboard aircraft propellers.
125,636. Sept. 26th, 1916. Vickers Ltd., and McKechnie, J. Fabrics for the gas bags of aircraft.
125,640. Sept. 28th, 1916. Ricardo, H. R. Driving of air propellers and methods of mounting the same.
125,643. Sept. 30th, 1916. Gaunt, J. Controls for aircraft.
125,647. Oct. 5th, 1916. Coates, J. U. Fire-balloon for searchlight practice and for other purposes.
125,648. Oct. 6th, 1916. Nestler, F. C., and Nestler, Ltd., F. C. Aeroplane hangars and like sheds.
125,654. Oct. 12th, 1916. Smith, W. T. Apparatus for measuring the speed of aircraft and for sighting gravity shots therefrom.
125,655. Oct. 12th, 1916. Smith, W. S. Aeroplanes and other aircraft.
125,658 Oct. 14th. 1916. Blackburn Aeroplane and Motor Co., Denison, G. H., and Wilson, S. Propellers for aerial machines.
125,669. Oct. 19th, 1916. Smith, W. S. Aeroplanes and other aircraft.
125,670. Nov. 29th, 1916. Eugen, C. M. von, and Letchford, H. Construction of wings and the like for aerial machines.
125,695. March 20th, 1918. Lewis, F. J. Aeroplanes.
125,735. April 20th, 1918. Cordner, J. Propulsion of aircraft.
125,748. April 24th, 1918. Mooney, D. J. Construction of metal spars and longerons for aircraft.
125,774. April 27th, 1918. Ward, T. W. H. Construction of wings and like parts of aeroplanes.
125,784. May 1st, 1918. Jones, L. Aeroplanes.
125,827. June, 22nd, 1918. Perks, E. W. Streamline fairing for aircraft.
125,864. Aug. 31st, 1918. Boulton and Paul, and North, J. D. Aeroplane flying machines.
125,875. Sept. 18th, 1918. Miller, H. W., and Bingley, F. Cowlings and similar casing or fairings used on aircraft.
125,893. Nov. 13th, 1918. Ritchie, T. M. Airships of the non-rigid and semi-rigid type.
123,085. Feb. 8th, 1918. Soc. des Ateliers d'Aviation, L. Bréguet. Means for supporting and releasing tanks or reservoirs employed in connection with aircraft.

COMPLETE SPECIFICATIONS ACCEPTED, PRINTS OF WHICH CAN BE OBTAINED ON AND AFTER MAY 29TH, 1919.

126,029. Oct. 31st, 1916. Bruce, R. A. Devices for attaching seaplanes or lighter-than-air craft capable of alighting on the water to the float or boats whose buoyancy supports them in that medium.
126,031. Nov. 1st, 1916. Sopwith Aviation Co., and Sopwith, T. Means for operating the tail planes of aeroplanes and the like.
126,040. Nov. 6th, 1916. Roe, A. V. Strut socket for use on aircraft.
126,045. Nov. 14th, 1916. Ryan, A., and British Cellulose and Chemical Manufacturing Co. Spars, rods, tubes, poles, masts and the like.
126,063. March 20th, 1916. Soc. Lorraine des Anciens Etablissements de Dietrich et Cie de Lunéville Carburetters for aviation motors.
126,065. Nov. 25th, 1916. Peters, J. A. Tail planes for aeroplanes.
126,066. Nov. 25th, 1916. Peters, J. A. Anchoring the struts in aeroplane framework
126,068. Nov. 27th, 1916. Brown, W. J., and Shaw, H. Hollow section aerial propeller.
126,072. Nov. 29th, 1916. Sloper, T. Aeroplane wheel bearings.
126,085. Dec 5th, 1916. Mavrow, J J. Construction of aircraft wings and aerofoils.
126,087. Feb. 28th, 1916. Soc. Anon des Etablissements Hutchinson. Means for maintaining the staunchness of petrol tanks when pierced by bullets
126,105. April 4th, 1918. Morch, J. J. Propellers for aircraft.
126,153. May 9th, 1918. Jezzi, P. G. L. Screw propellers for aircraft.

TRANS-ATLANTIC MAGNETOS.

To those who are still of the opinion that the only good magnetos are German magnetos, it will be of interest to note that the Sunbeam-Coatalen engines which drove the R.34 from Edinburgh to New York were equipped with B.T.H. magnetos built by the British Thomson Houston Co., Ltd., of Rugby. These magnetos, which were described fully in THE AEROPLANE some time ago, are all-British in design and construction and have secured an enviable record during the war for reliability and efficiency.

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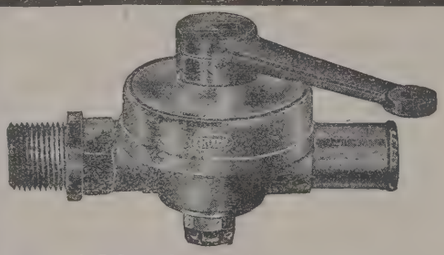
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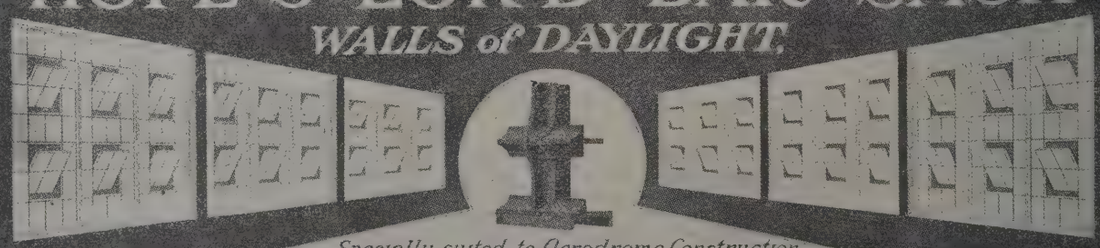
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EMPIRE PREFERENCE.

By "MEDWAY."

It may seem rather early to raise the subject of Imperial Preference as applied to aircraft, seeing that at present the Empire Overseas does not boast of an established Aircraft Industry, and at first sight the principle of preferential tariff within the Empire appears perfectly simple and eminently desirable.

We must, however, look forward to the time when there will be a large and world-wide demand for aeroplanes, both for commercial and private use, and consider how the adoption of Imperial Preference might affect the distribution of business among the manufacturing countries.

Much depends on the basis upon which Imperial Preference is established. Hitherto there has been a one-sided system, the Overseas Dominions giving preference on a somewhat modest scale to the Mother Country and to the other Dominions, while Great Britain has not reciprocated. In general the British preference was given by the Dominions in respect of any article 25 per cent. of the value of which was represented by British labour and material. Obviously this definition had the effect of classifying as British a lot of stuff merely assembled on British soil from components manufactured abroad. I believe, for instance, that Ford cars assembled at Manchester have been freely imported into South Africa on preferential terms as British products.

The pre-war scheme was really in the main a mutual arrangement between the Overseas Dominions, each of which realised that assembly was a step towards manufacture, and therefore wished to encourage it. Thus, for example, Canada, without necessarily possessing any genuine manufacturing concerns in the motor industry, could encourage American manufacturers to put up big assembling shops on Canadian soil, on the grounds that the products of these shops would be given preferential terms on export to Australia and elsewhere.

Needed by Aircraft Manufacturers.

This brings us very near to the point which needs special consideration. British aircraft manufacturers ought certainly to have some advantage in their home markets. Import duties are required on a scale calculated to restrict very much the activities of the foreign aircraft manufacturer in his capacity as an importer to Great Britain. We might find that a low reciprocal tariff would serve our purpose quite well in most cases, but that a very substantial tariff would be necessary to keep out the products of certain foreign countries.

Let us suppose that we put on a general duty of 30 per cent. with a preferential tariff amounting to the remittance of half this duty in respect of stuff imported from one part of the Empire to another. The business of the foreign manufacturer is to find a hole in our system so that he can evade the spirit but not the letter of it. Taking the figures suggested above, the American manufacturer importing into the British Empire would pay 30 per cent. The Canadian manufacturer importing into other parts of the Empire would pay only 15 per cent. The American would ask himself whether it would be worth his while to qualify as a Canadian.

Obviously much depends on the definition of "British goods" adopted in connection with our system. If we are to accept the old definition which classifies as British a lot of stuff which is three parts foreign, all the American has to do is to stick up an erecting factory half a mile over the border of Canada and deliver thence to all other parts of the Empire. The Canadian Government might well welcome it because it is better for a country to be an assembler than to have no industries at all. We in Great Britain have, however, got beyond that stage. Our object is to be a manufacturing and not merely an assembling country.

Little or No Advantage.

Our scheme should therefore be such that the assembler within the Empire gets little or no advantage over the foreigner when he wants to import into the British Isles. For certain temporary purposes the Board of Trade refuses to regard as British any manufactured goods of which less than 75 per cent. of the value is represented by British labour and material. We should not go far wrong if we adopted this limit in respect of the Aircraft Industry. We cannot make it 100 per cent. because anybody might find it necessary to import a certain amount of material unobtainable in his own country. At the same time 75 per cent. certainly involves manufacture as distinct from assembly. There is one more awkward point which ought really to be covered. To my mind no concern ought to have the full benefit of the system of Imperial Preference unless the greater part of its profits fall into the hands of British citizens. When a purely foreign concern sticks up a factory on British soil, the profits, if there are any, must necessarily go abroad. Therefore the industry is not as beneficial as it should be to the British community. The point is a very difficult one, because the point of view of Labour would be that it does not matter twopence where the profits go so long as British labour is employed on terms satisfactory to itself. Consequently one could not expect any support from labour interests for a proposal to withhold preferential terms from firms financed from abroad.

Unthinkable.

The President of the Board of Trade had to reply recently to a suggestion that, for preference purposes, it should be necessary that at least 50 per cent. of the value of goods should be represented by labour within the Empire. His answer was that a single percentage which would cover all classes of goods was unthinkable. It was necessary, in his opinion, to have a percentage applying to each particular class of goods affected, and such percentages would only be arrived at fairly after elaborate study.

This is really my excuse for raising the subject. We want the percentage applicable to aircraft to be something like 75 or 80 per cent., and it is clear that, if we are to get this, we shall have to prepare a statement to show that any lower percentage would not be fair or adequate in our case. The subject is an important one to the British manufacturing industry, and this must serve as my apology for boring my reader with a somewhat dry dissertation.

AVIATION IN SCOTLAND: FUTURE PROSPECTS.

By A SCOTTISH CORRESPONDENT.

Though playing an important part as regards aviation during the past five years, Scotland has been somewhat slow to make any progress in the way of commercial or passenger flying. Firms from the South are, however, beginning to find their way to districts in Scotland, and with the addition of the older established companies which have been carrying out war contracts, business promises to be brisk in aviation circles in this country.

The firms which are seriously contemplating future travel are mainly concerning themselves with attempting to obtain the supreme control of any service which may be run from the South to places like Edinburgh, Glasgow, Dundee, Perth and Aberdeen, and several have even now prepared their plans for the efficient carrying of passengers and mails. As a matter of fact, a service would already have been in fairly good order but for the uncertainty which exists regarding the restrictions which the Air Ministry may impose.

Still, firms like Beardmore and Company, of Glasgow, and the British Caudron Company, at Alloa (on the upper reaches of the Forth Estuary), are making extensive preparations for the future, and one can rest assured that Scotland will not be very far behind England when commercial aviation is assured of success, and has come to stay. The Glasgow firm are, however, building airships, and seem more intent to carry out post-war duties with the lighter-than-air types of aircraft than other firms, and it is probable that only passenger carrying will be done by that firm's representatives.

At Alloa the British Caudron Company, an offspring of the famous French company are merely awaiting word as to the relaxing of the present restrictions before commencing work as the first commercial firm in Scotland. At the Alloa ground there are at present three two-seater Caudron biplanes with 100-h.p. Anzani engines. These are doing the necessary pleasure flying, but there are six machines of the same type on the stocks and rapidly nearing completion.

In the event of any sudden demand for commercial work the firm propose constructing a large twin-engined Caudron biplane, which will either carry heavy goods or fifteen or more passengers. The aerodrome is only slightly over an hour's run from Edinburgh, Glasgow, or Perth, so that it is conveniently placed for the conveyance of goods to any of these large cities. In conversation, the manager informed the writer that the company would probably, if business promised to be heavy, enter into negotiations for the taking over of one of the military aerodromes near the city of Edinburgh, such as Penston (in East Lothian) or Turnhouse (three or four miles from the Scottish capital).

Persons who are interested in commercial aviation in Edinburgh predict an extremely busy time for the city, and in all likelihood the capital would become the centre for the country. An indication of how important Edinburgh promises to become was given at a recent meeting of one of the sub-committee meetings of the Town Council in Edinburgh. Numerous applications were received by the Corporation, applying for rights for flying, both commercial and pleasure, in the city and district. As the Council was not sure of its position, the whole matter was held over until answer was received from the Air Ministry regarding several important questions.

The principal application came from Aircraft and Travel (Ltd.), intimating that the company had been registered with the object of promoting commercial aerial transport. Another communication discussed was from Lieuts. Henshall and Caney as to leasing ground at Portobello (Edinburgh's seaside suburb) for the purpose of giving residents and visitors pleasure flights. It is more than probable that both these requests will be granted, and there is every hope once large firms note how important a part Scotland will have in aviation fresh companies will be formed : ground taken over.

There are a number of suitable grounds in Scotland. Glasgow possesses four or five, Edinburgh six, and the country round Perth and Aberdeen, if machines went as far, is well adapted for successful flying.

There is still some hesitancy on the part of the Scottish people to come forward for pleasure flying, but, as a manager of an aviation firm (who understood the cautious Scot) suggested to the writer, this will probably vanish when a good system of insurance is in working order. The flying which is taking place just now is fairly brisk, and one waits for the time when aeroplanes will be patronised by almost everybody. This day is sure to come, and in the meantime the Scottish firms are working quietly and making steady preparations for post-war aviation.

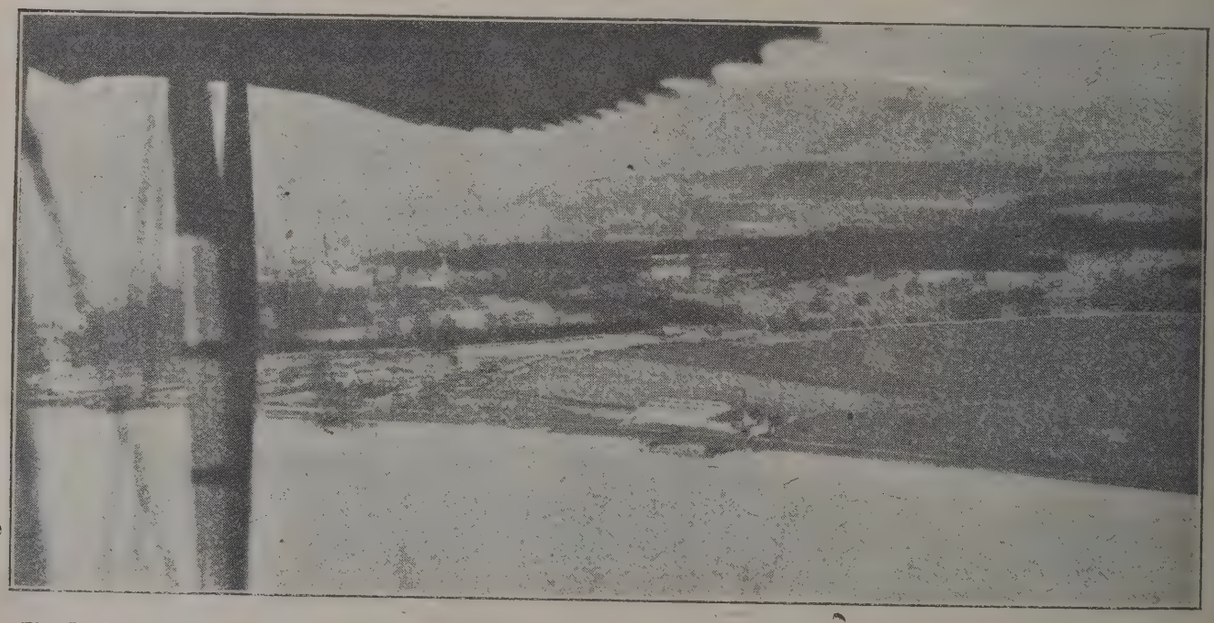
THE NEW HOME OF MR. GLENN CURTISS.

The many friends of Mr. Glenn H. Curtiss throughout the British Empire will be glad to know that he is now established as the Curtiss Engineering Corporation at Garden City, Long Island, New York State, where he has set up well-equipped shops for the building of experimental aircraft, and laboratories for aeronautical research.

His works are actually about 20 miles from New York, in convenient proximity to the U.S. Naval Flying Station, on the South Shore of Long Island, and the Sportsman's Flying Waters in Long Island Sound, on the North Shore of the Island; also, he is not far from Hempstead Plains in the centre of Long Island, so that he is exceptionally well placed for all-round flying, both of land and water machines.

The new Curtiss buildings are of the most permanent type, and are designed specially for aeroplane development work rather than for pure production, Mr. Curtiss's idea being to produce better and better aeroplanes rather than to settle down to run a kind of aeronautical factory. Two wind-tunnels embodying the latest ideas have been installed at the new Curtiss works, and the whole place is equipped to make it a first-class research and experimental establishment.

It is eminently satisfactory to see one of the great pioneers of aviation thus continuing to do really valuable pioneer work instead of degenerating into a mere manager of a quantity production plant. The success of Mr. Curtiss's experimental plant is demonstrated by the performance of the Curtiss-built N.C. boats which crossed the Atlantic, and the further products of his works will be watched with very great interest.



The British Caudron Company's Factory and Aerodrome at Alloa. This photograph was taken by M. R. L. Desoutter from a Caudron C.3 Biplane (100 h.p. Anzani engine).



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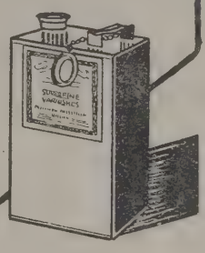
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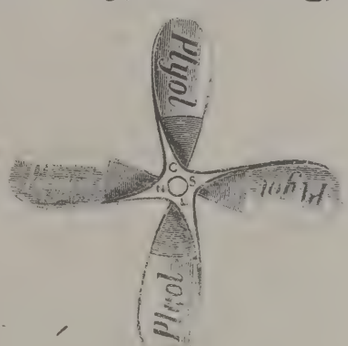
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AT THE TALIEDO AEROSHOW.

The third Milan Aeroshow at the Taliedo Flying Ground is deeply interesting, though chiefly so as a review of Italian war efforts.

The mounting of cabins on C.A. bombing aeroplanes and the evident utility of the Svas for carrying a passenger owing to their slow landing speed and rapid pull-up are perhaps the most promising signs of post-war enterprise, if one excepts the regular Milan-Venice dirigible trips, which are most attractive, being about three times as quick and only about four times as expensive as the same journey by railway. Lunch is included in the 300 lire fare.

The Show is housed in several lofty hangars of quite recent construction, and some smaller edifices of a less lasting nature.

A dirigible, a Prassone observation balloon, and some ordinary gasbags are there for the transport and amusement of visitors.

INTERESTING EVEN WITHOUT THE SHOW.

The Caproni, Saml, O.M. and other companies' works, which occupy two sides of the flying ground, and the military aviation sheds and barracks which line the remainder of the boundaries of the field, make the place highly interesting, even without the Show. So that the L.A.N. was wise in choosing the site in preference to a more accessible one. The exhibition with bi-weekly attractions in the way of competitions and stunting shows, is likely, I learn, to remain open for the greater part of the summer.

No fewer than eighty flying machines are staged, exclusive of lighter than air vessels. These eighty may be divided into sections of historic and modern war and peace craft, and a section that contains enemy machines. The curious element is furnished by the Bergonzi "canneton," or young "canard," called the Ardea, a biplane with Anzani 45 h.p. engine elevators in front, and daring vertical and horizontal dihedrals to the planes. Worthy of mention, too, are the Gabardini tethered monoplane and his chief pilot's foot-controlled runabout (steered by the feet only), which are used to get pupils accustomed to the feel of things before going up and wasting an instructor's time.

ALL METAL OR HALF METAL CONSTRUCTION.

The era of all-metal or even of half-metal construction seems as far off as ever, to judge by the naked skeletons of wings and tails so generously exposed on most of the stands. Barring an all-metal tail plane for a C.A., which I did not see in the Show but at the works, nothing of the sort seems to have come into common use.

Of the very large number of Italian motors exhibited probably the Itala is least known to English readers, and certainly the Perfetti-Dolara is the least known to Italians! It is a very perplexing looking and seemingly well-made 300 9-cyl. air-cooled rotary with cylinders parallel to and revolving round the crankshaft, which is to say parallel to and revolving round the longitudinal axis of the aeroplane, and in a line with the direction of flight of the machine. The cylinder heads face the blast of the displaced air much as a revolving cowl of a tractor screw seems to do, and the big ends of the piston rods appear to transmit rotary motion to a flywheel at right angles to the motor axis, that is in the normal position of a flywheel in respect of the airscrew. I hope to send the inventors' detailed description shortly.

The Ansaldo and Macchi exhibits are admirably staged. The former machines are a kind of *leit-motif* constantly appearing all through the Show in varying forms and guises. One who went out to see, however, missed the Marchetti-Vickers biplane and also the Tebaldi-Zari, both out to speed up aerial progress, and the latter of which is much spoken of. After peace has settled whether it is armed or disarmed perhaps Ing. Macchi will not find it expedient to keep M.12 up his sleeve. It has a 450 Ansaldo engine 12 cyl. V, at 60 degrees, which gives 570 h.p. Numerically the Caproni and Ansaldo exhibits preponderate, which signifies these firms' importance in Italian aviation.

The sister to the Fiat Company's B.R. with a huge 700 h.p. 12-cylinder Fiat, destined to cross to America was on view and in the air. With 24 exhaust pipes, the engine when in tune is quite as horrifying as a roundabout organ. The tendency to ever increasing horse-power does not promise well for commercial aviation in this period of depleted treasuries and exorbitant demands. One doubts that even the most important problems of the useful conquest of the air have been fully realised, much less faced.—T. S. H.

A RETURN TO INDUSTRY.

The name of Major H. Waymouth Prance, M.I.A.E., A.F.R.Ae.S., A.I.E.E., will be familiar to the majority of pre-war readers as a partner in the well-known firm of Markham and Prance, Consulting Engineers (motor, marine, and aeronautical), of Dudley House, Southampton Street, Strand, and High Street, Southampton. Like many other businesses of this nature, this firm shut down upon the outbreak of war, the partners and staff betaking themselves to the business of assisting in defeating the Hun and his allies.

Major Prance's duties carried him to the Near East, where he took part in the Gallipoli campaign as second in command of the 2/3rd Battalion London Regiment (Royal Fusiliers). Subsequently, after a somewhat protracted retirement to hospital, Major Prance, being no longer fit for active service, returned to his old sphere—that of petrol engines and aeroplanes—and for the past three years he has been serving in the technical department of the R.F.C. and R.A.F.

Here his duties were of a varied nature. In the early days he supervised tests and prepared reports upon the experimental engines which were submitted to the department. He next took charge of the Technical Information Section, which was subsequently developed into the Technical Publication Section. This section was responsible for the compilation of engine, aeroplane, and seaplane handbooks, data charts and diagrams, for the supply of technical information to the Allies and Colonial Governments, the supply of technical information to engine and aeroplane contractors, and the preparation of reports on German engines and aeroplanes.

His activities in this direction having ceased, it is pleasing to welcome Major Prance back to civil life. His future plans are as yet unsettled, but with his very thorough knowledge of internal combustion engines and up-to-date aeronautical practice his services should be of great use in civil aviation.

Major Prance is one of the "old hands" in aeronautical circles, for his experience dates back many years before the war, and this early knowledge, combined with his war-time experience of aeronautics, should prove a very useful combination.

THE AEROPLANE will be very pleased to put any firm in touch with Major Prance should they wish to correspond with him.



The Cabin of a small Commercial Passenger Italian Airship which is at present educating the public at Taliedo.

FOR USERS OF STEEL.

Mr. E. St. Clair Duncan, of 217, Piccadilly, London, W.1, has sent a copy of the new catalogue just issued by Messrs. Dunford and Elliott (Sheffield), Ltd. This catalogue is well produced, in an interesting and attractive form. It contains complete and instructive details concerning their steels, and also a mass of general information which cannot fail to be of interest to all users of steel.

OLEO PLUGS.

Messrs. Leo Repault and Co., of 64A, Poland Street, W.1, have issued a temporary retail list of their famous "Oleo" plugs, which, in addition to illustrations and prices of various types of plug, contains a number of useful hints as to the selection and use thereof.

THE ENCOURAGEMENT OF ENTERPRISE.

The London and Provincial Aviation Co., of Stag Lane Aerodrome, Edgware, announce that theey are retiring from business This firm is fairly well known to most of those who take any real interest in aviation.

Mr. Warren, its founder, has been intimately connected with the development of British aviation for between nine and ten years, the firm has been building aeroplanes for the last 5½ years, and have trained 550 pilots for the Air Services since the outbreak of war, with only one fatal accident.

The firm has recently produced a two-seater machine, fitted with a 50-Gnôme engine. This machine is of a type eminently suitable for teaching and intended for that purpose, and for sober pleasure flying. By way of securing to themselves an income which would justify their keeping together the staff of trained mechanics which they now employ, the L. and P. Co. had proposed to take three of these machines, a staff of mechanics and a supply of spare engines to the North of Ireland during that holiday season which embraces July 12th, and to visit in turn a number of towns, which, up to the present, have had few opportunities of seeing aeroplanes in flight. Thus they hoped to turn an honest penny or two by giving passenger flights and charging for admission to the ground.

The Department of Civil Aviation have, however, effectively prevented any such enterprise. Their method of so doing has been simple.

Firstly, they refuse to grant a certificate of airworthiness to the machines—because, forsooth, they are fitted with 50 Gnôme engines; and, secondly, they cannot pass as aerodromes any of the fields proposed by the firm for this purpose until complete maps have been submitted and a representative of the Department has inspected and approved the particular fields in detail—a process not likely to take less than three weeks—by which time the opportunity afforded by the present season will be well past.

This example of official methods being merely normal, the company has been forced to the conclusion that in the present state of the law and of the Department of Civil Aeronautics they have no chance of obtaining any return for a continuance of their present expenditure, and they have decided to retire from business till such time as these two hindrances have been reformed.

With particular regard to the immediate cause of this decision, most people who are acquainted with the history of the L. and P. Co. would feel much safer on a 50 h.p. Gnôme-engined machine, designed under Mr. Warren's supervision, flown by one of the L. and P. pilots and cared for by the L. and P. staff of mechanics, than on any of heretofore products of the Technical Department, particularly if this latter were attended by a certified official-hand-book-crammed Ground Engineer—even if it were engined by a salvaged Rolls-Royce.

In the matter of passing flying grounds, the Department of Civil Aeronautics has now had some months in which to get into working order, and it has been officially laid down that one of its most important functions is that of arranging for adequate landing grounds for civil aviation.

That it has not yet an organisation such that there is no spot in the British Isles more than ten miles from the headquarters of an accredited inspector who could report definitely within 24 hours as to whether a given field in his district was or was not suitable for any given aeronautical purpose, simply shows that this particular department has the characteristics of all known British Government departments—and that organisation means to it nothing beyond the provision of adequate methods of shirking its proper duties.

In such matters as this one would feel inclined to back the commercial sense of an experienced firm to select landing grounds which were suitable for their purpose, and would neither wreck their machines nor their reputation.

CIVIL AERIAL TRANSPORT NOTES.

UNITED KINGDOM.

It is notified by the Air Ministry for information that the following addition has been made to the telegraphic address of the Civil Aviation Department, Air Ministry, India House, Kingsway, "Civiatory, Estrand."

BRIGHTON.

Four Avro machines, two 5-seater and two 3-seater, flew from Hounslow to the Ladies' Mile Aerodrome, near Patcham, Brighton, on July 11th, where passenger-flying was started on Saturday, July 12th, with Captain Kennard in charge. Flying will commence every day at 11 a.m. Intending passengers may book their seats at the Avro Joy-Ride Office, at the Aquarium, or at the aerodrome.

On Sunday over 100 passengers were taken up there, and at least 1,500 spectators came to the Aerodrome during the course of the day.

On Sunday morning Colonel Henderson flew the Avro Limousine from Hounslow to Brighton in 30 minutes with two passengers and returned to Hounslow in the evening with two other passengers. Later in the evening two machines that had been flying all day at Brighton returned to town with passengers Commencing next week-end a permanent week-end service will be run from London to Brighton, leaving Friday and Saturday and returning on Monday, the charge being £5 per head single and £7 10s. per head return.

CARDIFF.

Mr. Daniel Radcliffe, the Cardiff millionaire shipowner, flew from Cardiff to London in 1¼ hour for the shipowners' meeting on July 11th.

EASTBOURNE.

Six members of the travelling company of the "House of Peril" were transported on July 12th by a seaplane, making two trips from Eastbourne pier to Brighton pier, where they are performing this week.

GOSPORT

An F.5 Flying-boat was successfully put through its trials on June 30th by Lieut. D. V. Carnegie, A.F.C., R.A.F. There were seven passengers. This is the fourth machine delivered by the Gosport Aircraft Company during the last seven weeks.

COVENTRY.

On Thursday, July 10th, Sir Harry Brittain and Mr. H. Gordon Selfridge flew from Hendon to Coventry to address a Victory Loan meeting. They arrived at Coventry at 2.30 p.m., and before landing circled the town several times, dropping Victory Loan pamphlets, and a letter worth a £5 bond to anyone presenting it at the Victory Loan office.

LONDON.

HENDON.—The afternoon of Saturday, July 12th, was quite as exciting as usual, perhaps more so, as the Summer Meeting was postponed, and only two passenger-carrying carroty "Avros" disturbed the peaceful sight of the trains going by. It had rained quite unpleasantly in the morning, but cleared up quite nicely in the afternoon. It would have been possible to hold the meeting, as rain does not interfere with determined aviators, but the public would not have been very pleased to sit on the wet forms. It strikes one that perhaps after all these meetings are not held entirely for the amusement of the Grahame-White Aviation Co. Despite the fact that there were only about a dozen visitors, it was necessary to wait nearly half-an-hour to obtain tea.

A twenty-mile speed contest for the Victory Trophy (presented by Messrs. Percy Edwards and Co.), will be held at the London Aerodrome, Hendon, on Saturday afternoon next, at 4 p.m.

The course, of which five laps must be flown, is round the Aerodrome Pylons and a point about two miles out, i.e., Bittacy Hill—a distance of approximately four miles.

Some of the pilots who may take part in the contest are Mr. Duke, a new pilot at Hendon, on a 170-h.p. B.A.T. Bantam, Mr. Sykes on a 70-h.p. C.A. machine, Mr. Chamberlayne on an 80-h.p. Grahame-White "Bantam" Biplane, and Messrs. Carr, Robertson and Hicks on 110-h.p. Avro Biplanes.

Entries close at 12 noon on Thursday next, the 17th inst.

Special flying displays and Passenger Flights will be carried out at intervals during the afternoon, and also on Sunday afternoon.

It has now been decided to hold air race meetings at the London Aerodrome regularly every week-end, an air race being held every Saturday afternoon, and special displays every Sunday afternoon. Passenger Flights will take place daily throughout the week.

Additional enclosure accommodation has been provided, and admission to the Aerodrome is now from 9d., plus tax. Children half price.

HOUNSLOW.

On Tuesday the 8th inst. Colonel Henderson flew the Avro Limousine from Hounslow to Aintree and returned the same day. On Wednesday a machine went to Weston-super-Mare with passengers, and another left later in the day with passengers and returned the following day to South Moulton, where over 120 people were taken up for "joy-rides" at the South Moulton Agricultural Association Fair.

The "Evening Standard" has been delivered every day to Southsea by Avro biplane from Hounslow.

During Peace week Avro three-seaters are available for flying to Paris, the charges being £75 return for one or two passengers, and £60 single.

In connection with the flight to Aintree, Liverpool, it is interesting to note that if civilian concerns were carried on in the same way as Government concerns there would be little accomplished.

Colonel Henderson landed at a Midland Aerodrome for petrol and was asked by a ferry pilot what the weather was like in London, as the weather report from the Air Ministry was "Unfit for cross-country flying." Colonel Henderson reported that as he had just flown from London this could hardly be so. He returned from Liverpool the same evening and was again informed by the same ferry pilot that the weather report was still "unfit for cross-country flying." Colonel Henderson then completed the flight to Hounslow in one hour and a quarter, a distance of over 100 miles, and the weather could certainly not have been described as "Unfit for cross-country flying."

The necessity for the one journey was a pressing commercial engagement, and the necessity for the other was merely delivery of Government machines to Civilian Parks.

If ferry pilots were paid for each journey instead of by day, whether they fly or not, there might be a little better effort in these Government Departments.

CRICKLEWOOD.

A successful flight was made on July 11th by a standard two-engined Handley Page, built for the Chinese Government, with whom the company has a large contract. Besides the pilot, Captain G. J. R. Hill, M.C., and the engineer, there were sixteen passengers. The total weight of the machine in the air was 12,800 lbs. A height of 15,000 ft. was reached, and during the tests the pilot flew for a time with one engine.

SOUTHSEA.

Amongst the passengers taken up in an Avro at Southsea Common last week was Commander Grieve accompanied by his mother and sister.

Two passengers were taken to Northampton, and two to Bristol and back, the latter journeys taking 1¼ and ¾ hours.

Cardboard discs were dropped over Portsmouth during the week, entitling the finders of the lucky numbers to free Joy Loan Certificates.

AUSTRALIA.

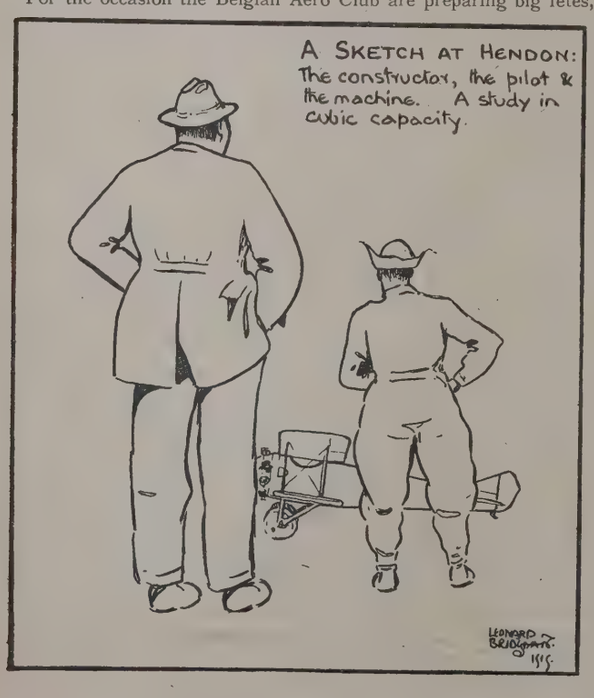
Boulton and Paul, Limited, of Norwich, have constructed an aeroplane for Lieut. A. L. Long, Aus. F.C., which is to be used on a sheep ranch in Australia. The machine was built in six weeks, is fitted with a 90 h.p. R.A.F. engine, and has good speed, climb and lifting capacity. The seating accommodation is adjustable.

As some of the sheep ranches cover 500 square miles, supervision from the air seems to be the ideal way of looking after the various flocks. With a little experience a good estimate of the number of head in the various flocks could be made from the air, and then flocks of the size required for the market could be selected very easily and quickly.

BELGIUM.

It is announced that the Congress of the Federation Aeronautique Internationale will be held at Brussels on October 22nd, 23rd, and 24th.

For the occasion the Belgian Aero Club are preparing big fêtes, at which it is hoped King Albert will assist, and during which they hope to play "Icarus," the opera of M. Deutsch de la Meurthe!





ROUNDING A PYLON.—Mr. Turner on the Bat-Bantam (170 h.p. A.B.C. Engine).

From July 19th to the 24th the Belgian Aero Club will hold an exhibition of Belgian aeronautical material, including Boche spoils of war. It is to be held in the big hangar at Evère, which is to Brussels as Hendon is to London.

It is now confirmed that fifteen hydravions will be used in transporting merchandise in the Belgian Congo.—F. T. N.

DENMARK.

The Danish Government has purchased a number of Avro and Bristol biplanes, which are now on their way to Copenhagen. Some British pilots are accompanying them to instruct the Danish pilots, who will be employed on the projected services between Denmark and the neighbouring countries. Owing to its peninsular formation, Denmark has been handicapped in fast trade with the rest of Scandinavia, with Britain, and with the rest of Europe, which is reached by the inconvenient route through Hamburg.

FRANCE.

Of course the most exciting thing that has happened in French civilian aviation during the last six years is the gift of £80,000 by M. Henri Deutsch de la Meurthe to the French Aero Club. Probably owing to the various fête days and peace celebrations is due the fact that the gift has passed almost unnoticed by the lay Press. This is not by any means the first amount of its kind given by M. Deutsch de la Meurthe, who permanently fulfils the position of president of the French Avro Club.

THE "GOLIATH" OVER THE "MARCHE DE LA VICTOIRE."

At intervals of every few months it is my pleasure to record new departures in the way of aerial advertising, especially with regard to "first issues" as the philatelist would have it, or "first usage" of a philologist. The following cutting from the Paris "Daily Mail" of Sunday, July 6th, speaks for itself. Mr. Dick

To "Aeroplane" Subscribers.

Since the Armistice, the subscription list of the AEROPLANE has steadily increased: an eminently satisfactory development which we are anxious to encourage.

Of the many books published on the war on the Western front, none conveys a more realistic impression of the work of a particular arm than FLYING COLOURS by Captain H. M. S. Saundby, A.F.C., R.A.F., M.C., published at **£2 2s.** net (Edition de luxe) and **15/-** net (Popular Edition).

Among the art books published in the last year or two, none can claim to be a more faithful reproduction of the artist's colour scheme and that indefinable thing, atmosphere.

FLYING COLOURS is a permanent memorial of the life of "the pilot in action," as Major-General C. B. Ashmore calls him. It was very costly to produce, and necessarily the price to the public had to be high.

Many would like to possess it who do not feel disposed to put down Two Guineas for the larger edition or Fifteen Shillings for the smaller.

How to meet their views? We make a special offer to any subscriber for one year to the AEROPLANE: namely to give him the right to purchase either edition at half price.

All he need do is to send us the accompanying order form with cheque for one year's subscription, plus **£1 1s.** or **7s. 6d.** according to the Edition he wishes to have.

In order to be fair to current yearly subscribers we extend the half-price concession to them also. If a subscriber has paid a quarterly or half-yearly subscription, then to secure the right to participate he should send the balance for the year.

Subscribers who have given their orders through the trade, and not direct to the AEROPLANE Office, must sign the form below or a copy thereof, and hand it with the balance on account of the book to their retailer for transmission to the AEROPLANE.

If the subscriber already has a copy of FLYING COLOURS, and would wish to take advantage of this offer, then he may secure McCudden's "Five Years in the R.F.C." **(7s. 6d.)**; Richthofen's "Red Air Fighter" **(3s. 6d.)**, and Gill's "The Aerial Arm" **(6s. 6d.)** at half price, *i.e.* **8s. 9d.** the three, plus the year's subscription to the AEROPLANE.

ORDER FORM.

To THE "AEROPLANE,"
61, Carey Street, W.C.2.

Please send me the "AEROPLANE" for one year post free **(30/- inland ; 35/- abroad)** and one copy of the { Edition de luxe / Popular Edition } of FLYING COLOURS at half price { **£1 1s. 0d.** / **7s. 6d.** } for which I enclose remittance value **£ s. d.**

Name.....

Address.....

Date.....

*** Current subscribers, who send for the books only through their newsagent, must sign this declaration:
I am a yearly subscriber to the "AEROPLANE" through.....Newsagent.

Address.....

Subscriber's Name.....

Farman's service of publicity has since intensified its efforts and sent a machine over Paris dropping gold and azure blue leaflets advertising such flights.

THE "GOLIATH" AT THE VICTORY FETES.

THE FARMAN firm takes a sensational initiative. They have decided to place the "Goliath" at the disposal of all those who would like to enjoy the unique spectacle of the Victory Fêtes and the march of the victorious troops passing beneath the Arc de Triomphe. The giant avion will, in conformity with the police regulations, fly at a great altitude but the sight witnessed from it will lose nothing of its grandeur.

The Price for this Extraordinary and Magnificent Aerial Trip is fixed at 1,000 frs. per person.

In the evening aerial trips will be organised to fly over the Versailles and Saint-Germain Château, where the most important episodes of the greatest events which the human race has ever known took place.

The PRICE of these trips from the Toussus-le-Noble aerodrome to Saint-Germain, Versailles, Paris and back on the Victory Fête Day is 500 frs. per person. Apply for tickets and additional information to the

AMERICAN EXPRESS, 11, Rue Scribe, PARIS.

Telephone: Gut. 36.04.

Every passenger if desired will be conveyed in an automobile from his residence to the Toussus-le-Noble aerodrome and back to Paris.

As only a very limited number of passengers can be accepted, persons desirous of taking advantage of this unique opportunity should apply for tickets at once.

It is possible to get eighteen passengers comfortably installed in a "Goliath" apart from pilot and mechanic, and as there are three "Goliaths" now off the stocks a very simple calculation will show that this enterprising firm stand to make nearly £2,000 if the smaller flights are included. Although all the "Victory," seats are not taken, quite a number are booked.

ANOTHER AERIAL EXPLOITATION COMPANY.

Although work in the majority of aviation factories is at a standstill, there is still plenty of war material to use, which accounts for the continued development in the way of new exploiting companies.

The latest which is about to be registered with a capital of £15,000, is entitled Société des Transports Aéronautiques du Sud-Ouest. They have at present one "Goliath," two F.40 aeroplanes and one F.40 seaplane. Having acquired an aerodrome and hangars at La Négresse, near Biarritz, they propose to work from here, running excursions to Bilbao, St. Sebastian, Santander, etc., in Spain, during the summer months—July to November—but to transfer their activities to Nice for the winter season, say, from December to April. They have some very good old-time (1911) pilots, and the moving spirit of the concern, Lieut. Gendner, was taken prisoner by the Boche the same time as Lieut. Villiers, the push-and-go member of La Société des Grands Express Aériens.

FRENCH EXHIBITORS AT AMSTERDAM EXHIBITION.

So far as is known, only Messrs. Bréguet and Farman intend to exhibit at this exhibition, but all is not yet certain owing to the opposition or dilatoriness of the French Government authorities, and another point that may operate against these firms exhibiting is the fact that there are no hangars in the vicinity of the Show, and owing to transport difficulties it is essential that machines be sent by air. Meantime Lieut. Roget hopes to fly to Amsterdam next week, stopping at Brussels and Utrecht on the way.

After many trials and tribulations Lieut. Romanet and his journalist passenger reached Madrid, whilst a good flight was put up in the reverse direction by Lieut. Coupet, who made the flight on a small dual control Farman, 80 h.p. Rhône.

Some people say that to change is to progress: to all such one commends the following announcement which gives the titular heads of various departments in the direction of civil aviation under the new co-ordination scheme recently adopted.

M. Fontan, engineer-director of Technical Services of the Naval Aeronautics, is named Director of Aeronautical Technical Services; Lieut.-Col. Séguin is appointed Director of Service of Aeronautical Construction; Lieut.-Col. Sacconnay, hitherto chief of Aeronautical Civil Service, is appointed Chief of the Service of Aeronautical Navigation.

Lieut.-Col. P. Leclerc, one-time Director of Civil Aeronautics, and now commanding the 1st Aviation Group at Dijon, has lost his wife.

Sergt.-Pilot Camille Frélat, Brig.-Aviator R. Warichet, and Lieut. Frederic Cochet Forthuny all met their death in aviation accidents this past week—the latter at Constantinople.—F. T. N.

GERMANY.

According to the "Weser Zeitung" of July 2nd, Dr. Armo Relizi, of Danzig, and Dr. Walter Geister, intend to start on an Arctic expedition by aeroplanes. The purpose of the expedition is to make topographical, oceanographical and meteorological surveys, and to test the value of aircraft in the Far North. The expedition will start from a vessel going as far north as possible, which will serve as the base for the operations which will be conducted north of the 58th degree of latitude.

The machines will be biplanes of two types, light scouts of great speed and heavy machines for the expedition proper. They will be fitted with floats with flat bottoms to enable them to land on water and/or ice.

ANOTHER AERIAL SERVICE.

The Prussian Minister of Commerce has sanctioned the foundation of an aerial transport company which will be established in Frankfort and have a capital of 15 million marks. Six routes are being planned for freight and letter traffic, all starting from Cologne to Frankfurt, Munich, Stuttgart, Basle, Hamburg and Breslau. It is proposed to open the service with about 200 machines. Eventually, a service for passengers will also be established.

A HEIGHT RECORD.

According to the "Vossische Zeitung" of June 29th, Oberleut. Diemer has beaten his own records by making a height of 9,620 m. in 89 minutes, on June 17th. Three sealed barographs showed 9,620, 9,760, and 9,480 m. height. The machine was one of the military standardised biplanes of the German Aviation Works, better known as the D.F.W., of Leipzig, with a 200-h.p. engine of the Bayerische Motoren-Werke of Munich.

ITALY.

As the result of the investigations of a Governmental Commission as to what is wrong with Civilian Aerial Transport, it is now decided to put the responsibility on that infant's up-bringing on one person's head. Briefly, an Under Secretary of the Ministry of Roads Transports, etc., is to be nominated to care for flying in this land. Mention of a grant of 80,000,000 lire has been made, with what truth one has no means of deciding. Certainly, the want of money has been the first cause of much of the infant's feebleness and failure to develop.

A really Italian magneto is about to shower sparks into our Teutonised magnetic field. Reference to the Monopoli patent shows how the inventor has advanced from standard practice by increasing the number of the polar extremities and gets fat sparks at the slowest speed.—T. S. H.

According to a Turin message of June 27th, Lieut. Brack-Papa, the Italian aviator, with two passengers, flew 159 miles in one hour. Thus, it is claimed, breaking the speed record set up by M. Sadie-Lecointe.

HOLLAND.

It seems likely that the first Aircraft Exhibition at Amsterdam, which is due to open on August 1st, 1919, will be of very considerable interest. Quite a number of British aircraft firms of the best class have taken space at the Exhibition, and though the Society of British Aircraft Constructors, as a Society, is not giving official support to the Exhibition, one gathers that, on the other hand, the Society is not in any way hostile to it.

The following firms have definitely booked space: The Aircraft Manufacturing Co., Ltd.; the British Aerial Transport Co., Ltd.; Vickers, Ltd.; Handley Page, Ltd.; the Gosport Aircraft Co.; the Blackburn Aeroplane and Motor Co.; Marconi's Wireless Telegraph Co., Ltd.; the Wireless Press, Ltd.; Boulton and Paul, Ltd.; the Westland Aircraft Co., Ltd.; R. S. Watling and Son; the Improved Liquid Glues, Ltd.; the Farringdon Propeller and Engineering Co., Ltd.; Geo. Williams and Co., Ltd.

Besides exhibiting machines at the Exhibition it is understood that all the aeroplane firms will also send machines and expert pilots to give exhibition flights. Though the Dutch Government is not officially concerned with the exhibition it is giving every possible support to it, and with the concurrence of the Government a very fine aerodrome has been laid out within easy reach of the most central portion of Amsterdam. Arrangements are also being made for the demonstration of flying-boats and aeroplanes in the immediate vicinity of the Exhibition.

It should be remembered that although Holland itself is a small country, and, therefore, the British Industry cannot expect to receive large orders for aeroplanes to be used in Holland, Dutch traders have enormous influence practically all over the world, and the Dutch East Indies alone offer a fine field for the use of aircraft both of the sea-going and the land-going species. Also, Holland being so easy of access to Scandinavian countries, the Exhibition offers opportunities of getting in touch with possible Scandinavian buyers.

Several French firms are also exhibiting, and, therefore, it is to be hoped that British manufacturers will be able to put up a good show both on the ground and in the air in competition with our esteemed Allies.

Inquiries concerning the Exhibition should be addressed to Mr. J. van der Steen, Trafalgar Buildings, Trafalgar Square, W.C.2. (Telephone: Regent 2648).

G  R

BY DIRECTION OF THE DISPOSAL BOARD.

AIRCRAFT DISPOSAL DEPARTMENT.

FOR SALE.

ENGINES.

Type.	H.P.	Type.	Cooling.	No. of Cyl.
Siddeley Deasy "Puma"	230	Vertical	Water	6
Sunbeam "Cossack"	320	Vertical	Water	12
Fiat A. 12 Bis	300	Vertical	Water	6
Hispano Suiza (French)	200	Ve 90	Water	8
Hispano Suiza (Viper)	200	Vee	Water	8
Rolls-Royce "Eagle"	250			
Marks I. II. III. IV. V. & VI. to	300	Vee	Water	12
Mono	100	Rotary	Air	9

SHOCK ABSORBER CORD.

5/8 Black shock absorber elastic cord	New	3,550 feet.
5/8 Black and red shock absorber elastic cord	,,	550 feet.
5/8 White ,, ,, ,,	,,	667 yards.
5/8 White and red ,, ,, ,,	,,	4,500 feet.
½ Black and red ,, ,, ,,	,,	668 feet.
⅜ Black and red ,, ,, ,,	,,	500 feet.

HOSE.

Grey Hose—new 1in. i/d.	2,075 eet.
Grey Hose—new ⅝in. i/d.	544 feet.
Grey Hose—new ⅜in. i/d. 3 ply	250 feet.
Grey Hose—new 9/16 i/d.	459 feet.

RUBBER PADS.

F.E.2.B.	7126—26	130
F.E.2.B.	3895—35	318

PALMER WHEELS.

Palmer wheels, complete with tyres and tubes in various sizes.

AIRCRAFT GLUE.

Hide glue—best quality for Aircraft	85 cwts.

Tenders are requested for any or all of the above lots or singly in the case of engines. Forms and all particulars may be obtained from

The Controller, Aircraft Disposal Department, York House, Kingsway, W.C.2.

Closing date for Tenders—July 28th, 1919.

HOW TO ENCOURAGE
CIVIL AVIATION!

The London & Provincial Aviation Co.

REGRET to announce that after between nine and ten years' experience of Practical Aviation on the part of their Principal, after building aeroplanes for 5½ years without a breakage in the air, and after training 550 pilots for the Flying Services with only one fatal accident, they are compelled to cease business owing to the operations of the Department of Civil Aviation.

The said operations make it impossible for the L. & P. Co. to obtain any adequate return for capital, labour, enterprise, experience or industry. The shareholders therefore consider that it is better to play for nothing than to work for nothing.

A number of highly-skilled mechanics will be thrown on an overcrowded labour market.

A number of aeroplanes and engines of proved quality will remain idle.

A number of people will be deprived of the opportunity of flying.

A number of opportunities of increasing public interest in flying will be lost.

A good aerodrome will be left idle.

For further particulars apply—

THE LONDON & PROVINCIAL AVIATION CO.,
STAG LANE AERODROME,
EDGWARE, MIDDLESEX.

AIRCRAFT FINANCE

WHITEHEAD AIRCRAFT SHAREHOLDERS.

What happened and what was said at the meeting of Whitehead Aircraft (Ltd.) shareholders last Friday was interesting and illuminating. The object of the meeting was to pass a resolution for the voluntary winding up of the company. This was carried, but not without some opposition.

LORD WEMYSS' ATTITUDE.

Lord Wemyss, who presided, said that some of the shareholders present might be surprised to see him still occupying the position of Chairman of the company. (It may be necessary to mention that his Lordship had told shareholders at the General Meeting that he would not have any more connection with the company: His association has been brief.) In explanation he would say that he found it difficult to resist the strong appeals that were made to him, apparently with the unanimous support of the previous meeting, that he should continue to occupy the chair, and, further, he did not like, having been captain of the ship, to leave it when it was in troubled waters. When he previously addressed them he told them that they had remunerative contracts in sight, but he also told them perfectly frankly that the undertaking of those contracts depended absolutely on their securing fresh capital.

Unfortunately, the times were not then propitious for the raising of that necessary capital, and the creditors were pressing, and it was therefore necessary to have some alternative scheme. It seemed to him, in the circumstances, that the best chance for the shareholders was to have some amalgamation with an existing company or to sell the property to another corporation or an individual. If their assets had been less valuable than he believed they would prove to be, their task would have been easier, because there would have been fewer people who would want to negotiate for the purchase of those assets.

He thought, however, they had been fortunate in beginning negotiations with a gentleman who was a very successful business man and whose financial position was absolutely undoubted. He referred to Mr. Taylor.

He had been told that various accusations had been made to the effect that all money subscribed had not gone into the coffers of the company. He had ascertained that that was not the fact. It was not correct to say so. What gave rise to the rumour was this. Mr. Whitehead applied for a great number of shares on which he paid 1s. and on which he received the ordinary underwriting commission in order to provide further monies for the company. Mr. Whitehead sold a great number of these shares, and on receiving the money took up the shares he had applied for and paid the money to the company.

THE PROSPECTIVE PURCHASER.

Mr. A. Taylor then addressed the meeting, and said that he was connected with a firm of engineers who had helped to win the war by the construction of aeroplane engines, and they had evolved a light car for which they had a sale of upwards of 15,000. They had to make those cars somewhere, and in looking round for a factory they had come across the premises of the Whitehead Aircraft Company.

If the shareholders would work with the Board, with the liquidators and the Receiver, and if they would keep discord out of the proceedings and avoid the expenses of litigation, his people would meet them at the right and proper time and make a fair proposal for the property, giving them everything that the merits of the situation warranted after the debts had been paid.

Mr. Leaney asked why all the money at call had not been called up. He saw by the balance-sheet that £131,000 of the issued capital had not been called up.

The Chairman said Mr. Whitehead had these shares allotted to him as explained, but he had not the money himself to pay them up.

Mr. Whitehead rose to explain his position. He said that on June 30th last, when the Treasury sanction expired on the issue there were 85,000 Preference shares left which would not have the Treasury sanction on the following day. Owing to an arrangement with the then existing shareholders he was not able to place these shares until £300,000 of Ordinary shares had been allotted and paid for. Therefore, he could not take up those Preference shares in full at that date. As a matter of fact temporarily he made himself the "goat" to the extent of £5,000 He had not been able to place the shares. "Not one of you," he said, "was so hard hit as I am."

Mr. Evans stated that the proposal made by Mr. Taylor could not be considered by the shareholders. They were practically asked to allow him to make all the investigations he chose, and then the shareholders would be asked to consent to any proposal that he desired to make.

Mr. Hammond strongly advised the shareholders to adopt a compulsory winding-up of the company in order that the position might be investigated.

CURRENT TOPICS.

A SPECULATION FEVER.

As soon as the National Loan is out of the way there will be an avalanche of fresh borrowings of all sorts and descriptions, with a good sprinkling of highly speculative things. Doubtless they will be swallowed voraciously by the public. It is beyond question that the speculative germ is rather virulent just now. Those who have profited by the war want to make more money, and those who have suffered because of the war seek compensation. It is wise to inoculate oneself against this fever.

TUBES: AN AMALGAMATION.

There has just been formed a company called "Tube Investments, Ltd.," with a capital of £1,250,000. The objective is to amalgamate by a purchase of shares certain undertakings known to the Aircraft Industry. Thus Accles and Pollock, Ltd., are mentioned, as well as Tubes, Limited, Oredenda Conduits Co., Ltd., and the Simplex Conduits, Ltd. Figuring in the directorate is Arthur Chamberlain, Edgbaston; J. H. Ashton, Birmingham; T. Pollock, a director of Accles and Pollock; and C. T. Barlow and J. Baker, also on the board of Accles and Pollock.

BEARDMORES AND FOREIGN TRADE.

Instead of establishing a new department for the purpose of specialising and developing their export business, William Beardmore and Co. have come to an arrangement with the City firm of John Buck and Co., who have branches throughout the world. To complete the scheme Beardmores have acquired some of the capital of John Buck and Co. and will have the benefit of its experience and organisation.

PROPAGANDA.

Two daily newspapers have blossomed out this week with Aviation Supplements. This is a good sign.

WHITEHEAD AIRCRAFT IN THE COURTS.

In the Companies Winding-up Court on Tuesday last New Pegamoid, Ltd., and another petitioned before Mr. Justice P. O. Lawrence for the compulsory winding up of Whitehead Aircraft (1917), Ltd.

Mr. Owen Thompson, K.C., who appeared for the petitioners, said the company wished for an adjournment. He (counsel) said he understood there was some suggestion of a voluntary liquidation, which would enable all the creditors to be paid in full. This was a company with £1,000,000 capital, and it was not the desire of the petitioners to ruin the company.

PAYMENT IN FULL?

Mr. Cecil Turner, for the company, said a meeting of creditors had been held, at which 70 appeared, and a special resolution was passed unanimously to the effect that it would be in the interests of all that there should be a voluntary liquidation. It was hoped that all would be paid in full, and that there would be a surplus.

Mr. Owen Thompson said he would not oppose a fortnight's adjournment if there was a prospect of the company's suggestion being realised.

Mr. H. E. Wright, appearing for creditors for £5,500, supporting the petition, said he thought a week was the outside time that should be allowed. He understood that a meeting of shareholders had been called for next Friday, and that the meeting of creditors to pass the special resolution would be at the beginning of next week.

Mr. Cecil Turner said the first meeting of creditors with a view to passing the special resolutions would be held next Friday.

Counsel appearing for £3,000 ordinary and a large number of preference shares supported the adjournment for a week.

The Palmer Tyre Co., creditors for £1,482, appeared by counsel, who also represented creditors for £29,000, who at a meeting expressed the opinion that a voluntary winding up would be better for all parties, supported a fortnight's adjournment.

Mr. Turner said a fortnight would enable them to crystallise the matter.

His Lordship said he thought a week's adjournment would be more advisable at the present, and made an order to that effect.

AIRCRAFT IN PARLIAMENT

The following oral answer was given on June 20th :—

AEROPLANES (CYPRESS WOOD).

Mr. REMER asked the Under Secretary of State for Air whether, in view of the fact that the use of cypress on aeroplanes cost the nation over a quarter of a million sterling, he will appoint a small Committee of Inquiry to go into the whole circumstances

Major-Gen. SEELY : The matter has already been fully investigated. The decision to use cypress was taken by the Department on expert advice as a war measure to meet a pressing emergency. I see no reason for a special Committee of Inquiry.

Mr. REMER asked the Under Secretary of State for the Air whether his attention has been called to a minute in his Department proving that one of his present advisers on timber was the official responsible for sanctioning the use of cypress; and what action he intends to take.

Major-Gen. SEELY : I do not know to what document my hon. friend refers in the first part of the question. But, in any case, I do not think any further action is required.

TIMBER TRANSPORT.

Mr. REMER asked the Under Secretary of State for Air whether large quantities of timber were dispatched by rail from Glasgow to London for no other purposes but to be stored; and whether, in view of the fact that traders are complaining of congestion on the railway he will take steps to see that no waste of transport facilities is incurred.

Major-Gen SEELY : I am unable to trace the incident referred to; but if my hon. friend will supply fuller particulars I will have further inquiries made.

FLYING-BOATS.

Lieut.-Comdr. KENWORTHY asked the Under Secretary of State for Air what was the cost for construction of the R34 type of airship; what was the cost of its shed; what is the personnel required at the shed for handling the airship, etc.; what is the estimated total monthly cost of the airship when in commission, including pay of personnel; and what is the cost of the N_3B type of flying boat seaplane, 1919, pattern.

Major-Gen. SEELY : The first part of the question is for the Board of Admiralty, and perhaps the hon. and gallant Member will address the question to them. The cost of the latest flying-boat built to N_3B specification is £9,000 complete with engines; the specification is, however, not a new one.

Lieut.-Comdr. KENWORTHY : What is the cost of the shed ?

Major-Gen. SEELY : Questions as to the shed of the airship should be addressed to the Admiralty. They ordered the ships, although the Air Ministry had control of them for experimental purposes. The actual details of the contract price should be asked of the Admiralty.

Lieut.-Comdr. KENWORTHY : What is the personnel ? Has the right hon. gentleman information as to the number of persons necessary to handle this airship ?

Major-Gen. SEELY : I have suggested that on that point also the question should be addressed to the Admiralty. I included that in the first part of the answer. I think they will be able to give the information required.

Capt. BENN : Are we to understand from that answer that the Air Ministry has not complete control over the lighter-than-air material ?

Major-Gen. SEELY : Yes, that is so. At present we have not complete control of lighter-than-air ships. With regard to personnel, we are responsible for that. The matter is complicated, but it will be adjusted in a very short time

* * *

The following written answer was given on June 26th :—

ROYAL AIR FORCE.—DOGS (IMPORTATION).

Colonel WESTON asked the Under Secretary of State for the Air Ministry, in view of the official report that at one aerodrome 64 dogs had been illegally imported, how dogs on aerodromes would be protected from infection.

Major-Gen. SEELY : The irregular importation of dogs is strictly forbidden, and should be impossible.

Colonel WESTON asked the Parliamentary Secretary to the Board of Agriculture whether he has received any proof of a case of landing dogs illegally from an aeroplane.

Mr. PRATT : The Board of Agriculture have received no official report of the illegal landing of any dog.

* * *

The following oral answer was given on June 30th :—

AIRCRAFT PRODUCTION DEPARTMENT (OFFICERS' LETTERS).

Mr. KELLAWAY (Parliamentary Secretary to the Ministry of Munitions), replying to Sir Francis Lowe, said : Unless marked "Personal" or "Private," letters addressed to individual members of the staff of the Ministry of Munitions are opened in the registry I understand that there is no similar rule in the Admiralty or War Office. The practice was adopted to prevent delay or miscarriage of correspondence. If correspondence is addressed to members of the Ministry and not marked "Private" or "Personal," it is presumably on official business and is opened.

* * *

The following written answer was given on June 30th :—

APRON DEFENCE, LONDON.

Lieut.-Col. PEEL asked the Under Secretary of State to the Air Ministry whether any action has been taken regarding a scheme for the so-called apron defence of London sent to General Headquarters, Home Forces, by Mr. Samuel Jones, of Debenham, on Jan. 31st, 1918; and whether this was the first occasion on which such a scheme was put forward ?

Mr. CHURCHILL : The apron defence of London was installed in 1917. The proposals received from Mr. Samuel Jones, of Debenham, were duly considered, but were found impracticable.

* * *

The following written answers were given on July 1st :—

ROYAL AIR FORCE.—SCAPA SEAPLANE STATION.

Captain BROWN asked the Under Secretary of State to the Air Ministry whether it is necessary to maintain the Scapa seaplane station, where four men are retained without anything to do.

Major-Gen. SEELY : Scapa seaplane base is being retained temporarily until Smoogroo is ready, and will be given up shortly. The station is in charge of a care and maintenance party who are responsible for equipment and stores.

HOURS (NUMBERING).

Colonel WEDGWOOD asked the Under Secretary of State to the Air Ministry whether the system of numbering the hours continuously up to 24, which was adopted in the Army last year, has also been adopted in the Royal Air Force; and, if so, from what date and under what Regulation.

Major-Gen. SEELY : The system in question was adopted throughout the Royal Air Force from midnight, Oct. 19th/20th, 1918, under Air Ministry Weekly Order No. 1,232, dated Oct. 10th, 1918.

FLYING EXHIBITIONS.

Mr. JOYNSON-HICKS asked the Under Secretary of State to the Air Ministry whether any, and, if so, what arrangements are being made for flying exhibitions by members of the Royal Air Force in connection with Peace or other celebrations.

Major-Gen. SEELY : No special exhibitions by Royal Air Force machines are being arranged for. All available machines are already demonstrating on behalf of the "Victory Loan." I think that this is the most useful way of celebrating Peace at the present time

WEEK-END LEAVE.

Major-Gen. SEELY, replying to a question asked by Mr Campbell if the officer commanding No. 70 Group, R.A.F., has issued an order suspending week-end leave, said : Week-end leave has not been stopped. The pre-war practice of granting week-end leave from Saturday midday to Sunday night has been reintroduced. At the same time it has been found possible to restore the practice prevailing before the war of observing general holidays and the giving of extended leave so far as the exigencies of the service permit

LADY SHORTHAND WRITERS (RIPON).

Mr. RENDALL asked the Under Secretary of State to the Air Ministry if he is aware that two lady shorthand-writers engaged at the R.A.F. Ripon depot in January, after five or six weeks' training in technical work, were discharged, although they volunteered to join the W.R.A.F., and that two other ladies requiring training were engaged; what reasons caused this change; and will he insist on an impartial inquiry into the chief section leader's conduct

Major-Gen. SEELY : I have not yet been able to trace the incident referred to, but further inquiries are being made both by the Air Ministry and the War Office, as the depot at Ripon is administered by that Department.

AIR NAVIGATION REGULATIONS.

Mr. JOYNSON-HICKS asked the Under Secretary of State to the Air Ministry whether any number of hours' solo flying is necessary before civilian pilots are licensed; and whether inquiries are being made regarding all crashes which occur in civilian flying.

Major-Gen. SEELY : (1) Tests required for civilian pilots are specified in the directions issued under Air Navigation Regulations, 1919. All pilots who have been licensed have had a large number of solo flying hours to their credit. (2) All possible inquiries are made. The question is being considered by a Committee dealing with points arising on the subject of the Air Navigation Regulations

* * *

The following oral answers were given on July 2nd :—

R.34 AIRSHIP.

Lieut.-Commander KENWORTHY asked the First Lord of the Admiralty if he will state the cost for construction of the R.34 type of airship, the cost of the housing-shed and extensions, the personnel required at the shed for handling, berthing, cleaning the airship, etc., the estimated total monthly cost of the airship when in commission, including pay of persons employed in ship and shed; how many of these airships are under construction; and whether work is being continued on them.

Dr. MACNAMARA : The cost of constructing an airship of R.34 type is approximately £350,000. The cost of the housing-shed at East Fortune, together with extensions and windscreens, is approximately £166,000. Fourteen officers and 400 men are required at the station for handling, berthing, cleaning airships, etc. The estimated total monthly cost of the airship when in commission depends on the distance flown. Taking as basis 8,000 nautical miles per month at a speed of 40 knots, it amounts to about £2,600 at current rates for cost of petrol, oil, and gas. This figure includes the wages of crew and also one-fourth the total pay of the personnel required for handling, etc., as this latter is adequate for maintaining four airships in commission. No further airships of this class are under construction, but six of improved types have been ordered and are in varying stages of construction. Work upon them is being continued.

An HON. MEMBER : Can the right hon. gentleman say whether he has any news of the ship ?

Dr. MACNAMARA : I am sorry to say I have not.

Lieut.-Commander KENWORTHY : Will Peace make any difference to the programme ?

Dr. MACNAMARA : Speaking off-hand I should say no.

* * *

The following written answers were given on July 2nd :—

CANADIAN AIR FORCE.

Captain W. BENN asked the Under Secretary of State to the Air Ministry whether he is in a position to make any statement about the Canadian Air Force.

Major-Gen. SEELY : I understand the question is under the consideration of the Dominion Government, who will doubtless make their own announcement of policy in due course.

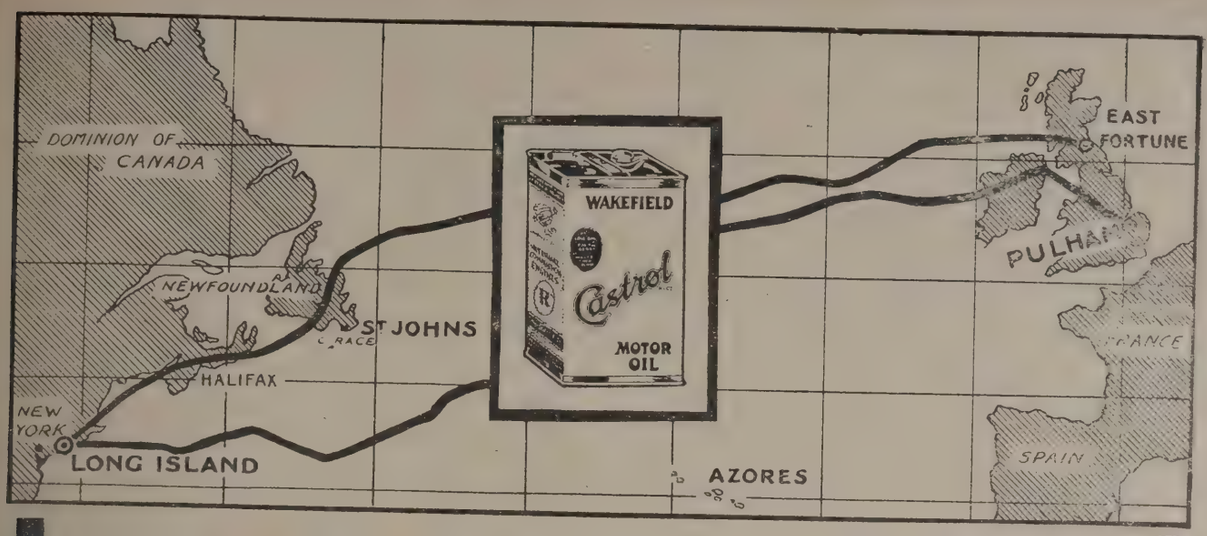
ROYAL AIR FORCE.—AEROPLANES (AUTOMATIC CONTROL).

Captain WEDGWOOD BENN asked the Under Secretary of State to the Air Ministry whether he can amplify the statement recently made by Mr. Baker, the United States of America Secretary for War, on the question of automatic control of aeroplanes.

Major-Gen. SEELY : I regret that I am not in a position to do so at the moment. I will have further investigation made and communicate with my hon. and gallant friend.

MARRIED QUARTERS.

Major-Gen. SEELY, replying to Major Lloyd-Greame, said : I realise that married officers and other ranks of the Royal Air Force are probably finding difficulties in obtaining suitable accommodation near aerodromes. Married quarters will eventually be provided at permanent stations, and in the meantime the possibility of making temporary use of suitable hutting accommodation where available is being investigated.



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WOMEN'S CORPS (RAILWAY WARRANTS).

Major-Gen. SEELY, replying to Mr. F. C. Thomson, said that, although concessions were made to the Army and Air Force with regard to leave being a public charge, they were not extended to the women's corps because of the difference in their conditions of service. The question of making similar concessions to the women's corps is now under consideration

* * *

The following oral answers were given on July 3rd :—

FLYING-BOAT CONTRACTS.

Mr. MACQUISTEN asked the Secretary to the Admiralty whether, at the outbreak of war, the Admiralty purchased a flying-boat of new and successful design, by Mr. Norman Thompson, built by Messrs. White and Thompson (subsequently renamed the Norman Thompson Flight Company in 1915), a pioneer firm, established in 1909; whether in 1915 the Admiralty placed an order with the Norman Thompson Flight Company for 10 flying-boats of such size that the firm were compelled to lay out considerable money in additional buildings to their existing works; whether for 12 months after these extensions were completed in May, 1916, the Government were aware that the firm were only able to work at about one-third full output owing to constant changes in design ordered by the Admiralty and shortage of orders, and, if so, whether he will explain why in the autumn of 1916 the Admiralty refused to allow the War Office to place orders with the firm.

Dr. MACNAMARA : With my hon. friend's permission I will circulate the answer in the "Official Report."

The following is the reply referred to :—

In August, 1914, the Admiralty requisitioned a seaplane from Messrs. White and Thompson. The seaplane was an improved form of the "Curtiss" single-engined flying-boat, of which Messrs. White and Thompson were sole concessionaires.

Trials of this machine were successful, and as a result of the trials the machine was purchased and six further machines were ordered. A further order for 10 "America" type seaplanes, to be fitted with engines to be supplied by the Admiralty, was placed with the firm in July, 1915, tender price being finally accepted Dec. 28th, 1915. An advance of 25 per cent. of the contract price was made with the acceptance of tender at firm's request, the firm stating that the greater part of the profits they might derive from the contract would be spent on new factory extensions and land which they were making arrangements to purchase. The firm did not state that such extensions were necessary on account of the size of the flying-boats.

Shortly after the order was placed it was decided to fit 140 horse-power instead of 100 horse-power engines in order to improve the performances of the machines. At this time the firm had in hand 18 S.38 type school aeroplanes; delivery of the last of these was made on June 7th, 1916. In July, 1916, an order for 20 F.B.A. flying-boats was placed with the firm. Various orders for spare parts were also in hand. In August, 1916, the War Office asked the Admiralty whether there was any objection to the firm's resources being utilised for supply of spare parts.

The 10 "America" and 20 F.B.A. flying-boats were then under construction, and it was under consideration to place an order for small flying-boats of the firm's own design, in which circumstances the War Office was informed that the Admiralty's orders would absorb the firm's whole output for some time.

Mr. MACQUISTEN asked the Parliamentary Secretary to the Ministry of Munitions whether a design of flying-boat by the Norman Thompson Flight Company, known as type N.T. 2 B, and officially adopted by the Air Ministry in April, 1918, as a standard naval instruction machine, was ordered in repetition from them and from other firms; whether, in June, 1917, the Air Board required the firm to increase their works for the production of one of their designs of flying-boats, type N.T. 4 A, and subsequently agreed to advance £20,000 for new buildings; whether, after placing considerable orders in the autumn of 1917 for N.T. 4 A flying-boats, the Air Board cancelled those orders in January, 1918, and gave no new orders until May, 1918, after the appointment of a receiver for the debenture holders; whether the Aircraft Finance Department of the Ministry of Munitions in October, 1918, refused the recommendation of the Lubbock Committee of the Treasury to pay off the debentures issued to Messrs. Cox and Company as security for advances and revest the control of the company in the directors; and, if so, whether he proposes to take any action in the matter?

The FINANCIAL SECRETARY TO THE MINISTRY OF MUNITIONS (Mr. James Hope) : The answer to the first three parts of this question is in the affirmative. No such recommendation was ever made by the Lubbock Committee as is suggested in the fourth part of the question, and the fifth part does not accordingly arise.

Mr. MACQUISTEN : Will the hon. gentleman make an investigation into the whole transaction of the Admiralty with this particular company, and allow Mr. Thompson to appear before him?

Mr. HOPE : Not on the information I have at present. If my hon. and learned friend will give me any more information, I shall be delighted to act upon it, but at present his premises, I think, are wrong.

Mr. MACQUISTEN : As the hon. gentleman's information is so meagre, will he take the steps I suggest, so as to get the necessary information?

Mr. HOPE : I take it that it is for my hon. and learned friend to supply me with premises on which I can reasonably act.

ROYAL AIR FORCE.—TECHNICAL OFFICERS.

Sir F. HALL asked the Under Secretary of State to the Air Ministry if he can state what amount of technical pay, if any, it has been decided to award to technical officers in Class A of the Royal Air Force: whether the same is to be retrospective from Sept. 1st, 1918, and will include technical officers demobilised before the decision has been arrived at, and, if so, whether an officer who would thus be entitled to additional pay can claim the same together with gratuity based on the larger amount of pay?

The UNDER SECRETARY OF STATE FOR AIR (Major-Gen. Seely) : The whole question of pay is now under consideration, and I hope to be able to give further information in a short time. Perhaps the hon. and gallant gentleman will put down a question next week.

ATLANTIC FLIGHT (AIRSHIP R.34)

Captain W. BENN asked the Under Secretary of State to the Air Ministry whether he can make a statement about the Atlantic trip of the airship R 34

Major-Gen. SEELY : His Majesty's airship R.34 left East Fortune, near Edinburgh, at 2.48 yesterday morning on an experimental cruise across the Atlantic. She is equipped with every known form of scientific instrument which it was considered would be of value for the trip. We are sure that much valuable information will be obtained as to the possibilities of air traffic across the Atlantic

All being well she will drop messages at Newfoundland and Halifax, and proceed to New York. I should like to acknowledge the great assistance given by the Admiralty in every respect to the Air Ministry, who are responsible for the flight.

His Majesty's ships "Tiger" and "Renown" are in the Atlantic sending and receiving wireless messages. At six o'clock this morning the airship was reported to be about 1,030 miles on her course, and 885 miles from St. John's. The weather reports are very favourable, and it is hoped that she will soon get a following wind.

I may add that what weighed with us most in deciding to attempt this flight was the hope of thereby making still closer the ties between this country and America

* * *

The following written answers were given on July 3rd :—

ROYAL AIR FORCE (BADGES).

Lieut.-Colonel ARCHER-SHEE asked the Secretary of State for War whether officers who have qualified as pilots or observers during the war, and have served in that capacity at the front, are entitled to wear wings on their uniform if since transferred to a line regiment.

Mr. CHURCHILL : Badges of the Royal Air Force may not be worn by Army officers after return to Army duty with their units. A notification to this effect was issued in Army Council Instruction 1,110, of 1918.

CELLULOSE ACETATE.

Lieut.-Colonel THORNE asked (1) the Secretary of State for War the names of the firms referred to on page 5 of the Fifth Report of the Select Committee on National Expenditure who were invited to tender in July, 1915, for supplies of cellulose acetate and what was the reason for refusing to send a tender form to the Cellon Company, of London, and who was the person responsible, and his name, who thus refused permission to an English company and invited tenders from a firm of neutrals adjacent to enemy territory, the Cellonit Gesellschaft Dreyfus, of Basle, who were advertising their wares in the enemy Press; and was the Department aware of this firm's advertisements in the "Chemiker Zeitung" when they invited them to tender; and (2) the Parliamentary Secretary to the Ministry of Munitions the reason why in March, 1918, his Department made an Order forbidding the importation of cellulose acetate as indicated in the Fifth Report of the Select Committee on National Expenditure, in view of the fact that all that which was being produced in this country was pronounced to be defective; will he state the names of the contractors who carried out the erection and extension of the British Cellulose Company's work at Spondon, Derby; and whether this was a contract between the Ministry of Munitions and the builders or the British Cellulose Company and the builders?

Mr. KELLAWAY : I will reply to these questions at the same time. A Committee appointed by the Government is examining this question, and, as was stated by the Leader of the House on July 1st, it is hoped that their report will be ready by the end of the month. In these circumstances I do not think it would be desirable to make any statement at present.

* * *

The following oral answer was given on July 7th :—

NAVY, ARMY AND AIR FORCES (ESTIMATES).

Sir DONALD MACLEAN asked the Lord Privy Seal when he proposes to re-introduce the Estimates for the Navy, Army, and Air Forces in accordance with his promise?

Mr. BONAR LAW : My right hon. friend is mistaken in saying that I gave any promise that new Estimates would be introduced, though I said that the suggestion would be considered. I did say, however, that I thought there ought to be a discussion of the whole subject in the House when we revert to a peace footing, but I do not think that the time has yet come when it would be useful to have that discussion.

* * *

The following written answer was given on July 7th.

IRELAND, MILITARY AND AIR FORCES.

Mr. MACPHERSON, the Chief Secretary for Ireland, replying to Lieut.-Col. Malone, said that it is not proposed to withdraw the Army of Occupation from Ireland.

Mr. CHURCHILL (the Secretary of State for War), replying to Lieut.-Col. Malone said that there were 59,520 Army and 1,789 Air Force officers and other ranks now stationed in Ireland.

* * *

The following oral answer was given on July 8th :—

CANTEEN FUNDS (DISTRIBUTION).

Mr. FORSTER (the Financial Secretary to the War Office), replying to Major Glyn, said that the details of the grants from canteens funds are too lengthy to be given in answer to a question, but he would arrange for them to be published in the Official Report

According to the Official Report, a grant of £2,000 was made by the Central Regimental Fund to the Hospital for Officers, Royal Air Force, in 1917.

* * *

The following oral answers were given on July 9th :—

RIGID AIRSHIPS.

Lieut.-Commander KENWORTHY asked the First Lord of the Admiralty what will be the total cost of the six rigid airships of an improved type now under construction for the Navy; whether the signature of Peace will enable the building of some or all of these expensive airships to be postponed; and, if not, why is there no difference between the War and Peace airship programme.

Mr. LONG : The estimated total cost of the six rigid airships is £2,200,000. The rigid airship programme was thoroughly revised shortly after the Armistice was signed, and was reduced as far as is consistent with the Peace requirements of the Navy, and with the necessary development of the Airship service. No further reduction is at present contemplated. It should be noted that the six airships are not, as implied in the question, of a single type, but of several types, representing successive stages of development.

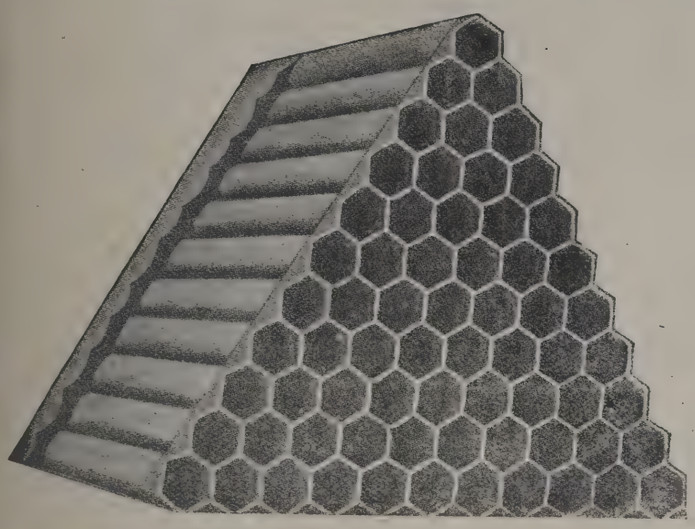
Captain WEDGWOOD BENN : Is it proposed to hand over the construction of the lighter-than-air-craft to the Air Ministry; and, if so, when?

Mr. LONG : That does not arise on this question at all.

Lieut.-Commander KENWORTHY : Is it not to be taken into consideration, in the interests of scientific experiment, at any rate, to postpone this building and the expenditure of this money until a later date, and until we have had more experience of this kind of vessel?

Mr. LONG : Those questions have already been taken into consideration by the Board of Admiralty in arriving at their decision.

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A PILOT IN THE DOCK. *-(continued.)*

By "THE LINCOLN IMP."

This article was begun as long ago as May 21st, but the Air Regulations have taken up so much of the Imp's time that the sequel has been postponed until now. It is therefore necessary to refresh your memories by "harking back" to the definitions previously laid down.

Culpable Homicide.

Homicide is the killing of one man by another. Unless evidence is given that such killing was justifiable or excusable it is culpable homicide. Culpable homicide done by malice aforethought is murder; if done without malice it is manslaughter. "Malice" has here a technical meaning, and since the Indictments Act, 1915, need not even be alleged in the indictment, but to establish murder it is still necessary to prove that the killing was the result of an act done wilfully and without lawful excuse, the known or obvious consequence of which was the injury of another.

Manslaughter.

Manslaughter is a culpable homicide not done of malice aforethought. Thus a pilot who dived on a crowd for sport or to frighten the people in the erroneous belief that he could avoid all hurt to any of them would be guilty of manslaughter. And, moreover, "if a person whilst doing or attempting to do another act undesignedly kills a man—if the act intended or attempted were a felony, the killing is murder; if unlawful, but not amounting to felony, the killing is manslaughter; if lawful, homicide by misadventure merely." (Archbold, 25th ed., p. 852.)

The Sleaford Case.

In the case recently tried before Shearman, J., at the Lincoln Assizes, the undisputed facts were that two officers being driven in a trap on the high road were killed by an aeroplane piloted by the accused, who was before the Court on a charge of manslaughter.

It was not suggested that the pilot intentionally dived at the trap; much less that the pilot had any intention of doing any injury to anyone, in which case the charge would have been murder; the charge of manslaughter was based on the contention that the pilot was doing an unlawful act in flying low over the high road in breach of the R.A.F. regulations, or, alternatively, that he was culpably negligent in doing the lawful act of flying. By the way, no one seems to have suggested that the *usque ad cœlum* doctrine applied and made him a trespasser on the highway! The jury acquitted the accused.

Importance of the Case.

The Imp has as yet seen no technical report of the case, but from the newspaper account it would seem that there was no evidence tendered of negligent piloting, and the jury rightly acquitted on this head. The breach of R.A.F. regulations would seem to have been admittedly proved, so that the finding of the jury necessarily involves that the R.A.F. regulation against low flying is not part and parcel of the ordinary law of the land.

If it is law, its breach was unlawful but not felonious, and in committing the breach the pilot had *un*designedly killed a man and had therefore committed manslaughter according to Archbold's definition which the Imp has just quoted. There are good grounds for the jury's finding inasmuch as Service Regulations are not always drafted with such skill and care that their wording can safely be allowed to make a criminal out of a pilot who but for that wording would be innocent of crime, though guilty of a breach of Service Regulations.

The Air Regulations.

The Air Regulations, 1919, it will be remembered, are made by order of the Secretary of State under the express authority of Parliament. They are therefore part and parcel of the law of the land. Under the heading "General Safety Provisions" Regulation 5 (2) provides: "No person in any aircraft shall . . . (c) carry out any flying which by reason of low altitude or proximity to persons is dangerous to public safety." Suppose, then, that on the trial for manslaughter of a pilot who had undesignedly killed a man by low flying the jury found that (a) he was not negligent in flying low, but (b) he had contravened Regulation 5 (2) (c).

As matter of law, is this a finding of manslaughter? "Yes," you say, "if it is right that contravention of the regulation is an unlawful act in the doing of which the pilot undesignedly killed the man. This falls within the exact wording of the definition of manslaughter you have quoted." True, but wait a bit. A penalty is laid down for contravention of the Regulations—six months' imprisonment or a £200 fine or both. Surely (it will some day be argued) the draftsman did not intend to incorporate by implication the penalty for manslaughter as well? Surely the statutory penalty is the only one?

See the absurdity of any other construction. A pilot's engine cuts out. He has to fly low over a crowd to land on the far side and without negligence he kills one of them. This is a contravention of Reg. 5 (2) (c), and according to your contention is also an unlawful fact. To any proceedings for contravention it will be a good defence to prove that the contravention was due to the engine cutting out as its unavoidable cause (Reg. 10 (1)). But according to your argument, though defensible, it is still an unlawful act and consequently manslaughter! This is one of the endless questions of interpretation which the Regulations are destined to raise in the future.

THE COMPANIES (CONSOLIDATION) ACTS, 1908—1917.

IN THE MATTER OF

The Norman Thompson Flight Company, Limited.

(In Voluntary Liquidation.)

Pursuant to Section 188 of the Companies (Consolidation) Act, 1908, Notice is hereby given that a meeting of the creditors of the above named Company will be held at the Hall of the Institute of Chartered Accountants, Moorgate Place, Moorgate Street, London, E.C.2, at 2.30 p.m., on Monday, the 28th July, 1919.

Notice is also hereby given that the creditors of the above named Company are required, on or before the 22nd July, 1919, to send in their names and addresses and particulars of their debts and claims to W. R. Clemens of Aldermans' House, Aldermans' Walk, Bishopsgate, London, E.C.2., one of the Liquidators of the Company, and, if so required by notice in writing from the said Liquidator, are, by their solicitors or personally, to come in and prove their debts or claims, at such time and place as shall be specified in such notice, or in default thereof they will be excluded from the benefit of any distribution made before such debts are proved.

Dated this 15th day of July, 1919.

H. J. MORLAND, F.C.A.
W. R. CLEMENS, A.C.A.
Joint Liquidators of the Company.

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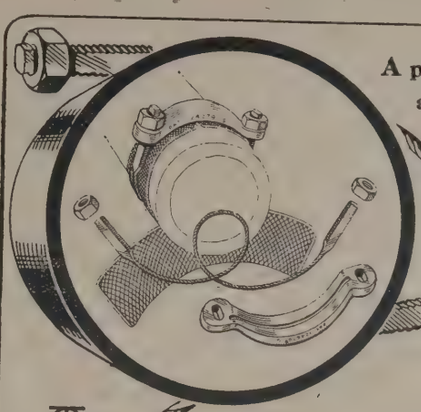
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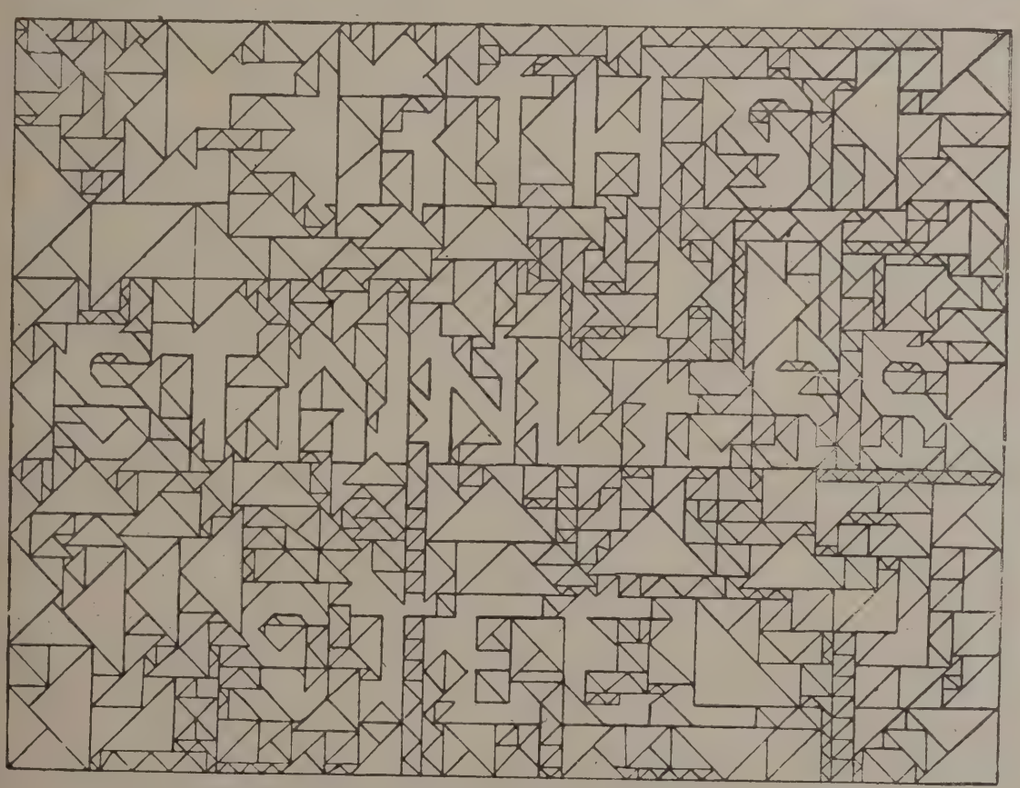
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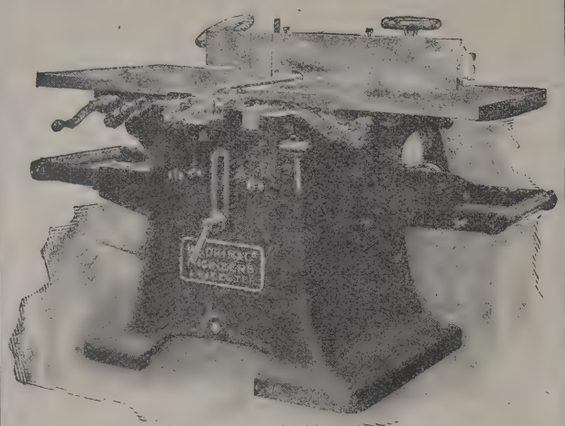
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BUCKINGHAM PALACE, July 10th.

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His Majesty then conferred decorations as follows :—

THE MILITARY CROSS.—Capt. Charles Banks, R.A.F.; Capt Erroll Mauduit, K.R.R.C., attd. R.A.F.; Capt. Ronald Mauduit, Dragoon Gds., attd. R.A.F.; Lt. Albert Robertson, Aust. F.C.

BUCKINGHAM PALACE, July 12th.

The following were severally introduced into the presence of the King, when His Majesty invested them with the Insignia of the respective Divisions of the Orders into which they have been admitted :—

THE MOST DISTINGUISHED ORDER OF SAINT MICHAEL AND SAINT GEORGE.—Companion.—Lt.-Col. Henry Smyth-Osbourne, R.A.F.

THE DISTINGUISHED SERVICE ORDER.—Maj. Francis Feeney, R.A.F.

THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE.—Officers (Military Division).—Lt.-Col. Reuben Farley, R.A.F.; Lt.-Col. John Rubie, R.A.F.; and Maj. Charles Bell, R.A.F.

Member (Military Division).—Capt. William Bowring, R.A.F.

NAVAL.

ADMIRALTY, July 12th.

The King has been pleased to approve of the award of the following decoration to the following officer :—

DISTINGUISHED SERVICE CROSS.

Paymr. Lt. (now actg. Paymr. Lt.-Comdr.) H. G. Badger, R.N.—For distinguished services as observer in one of the seaplanes employed on spotting duties during the attack on the German cruiser "Königsberg" on July 6th and 11th, 1915.

ADMIRALTY APPOINTMENTS.

The following appointments have been made :—

JULY 11th.—Eng. Comdr.—W. W. Newton, to "Argus," July 10th.

JULY 14th.—Comdr.—C. V. Robinson, to "Empress," in command, July 12th.

R.N.R.—Paymr. Sub-Lt. (temp.).—H. G. Swanwick, to "Empress," June 28th.

* * *

On July 11th two Naval F.5 flying-boats (two 350 h.p. Rolls-Royce engines) left Felixstowe for Dundee, this being the first stage of a nine days' flight to Scandinavia and back. The boats belong to No. 4 Communication Squadron, and each one carries a crew of five, including a wireless operator.

Owing to thick fog one of the boats was forced to land at Orford Bay, Suffolk, on July 11th, but proceeded to Dundee the following day.

The route will be *via* Dundee to Christiansand, Christiania, Copenhagen, Stockholm *via* the Baltic Coast, Goteborg (direct route *via* Lydkoping and Nonkoping), Esbjerg, and so back to Felixstowe, covering a total distance of 2,380 miles.

The meteorological authorities in the three countries concerned have arranged to forward to the stopping points daily reports and forecasts of weather conditions.

* * *

On July 7th H.M.A. R.33 started from Pulham, Norfolk, on a flight of 900 miles. During the flight she passed over Nottingham, Grantham, Peterborough, and Norwich, and returned to Pulham on July 8th, the flight having been accomplished in 31 hours.

H.M.A. R.33 will shortly fly from the Naval Airship Station at Howden, East Yorks, to India. The journey will take from 15 to 20 days, and stops will be made at towns (unnamed) in France and Switzerland, and at Rome and Cairo.

Twenty-two tons of petrol will be carried, the distance being roughly estimated at 6,000 miles. The gunner's seat in the tail of the airship will be used for meteorological work and for observation.

The ship is expected to leave Pulham shortly for Howden.

* * *

The officers and crew of Seaplane 8663 claimed in the Prize Court on July 14th for prize bounty for the destruction of U.C.36. Mr. Wilfred Lewis appeared on behalf of the claimants.

In this case it appeared from the affidavit of Captain Henry George Boswell, D.S.C., R.A.F., that on May 20th, 1917, he was in command, jointly with Captain Charles Reginald Morrish, D.S.C., R.A.F., of H.M. Seaplane 8663, and he sighted an enemy submarine 20 miles E.N.E. of the North Hinder Lightship in the North Sea.

The seaplane attacked the submarine with bombs, two of which struck her, and she sank by the stern. There were no survivors. The submarine had been ascertained to be the U.C.36, manned by 25 hands.

Mr. T. H. T. Case, on behalf of the Procurator-General, said that the claims were not opposed.

The President granted declarations that the following amount of prize bounty was payable to the Seaplane 8663, namely, £125.

MILITARY.

FROM THE "LONDON GAZETTE."

WAR OFFICE, July 7th

REGULAR FORCES.—COMMANDS AND STAFF.—HDQRS. OF ADMIN. SERVS AND DEPTS.—The following relinquish their temp. appts. :—Mil. Counsellor (graded for purposes of pay as a G.O.C in C., 2nd Class, without allces.).—Lt.-Gen Sir D. Henderson, K.C.B., K.C.V.O., D.S.O., June 14th

WAR OFFICE, July 8th.

REGULAR FORCES.—INFANTRY.—RIF. BRIG.—Capt. W. J. C. Kennedy-Cochran-Patrick, D.S.O., M.C. (attd. R.A.F.), resigns his commn., July 9th.

MEMORANDUM.—To be temp. Sec. Lt. :—Actg. Serjt. G. H. Godwin, R.A.F., for duty as an Officer Instr., June 29th.

WAR OFFICE, July 9th.

REGULAR FORCES.—ARMY MEDICAL SERVICE.—The following temp. Capt. relinquishes his commn. :—H. Greenwood, on transfer to R.A.F., Oct. 1st, 1918.

WAR OFFICE, July 10th.

REGULAR FORCES.—OVERSEAS FORCES.—CANADA.—CAN. AIR FORCE.—Temp. Capt. (actg. Lt.-Col.) G. C. St. P. de Dombasle, from Nova Scotia R., to be temp. Lt.-Col., and to remain secd., Feb. 28th.

WAR OFFICE, July 11th.

REGULAR FORCES.—INFANTRY.—9th Bn. Royal Scots.—Sec. Lt. (Lt., R.A.F.) A. Henderson to be Lt., and to remain secd., Sept. 28th, 1918.

OVERSEAS FORCES.—CANADA.—MEMORANDUM.—Temp. Lt.-Col. (temp. Brig.-Gen.) A. C. Critchley, C.M.G., D.S.O. (Can. Cav.), ceases to be secd. for duty with the R.A.F., May 31st.

WAR OFFICE, July 12th.

REGULAR FORCES.—INFANTRY.—SERVICE BATTALIONS.—R. WAR. R.—Temp. Lt. V. W. Thompson (14th Bn.) to be atg. Capt. while comdg. No. 12 Anti-Aircraft Co., Feb. 4th.

* * *

The following communiqué was issued by the War Office on July 7th :—

Tsaritsin-Saratov Front.—Tsaritsin was taken on June 30th by Denikin after fierce fighting; tanks and aeroplanes co-operated.

The following communiqué was issued at Simla on July 8th :—

Aeroplanes from Chaman report a certain amount of movement among Abdul Qudo's troops and tribesmen within the Afghan limits, who are concentrating west of the Bogra Pass, probably on account of the water there.

The following communiqué was issued at Simla on July 9th :—

A letter from the Amir of Afghanistan dated June 29th was received at Simla yesterday, in which he enters into a long dissertation on the one-sided character of the Armistice terms and the impossibility of their literal observance.

He also considers it advisable that we should forgo the free movement of aeroplanes over Afghan territory, which, he states, will inevitably provoke the Afghans to fire upon them, in spite of strict prohibition, which would result in our retaliation, leading to a breach of the Armistice.

* * *

It was reported from Chaman that on July 9th British aeroplanes bombed some tribesmen near the Bogra Pass.

* * *

Apropos the photograph which appeared in THE AEROPLANE recently of a Bristol monoplane crossing the Andes, a correspondent writes saying that the sight of the machine recalls happy memories of Bolo muddling. Apparently, 12 of these Bristol monoplanes were sent to Chile as part payment for a battleship. It is alleged that these particular machines were stored in the Royal Enclosure at Ascot for many months until the Authorities decided that something ought to be done with them. One day instructions arrived that they were to be stripped of all useful accessories prior to "reduction to produce." Consequently, Vickers guns, pressure pumps, instruments and so forth were removed. Six months later still nothing had happened and the fuselages were hidden by cobwebs and dust.

Then one day instructions were issued for six of the machines to be sent to the School of Aerial Gunnery at Marske and the others to Montrose. The various accessories which had been removed were replaced hastily and the machines were dispatched. A few days afterwards they were returned to Ascot, and the only explanation given was that the pilots at this Station at the time did not like monoplanes, though, as a matter of fact, the Bristol had been proved to be an extraordinarily fine fighting machine.

Later, again, the machines were sent for another and equally futile journey, and, finally, it was decided to send them to Chile, after adapting them to take 110 h.p. Le Rhône engines.

It would be interesting to know whether the machines which actually got to Chile were those which showed such curious

homing proclivities. Should they be so, one would be surprised to learn that two of the machines succeeded in crossing the Andes after thus being bandied about in England if one did not know the excellence of the design and workmanship of the Bristol firm. If, in fact, the Chilian machines are actually the Ascot machines we have here another splendid testimonial to the Bristol Company.

* * *

The following highly coloured story was issued recently by the Air Ministry. THE AEROPLANE disclaims all responsibility :—

A remarkable tribute to the stability of the British aeroplane comes from India in the form of a story of an airman's race from Amballa to Simla against heavy dust and thunder storms. Major H. A. Tweedie, Australian Flying Corps, flying a Sopwith "Camel," left Amballa for Simla. Visibility was so poor, that at a height of only 6,000 feet it was impossible to see a spot five miles distant, and more extraordinary still no hills were visible. Flying by compass, Major Tweedie bore north-east into the clouds at 7,500 feet and again climbing failed to get above the clouds.

He then made up his mind that it was practically useless to carry on, but looking around he found nothing could be seen ; a dense fog and ominous indications of a severe duststorm were creeping up behind. Climbing still higher Major Tweedie observed that the storm was getting nearer and nearer. He says he could not make up his mind which would reach Simla first. Hoping against hope that he could race the storm he climbed his machine to 10,000 feet, and was relieved to see the Simla hills in front of him.

In order to approach the aerodrome it was necessary to come down into a cup in the hills. The moment he throttled down, however, the machine became unmanageable owing to the bumps due to the thunderstorm overhead. Eventually, compelled to approach the ground "down wind" owing to the storm, he was lucky enough to make the dangerous approach of about 300 feet deep and only accessible from one end. Jumping a wall between trees fifteen feet higher the pilot made the landing just as the storm broke. So severe was it that within a quarter of an hour there were over twenty holes in the fabric of the planes caused by hailstones larger than pigeons' eggs.

The arrival of the machine at Simla created a great impression, particularly amongst the natives, who saw an aeroplane for the first time.

* * *

Messrs. Robinson and Cleaver have put in a claim to the Royal Commission on Awards to Inventors in respect of suits for aviators. The claim was heard on July 14th, and the Commission reserved their decision.

AIR FORCE.

FROM THE "LONDON GAZETTE."

AIR MINISTRY, July 8th.

R.A.F.—The following temp. appts. are made at the Air Ministry :—Staff Officers, 3rd Class (Air).—Capt. R. G. Parry, D.S.O., July 4th, 1918 (substituted for notification in "Gazette," Oct. 18th, 1918)

Staff Officers, 4th Class (T.).—Lt. S. J. Furse, Sept. 14th, 1918.

The notification in "Gazette," June 20th, concerning Capt. W. A. A. Chauncy is cancelled.

FLYING BRANCH.—Maj. F. W. Lucas, O.B.E., to be actg. Lt.-Col. (A'ship) while specially empld., May 26th.

Capt. W. H. Mackenzie to be actg. Maj. while empld. as Maj. (A. and S.), May 1st.

Sec. Lt. C. W. Sutcliffe to be Sec. Lt. (A.), from (Ad.), April 8th.

P.F.O. G. L. Barrett (late R.N.A.S.) is granted a temp. commn. as Sec. Lt. (K.B.), May 16th, 1918 (substituted for notification in "Gazette," July 9th, 1918).

D. J. Stewart (temp. Sec. Lt., R.E.) is granted a temp. commn. as Sec. Lt. (O.), April 24th, 1918.

Sec. Lt. G. A. Lynch (Sec. Lt., Yorks L.I.) is granted a temp. commn. as Sec. Lt. (O.), Aug. 8th, 1918.

The following relinquish their commns. on ceasing to be empld. :—Sec. Lt. R. Smith, Oct. 9th, 1918, and is granted hon. rank of Sec. Lt. (substituted for notification in "Gazette," Oct. 18th, 1918); Lt. D. Leeson (Capt., Brit. Col. R.), Nov. 19th, 1918; Lt. F. J. Simpson (Lt., Brit. Col. R.), Dec. 18th, 1918 (substituted for notification in "Gazette" June 6th); Sec. Lt. (Hon. Lt.) A. L. G. Price (Somerset L.I.), Jan. 25th; Lt. A. Gibson (Lt., Sask R.), Feb 19th; Sec. Lt. W. R. Hudson (Lt., Manitoba R.), March 10th; Lt. G. E. Leishman (Lt., Cent. Ont. R.), March 31st; Sec. Lt. A. E. White, M.C. (Lt., Can. Rly. Servs.), April 8th; Lt. J. P. Francis (Lt., Can. Hrs.), April 14th; Sec. Lt. (Hon. Lt.) G. W. Drowne (Lt., Manitoba R.), April 22nd; Lt. W. J. Gillespie (Lt., E. Ont. R.), April 30th; Lt. G. E. Lucas (Lt., W. Ont. R.), Lt. D. R. Smith (Lt., Quebec R.), May 4th; Lt. D. R. McLaren, D.S.O., M.C., D.F.C., May 14th; Lt. J. E. Price (Lt., Sask. R.), May 16th; Sec. Lt. (Hon. Lt.) H. Symons (Lt., Herts R., T.F.), May 23rd; Lt.-Col. A. C. Critchley, C.M.G., D.S.O. (Lt.-Col., temp. Brig.-Gen., Lord Strathcona's Horse), May 31st; Lt. H. F. Moore (Lt., Manitoba R.), June 10th; Capt. R. T. Van-Der-Byl (Lt., temp. Capt., Brit. Col. R.), June 23rd; Lt. R. H. Luxton (Lt., Can. F. Art.), June 27th; Lt. A. H. Hinton (Lt., Can. F. Art.), June 28th.

Transfd. to unempld. list :—Sec. Lt. J. MacDonald, Feb. 6th; Capt. J. H. N. Drope, Feb. 11th; Sec. Lt. J. L. Brown, Feb. 15th; Sec. Lt. R. I. Palmer, Feb 19th; Sec. Lt. F. D. Butcher, Feb. 21st (substituted for notification in "Gazette" of April 1st); Sec. Lt. H. Cooper, March 6th; Sec. Lt. G. W. Dyson, March 15th; Lt. W. E. Cowan, March 24th; Lt. A. H. Wallace, March 27th; Lt. J. E. De Watteville, March 30th; Lt. J. T. Morgan, March 31st; Lt. R. J. Dawes, D.F.C., Sec. Lt. W. G. Watson, April 1st; Sec. Lt. W. McL. Hirons, April 3rd; Lt. H. Hadley, April 4th; Lt. E. B. Hamel, April 5th; Lt. H. G. Herbert, April 8th; Lt. T. M. Nicholl-Carne, April 9th; Sec. Lt. (Hon. Lt.) H. B. Hampson, April 10th; Sec. Lt. A. J. Hiff, Sec. Lt. L. C. Hillman, Capt. O. Hook, April 11th; Sec. Lt. (Hon. Lt.) D. G. O. Hepworth, April 12th; Lt. M. O. Haskell, D.F.C., Lt. H. Hiley, Sec. Lt. A. E. Walsh, Sec. Lt. C. Watson, April 13th; Lt. G. T. Dunstan, April 14th; Lt. D. M. Hambly, Sec. Lt. D. G. Higgins, Sec. Lt. E. A. D. Watmouth, April 15th; Sec. Lt. W. S. Eastaugh, Sec. Lt. J. J. Haslett, April 16th; Lt. G. H. Halls, Sec. Lt. S. H. Hamblin, Sec. Lt. (Hon. Lt.) G. G. Harris, April 17th; Lt. P. A. de Escofet, Sec. Lt. W. A. Hall, April 18th; Sec. Lt. J. Bill, Sec. Lt. M. A. Dixon, Lt. D. L. Helliwell, Sec. Lt. E. H. Henson, April 19th; Lt. J. R. O'Connell, April 20th; Sec. Lt. W. S. Hedley, April 22nd; Lt. E. R. Watson, April 24th; Sec. Lt. L. M. Hall, Sec. Lt. M. E. V. Hill, Lt. G. N. Smith, April 25th; Sec. Lt. (Hon. Lt.) H. H. Warren, April 30th; Sec. Lt. E. C. Cross, Capt. H. R. C. Dewes, Sec. Lt. D. Walker, Sec. Lt. M. A. Watts, May 1st; Sec. Lt. J. G. Hayes, Sec. Lt. H. Waddington, May 6th; Sec. Lt. O. D. E. Hillsdon, May 7th; Lt. E. D. Hall, May 8th; Lt. F. J. B. Hammersley, May 9th; Sec. Lt. M. S. Hale, Lt. E. W. Walls, Lt. J. W. Wathers, May 10th; Lt. R. N. Haile, Sec. Lt. H. E. Wase, May 14th; Sec. Lt. C. H. Hempel, Sec. Lt. J. E. Watts, May 15th; Lt. S. H. Wallace, May 18th; Lt. W. B. Henderson, Sec. Lt. W. C. Henry, Sec. Lt. F. P. Walker, May 20th; Lt. H. L. W. Hancock, Lt. R. M. Williams, May 21st; Sec. Lt. H. L. Herman, May 22nd; Sec. Lt. C. T. Halliday, Lt. H. Hamer, May 23rd; Lt. F. J. Hansell, Sec. Lt. (Hon. Lt.) C. T. Wakeford, May 25th; Sec. Lt. J. McDonald, Sec. Lt. J. O. Waddington, May 26th; Sec. Lt. J. A. Hannigan, Sec. Lt. G. W. Heslam, Sec. Lt. R. C. Wackett, Lt. A. E. Ward, Sec. Lt. V. A. J. Wagstaff, Lt. E. L. Walters, May 28th; Sec. Lt. J. W. Hartley, Sec. Lt. V. Heller, May 29th; Lt. W. F. Williamson, Sec. Lt. N. S. Watt, May 30th; Sec. Lt. N. M. Harrison, Lt. E. G. Hayes, Sec. Lt. G. O. Parker, Lt. I. W. Parnell, Capt. A. Payze, May 31st; Lt. R. Done, Lt. T. H. Hampshire, Lt. H. S. Notley, June 1st; Sec. Lt. R. K. Harvey, Sec. Lt. B. G. Wattmough, Lt. W. W. Waterson, June 2nd; Capt. H. B. T. Hawkins, Lt. N. Parkinson, Capt. H. S. Paynter, Lt. (Hon. Capt.) G. C. Wall, June 3rd; Sec. Lt. J. Cumming, Lt. G. W. Hawkins, M.C., Capt. B. W. Hemsley, Lt. H. W. Hewett, June 4th; Sec. Lt. L. Badger, Lt. C. H. Biddlecombe, Lt. G. E. Cooper (R.G.A.), June 5th; Maj. E. T. Newton Clare, D.S.O., Sec. Lt. C. R. Palmear, June 6th; Sec. Lt. F. E. L. Elliott (R.A.), Lt. L. W. Heath, Sec. Lt. C. A. White, June 7th; Lt. E. Harling, June 8th; Lt. S. E. Faber, A.F.C., Sec. Lt. R. Hacking, Sec. Lt. O. T. Hazell, Sec. Lt. J. Helingoe, Sec. Lt. C. F. Hull, June 10th; Lt. S. G. Budgett, Lt. G. H. Heaton, Lt. G. B. Hett, D.F.C., Lt. H. Wesley-Segui, Lt. C. F. Whistance, June 11th; Sec. Lt. (Hon. Capt.) J. Hewitt, Lt. L. R. Heywood, Sec. Lt. R. E. Hudson, June 12th; Sec. Lt. A. S. Cameron, Sec. Lt. R. W. Drewett (Lond. R.), Sec. Lt. H. J. Ewan, Lt. H. T. Hammond, Sec. Lt. A. G. Harrison, Sec. Lt. A. E. Heath, Sec. Lt. R. V. N. Makepeace, Lt. T. W. Mansell, Sec. Lt. R. R. Martin, Sec Lt. S. Max, Lt. W. J. N. Morrisby, Lt. M. Munden, Sec. Lt. J. M. Neall, Sec. Lt. L. D. H. Nel, Lt. E. Osborne, Sec. Lt. G. H. Pascal, Sec. Lt. B. Pemberton, Sec. Lt. G. E. Watson, June 13th; Sec. Lt. R. S. Hancock, Sec. Lt. V. F. Hardy, Sec. Lt. (Hon. Lt.) C. P. Harrison, M.C., Sec. Lt. J. A. Hart, Sec. Lt. A. R. Hartley, Sec. Lt. P. S. Henderson, Sec. Lt. J. E. Neilson, June 14th; Lt. A. R. Metelerkamp, June 15th; Lt. S. D. Chard, Sec. Lt. E. H. Halley, June 16th; Sec. Lt. J. L. Ure, Sec. Lt. C. R. E. Wakefield, June 17th; Sec. Lt. C. A. Chaplin (R.F.A.), Sec. Lt. D. E. Haighton, Lt. W. Hallitt, June 18th; Lt. A. I. Birnie, June 19th; Sec. Lt. W. B. Crouch, Capt. E. P. Hardman, Lt. S. C. Howes, Lt. B. W. Smyth-Pigott, M.C., June 20th; Sec. Lt. F. Fletcher, Sec. Lt. C. B. Hales, Sec. Lt. J. F. Higgins, Sec. Lt. J. J. Melvill, Lt. J. Wood, June 21st; Sec. Lt. J. W. Hammond, June 22nd; Sec. Lt. A. Cairnie, June 24th; Capt. A. H. H. Gilligan, A.F.C., Lt. A. Hepburn, June 25th; Sec. Lt. W. H. Gladwin, Sec. Lt. T. Hall, Lt. H. R. Owen, June 26th; Sec. Lt. H. W. Atherton, Lt. E. P. Fletcher (R.F.A.), Lt. H. D. Hamilton, Sec. Lt. H. A. Myott, Lt. V. S. Parker, June 27th; Sec Lt. J. T. Molteno, June 28th, Lt. R. T. Percival, June 30th; Sec. Lt. A. Bargwanna, Lt. R. E. L. Davies, D.F.C., Lt. L. M. McNab, July 1st; Lt. (Hon. Capt.) H. W. Eades, Sec. Lt. V. S. G. Hawkins, July 3rd; Sec. Lt. W. G. Pearce, July 6th.

Maj. G. S. M. Ashby (R.G.A.) relinquishes his commn. on account of ill-health contracted on active service, June 25th.

Capt. E. G. F. Thompson relinquishes his commn. on account of ill-health, and is permitted to retain his rank, April 17th (substituted for the notification in "Gazette" of Oct. 1st, 1918).

The following Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank :—W. M. Davidson (contracted on active service), Jan. 22nd (substituted for the notification in "Gazette," Jan. 21st.); S. Anderson (caused by wounds), Feb. 22nd (substituted for the notification in "Gazette," Feb. 21st); O. A. Moore, May 23rd (substituted for the notification in "Gazette," April 15th).

Lt. F. T. S. Menendez, M.C., relinquishes his commn. on account of ill-health, and is permitted to retain his rank, June 5th (substituted for notification in "Gazette," March 14th).

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank :—H. L. Buckley, June 24th; G. P. Dymond, June 27th; C. S. Gregg (contracted on active service), June 28th; C. R. Abell, July 4th.

The initials of Sec. Lt. W. J. Cairns are as now described, and not "W. G.," as stated in "Gazette," May 6th.

The initials of Sec. Lt. F. N. York are as now described, and not "F. W.," as stated in "Gazette," May 23rd.

The notification in "Gazette," Sept. 17th, 1918, concerning Sec. Lt. E. Tomkins is cancelled.

The notification in "Gazette," Feb. 11th, concerning Lt. R. K. McConnell is cancelled (notification in "Gazette," April 1st, to stand).

The notification in "Gazette," March 7th, concerning Sec. Lt. T. E. W. Browne is cancelled (notification in "Gazette," April 1st, to stand).

The notification in "Gazette," March 11th, concerning Sec. Lt. C. S. Muir is cancelled (the notification in "Gazette" April 1st, to stand).

The notification in "Gazette," March 18th, concerning Sec. Lt. D. J. Brooks is cancelled (the notification in "Gazette," April 1st, to stand).

The notification in "Gazette," March 25th, concerning Lt. (actg. Capt.) R. McLaughlin, D.F.C., is cancelled (the notification in "Gazette," April 4th, to stand).

The notification in "Gazette," April 1st, concerning Sec. Lt. (Hon. Lt.) A. K. Boning is cancelled.

The notification in "Gazette," March 6th, concerning Sec. Lt. S. A. Church is cancelled.

The notification in "Gazette," May 27th, concerning Sec. Lt. M. M. McRae is cancelled.

ADMINISTRATIVE BRANCH.—Capts. to be Capts. :—W. S. Evans, from (S.O.), Jan. 19th; A. C. Bolton, M.C., from (S.O.), April 1st; P. F. J. Kent, from (A.), April 17th.

Lt. G. A. McMillan to be graded for purposes of pay and allowances of Capt. whilst empld. as Capt., May 1st (substituted for notification in "Gazette," May 30th).

Lts. to be Lts. :—A. W. Allan, from (A.), June 4th, 1918 (substituted for notification in "Gazette," March 28th); F. A. Gill, from (O.), Sept. 13th, 1918.

D. W. McEwan (Lt., Arg. and Suth. Highrs.) is granted temp. commn. as Lt., Oct. 28th, 1918.

Sec. Lt. P. Reed to be Sec. Lt., from (A.), June 17th.

Sec. Lt. F. A. A. Hewson to be Sec. Lt., from (O.), Dec. 19th, 1918 (substituted for notification in "Gazette," April 18th).

Sec. Lt. (Hon. Lt.) C. C. Blizard to be Sec. Lt., from (O.), June 17th, and to be Hon. Lt.

Lt. L. G. Bacon relinquishes his commn. on ceasing to be empld., and is permitted to retain his rank, April 8th, 1918.

The following relinquish their commns. on ceasing to be empld. :—Capt. K. H. Marshall (Capt., Lond. R.), Nov. 2nd, 1918; Lt. T. P. L.

Molloy (Lt., Dorset R.), June 9th; Lt. R. T. Wilson (Lt., H.L.I., T.F.), June 11th; Lt. (Hon. Capt.) E. W. P. Newman (Scot. Rif.), June 12th; Sec. Lt. (actg. Lt.) M. E. Dunham (Lt., R. Berks R.), June 14th.

Transferred to unempld. list:—Sec. Lt. (Hon. Lt.) A. K. Boning, Jan. 30th; Lt. H. D. Higham, Sec. Lt. W. Hassall, Lt. A. R. Harris, April 10th; Sec. Lt. F. M. Hawthorn, April 14th; Sec Lt. S. A. Church, April 24th; Sec. Lt. F. Waldron, Lt. G. Wallis, Sec. Lt. H. T. Joy, April 30th; Lt. E. D. Warburton, May 13th; Sec. Lt. R. C. Harley, May 15th; Sec. Lt. M. H. McRae, May 20th; Capt. F. M. Hannay, May 23rd; Lt. L. P. Wallis, May 26th; Maj. H. W. Davies, May 27th; Sec. Lt. G. C. Harvey, May 29th; Lt. F. W. Newby, May 31st; Lt. E. R. Harris, June 1st; Sec. Lt. K. G. Ward, June 3rd; Lt. A. E. Harford, June 5th; Lt. C. Watson, June 11th; Lt. H. D. Evans, Sec. Lt. F. C. Hilbert, Lt. O. I. Norton, Lt. (Hon. Capt.) R. K. Nunes, June 13th; Sec. Lt. A. F. White, Lt. H. McG. Wood, June 15th; Sec Lt. J. C. Fairer, June 21st; Lt. (Hon. Capt.) F. C. McBride, June 24th; Lt. H. Pooley, June 29th.

Sec. Lt. H. J. Coles to take rank and precedence as if his appt. as Sec. Lt. bore date March 1st.

TECHNICAL BRANCH.—Lt. A. W. Allan to be Lt., Grade (B), from (Ad.), Aug. 11th, 1918 (substituted for notification in "Gazette" of March 28th.

Lt. L. L. W. Smythe to be Lt., Grade (B), from (Ad.), June 26th.

Sec. Lt. H. G. Burroughs to be Lt., without pay and allces. of that rank, Dec. 30th, 1918.

Sec. Lts. to be Sec. Lts., Grade (A):—C. H. Marston, from (Ad.), May 28th, 1918, L. B. Hogben, from (Ad.), Nov. 7th, 1918; E. B. Saunders, from (O.), March 1st.

Sec. Lt. H. G. G Rawlings (late Gen. List, R.F.C., on prob.) is confirmed in his rank as a Sec. Lt., Grade (B), Nov. 1st, 1918 (substituted for notification in "Gazette" of Nov. 4th, 1918).

Lt. M. P. Spencer (Lt., Norf. R.) relinquishes his commn. on ceasing to be empld., April 29th.

Transferred to unempld. list:—Lt. R. Hogan, Feb. 13th; Sec. Lt. (Hon. Lt.) L. C. Hearne, April 3rd; Capt. (actg. Maj.) C. H. Nathan, April 9th; Sec. Lt. E. A. Pollitt, April 19th; Sec. Lt. C. E. D. Marsden, April 20th; Capt. S. R. Hemingway, April 26th, Lt. G. R. Waters, April 29th; Capt. B. F. Bedford, Lt. J. Hodder, Lt. H. L. Waddington, May 1st; Sec. Lt. M. D. Hart, May 6th; Sec. Lt. C. R. Orchard, May 7th; Sec. Lt. G. C. Harrison, May 8th; Lt. (Hon. Capt.) E. H. Walter, May 9th; Lt. S. H. Hawes, May 17th; Sec. Lt. (Hon. Lt.) A. C. White, May 18th; Sec. Lt. W. C. Hanney, May 29th; Sec. Lt. E. G. Wait, May 30th; Lt H. Fernihough, Lt. C. B. Maddocks, Sec. Lt. F. H. Newbery, Capt. L. G. P. Warren, May 31st; Sec. Lt. P. D. Wilson, June 7th; Capt. W. M. Groom, June 10th; Capt. F. R. Hardie, Lt. R. F. McMichael, June 13th; Lt. F. Atkins, Sec. Lt. W. F. Hendry, June 17th; Sec. Lt. (Hon. Lt.) A. Howard, June 20th; Lt. H. Viney, June 22nd; Lt. C. S. Heaton, June 25th; Sec. Lt. E. J. S. Aston, June 26th; Capt. B. Grant (R.N.V.R.), Sec. Lt. G. J. Finley, June 28th; Lt. S. Crowther, Sec. Lt. H. J. Phillips, July 1st; Lt. A. V. McPhail, July 6th

The initials of Lt. E. H. Edwards are as now described, and not "E. W.," as stated in "Gazette" of April 25th.

The notification in "Gazette" of May 6th concerning Capt. C. D. Butler is cancelled.

The notification in "Gazette" of June 4th, 1918, concerning Flt. Lt. H. W. Campion (late R.N.A.S.) is cancelled.

The notification in "Gazette" of Jan. 3rd concerning Sec. Lt. H. I. Allen is cancelled.

The notification in "Gazette" of June 20th concerning Lt. C. E. Maryon is cancelled.

MEDICAL BRANCH.—Transferred to unempld. list:—Capt. H. T. H. Butt, March 3rd; Capt. W. F. Walker, April 16th; Capt. R. H. Dixon, M.B., June 3rd; Lt. G. M. Mellor, June 25th

DENTAL BRANCH.—Lt. H. Wardill is transferred to unempld. list, April 3rd.

CHAPLAINS BRANCH.—Rev. T. L. Beveridge (temp. Chapln. to the Forces, 2nd Class, R.A.C.D.) is granted a temp. commn. as Chapln., with the relative rank of Capt., and is granted the relative rank of Maj. whilst empld. as Asst. Principal Chapln. (Presbyterian), June 5th.

MEMORANDA.—The following heading, concerning the grant of temp. commns. to Overseas Cadets, is substituted for the notifications which appeared in "Gazettes" dated May 2nd, 6th, 9th, and 27th, June 6th, 10th, 13th, 20th, 24th, and 27th, July 1st and 4th:—

"The following Overseas Cadets are granted temp. commns. as Sec. Lts., with effect from Feb. 15th, and relinquish such commns., with permission to retain the rank, from the day following termination of the standardised voyage in the case of those claiming immediate repatriation, and from the day following demobilisation in England in all other cases."

The following Overseas Cadets are granted temp. commns. as Sec. Lts., with effect from Feb. 15th, and relinquish such commns., with permission to retain the rank, from the day following termination of the standardised voyage in the case of those claiming immediate repatriation, and from the day following demobilisation in England in all other cases:—100087 E. G. Hickmott, 178179 H. C. Johnston, 68081 S. Julian, 7 1181 E. R. O'Connell, 13296 J. H. Walmsley.

The following Cadets are granted hon commns. as Sec. Lts.:—100212 J. F. Morison, Jan. 2nd; 180710 H. W. Ash, 94039 S. Moreman, Jan. 12th; 576239 B. Robinson, 137102 C. A. F. Rushford, 137095 D. S. Robinson, 37370 S. Rhein, Jan. 13th; 117347 L. T. Gwyther, 176100 C. E. Jenkinson, 21684 G. T. Mann, 110745 B. E. Stott, Jan. 15th; N. M. Firench, Jan. 17th; 179155 H. C. Howells, Jan. 19th; 177279 J. R. Jones, Jan. 25th; 110868 W. H. Price, Jan. 28th; 180192 J. A. Browswood, 175168 F. Beech, 137131 F. J. Brown, G.8739 J. H. Crossland, 17322 F. W. Clements, 175504 W. Connon, 275031 H. A. Crook, 56736 T. B. Daniels, 51030 L. G. Enright, 27168 J. Evans, 179442 C. Hotter, 120664 J. Hubbock, 137640 A. Jones, 175319 T. H. Lewis, 176184 W. H. Lewis, 54/066071 A. Letters, TL/211306 J. L. Milne, 176793 C. J. Morley, 176841 L. C. Ramsey, 175148 H. A. Sloman, 316020 J. E. Sharp, 128705 G. Strachan, 128442 J. C. Thurburn, 176836 E. G. Thomas, 137039 W. R. Tribe, 137032 E. W. M. Thompson, 137095 A. C. Tate, 133716 R. Whitworth, 7584 E. Willoughby, 117274 T. W. Yeates, Jan. 31st; 100694 D. F. Menzies, 175212 R. Y. Rutherford, Feb. 3rd; 7519 F. H. B. Allen, 176203 R. H. Bryson, 176212 V. L. Benson, 64978 C. Booth, 117004 H. H. Burrows, 10/78/210 J. Y. Childs, 180653 E. Chappelow, 97707 J. Curtis, 215036 W. E. Chandler, 220536 F. W. Davies, 229508 F. H. Down, 113246 W. E. Green, 177409 H. Gribbon, 37725 A. Hunt, 173856 E. R. Holloway, 176245 H. R Jackson, 205062 A. H. King, 6355 J. H. Lewis, 176107 W. Millington, 129303 P. McG. McLean, 28635 R. H. McCullock, 35692 J. Middleton, 48157 H. Parkin, 175143 T. E. Price, 137088 G. Richards, 137097 F. L. Roberts, 110512 A. J. Smith, 128492 A. F. C. Smith, 176378 W. H. Spikins, 137055 O. E. E. Wood, Feb. 10th; 175163 A. Adams, 126166 J. Anderson, 176900 D. E. Bryett, 175035 H. C. Bailey, 216781 S. J. Baxter, 17600 P. J. Barrow, 176175 A. Cooke, 110559 H. R. Comerford, 21107 D. I. Evans, 092761 E. Farrell, 176243 D. Heap, 178859 G. Hammond, 219857 A. W. Jupp, 177210 H. Jopling, 203835 M R. Knight, 176350 A. W. Kay, 176701 A. J. Ll. Lewis, 9116 H. W. Marriott, 179461 D. R. Pocock, 95148 A. Ross, 64983 E. Roberts, 176371 F. W. Roberts, 70669 K. K. Robson, 176381 E. H. Smith, 128714 J. Shepherd, 128500 P. H. Stearn, 128403 W. J. Sargeant, 117992 D. R. Thomas, 110952 R. N. Tanner, 18456 J. A. Verel, 110416 R. A. Wathen, 176131 F. D. Wheeler, Feb. 11th; 39606 N. J. Albin, 2367 A. Adlington, S.S./5284 J. G. Bates, 31400 A. G. Bateman, 176211 G. R. Bestic, 175629 W. Brown, 4059 W. D. Candy, 128351 C M. Cassie, 50128 C. Cowell, 353933 H. F. Crowhurst, 240762 W. J. Milne, 206050 W. A. Newton, F/14214 T. D. S. Outred, 70676 S. E. Payne, 37734 W. E. Pechey, 176428 J. R. Palmer, 95442 J. Retson, 117924 P. Shaw, 53583 W. H. Secker, 128111 F. W. K. Symons, 22513 W. P. T. Vear, Feb. 12th; 110994 G. A. Broderick, 90521 A. H. Burton, 374018 A. T. Burridge 128457 H. C. Cocksedge, 237953 H. H. Duckett, 110361 C. Drake, 117794 D. McI. Graham, 110102 A. J. O. Hopkins, 110781 J. S. Pearson, 96526 G. W. O. Rudd, 94836 P. T. Saunders, 85305 L. W. Seet, 48226 C. G. Swift, 128146 J. R. Taylor, 128064 T. Webb, Feb. 14th; 238614 H. D. Benham, 178401 H. Bush, 374077 C. Coles, 175683 R. G. Cross, 175519 J. A. Gilbert, 524491 E. A. Hull, 175185 G. W. T. Hartnell, 176342 C. Ll. Jones, 129322 V. C. B. Johnson, 31185 D. S. Kirkland, 137577 T. Lomas, 128906 D. W. Robertson, 51308 T. N. Rowe, 73853 H. F. Redway, 128904 K. M. Ross, 128703 W. H. Simson, 128723 C. F. Spark, 49816 D. D. Thompson, 300055 H. G Williams, 110480 A. Wilson, 176842 E. J. Yapp, Feb. 17th; 137124 S. A. Andrews, 94677 A. Aitcheson, 69286 J. H. Asher, 136048 R. E. Blanche, 6304 A. H. Bayes, 179013 J. C. Beattie, 151340 C. B Bickell, 137135 A. R. Burberry, 128813 W. Bretherton, 25927 P. J. Chappill, 180655 D. Cranston, 179715 E. A. Challis, 22232 E. W. Clarke, 175507 G. Currie, 180658 B. R. Davis, 117496 C. J. Dean, 180663 S. Downing, 179430 W. E. Davies, 197339 J. H. Freer, 180714 W. A. Fleming, 178814 W. Fraser, 128530 W. Griffin, H. S. Howarth, 84932 W. B. Hargreaves, R. T. Hibberd, 179440 G. Henning, 181356 W. A. Hardy, 176893 C. Hinchcliffe, 179437 R. C. Huzzey, 179201 J. Hillman, 175131 H. Harrison, 178864 K. Ivy, 20293 A V. Irish, 128519 J. W. B. Kent, 117539 W. J. King, 66504 D. O. Ledgar, 37696 W. F. Lovering, 176865 E. G. Legg, 117005 S. Law, 180455 W. W. McKerrow, 17945 T. McIlroy, 100533 A. Millar, 178088 E. A. Miles, 21662 W. T. Menniss, 180686 T. W. Machin, 117315 R. Mackay, 1311 V. E. Parker, 240068 A. C. Packman, 53035 R. Pick, 435 A. Richards, 176821 B. S. Ringer, 115047 J. J. Snow, 178831 D. E. Smithson, 128546 H. C. Turrell, 128774 S. W. Tweedy, 100225 A. Webb, 45265 W. H. Watson, 128973 G. E. Winn, 175928 H. Yeomans, 110774 C. G. Young, Feb. 18th; 179389 G. N. Beck, 19416 A. E. Savill, 179009 A C. Tucker, Feb. 19th; 126336 R. J. Anderson, 61736 J. Duncan, 28028 S. P. Grieve, Feb. 21st; 73544 C. J. E. Birch, 308329 G. Campbell, M/32282 E. B. Eastland, 204514 H. Elmer, 49642 L. C. Gleaves, 177460 J. E. Hooper, 5043 C Lexious-Lawson, 9972 S. C. Lovell, 35590 H. Owen, 70590 E. D. Owens, 767417 G. R. Powell, 534876 K. H. Shalis, 501906 D. Ward, 203819 L. H. Welsh, 46915 E. W. Wilsher, 147076 D Wright, 245514 R. J. Wright, Feb. 22nd; 39645 C. W. Crowder, 403559 E. Saville, 5653 E. M. Smith, Feb. 24th; 128706 G. B. Smith, Feb. 25th; 399768 C. Burgess, 35377 H. C Burgess, 39266 G. V. Close, 117495 W. Davis, 15306 C. F. Guise, 39908 A Hurst, 113838 J. G. Langton, Feb. 27th; 137274 W. G. Hammond, March 1st; 125806 A. Bullard, 6760 R. Clay, 113477 A. H. Muidhead, 137783 J. H. Meek, 12318 J. J. O'Leary, 512686 G. S. Plant, 62211 R. Woodhouse, March 4th; 522564 E. B. Saunders, March 5th; 100588 L. E Coleman, 99715 D. T. Dickie, 5069 T. Edwards, 175989 C. T. Filer, A. H. Giles, 17652 H. S. Gray, 17146 J. T. Goldsmith, 117389 F. W. Hall, 30323 T. W. Howells, 193001 H. A. Lewis, 32257 J. G. Ledingham, 530110 J. A. Ladds, March 6th; 100305 G. B. E. Norburn, 177285 C. Potter, 19561 J. L. Pendleton, 417195 W. H. Pace, 110464 F. Rurcie, 9693 H. Tullock, 128315 H. I. Thomas, March 6th; 402105 G. W. I. Carter, 65663 G. Fluck, 6278 L. F. L. Salmons, 36398 C. Savage, 190702 J. Woodcock, March 7th; 59290 W. H. Evans, 767277 A. J. Gallop, 0/81168 C J. Herald, 11071 W. B. R. Skinner, 2112 R. A. Turner, 450775 A. F. Willis, March 8th; 98737 A. Bridgeman, 8175 G. H. Merry, March 10th; 175712 G. E. Palmer, March 11th; 18108 H. S. Abrahams, 39649 J. L. Barton, 155707 R. B. Culverwell, 176219 D. Creighton, 6081 J. A. Lathean, 117025 A. E. Lewis, 240376 A. Minshall, 176907 C. H. Moore, 94794 E. A. Osborn, 52193 H. Ogden, 176610 J E. Preece, 25322 W. E. Rassell, 137100 F. W. Robinson, 110524 J. R. Robison, 432489 W. G. Tonge, 154714 J. A. Vallance, 100360 F. C. Wallen, March 13th; 12223 J. C. Anton, 519165 M. Millicott, 288147 I. O. Pugh, 117481 J. Strathian, March 14th; 54523 G. A. Harriman, 6958 S. Macario, 34874 N. Small, 10/155312 E. Ward, March 15th; 175391 W. W. G. Harris, March 17th; 110770 C. Carter, March 18th; 176305 A. W. Bessant, 137136 D. Brooke, 119678 W. Cambage, F/16791 F. C. J. Carpenter, 117168 D. Conroy, 176222 H. A. Dalton, 20209 W. D. Gannaway, 128017 W. Horsley, 117195 R. Henry, 13090 P. D. Lane, 6140 L. Matthews, 128898 A. Othick, 379263 W. H. Stone, 203501 G. I. Smith, 117990 L. R. G. Smith, 30764 N. Tucker, 1173376 H. Wilsdon, 2090 J. C. Westwood, D. J. A. Yeomans, March 19th; 175933 L. R. W. Knight, 43263 H. B. Spry, 5/31145 H. Warby, March 20th; 36827 E. B. Snelling, March 21st; 81018 F. W. Luck, 117394 H. C. Miller, March 22nd; 103625 A. C. McCullum, March 25th; 110927 H. P. Barnard, 69312 J. R. Barnett, 402655 H. Boyle, 175239 H. G. Blade, 176115 H. Beavis, 132132 A. Clark, F/40594 P. Crosland, 176323 F. A. Cridland, 128281 H. R. Cardale, 180459 L. K. Garrett, 128850 B. L. Gilles, 175922 C. Garner, 175743 H. T. Hughes, 117353 T. A Joy, 114693 R. E. Keeling, 44028 E. C. Mills, 251562 A. L. Mitchell, 175017 T. R. Morrall, 176923 A. V. Norman, 100365 F. L. Palmer, 82455 H. T. Philips, 70957 S. Parker, 305653 W. G. C. Pleases, 117986 F. A. Pearce, 176370 E. C. G. Roper, 128423 C. L. Richardson, 10899 J. W. Russell, 3/26129 J. Souter, 128523 W. E. Stephens, 128434 F. Savage, 128429 N. S. Sheryer, 12822 F. E. Streets, March 28th; 2819 A. Shaw, 7744 S. Smythe, 179466 V. Snook, 06772 F. West, March 28th; 4719 C. H. Gillam, 254662 C. P. Hardacre, 3003 G. Vaughan-Evans, March 29th; 110962 E. C. Davis, March 31st; 128863 J. Harrison, April 1st; D. P. Smith, April 3rd; O/32134 W. H. Brown, April 4th; 31087 R. H. Cater, C/26303 D. H. Farrar, 175056 G. R. Graham, 176092 R. E. W. C. Hawkshaw, 117718 G. H. Hill, 175204 N E. Lane, April 5th; 175246 J. McD. Colvin, 175430 A. M. Cave, 175649 D. J. E. Davies, 57214 C. J. Guy, 526665 R. K. Robson, 128324 L. A. Stuart, 176854 B. R. M. Smith, 25466 W. Weir, 175100 J. H. Wright, April 7th; 128879 S. Lees, 89754 V. Peacock, April 10th; 90279 F. Charnley, 128899 S. A. Pougnet, May 1st; 94878 C. R. Smith, May 6th; 40024 G. Harris, May 8th; 117737 H. T. Armstrong, 137214 F. J. Collis, 97552 A. Reynolds, May 12th.

Lt. H. D. Goldsmith, D.S.O. (Maj., Bt. Lt.-Col., D. of Corn. L.I.), relinquishes his commn. on ceasing to be empld., Jan. 1st.

Transferred to unempld. list:—Sec. Lt. (actg. Lt.) J. W. Mayall, April 12th; Capt. G. C. V. Hewson, May 14th; Capt. G. B. Fraser (King Edward's Horse), June 8th; Lt. R. A. Pennington, June 17th; Sec. Lt. H. Jones, from (S.O.), Maj. H. A. Moore, C.B.E., M.C., July 1st.

Maj. W. J. C. Kennedy-Cockran-Partick, D.S.O., M.C. (Capt., R. Brig.), resigns his commn., and is permitted to retain his rank, July 9th.

The notification in "Gazette" of April 29th, concerning Sec. Lt. (actg. Capt.) J. L. Brown is cancelled.

AIR MINISTRY, July 11th.

R.A.F.—Chief of the Air Staff.—The notification in "Gazette" of June 20th concerning Maj.-Gen. Sir H. M. Trenchard, K.C.B., D.S.O., is cancelled.

FLYING BRANCH.—Lt.-Col. J. C. Halahan, C.B.E., to be Lt.-Col (A.), from Group Comdr., July 1st.

Maj. R. A. Bradley to be Lt.-Col., Aug. 1st, 1918.

Majs. to be actg. Lt.-Cols. whilst empld. as Lt.-Cols. (A.):—C. H. B. Blount, M.C., A. V. Holt, D.S.O., S. Smith, D.S.O., A.F.C., May 1st.

Maj. G. F. H. Faithfull to be actg. Lt.-Col. whilst empld. as Lt.-Col. (K.B.) from May 1st to June 9th.

Maj. W. J. C. Kennedy-Cockran-Patrick, D.S.O., M.C., to be Maj. (A.), from (S.O.), July 1st.

Capts. to be actg. Majs. whilst empld. as Majs. (A.):—G. C. Bailey, D.S.O., W. E. Collison, C. R. Cox, A.F.C, C. C. Durston, J. F. Gordon, D.F.C., C. H. Hayward, P. Huskinson, M.C., G. C. Pirie, M.C., V. A. H. Robeson, M.C., J. G. Selby, M.C., D. F. Stevenson, D.S.O., M.C., H. G. Smart, May 1st.

Capt. J. A. Cochrane, M.C., to be actg. Maj. whilst empld as Maj. (K.B.), May 1st.

Capt. C. J. Galpin, D.S.O., to be actg. Maj. (A. and S.), without pay and allces. of that rank, whilst specially empld., May 1st.

Capt. W. St. J. Scott-Scott to be Capt. (A.), from S.O., April 10th (substituted for notification in "Gazette" of June 24th).

Lts. to be actg. Capts. whilst empld. as Capts. (A.):—P. J. Barnett, M.C., C. K. M. Douglas, A.F.C., D. W. Grinnel-Milne, A. McGregor, D.F.C., R. K. Morris, M.C., S. E. Toomer, May 1st.

Lts. to be actg. Capts. while empld. as Capts. (K.B.):—(Hon. Maj.) G. T. J. Barry, W. R. Phillips, D.F.C, May 1st.

Lt. (Hon. Capt.) E. H. Grant to be Lt. (A.), from (S.O.), June 2nd.

Lt. (actg. Capt.) H. E. Hazlehurst to be Lt. (A.), from (T.), and to relinquish actg. rank of Capt., Sept. 23rd, 1918 (substituted for notification in "Gazette," Oct. 4th, 1918).

Lt. L. V. Dell to be Lt. (O.), from (Ad.), May 15th.

177155 Flt. Cadet F. W. Carter is granted a temp. commn. as Sec. Lt. (O.), Sept. 27th, 1918.

Sec. Lt. C. H. Taylor (Capt., I.A.R.O.) relinquishes his commn. on reversion to I.A.R.O., May 20th.

The following relinquish their commns. on ceasing to be empld.:—Lt. S. C. Burt (Lt., Brit. Col. R.), April 9th; Sec. Lt. (Hon. Lt.) G. W. F. W. Downer (Lt., R.H. and R.F.A.), May 17th; Lt. T. H. Wickett (Lt., W. Ont. R.), May 31st; Lt. R. P. Baker (Capt., Brit. Col. R.), June 9th; Lt. G. C. T. Hadrill (Lt., R.A.S.C.), June 18th; Lt. (Hon. Capt.) D. S. Inglis (Lt., Gord. Highrs.), June 23rd; Sec. Lt. (Hon. Lt.) W. V. Tyrrel (Lt., R.I. Rif.), June 24th; Lt. H. M. Tulloch (Lt., I.A.), June 27th; Lt. J. P. Cunninghame (Lt., Alberta R.), July 2nd.

Transferred to the unempld. list:—Lt. R. T. W. Hill, Dec. 31st, 1918; Lt. A. Blair, Jan. 27th; Lt. J. E. Fitzpatrick, Feb. 8th; Sec. Lt. C. G. Hoffman, Feb. 14th; Sec. Lt. A. R. Giroux, Feb. 18th; Sec. Lt. W. F. Spencer, March 1st; Lt. E. A. Stewardson, March 4th; Sec. Lt. L. S. Anderson, March 26th; Lt. H. S. Holcombe, Sec. Lt. C. Herr, Sec. Lt. A. S. McGrath, April 1st; Lt. C. C. F. Rkins (Essex R.), April 8th; Sec. Lt. W. Bartley, Sec. Lt. R. C. Hirst, Lt. R. H. Reece, April 9th; Maj. H. P. L. Higman, D.F.C., April 10th; Lt. J. W. Hart, Lt. C. H. Tyreman, April 11th; Sec. Lt. F. E. Power, April 13th; Lt. R. H. Dennis, Lt. G. R. Hicks, Sec. Lt. J. S. Howard, April 14th; Sec. Lt. G. C. Edmond, Lt. B. D. Higman, April 15th; Sec. Lt. G. C. Hinge, April 16th; Sec. Lt. L. Harrison, April 17th; Sec. Lt. H. Hillier, April 18th; Sec. Lt. F. E. Armstrong, Lt. H. T. Singleton, Sec. Lt. H. M. Stover, Sec. Lt. F. L. Vanallan, April 19th; Lt. H. A. Hince, Sec. Lt. F. S. Smith, April 20th; Sec. Lt. E. I. Davis, Lt. W. Hardy, Sec. Lt. G. R. Hodson, April 21st; Sec. Lt. D. V. Hoskins, April 24th; Sec. Lt. P. Davey, Sec. Lt. R. E. Haestier, April 25th; Sec. Lt. J. K. Hill, Capt. J. E. Wood, April 30th; Sec. Lt. A. C. E. Smith, May 1st; Lt. G. Hall, May 2nd; Capt. G. H. B. McCall, May 3rd; Lt. J. D. V. Holmes, May 4th; Lt. R. J. Stallard, May 5th; Sec. Lt. H. P. Hobbs, May 6th; Sec. Lt. T. C. Stranger, Lt. C. H. Sands, May 7th; Sec. Lt. H. Hough, May 8th, Lt. M. D. C. Drummond, May 9th; Lt. C. W. Harbidge, May 13th; Sec. Lt. A. Abernethy, Lt. W. E. Beckett, May 15th; Sec. Lt. G. J. Ellsmere, Sec. Lt. E. P. Hall, Lt. C. E. Hill, Sec. Lt. R. Hopkins, Sec. Lt. T. Moffatt, Sec. Lt. J. A. Simmers (substituted for the notification in the "Gazette" of May 13th), May 20th; Lt. C. A. H. Aspinall, Sec. Lt. O. P. Bewers, May 21st; Lt. F. Barf, May 22nd, Lt. J. E. Adam, Lt. D. Adams, Sec. Lt. M. Furtney, Sec. Lt. K. S. Hill, May 23rd; Lt. A. E. G. Bailey, May 24th; Capt. G. H. Hooper, M.C., May 25th; Lt. B. E. Barwell, Sec. Lt. J. Durie, Sec. Lt. C. Harrison, Sec. Lt. (Hon. Lt.) A. E. Haynes, M.C., May 28th; Lt. D. B. Adamson, Sec. Lt. I. P. Aitken, Sec. Lt. (Hon. Lt.) R. L. Bateman, May 29th; Sec. Lt. A. N. Abbott, Sec. Lt. H. C. E. Adlard, Sec. Lt. S. J. Alderson, Capt. F. J. Bailey, Sec. Lt. C. H. Baker, Capt. L. W. Barney, Sec. Lt. H. S. Sandiford, May 30th; Capt. W. H. S. Aplin, Lt. W. Arthur, Lt. H. W. L. Baartman, Lt. F. R. Baker, May 31st; Sec. Lt. E. H. Bird, June 1st; Sec. Lt. F. A. Beardmore, Sec. Lt. A. E. Beilby, Sec. Lt. R. D. Bird, Lt. G. M. Duncan, D.F.C., Sec. Lt. J. M. Munro, June 2nd; Sec. Lt. W. R. Atkinson, Capt. J. S. Beattie, Sec. Lt. J. Evans, Lt. L. J. Minter, June 3rd; Lt. C. D. Barnard, June 4th, Capt. H. S. Broad, Lt. J. Evans, M.C. (Welsh R.), Lt. G. Shaw, Lt. B. W. Sims, June 5th; Lt. L. L. T. Sloot, June 6th; Lt. M. D. Allen, Lt. G. Archer, Sec. Lt. W. W. Ash, Sec. Lt. W. G. Baker, Lt. G. T. Eveleigh, Sec. Lt. O. D. E. Hillsdon, Sec. Lt. F. C. Mildenhall, Lt. W. B. Shelton, Capt. W. A. Shirlaw (H.L.I., T.F.), June 7th; Sec. Lt. (Hon. Lt.) H. R. Hill, M.C., June 8th; Sec. Lt. A. G. Ely, Sec. Lt. (Hon. Lt.) J. Montgomery, Lt. D. H. Phillips, June 9th; Sec. Lt. C. P. Bristow, Sec. Lt. O. Matthews, Lt. O. M. D. Rochs, Sec. Lt. (Hon. Lt.) H. Sainsbury, June 10th; Capt. H. H. W. Bean, Lt. A. L. B. Bennett, Lt. A. Blount, Sec. Lt. (Hon. Lt.) H. Dinwoodic, M.C., June 11th; Lt. W. H. Delamere, Lt. (Hon. Capt.) D. Walrond-Skinner, June 12th; Lt. F. Adams, Sec. Lt. F. Barker, Lt. J. G. Beck, Lt. L. G. Brazier, Sec. Lt. (Hon. Lt.) J. Donaldson (Seaforth Highrs.), Lt. L. Duffus, Lt. D. C. Dunlop, Sec. Lt. W. E. Eastman, Sec. Lt. W. Fenwick, Lt. H. Ford, Sec. Lt. T. W. N. Hitge, Sec. Lt. E. G. Hill, Lt. (Hon. Capt) R. Lindsay, Lt. F. P. Serginson, June 13th; Sec. Lt. A. S. Adams, Lt. R. W. Anderson, Sec. Lt. H. C. A. Arnot, Sec. Lt. C. A. Backberg, Lt. J. M. Batting, Lt. K. V. Betts, Lt. H. A. Bird, Sec. Lt. T. J. Birmingham, Sec. Lt. F. C. Bowler, Lt. (Hon. Capt.) C. Duttson, Lt. W. B. Hills, Sec. Lt. H. L. Magid, June 14th; Sec. Lt. R. Hinsch, Lt. D. A. Savage, M.C., June 15th; Sec. Lt. B. G. W. Adams, Sec. Lt. V. V. Anderson, Lt. A. B. Bennett, Sec. Lt. G. E. Martienssen, June 16th; Lt. A. W. Blake, Lt. J. Hogan, Sec. Lt. L. W. Savidge, Sec. Lt. S. L. R. Switzer, June 17th; Sec. Lt. J. Malcolm, June 18th; Sec. Lt. (Hon. Lt.) H. M. Fulton, Capt. H. H. Square, Sec. Lt. H. Ward, June 19th; Sec. Lt. (Hon. Lt.) C. A. S. Booth, Sec. Lt. F. B. Booth, Sec. Lt. J. W. Bowler, Sec. Lt. J. C. Edwards, June 20th; Lt. G. A. Cox, June 21st; Lt. G. P. Olley, Lt. E. L. Pratt, June 22nd; Lt. P. H. Burt, Lt. W. N. Fraser, Lt. S. J. N. Haigh, Capt. H. T. Jones, Sec. Lt. T. St. J. H. Silvester, Lt. W. S. Wheeler, June 24th; Sec. Lt. H. Burns, Capt. N. B. Hair, Sec. Lt. H. Hudson, Lt. W. C. Sidaway, June 25th; Lt. R. W. M. Andrew, Sec. Lt. D. J. Georgeson (Gordon Highrs.), Sec. Lt. (Hon. Lt.) V. R. Husband, Sec. Lt. J. M. James, Sec. Lt. (Hon. Lt.) T. Large, June 26th; Sec. Lt. R. C. Capel-Cure, Lt. A. Carruthers, Sec. Lt. E. E. Fresson, Sec. Lt. (Hon. Lt.) W. Hawk, June 27th; Sec. Lt. K. R. Angus, Lt. J. A. Blythe, Lt. H. A. Howell, Lt. G. E. Marden, M.C., Sec. Lt. J. G. MacDougall, Sec. Lt. E. H. H. Peel, Lt. K. B. Watson, Sec. Lt. W. V. Wood, June 28th; Lt. W. G. Albu (R.I. Fus.), Lt. E. H. M. Fetch, Lt. J. R. Foster, Lt. C. E. Kingsford-Smith, June 29th; Lt. D. P. Farley, July 1st; Sec. R. M. M. Houston, July 2nd; Sec. Lt. C. R. Abell, Sec. Lt. R. J. Acheson, Lt. L. de S. Duke, Lt. S. Gavin, M.C., July 3rd; Lt. L. B. Aylen, Capt. G. E. Hervey, D.S.C. Lt. F. Jardine, July 6th; Lt. H. F. Birchal, D.F.C., July 7th; Lt. E. A. Alton, Lt. W. D. Archer, Sec. Lt. J. F. Lochhead, July 9th; Lt. H. E. R. Fitchat, Sec. Lt. M. McConville, M.C., Lt. C. W. Meredith, July 10th; Lt. G. E. Brookes, Sec. Lt. H. A. Paquette, Capt. E. E. E. Pope, July 11th.

Lt. W. A. Stead relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, June 25th.

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—F. A. Maples, April 10th (substituted for the notification in the "Gazette" of Jan. 28th); W. A. Gurr, April 29th; C. G. Parmelee (caused by wounds), June 26th; J. R. Roulston (contracted on active service), July 3rd; H. S. Dyson, July 4th (substituted for the notification in the "Gazette" of Jan. 31st); E. R. Moore (contracted on active service), July 9th.

The initials of Sec. Lt. W. J. Cairns are as now described, and not "W. G.," as stated in "Gazette," May 6th.

The surname of H. C. Biard is as now described, and not as stated in "Gazette," July 30th, 1918.

The surname of Lt. (Hon. Capt.) E. C. Fernandes-Ferreira is as now described, and not as stated in "Gazette," May 16th.

The notification in "Gazette," May 31st, 1918, concerning Sec. Lt. K. R. Campbell is cancelled.

The notification in "Gazette," March 4th, concerning Lt. J. E. Burke is cancelled.

The notification in "Gazette," March 21st, concerning Sec. Lt. R. P. Stockton is cancelled.

The notification in "Gazette," April 1st, concerning Sec. Lt. N. H. Midgley is cancelled.

The notification in "Gazette," April 1st, concerning Lt. E. H. Tredcroft, D.F.C., is cancelled.

The notification in "Gazette," April 4th, concerning Sec. Lt. J. D. Scott is cancelled.

The notification in "Gazette," April 25th, concerning Sec. Lt. S. B. Milner is cancelled (the notification in "Gazette," April 15th, to stand).

The notification in "Gazette," April 29th, concerning Sec. Lt. W. V. Thomas is cancelled.

The notification in "Gazette," May 6th, concerning Lt. (actg. Capt.) D. Sutherland is cancelled (the notification in "Gazette," March 11th, to stand).

The notification in "Gazette," May 13th, concerning Sec. Lt. M. D. McTaggart is cancelled (the notification in "Gazette," June 24th, to stand).

The notifications in "Gazette," May 30th (page 6658) concerning Sec. Lt. F. E. Power are cancelled.

The notification in "Gazette," June 6th, concerning Sec. Lt. (Hon. Lt.) R. B. Francis (Lt., Can. M.G.C.) is cancelled (the notification in "Gazette," May 6th, to stand).

The notifications in "Gazettes," Jan. 21st and June 20th, concerning Capt. G. L. Hartgill are cancelled (the notification in "Gazette," June 17th, to stand).

The notification in "Gazette," July 1st, concerning Lt. E. S. C. Sen is cancelled.

Administrative Branch.—Capt. E. N. E. Waldron to be Capt., from (S.O.), May 1st.

Sec. Lt. E. R. Webb to be graded for purposes of pay and allces. as Capt. whilst empld. as Capt., May 1st.

H. Milman (Capt., R.E.) is granted a temp. commn. as Sec. Lt., May 27th, 1918, and to be Hon. Capt. (substituted for the notification in "Gazette," Dec. 10th, 1918).

Sec. Lt. J. W. Thompson (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt., Dec. 10th, 1918.

The following are granted temp. commns. as Sec. Lts.:—F. G. L. Heyes, June 24th; W. Graham, July 4th; E. C. A. Clarke, W. Macpherson, C. S. Roads, July 7th.

The following relinquish their commns on ceasing to be empld.:—Capt. H. B. S. Stephenson (Capt., R. Mun. Fus.), Nov. 25th, 1918; Sec. Lt. (Hon. Lt.) F. H. Sibley (Capt., R.F.A.), June 13th; Lt. J. T. Wright (Lt., R.N.), June 25th.

Transferred to unempld. list:—Lt. (Hon. Capt.) H. P. G. Branston (Sher. For.), Feb. 8th; Sec. Lt. N. H. Midgley, Feb. 12th; Lt. M. J. Penwick, March 14th; Sec. Lt. (actg. Lt.) W. L. Roblou, March 19th (substituted for notification in "Gazette" of July 4th); Lt. D. Miller, Sec. Lt. C. E. Thorpe, March 21st; Sec. Lt. P. J. Holmes, April 16th; Lt. T. B. Duncan, M.C. (Scott. Rif.), April 19th; Lt. J. McK. Hooper, April 25th; Lt. J. T. Denman, April 27th; Lt. L. S. Thompson (R. Dev. Yeo., T.F.), May 6th; Lt. A. S. Hibbs, May 8th; Sec. Lt. B. M. Hickman, May 14th; Lt. E. S. C. Sen, May 23rd; Sec. Lt. R. G. Ashby, May 24th; Sec. Lt. H. G. Arnold, Lt. F. Bagot, May 29th; Lt. J. D. P. Sowbury, June 1st; Lt. F. H. Barratt, Sec. Lt. R. F. Pyke, June 2nd; Sec. Lt. S. V. Daley, June 6th; Lt. J. C. G. Sibley, June 7th; Lt. V. C. Baker, June 9th; Lt. R. W. G. Morrison, June 11th; Lt. L. Taylor, June 12th; Lt. J. H. Clive (Lt., Lond. R., T.F.), Capt. C. W. Small, June 14th; Capt. E. H. T. Atkinson, June 17th; Sec. Lt. E. H. Sherman, M.C., June 18th; Sec. Lt. (Hon. Capt.) G. H. Blake, D.C.M., June 19th; Sec. Lt. V. Brimacombe, June 20th; Sec. Lt. J. Ferguson, June 21st; Lt. C. F. Palmer, June 24th; Sec. Lt. E. N. Allott, Sec. Lt. W. C. Snowdon, Capt. J. W. Culme-Seymour, June 25th; Sec. Lt. W. E. Doran, June 26th; Capt. H. Sherwood, Maj. J. B. Handley-Seymour, June 27th; Sec. Lt. W. Fillery, June 29th; Lt. H. S. Nicholls, July 1st; Lt. W. J. McLean, July 3rd.

Lt. L. G. Hall relinquishes his commn. on account of ill-health contracted on active service, and is granted the rank of Capt., June 12th.

Lt. L. D. Brown relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, June 30th.

Sec. Lt. H. T. Wellard relinquishes his commn. on account of ill-health, and is permitted to retain his rank, July 3rd.

The rank of Lt. F. R. T. Pearson is as now described, and not Sec. Lt. as stated in the "Gazette" of March 21st.

The notification in the "Gazette" of June 10th concerning Sec. Lt. R. C. E. Vernede is cancelled.

Technical Branch.—Capt. A. C. Baker to be actg. Maj. whilst empld. as Maj., Grade (A.), from April 1st, 1918, to March 12th.

Lt. H. E. Hazlehurst to be actg. Capt. whilst empld. as Capt., Grade (A.), Sept. 16th, 1918 (substituted for notification in the "Gazette" of Nov. 29th, 1918).

Lt. H. E. Hazlehurst to be actg. Capt. whilst empld. as Capt., Grade (A.), from (A.), from Dec. 11th, 1918, to April 30th.

Sec. Lts. to be graded for purposes of pay and allces. of Capts. whilst empld. as Capts., Grade (A.):—(Hon. Lt.) J. Drew, (Hon. Capt.) R. C. Fowler, T. E. Morton, May 1st.

Sec. Lts. to be graded for purposes of pay and allces. as Lts. whilst empld. as Lts., Grade (A.):—G. J. C. W. Fitzwilliam, L. T. Bulmer, May 1st.

Sec. Lt. J. R. Hovenden to be Lt., without pay and allces, of that rank, Aug. 28th, 1918.

Sec. Lt. C. R. Booth to be Sec. Lt., Grade (A.), from (Ad.), Feb. 22nd.

Sec. Lt. F. S. Read to be Sec. Lt., Grade (B.), from (Ad.), Oct. 1st, 1918.

Sec. Lt. (Hon. Lt.) C. O. Wright (Lt., King's Own R. Lancs. R.) relinquishes his commn. on ceasing to be empld., June 10th.

Transferred to unempld. list:—Maj. (actg. Lt. Col.) A. S. Hellawell, O.B.E., March 27th (substituted for notifications in the "Gazettes" of April 4th and June 27th); Sec. Lt. J. W. Davis, April 1st; Lt. D. N. Stewart, April 2nd; Lt. R. Hopkin, Sec. Lt. W. H. Hildreth, April 17th; Lt. C. E. Devas, April 18th; Lt. L. H. Scott, April 20th; Sec. Lt. C. F. Hodges, April 30th; Sec. Lt. J. E. Kocford, May 2nd; Sec. Lt. H. D.

Dall, May 6th; Capt. H. K. Hitchcock, May 12th; Sec. Lt. H G Smith, May 19th; Sec. Lt. M. Bateson, Sec. Lt. E. G. Doyland, May 21st; Lt. W. D. Hogarth, May 24th; Lt. J. Hooper, May 26th; Sec. Lt. E. A. Sullivan, Sec. Lt. (Hon. Lt.) R. J. Wallace (R. Scots, T.F.), May 28th; Capt. R. Bissett, Sec. Lt. (Hon. Lt.) S. O. Savillec, May 29th; Sec. Lt. H. Hilsdon, Capt D. Cameron-Swan, May 30th; Capt. F. W. Strong, May 31st; Lt. (Hon. Capt.) A. D. S. Barr, Capt. H. E. Shaw, Maj. D. B. Sanders, June 1st, Sec. Lt. R. O. Street, June 3rd; Sec. Lt. J. L. Baring, June 6th; Capt. J. G. Dothie, Sec. Lt. W. A. Hill, June 7th; Sec. Lt. H. Archer, June 8th; Sec. Lt. J. F. Farquharson, June 10th; Sec. Lt. S. W. Bennett, June 11th; Capt. H. S. Slade, June 12th; Lt. T. J Boyer, June 14th; Lt. E. H. Hart, Lt. G. F. Wilson, June 17th; Sec. Lt. F. N. Lynch-White, June 19th; Maj. E. Darrell-Huskinson, Sec. Lt. H. S. Smith, Maj. G. L. Wightman, June 23rd; Sec. Lt. H. H. Fanthorpe, Sec. Lt. A. Marr, June 24th; Sec. Lt B. B. Long, Sec. Lt. H. W. Levy, June 25th; Sec. Lt. G. Albert, June 26th; Lt. H. H. Ballard, June 28th; Sec. Lt. W. Massey, June 30th; Sec. Lt. W. E. Dewberry, Maj. H. W. Prance, Capt. P. Swain, July 1st; Sec. Lt. H. A. P. Disney, Maj. E. R. Peal, O.B.E., D.S.C., July 2nd.

Sec. Lt. (Hon. Lt.) F. J Colishaw relinquishes his commn on account of ill-health contracted on active service, and is permitted to retain the rank of Lt., July 3rd.

The notification in "Gazette" of April 25th concerning Sec. Lt. F. B. Miles is cancelled (notification in "Gazette" of April 15th to stand).

The notification in "Gazette" of June 13th concerning Lt. J. W. McKee is cancelled.

MEDICAL BRANCH.—A. G. Graham is granted a temp commn. as Capt., July 18th, 1918 (substituted for notification in "Gazette" of July 19th).

Transferred to unempld. list:—Capt. M. R. Dobson, April 25th; Capt. T. R. F. Kerby, June 29th; Maj. H. F. Horne, July 2nd.

DENTAL BRANCH.—Capt. J. Barratt is transferred to unempld. list, May 29th.

MEMORANDA.—Sec. Lt. J. Keyes to be Lt., May 22nd.

Lt. (Hon. Capt.) E. H. Grant (Capt., Arg. and Suthd. Highrs.) relinquishes his commn. on ceasing to be empld., July 3rd.

Transferred to unempld. list:—Maj. (actg. Col.) C. A. J. Butter, O.B.E. (Sco. Horse, Yeo., T.F.), Feb. 7th (substituted for notification in "Gazette" of Feb. 21st); Sec. Lt. (actg. Capt.) F. C. Payne, from (S.O.), April 10th; Lt. H. Hibbard, from (S.O.), May 2nd; Lt. V. L. Anderson, from (S.O.), May 28th; Capt. A. H. Stuart, from (S.O.), May 29th; Lt.-Col. J A. Houison-Crauford, C.M.G., C.B.E., from (S.O.), June 1st; Lt.-Col. F. H. Cleaver, C.B.E., D.S.O., from (S.O.), June 26th; Capt. G. C Milnes, M.C., from (S.O.), July 2nd.

Sec. Lt. C. W Kerr to take rank and prec. as if his appt as Sec. Lt. bore date May 1st, 1918.

The name and number of the following Oversea Cadet is as now described and not as in "Gazette" of June 13th:—183195 G. E. Glenn.

The notification in "Gazette" of June 6th concerning 177155 Flt Cadet F. W. Carter is cancelled.

In connection with the Victory March through London on July 19th the Royal Air Force will contribute a contingent of 55 officers and 605 men, and the W.R.A.F. four officers and 120 ranks. Nineteen squadrons from the Army of Occupation will be represented, together with personnel from the four Areas and from the 29th and 11th Groups. These numbers will be exclusive of the G.O.C. and Staff.

Major-General Sir J. M. Salmond, K.C.B., C.M.G., C.V.O., D.S.O., commanding the R.A.F. in the field, will be in command of the contingent, with Brigadier-General G. L. Lambe, C.M.G., D.S.O., as his Chief Staff Officer.

* * *

The Air Ministry announces that the R.A.F. Eastern aerodrome at Yatesbury has been closed. All machines landing at Yatesbury should, therefore, use the Western aerodrome.

The aerodrome at Wyton has also been relinquished by the R.A.F.

* * *

An order has been issued by the Air Ministry with regard to the supply and renewal of artificial limbs for disabled airmen.

The procedure followed is precisely the same as that applying to disabled soldiers, i.e., through the Local War Pensions Committee and the Director of Artificial Limb Supplies—Ministry of Pensions.

Thus, if a discharged disabled airman is in need of further surgical treatment, or if his artificial limb requires repair he should apply direct to his Local War Pensions Committee. In the former case the Committee will arrange for his treatment by the nearest Civil, Military, or Air Force hospital available.

The Committee will also defray all travelling expenses necessarily incurred by a discharged airman in connection with the repair or renewal of his artificial limb, and his attendance at the hospital selected.

* * *

Saturday, July 12th, was the last day of the Royal Naval, Military and Air Force Tournament. It was an unqualified success, and it is greatly to be regretted that it was not possible to continue the Tournament for a longer period.

The prizes were presented by H.R.H. the Duchess of Albany.

The following are among the results of the competitions held at the Royal Naval, Military, and Air Force Tournament:—

JULY 8th.—Tug-of-War (110 st.).—The winners of the Navy, Army, and Air Force competitions were 3rd Bn. Leinster Regt., the challenge cup being presented in the arena by Capt. R. C. Dalglish, Royal Navy.

JULY 9th.—Sabre v. Sabre (Championship).—1, Col. R. B. Campbell, D.S.O., Gordon Highrs.; 2, C.P.O. Cassford, Royal Navy; 3, Capt. Walter Palmer, M.C., K.R.R.C.; 4, tie between Serjt.-Maj. H. Grainger, R.A.F., and Comdr. E. W. H. Brookfield, Royal Navy; 5, Major E. G. S. Cooke, 8th Bn. Essex Regt.

July 11th.—Tug-of-War (130 stone).—3rd Battalion Coldstream Guards (Chelsea) beat No. 5 Stores Depot, R.A.F., Earl's Court, by two pulls to nil.

July 12th.—Bayonet v. Bayonet Championship.—Lieut. F. H. Durham, R.M.A., 1; Serjt.-Major H. Grainger, R.A.F., 2; Serjt. H C. Randall, R.M.A., 3.

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On Aug. 15th and 16th a cricket match between teams representing the R.A.F. and the Army will be played at the Oval.

* * *

At Stratford Police Court recently, Serjt. Eric Potter, R.A.F., was sentenced to one month's imprisonment with hard labour, for stealing a number of cricket pads, a quantity of motor cycle fittings, and other articles. It was stated that the prisoner was in charge of the stores at the Woodford Depot of the R.A.F., and that he had sent five cases of goods to his home in Staffordshire.

* * *

By order of the Home Secretary, Captain Walter Raymond Hinchcliffe, D.F.C., R.A.F., who was sentenced on June 28th to six months' imprisonment in the second division for the theft of a motor-cycle and side-car at Skegness, has been released on account of ill-health.

* * *

At Sussex Assizes on July 10th Lieut. Leslie Joseph Holland, R.A.F., was sentenced to five years' penal servitude for assaulting William Farrow, manager of the Shoreham branch of Farrow's Bank, with intent to rob him.

Prisoner, who was a customer of the bank, entered the premises disguised, and, on the pretence of desiring to open an account, enticed the manager from behind the counter, and then struck him on the head with a sandbag containing sand and two shillings' worth of coppers, and threatened him with a revolver A struggle lasting 10 minutes ensued, causing a crowd to assemble outside the bank. Three man broke into the bank, as the door had become unlatched during the struggle, and secured Holland.

The defence was that war service had rendered the prisoner unaccountable for his actions.

FRANCE.

The following has been received from a Paris correspondent:—

Fate, silent, inexorable Fate, has claimed another of her foremost subjects. In the afternoon of the 10th inst. Lieut. Jean Navarre was killed whilst trying to land at Villacoublay. Further reports on the actual accident will be awaited with interest, as it seems that by dexterous navigating, after an apparent misjudgment of distance, he almost landed safely, but, losing flying speed, he sideslipped on the turn and crashed.

Navarre was one of the first Aces of the war early in 1916, and performed prodigies of valour during the Verdun battles, bringing down nine Boches in three following special missions. At this latter work he vied with Védrines in success.—F. T. N.

U.S.A.

The following appeared in the official Air Service news published in the United States of America:—

"The Army Air Service has been chosen by more than forty high school graduates of Greater New York this year as a technical institution of higher learning, in preference to the technical colleges of the country. Of this number more than one-half are financially able to attend regular institutions of learning, but all elected the Army to gain knowledge that will fit them as aeronautical engineers at the end of a three-year course.

"The others are students who would be obliged to work their way through college and have chosen the Army because their status will be exactly the same as the boys of independent means and completion of the course is assured.

"The incident has opened the eyes of Army officials to the new and high regard of the educational value of the Army and the possibilities of securing men of the highest order for the Air Service. Accordingly an energetic campaign is being prepared to present the opportunities for higher education and technical aeronautical instruction to high school graduates in all parts of the country. A number of aviation officers will be detailed for this work, and educational boards will be requested to include such an officer as a speaker in the graduation programme of public schools.

"It is pointed out that the Army instruction is not confined to theory, but combines a minimum of theory with a maximum of practical work which should develop aviation experts of the highest order. The social and athletic features of college life are not lost in the Army. Regular hours, good food, and plenty of exercise will keep the students in the best physical condition, and programmes of sports are followed by the men with the same degree of enthusiasm as in college.

"A feature which particularly appeals to proud parents is that every letter from 'the boy' does not contain an eloquent story of destitution and the crying need of a check, for in the Army he is being paid while he learns. With the signing of the peace treaty soldiers will be allowed to wear civilian clothes, and with liberal

pass privileges the hours of study are practically the same as in college.

"The New York boys have dubbed the aviation school 'Khaki University.' The Army extends a hearty invitation to any high school graduate who wishes to associate himself with the development of the commercial aviation to acquire a technical education at the expense of the Government."

* * *

The first U.S.A. Government peace-time order for aeroplanes has been placed by the Navy Department with the Loening Aero. Eng. Corp., New York, for the immediate delivery of six special Loening monoplanes for shipboard observation use.

With characteristic American modesty it is claimed that this machine, a new type of two-seater fighter, after official tests was found to be the fastest and best performing two-seater fighter in the world.

They are intended to be launched from the deck of a ship, and each is fitted with a 300-h.p. Hispano-Suiza engine.

PERSONAL NOTICES.

NAVAL.

ENGAGEMENT.

CUCKNEY—WILLIAMS.—The engagement is announced between Captain E. J. Cuckney, D.S.C., R.A.F., and Miss L. Williams, of Wimbledon.

MILITARY.

DEATH.

BODDAM-WHETHAM.—Lieut.-Colonel A. C. Boddam-Whetham, D.S.O., 4th Battn. Argyll and Sutherland Highlanders and R.A.F., of Earlscliffe, Folkestone, who was killed in an aeroplane accident in Egypt on June 22nd, was the eldest son of the late J. W. Boddam-Whetham, late of Kirklington Hall, Notts, and Mrs. Boddam-Whetham, and husband of May Grace Boddam-Whetham. He was 35 years of age.

ENGAGEMENT.

MAUDUIT—BROOKSBANK.—A marriage has been arranged, and will shortly take place, between Captain Mauduit, 7th Dragoon Guards and R.A.F., eldest son of Lieut.-Colonel Mauduit, of 57, Sloane Street, and Mrs. Mauduit, and Irene, daughter of the late Captain A. H. Brooksbank, 19th Hussars, and Mrs. Brooksbank, of Middleton Hall, Yorkshire.

AIR FORCE

DEATHS.

HALL, SUMNER, VANCE and JAFFE.—On July 9th the military postal aeroplane, No. 41,591, crashed near Pourriers (Var). As a result of the accident the petrol tank exploded and the machine caught fire. The four occupants were killed. They were Lieuts. Hall, Sumner, and Vance, and Cpl. Jaffé.

Lieut. Francis Cyril Sumner, R.A.F., was the eldest son of Mrs. Sumner, "Inversnaid," Bromley, Kent, and of the late Frank Sumner, Engineer to the City Corporation. He was 20 years of age.

HERBERT, HILEY, and BIZION.—Two pilots and a mechanic were killed at Farnborough on July 14th as the result of a collison in the air. One of the machines concerned was a two-seater Avro, of which the pilot was Lieut. Herbert, R.A.F., attached to the Royal Aircraft Establishment, and Air Mechanic C. Hiley. The other was an S.E. Fighter piloted by Lieut. Bizion, R.A.F.

KNIGHT.—Lieut. C. R. Wentworth Knight, R.A.F., who was killed in action on June 21st at Topsa, on the Archangel Front, was the only son of Mr. and Mrs. W. H. Knight, of Towns End House, Limington, Ilchester. He was 21 years of age, and had served continuously in France and elsewhere since January, 1915.

MATURIN.—An inquest was held on July 10th on the body of Lieut. William Henry Maturin, R.A.F., an American, aged 28, who shot himself while drowning in Langstone Harbour. It was stated that Mr. Maturin had been invalided out of the R.A.F. and he had been unable to obtain work. A verdict of suicide while temporarily insane was returned.

ENGAGEMENT.

TAYLOR—LOCOCK.—The engagement is announced of Capt. Bernard A. Taylor, R.A.F., only son of Mr. and Mrs. A. E. Taylor, of Crawley, Sussex, and Kitty, third daughter of the late Capt. H. F. Leicester Locock and Mrs. Leicester Locock, of Pook's Hill, of Angmering, Sussex.

MARRIAGES.

BARTON—LEE.—On July 5th, at Woodton Parish Church, Lieut. Charles Frederic Barton, R.A.F., of Toronto, Canada, was married to Mary Letitia Driffield Lee, younger daughter of the Rev. Frederick and Mrs. Lee, of Woodton Rectory, Bungay, by the Rector, the father of the bride.

EVAMY—HANNAFORD.—On July 9th, at St. Matthias Church, Torquay, Capt. H. S. Evamy, R.A.F., was married to Dorothy Jeanette, eldest daughter of Mr. and Mrs. C. J. Hannaford, of Chulmleigh and Torquay, Devon, by the Rev. W. P. Alford.

TOLFREE—NASH.—On June 26th, at Kas-er-Nil Garrison Church, Cairo, Lieut. W. M. N. Tolfree, R.A.F., youngest son of Mr. and Mrs. W. H. Tolfree, of Winsford, Cheshire, was married to Frances Winifred, only daughter of Mr. and Mrs. F. R. Nash, of Guildford, Surrey, by the Rev. E. L. Millen, C.F., assisted by the Rev. H. Valentine, C.F.

BIRTHS.

CUMMINGS.—On July 8th, at Streatham Manor, the wife of Lieut. Philip H. Cummings, D.F.C., R.A.F.—a daughter.

HELLYAR.—On July 12th, 1919, at 27, Bonham Road, Brixton Hill, S.W.2, to Captain (late R.A.F.) and Mrs. William F. Hellyar—a daughter.

HUMFRESS.—On July 5th, at 61, Rusholme Road, Putney Heath, the wife of Capt. H. T. Humfress, R.A.F., of a daughter.

LINDEMAN.—On July 8th, at 12, Walpole Gardnes, Gunnersbury, the wife of Capt. Gerald N. Lindeman, R.A.F.—a son.

MAXTON.—On July 18th, at the Firs, Westgate-on-Sea, Ruby Beatrice (née Holmes), wife of Captain L. G. Maxton, R.A.F.—a son (Geoffrey).

ROBERTSON.—On July 6th, at Rempstone, Cheriton Road, Winchester, the wife of Capt. Norman Robertson, R.A.F., of a son.

SMITH.—On July 10th, at 20, Ladbroke Gardens, to Olive Merle (née Nickson), the wife of Capt. W. E. Smith, late R.A.F.—a son.

STAMMERS.—On July 8th, at the Nursing Home, Gerrards Cross, to Muriel, the wife of Capt. S. R. Stammers, A.F.C., late R.A.F., of a daughter.

STRICKLAND.—On June 30th, at Dublin, the wife (née Bentham) of Harley, Lieut. C. W. Strickland, R.A.F., of a daughter.

SOME THOUGHTS ON REORGANISATION.

One wonders why it is that in England everything appears to come too late. In whatever light one regards the late war one is sure to come upon something that might have happened earlier—that, indeed, should have happened earlier—to be really appreciated. Although, in some cases, it would have been better had it never happened at all. The Armistice was one of these latter things.

Take the signing of the Peace terms, which, it is stated, fell so adventitiously upon the very day (five years later) that the Archduke Franz Ferdinand of Austria was assassinated, that it seems to indicate some very clever arranging upon the part of the politicians.

"Playing to the Gallery" that sort of thing is called, but the Gallery is tired of the Play. It has had so many occasions for celebrating already that it scarcely knows what to do with July 19th. Besides, one cannot well celebrate any Peace properly while enduring a shortage of alcohol. And the thought of a Ministry of Health to look after one and tell one what not to do is enough to spoil anybody's pleasure.

But Peace Celebrations have little to do with reorganisation in the R.A.F., excepting always the fact that the R.A.F. will need a lot of reorganising after the Peace Celebrations. One does not really see why it should, but that seems the right kind of thing to say of the R.A.F.

Of course, reorganisation in the middle of a war is recognised by everybody as being bad. But one wonders if it is really so bad as no organisation at all. Or if it is as bad as forming a new Service on nearing the end of a war, just when Britain is about to start winning her last battle, having—in the good old way—lost most of the foregoing ones.

One has only to think of the R.N.A.S. to remember how badly in need of reorganisation it was. If only the Government could have been original for once and said—with the fashionable folk—"Oh! damn convention"—or some such thing—and reorganised that. One feels sure it would have paid in the long run.

Naturally, the pukka Navy people would have felt a little injured at first, because nobody likes to own one's poor and unconventional relations. But there seems no reason against a pilot becoming serious as he grows older. Personally, one rather doubts if he will.

One calls to mind a certain pilot, who, some few hours after one's first meeting with him, fused all the electric lights in the building so that one sat in darkness for a week.

Still, reorganisation is good even when it comes too late to save what might have been a very useful branch of His Majesty's Senior Service.—S. F. BENDA.

JULY 23, 1919.

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ON PREPARING FOR WAR.

Last week I endeavoured to show that there must be a next war, and prophesied that the great war will be one waged by all the Teuton tribes, such as Franks, Burgundians, Anglo-Saxons, Belgicæ, Jutes, and Germans, against the whole Slav Race. I propose now, purely as a matter of personal opinion and not in an impersonal editorial capacity, to hazard a few prophecies as to the manner of coming of the real World War, and as to the part which the Air Force will play therein.

Recently Major-General Sir Frederick Maurice, a very gallant soldier who threw up a splendid military career because he had the courage of his convictions, made the astonishing statement that, though he had been brought up to believe that preparation for war was the surest guarantee of peace, he now believed that "if you prepared for war you got war." The natural inference is that in his opinion if you do not prepare for war you do not get war.

That may be literally true, for the good and sufficient reason that if you do not prepare for war you get conquest. One still believes firmly that the only way in which the lamb can lie down peacefully with the lion is with the lamb inside. Surely General Maurice would not have us believe that the big strapping athletic man in the pink of condition is more likely to be assaulted in the street than is a little ill-conditioned chap, especially if the big man behaves like a gentleman and the little chap behaves like a cad. Yet that is precisely the difference between a big nation prepared for war and a little nation unprepared.

Let him remember that it was the impudent behaviour of Servia to Austria over the assassination of the Arch-Duke Franz-Ferdinand by a Servian at Sarajevo, as the result of a plot hatched in Servia, which was the small cause from which the long-avoided European tribe-fight began. And it was the bullying and blustering of unprepared Russia which actually began the war.

If Russia had been fully prepared Germany would not have fought when she did. And by the time the war did begin France and Great Britain might have been better prepared for it, and it might have been over quicker. But then again it might not. In any case it is foolish to argue that either man or nation must not train for fighting because if they do they will get into a fight. It seems so obvious that if they do not train they will merely be consistently bullied and assaulted by those who have the sense to go into training.

Therefore, whether we see a war coming or not it is our duty to keep in training—that is to say, to prepare for war. In our particular case the coming war can be seen quite plainly with the naked eye, though it is impossible to judge with any hope of accuracy when it is likely to arrive.

The war must evidently be with the Slav Race, for the Slavs are a very young and undeveloped people compared with the older civilisations of the West, and it is a law of history that the young races develop towards the West and in time replace the older races. Always the replacement is done by peaceful penetration in the end, for though waves of invasion from the East may have temporary success they are always beaten back, and leave only a trace behind.

Let us then consider how this war with the Slavs may arise.

History Repeating Itself.

Up to the present moment the course of the rebellion against the government of His Imperial Majesty the Tsar follows curiously along the lines of the French rebellion of 1789, which ultimately became known as the French Revolution and produced the first French Republic and the first French Empire.

The first outbreak followed closely the lines of the declaration of the States-General in France. The feeble but intense Kerensky resembled the "sea-green incorruptible" Robespierre, except that he lacked Robespierre's strength in dealing with his enemies and Robespierre's courage in dying for his opinions.

The two arch-criminals of the Bolshevik misrule, Lenin and Trotsky, seem to resemble Marat and Danton, or possibly Carnot and Barras, without the solidity of character of the Frenchmen, though it is said by those who ought to know that Lenin is an honest fanatic.

The Bolshevik "Red" Armies, with their People's Commissaries and their Soldiers' Councils, are like those which under the States-General defended the frontiers of France against the Germans, Austrians, and English. The fighting in Northern Russia and near Petersburg may be taken as a parallel to the battles of the period of Fleurus, and the fighting against Koltchak and Denikin is a close parallel to the campaigns of Kléber and Hoche against the loyalist Chouans in La Vendée in 1793 and against the Prince de Condé in the north.

It is to be hoped that Koltchak and Denikin will do better than did La Rochejacquelin, Stofflet, La Ville-Beaugé, and Vaugiraud at that period. They certainly have better backing from their Allies, but, being Russians themselves, their followers may fail in the moment of victory just because of that lack of intensity of purpose and that childish characteristic of losing heart or losing interest at the critical moment which stamps the Slav as the savage which he is, no matter what veneer of culture he may have acquired during a sojourn in a more civilised country, or in a school under the management of a civilised foreigner.

The Departure from the Parallel.

The parallel with the French Revolution fails in the fact that France was one single nation, whereas the Slav situation is complicated by the number of small "self-determined" Republics which have set themselves up, and keep upsetting themselves and everybody else. None can follow with any clearness of idea the squabbles of the Letts, Balts, Esthonians, Ruthenians, Finns, Karelians, Ukrainians, and so forth on the West and North of what used to be the Russian Empire.

Nor is the Polish position any clearer, seeing that the present Polish Government claims bits of Germany and Austria, as well as Gdansk (better known to the civilised world as Danzig), bits of Ruthenia, part of the Ukraine, and some of Hungary. The Polish propagandist people in Paris have recently been kind enough to send me a number of interesting pamphlets, which lead ultimately to the conclusion that at one time or another in its lurid history Poland has conquered most of Central Europe.

These conquests seem to have been made whenever a warlike Polish prince has prepared for war, and they seem to have been lost through unpreparedness for war. Which unpreparedness has always been due to the Slav's constitutional inability to stick to one object and make a job of it. The one perfectly clear fact which emerges from all the pamphlets is that German Poland has always been more prosperous than any other country inhabited by Poles. As, for example, the statement that in 1906-1910 Lithuania and White-Ruthenia (under Russian government) produced 6 quintals of rye per hectare, "Congress" Poland produced 10 quintals, and the German Polish province of Posen produced 15.6 quintals.

Delaying the Big War.

The natural inference is that the Slav, whether pure Russian, Pole, Lett, Ruthenian, or anything else, will only work when he has a master to make him work. So long as all these Slav tribes keep on squabbling among themselves the rest of Europe may exist in comparative peace and safety. Therefore it seems very sound policy to keep them all fighting. It prevents them from coming under the leadership of one great man, and incidentally it keeps the Slav population from increasing too rapidly.

But, and here is the key to the whole situation, if and when the Slav Napoleon arises, then the Slav peoples will be made to settle down to work. They will pile up wealth (for Russia is by nature the wealthiest portion of the world), they will pile up population, and then they will overflow, by the Law of Nature, to the West.

Where Is the Leader?

None can guess where that great Slav leader is to-day. Perhaps he is not yet born. Perhaps he is a boy soldier in a Bolshevik regiment. Perhaps he is an ambitious young officer of the old régime. It is well to remember that Napoleon, who was a mere youth when the French rebellion first began, was trained as a child in the old Royalist military academy; and similarly a young Russian officer whose personal ambition is greater than his loyalty to the Tsar may make himself master of the Slav peoples.

He will have no difficulty in finding supporters in the Bolshevik armies, for here the parallel to France of 1790 to 1800 is very close. The popular belief is that Napoleon's famous Marshals and Generals all rose from the ranks, and were men of the people. So far as one remembers, Lefebvre and Jourdan were the only Marshals who rose from the ranks, though several minor Generals did so. All the other Marshals and most of the Generals (who were as a rule older men than Napoleon himself) were trained at the old Ecole de Guerre, founded by M. le Duc de Choiseul in 1761, which preceded the Saint Cyr of to-day.

Hardly any, if any, of Napoleon's officers were of the Higher Nobility, but many were of the well-to-do Bourgeoisie or of the Minor Noblesse. When the utter chaos of the first years of the Revolution settled down under the Directory and the Consulates, and something like law and order was restored, the decent people who were still left in France felt it to be their duty to help in defending the Country against foreign invaders. Some of them even approved the Revolution in principle, though not as practised by the "Red" revolutionaries. And so they set to work and helped in restoring order and discipline in the Army, realising that even a Republican government was better than no government at all. And when Napoleon rose to power they supported him as a great leader who would do more for France than would any government composed of middle-class nonentities elected by the people. Wherein they were perfectly right.

The Parallel Again.

Something very similar is already happening in Russia to-day. Lenin and Company, who are the equivalent of the Directory, have already gone far towards abolishing Liberty—as understood by the mob. Their rule is "No work, no food." Their system of compulsory education is said to be excellent. I am told that it is modelled on the American system, modified and improved to suit their own purposes and the Russian mentality. They are hammering into the heads of their people the doctrine of obedience. And it is well to remember that, despite the Bolshevik outbreak of savagery, the Russian is by nature inclined to be obedient.

The survivors of the *bourgeoisie* in Russia are supporting these efforts to bring the populace into a proper state of subjection, for it is their only hope of self-preservation. The professional soldiers, having lost everything they ever possessed in the world except their military knowledge, are helping to put the Bolshevik troops into a proper state of discipline, for they know that without discipline they cannot even feed the troops and themselves.

The power of the Commissaries of the People in the Bolshevik armies is decaying—just as it decayed in the French Revolutionary Armies—and the power of the Directory over the troops and people is growing. As the Central Government's power grows, so the possibilities of mob-rule in the Provinces decreases. And so something like an established Government is coming into being. Such a Government will bring the mob properly to heel and Central Russia will become consolidated.

Meantime all the little Slav Republics round her borders will go on fighting with one another, becoming more and more poverty-stricken and depopulated. The result must be that when the great Russian leader arises—a new Peter the Great or Ivan the Terrible—these enfeebled States will fall easy victims to his well-fed and well-equipped armies.

Some day Lenin will be assassinated, or will commit suicide, or perhaps will die a natural death. He will probably be succeeded by weaker or less honestly fanatical or less able men, and then will come the opportunity of the great leader.

Or, as a possible alternative, Admiral Koltchak and General Denikin, either or both, may defeat the Bolsheviks utterly and establish a military government in Central Russia, under a Military Directory, in place of the Bolshevik Directory. In this case also the proletariat will be brought to heel, and a settled government will strengthen Central Russia while the outlying Slav tribes are hammering one another into a state of exhaustion and preparing themselves to be conquered.

The March of Conquest.

In either case the great leader will find his opportunity waiting for him. One by one the petty republics will be brought under his thumb. The Esthonians will seek his protection against the Letts, or *vice versa*, and he will help the one to conquer the other, so that ultimately he will absorb both. Similarly he will help the Servians to conquer the Bulgars, or *vice versa*. And he will help Jugo-Slavs to conquer the Poles or the Czecho-Slovaks, or the Roumanians, or the other way round.

It will not matter in the least to him which tribe he helps to conquer the other, because ultimately he will rake the lot into his great Russian Empire. And when he has done all that he will find himself up against the Teutonic and Latin races of Western Europe.

The Slavs will be flushed with conquest and will think that they can go on conquering Westward as easily as they absorbed all the little Slav republics. They will be met by the Germans in the North, by the Bavarians and Austrians in the Centre, and by the Swiss and Italians in the South.

How far that march of conquest will progress will depend on two or three factors. Firstly on how much strength Germany can raise to stop the Slav advance. Secondly on how much support France will give to Switzerland and Italy. And thirdly on how much help Great Britain will provide by sea, land, and air to Teutons and Latins alike. And it is precisely at this point that Britain's Air Power becomes the decisive factor.

The New World's Affairs.

So far I have purposely omitted any consideration of America's share in this coming war, because it seems quite possible that America will be very busy about her own affairs. At the present moment those who are in power in Japan are our loyal and gallant allies, and are therefore without doubt equally attached to our friends in the United States. But it is quite within the bounds of possibility that in time an ambitious Japanese leader may arise who may induce his people to attack America.

It is said that already individual Japanese are acquiring great interests in Mexico, and that among those interests is a great factory in Mexico City for the production of explosives. Doubtless those explosives are for use in Mexican mines, but the factory might, in time of Mexican civil war, be put to other uses. The United States also has great interests in Mexico, and it is conceivable that those interests might clash with Japanese interests while at the same time Japanese and American interests in Manchuria and Korea gave rise to quarrels.

Thus it might come about that, despite the best endeavours of our present friends in Japan, a war might break out between Japan and the United States. The Japanese Fleet might clear the U.S. Navy off the seas before Mr. Secretary Daniels' proposed "greatest fleet in the world" becomes a fleet in being. And then Japan could land troops unhindered in Mexico, whence they could attack the United States over open country without having to surmount the Pacific Slope and cross the barrier of the Rocky Mountains.

Thanks to America's intervention towards the end of the Anglo-Franco-German war, the United States have a large partially-trained Army which has within it a nucleus of officers and men who have seen several months of active service and have been in several serious battles. For the same reason they have a large number of young men who know how to fly, and many firms which can build aeroplanes and aero-engines, together with several dozens of active-service aviators and several firms which now know how to build aeroplanes-of-war, though none of the said aeroplanes were actually used on active service. Thus the States are ready to-day to meet quite a considerable enemy force.

Japan, though her Army and Navy never participated actively in the European war, made use of the Siege of Tsing-Tao to put a number of divisions successively under fire, thus using the siege as a kind of advanced training school for troops. And so Japan also has a nucleus of men with war experience.

A Discouraging Experience.

I hope very sincerely that this mutual experience of war will tend towards peace between our friends in America and in Japan. But, judging from all past history, a slight taste of war increases the appetite for war, and a long peace is only produced either by conquest or by mutual exhaustion.

One would have thought that as East Prussia, Poland, Galicia, and Hungary have been the cockpits of some of the fiercest fighting in the recent war the inhabitants of those countries would have had their bellyful of fighting for a generation. Yet we see them still fighting as amiably as ever. It hardly seems likely therefore that as neither the Japanese nor the Americans have seen any fighting at all on their own territory for over fifty years the people themselves will be deeply opposed to further wars.

Therefore, while hoping that a Japanese-American war may not occur, it would be very unwise to assume that it can not occur. And so it would be still more unwise to reckon on any substantial help from America when the war between the Slavs and the civilised races of Europe actually breaks out upon us. Let us return therefore to the purely European outlook.

Time Estimates.

As I have said, none can even guess at the time when this race-war will begin. There was a period of six years between the outbreak of the French Revolution and the first rise to a prominent position of Napoleon, and even then he was only an Army-Commander under the Republic. So that if the Russian Napoleon is following a career exactly similar to that of his great predecessor he may still three years hence be only a young commander of a Bolshevik army whose name is unknown



A Zeppelin Product: A twin-tractor Friedrichshafen Bomber, Type F.F.62 (2-260 h.p. Mercédès).

to us in the West. For, be it remembered, we have never yet heard the name of any one of the Bolshevik leaders in the field, though from the recent defeats of Koltchak and Denikin it is obvious that the Bolsheviks must have some very good soldiers among them.

[Since these notes were written it has been reported that the C.-in-C. of the Bolshevik armies is a certain Kemeneff, formerly Colonel on the General Staff of the Tsar's Army.]

Can anyone say who in their armies corresponds to Kellermann, Jourdan, or Pichegru, of the armies of the French Republic? To those who wish to get a fairly correct view of the Russian situation I recommend strongly the reading of those volumes of MM. Erckmann and Chatrian, entitled "The Story of a Peasant," which cover the whole period of the French Revolution. The parallel to Russian affairs is seen therein as being much closer than any study of Carlyle would lead one to believe.

The introduction of railways, motor-cars, aircraft, and telegraphy (wireless and otherwise) might lead one to imagine that the rise of the Russian Napoleon will be quicker than that of the French Emperor. A similar line of argument led some people to think that these aids to rapid transport and communication would shorten future wars.

As a matter of fact they increased the length of this recent war because aeroplane scouts enabled the British Army to escape after Mons, and later enabled our Army Commanders to judge exactly where a big attack was coming, and to concentrate forces in defence by means of the other means of rapid transport. But for these aids the war would have been over, so far as the West Front was concerned, in the first six weeks. We might have carried on a Naval war, but it is much more likely that Messrs. Asquith and Co. would have made a reasonable peace and that Germany would have been left free to hammer Russia and so delay the Slav irruption for another ten years or so.

All for the Best.

Nevertheless, things may have worked out for the best after all. Despite the heavy losses of the Western races in this war, we have learnt a vast amount about modern war material which the Slavs have not. We have built up huge factories and masses of machinery which can be turned again to produce war material, which the Slavs have not. Our bitter experiences may be made of good account in preparing for the next war.

As in all previous irruptions of barbarians from the East, Western science and organisation will be pitted against mere masses of humanity. French quickness of mind and scientific attainments, plus British solidity of purpose and sound practical ability, plus German power of organisation, ought to be able to stave off any Slav invasion of Europe, albeit the effort required will be much greater and much more prolonged than that which was needed to finish this recent scrap of four years and a bit.

And because we shall need all the strength we can collect it is merely silly to talk about crushing Germany out of existence. As I said last week, Germany divided into her natural component parts will be a very valuable barrier. Germany crushed out of existence (if such a thing were possible, which it is not) would be merely a roadway over which the Slav could march into France. On which point it is well to remember that the much advertised German atrocities in France and Belgium were a mere game of kiss-in-the-ring compared with atrocities committed by Slav troops in East Prussia, Poland, and Galicia, and by Servo-Slav troops against Italians, and by Bulgars against Servians and *vice versa*. The mere Teuton is an infant in comparison with the Oriental when it comes to atrocitising. I only hope that my esteemed friend Captain Alan Bott, M.C. (better known as "Contact"), who is telling his Eastern experiences so well in "Blackwood" at present, will tell in the coming instalments some of the stories of Bolshevik atrocities which he collected while in Odessa and elsewhere after escaping from Turkey. He will help materially to prepare us for the next war if he does so.

A Matter of Longitude.

The German is by no means the savage which our yellow press would have us believe. (And be it here noted that in a few years or a few months' time the same yellow press will be telling us what a fine chap the German is—when our Jew financiers want us to begin trading with Germany for their benefit.) Witness for example how the Kaiser's sons, and the aged Field-Marshal von Hindenberg and the ex-Chancellor von Bethmann-Holweg all came forward and accepted responsibility when the ridiculous Peace Conferenciers proposed to try the Emperor for the sins of his subjects.

Supposing that the war had gone the other way and that the Central Powers had proposed to try King George for England's perfidiousness. Can you imagine Mr. Lloyd George offering himself in his master's stead, as von Bethman-Holweg did? I do not say for a moment that Mr. George would not gladly die, or serve a life sentence, in his King's place. But, can you mentally see him doing it? And whether you can or not, does not von Bethmann-Holweg's offer show him to be a loyal gentleman?

Whether we like him or not we have got to live in the same world as the German, so we may as well make the best of him. According to the Army of the Rhine, the German is not at all a bad neighbour, and he knows more about building a handsome and pleasant city than we are ever likely to learn.

The fact of the matter is that in whatever country you choose to make investigations you can find people who will commit outrages and atrocities. The only material difference is that the farther East you go the greater will be the percentage of atrocities in proportion to the population. A conscript army includes all the criminals as well as all the saints of the population. Even a British volunteer army will commit a certain small number of atrocities, as anyone who served in South Africa knows. A British conscript army of the same size will commit more. A German conscript army will commit a still higher percentage in proportion to its size. And a Slav conscript army will be worse again.

It is purely a matter of longitude. The farther East you go the nearer you get to absolute savagery and total absence of all morals. The low-water mark is reached in Russia, for when you get past Russia you arrive in China, where there is an ancient civilisation, and where there is an old aristocracy. Even the Chinese are fairly expert torturers, but that is part of their system of civilisation, and is not mere wanton beastliness as in the case of the Slav.

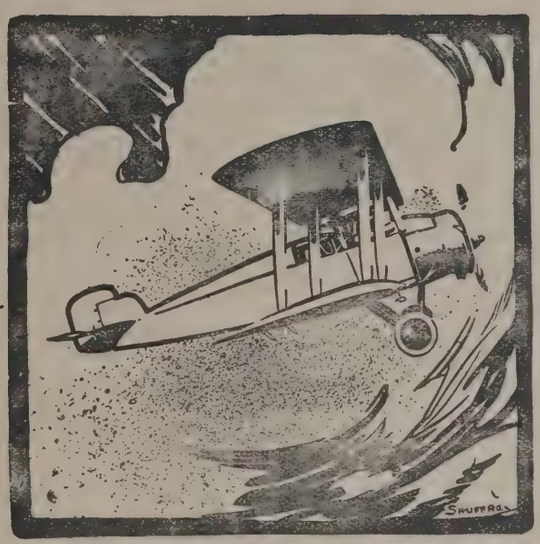
The Task Before Us.

When once the British nation has made up its mind that the Western Nations have to prepare for this race-war with the Slavs it will be easy to induce people to see the need for a big Air Force. Meantime, we who are intimately concerned with aircraft have upon us the burden of preaching the Gospel of Aeronautics henceforth until the war begins.

We ourselves can visualise our fleets of tanks, guided by their attendant air scouts, ploughing through and through the Slav hordes. We can see our great bombing fleets destroying Slav cities in a way that has never been

CIVIL FLYING

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attempted in this war. We can imagine our reconnaissance machines searching over the great forests of Central Europe for the tracks of the Slav armies, just as the splendid pre-war German machines did just five years ago. But we cannot get the stupid British Public to see it, nor can we get the self-interested British newspapers to make them see it.

Therefore all that we aeronautical people can do is to go on preaching aircraft and the use of aircraft, for on us will depend most of the air work of the war, as it did in this war. Under the Peace Treaty, the Germanic States may not maintain a military Air Force, and their magnificent aircraft factories will have to be shut down. Already the Rumpler Works, one of the oldest aircraft concerns in the world, are in liquidation, and others are following while they still have money to save.

So it will devolve upon us to supply the Western Nations with aircraft in the really Great War which is coming. That will certainly be a fine thing for the British Aircraft Industry, but it will not be possible unless we can maintain an Industry and an Air Force in the years which are immediately ahead.

Commercial aeronautics will not develop into real business for some years to come. How then shall we retain our British Air Power in the immediate future?

The answer is, very simply, by doing everything possible to make flying a gentleman's sport, and not a mere vulgar circus show, and by combining sport and duty in building up a huge Territorial Air Force. The sporting aviator will join such a Force, and it, as it grows, will give work to the Aircraft Industry, and will maintain our supply of skilled mechanics. And so we may at least do something to prepare for that great Race War which may come upon us in the next five years, but may not break in its full fury for fifty years or more.

C. G. G.

ON THE WRITING ON THE WALL.

Among that excellent series of mnemonic rhymes on Hebrew history from which one has quoted samples in this paper from time to time is one which runs:—

"At the writing on the wall all the Magi stood appalled,
Till somebody suggested that Daniel should be called.
So Daniel *was* called, but merely remarked in passin':
'Ah! *Mene, mene, tekel upharsin!*'"

If one recollects rightly, the weird words in the last line being interpreted mean, "Thou hast been weighed in the balance and found wanting." And, as the Oriental Potentate to whom they referred refused to pay attention to the warning, his Empire (one cannot remember whether it was Babylon, Nineveh, or Assyria) expired shortly afterwards.

A Fair Warning.

We have just had a very similar warning in the form of that wonderful non-stop flight from Rome to London by Lieutenant Brack-Papa, of the Italian Army, on a S.I.A.-Fiat biplane, at a speed of over 160 miles per hour.

Are we going to heed the warning or are we not? The question is addressed equally to the British Aircraft Industry and to the Air Ministry.

For the last year we have patted ourselves on the back and prided ourselves on the fact that we held the Command of the Air—despite General Henderson's expressed opinion that such a command was impossible. And we had every right to do so, for the Germans were beaten out of the air, the French had no fighting aeroplanes worth mentioning, the first-class Italian machines were few and far between, and America had achieved the distinction of producing quantity devoid of quality. Great Britain at the end of the war stood alone as the leader of the world's aircraft design.

Since the war we have produced many excellent aircraft, and we have put up one or two fine performances, *but* we no longer lead as we did. As General Brancker said at the R.A.F. City Luncheon Club on Thursday last, other nations are overtaking us in the production of aircraft. The very performances on which we pride ourselves most have been beaten in one way or another.

Where We Are Beaten.

A British aeroplane was the first to cross the Atlantic without a stop, it is true. All honour to Sir John Alcock and Sir Arthur Brown. But their speed, despite a favouring wind, was far below that of Signor Brack-Papa's Fiat, which had no wind to help it, and in fact had the wind against it for much of the journey.

Also their time in the air—some 16 hours—was beaten before the war by Herr Rudolf Böhm on a Mercédès-engined Rumpler biplane, who flew for 24 hours 12 minutes without a stop.

To the Vickers-Rolls-Royce combination belongs the distinction of having covered the longest distance without a stop. Even allowing for the favouring wind that is at any rate a record of practical value, and not of purely sentimental interest, as is the crossing of the Atlantic *per se*.

It is of interest to note that the Fiat's journey was made with a single engine of 700 h.p. To this the phenomenal speed of the machine, and its capacity for carrying a big load at the same time, may be attributed. We in this country have not got a single engine of 700 h.p. When we want to carry a big load we have to sprinkle engines all over our machines in very inefficient positions, and so we are beaten on speed. Our tandem air-screw arrangement is about as bad as can be, despite the arguments of Technical Department "experts," but it cannot be avoided.

And though we have had designs for engines of 700 h.p. and more being hawked about the country for years, we have not got the engines. The Italians *have* got them. Hence our defeat in this exposition of high speed and long distance.

Similarly we pride ourselves on having produced the first airship to cross the Atlantic, and the first to go there and back. But the Zeppelin of 1917 did a longer and faster journey from Bulgaria to Central Africa and back. So, apart from a sentimental triumph, what on earth or in the air have we got to cheer about?

Who Is to Blame?

Readers may well ask, who is to blame for our losing our lead, and for this—the first and one hopes the last—of our defeats by our Allies in the air? Primarily, of course, the fault lies with the officials of the Air Ministry's Supply and Research Department as it is to-day, or Technical Department as it was, who cramp and crab private enterprise to-day as they did during the war.

Signor Brack-Papa has the honour of being the first to demonstrate publicly that an aeroplane can travel at 160 miles an hour. It is entirely the fault of the Air Ministry that the British Aircraft Industry was prevented from demonstrating in the Aerial Derby that we have several machines which can travel at speeds somewhere between 155 and 165 miles an hour.

This paper has constantly published accounts of the high speeds developed by the new French machines, such as the de Marçay and the Spad-Herbemont, and the new Italian machines, such as the S.I.A. and S.V.A., but the Air Ministry refused to permit the Bristol, Bat, Martinsyde, Nieuport, and Sopwith firms to prove that they were in the same or a superior class. We have not



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heard the last of this Air Ministry imbecility, one hopes, but the harm is done. The Fiat people have shown the world that they have something better than we have, so far as public performance is concerned.

Where the Industry Fails.

Personally one believes that the British firms mentioned hereinbefore can beat our esteemed Allies if given a fair chance, but it would be foolish to put all the blame on the Air Ministry because they have not already done so. Surely the past five or six or seven years ought to have taught the British Aircraft Industry that it is not enough to beat the World in aircraft and aero-engine design and construction. That is comparatively easy. The real difficulty is to beat the various Government Departments which hinder progress and hamper business.

If after three years of neglect, four and a half years of war, and six or seven months of a devastating peace, the Industry has not learnt the gentle art of wangling, then it is quite time for it to look around for new business managers. Surely if the Industry desired keenly to prove the superiority of British speed machines it could combine to defeat the officials of the Air Ministry, who are in reality intensely stupid, as their actions and arguments over the Aerial Derby affair have proved.

If the Society of British Aircraft Constructors and the Royal Aero Club (which homologates all British records) combined to demonstrate and advertise to the world at large the wonderful performances of British aeroplanes the Air Ministry would be completely beaten. It may be true that the Industry cannot exist without orders from the Air Ministry. One doubts it, because there is plenty of business to be got abroad by any enterprising firm that goes the right way to work. But it is perfectly true that the Air Ministry cannot exist without the Aircraft Industry.

The war proved that Trade designs could always beat Official designs, and if the S.B.A.C. struck against the imbecilities of the Technical and Supply Departments the Society would have all the practical and active-service people in the R.A.F. in its favour. The question is whether the members of the S.B.A.C. trust one another. There seem to be doubts on the subject. But if the S.B.A.C. is a solid body, without any members who will sell the Trade in order to curry favour with the Air Ministry, then it can beat the Air Ministry every time.

Precedents to be Avoided.

One has only to recall how before the war the motor trade, the cycle trade, and other British trades were beaten by foreign competition to realise how grave is the danger to our Aircraft Industry to-day. We must avoid at all costs that foolish British custom of sitting down and saying to ourselves: "British stuff is the best stuff. Let the foreigner come and fetch it."

We have got to go and fetch the foreigner to look at our stuff. We have got to take our stuff for the foreigner to look at. We have got to demonstrate at home and abroad that our stuff is the best. We have got to force the Air Ministry to let us demonstrate that our stuff is the best. We have got to "git up and git"—to use the expressive American phrase. We have got to get over the habit of doping ourselves with self-satisfaction. We have got to get busy. We have got to prevent ourselves from being beaten in the race for Commercial supremacy in the air by Germany, France, Italy, and even by America.—C. G. G.

THE TROOPS' DAY.

The following was issued by the Air Ministry on July 16th:—

"In response to inquiries received, the Air Ministry makes it known that during Peace Celebrations there will be no relaxation of the General Safety Provisions (Para. 5, Air Navigation Regulations) in regard to flying over town areas or populous districts, either for the purpose of taking photographs or for any other purpose.

"On Saturday, July 19th, the date of the Procession, no flying whatever will be permitted over London within a circle of four miles radius from Charing Cross."

It is seldom that one has cause to disagree with Major C. C. Turner, late R.A.F., and with those excellent articles which he contributes to the "Observer." But for once one feels it necessary to do so.

On July 20th he delivered himself of a strongly worded and richly deserved attack on the maladministration of Civil Aviation in this country, and showed clearly that civilian flying is suffering from "control amounting to oppression." But in the course of that attack at one point he confuses civil administration with military affairs and the public welfare, for he says:—"The prohibition of flying over London yesterday is a good instance of the state of the official mind. . . . It is not suggested that flying over London should be always permitted; there are good reasons why the prohibition should remain in force in normal times. But surely on Peace Day, when everything that can be done to signalise the greatest event in our history should be done, a few aeroplanes in the London sky (strictly ordered to maintain a safe altitude) would have been a fitting reminder and climax of the splendid work of the R.A.F. in the great conflict. But no: some pettifogging official had it in his power and had the meanness of spirit to cut it out."

It does not seem to have occurred to Major Turner, and to those who think as he does, that Saturday was essentially the Troops' Day. The British Army and the Allied troops, who were represented in the pageant, won the war. A detachment of the Royal Air Force represented the Naval and Military sections of the R.A.F. in the procession.

It would have been a breach of Service courtesy for R.A.F. aeroplanes to have flown overhead and to have diverted to themselves any of that attention which belonged by right to the troops on the ground. And if civilian aeroplanes had done so it would have been a gross impertinence.

Furthermore, on the minor point of public welfare, no altitude at which an aeroplane would be visible could have been safe on such a day. Every open space around London was filled with people making holiday, and an engine failure would have meant a descent either into the river or into a crowd.

Yet another good reason for prohibiting flying over London is that the occasion was not one on which it was seemly that officers of the King's Armed Forces should provide light entertainment for the mob. It is a regrettable fact that when portions of our victorious Army marched through London some weeks ago certain pilots so far forgot their positions as officers and gentlemen as to perform like circus clowns in the vicinity of Trafalgar Square and the Strand. With the R.A.F. in its present state the only guarantee against a repetition of such antics seems to be the total prohibition of flying. Doubtless when the R.A.F. contains only officers with permanent commissions, or with temporary commissions which they hope may become permanent, such safeguards will be unnecessary.

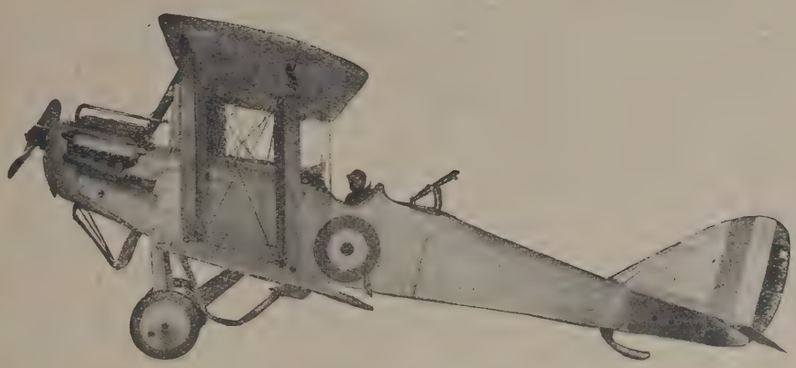
Some day perhaps the Royal Air Force may, in its reorganised state, provide for the people a pageant of its own at some great aerodrome where the populace may see it in its proper element and under seemly conditions. But the Troops' Day over London did not provide the time nor the place for a demonstration by the Royal Air Force.—C. G. G.

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Now that the Atlantic has been bridged by air in both heavier-than-air and lighter-than-air craft, the next step is to prove the practicability of commercial flying within the Empire. With this object in view, the "Daily Express" offers a prize of £10,000 not only to prove the feasibility of commercial flying within the Empire, but also to bring the outlying portions of the Empire into infinitely closer touch with the Mother Country. Australia has offered a similar prize to the first aircraft to fly there from the United Kingdom. There remains, therefore, the task of establishing aerial communication on a commercial basis with South Africa and India. This task the "Daily Express" proposes to carry out.

CONDITIONS.

In general, the terms and conditions of this £10,000 competition may be outlined as follows:—

(*a*) All types of aircraft are eligible for entry.

(*b*) *The competition is open to all the world, except late enemy countries.*

(*c*) All aircraft entered must carry a useful load of at least a ton both on the outward and homeward flights.

(*d*) Each entrant must produce one aircraft for the flight to and from South Africa, and one aircraft of a similar type for the flight to and from India.

(*e*) The factors considered in the award will be:—

Average reliability.

Airworthiness and general conduct of aircraft entered.

Average gain in speed over the established means of transport.

(*f*) As it is aimed that each aircraft shall carry a useful load of saleable or exchangeable commodities or raw materials, it will be to the advantage of competitors to study the commercial situation as affecting this interchange.

(*g*) Particulars of entries will be announced within the next few days.

(*h*) Competitors may undertake the flights at any date between the closing of the entries list, which will be announced later, and June 1st, 1920. Priority in completion will not prejudice the success of later but obviously more efficient performances.

(*i*) One complete failure by a competitor will involve disqualification for the award.

EMPIRE UNITY.

Further instructions as to the particulars and conditions of the competition will be announced later.

In making the preliminary announcement, however, it is in order to point out the importance to the Empire and to commerce of these unique reliability trials. In the first place, they will demonstrate the fact that aircraft is capable of bringing South Africa into as close touch with the heart of the Empire as Canada is with the fastest traffic by sea. These trials will demonstrate also that India is only a week away from London instead of a month, and this for sustained traffic, not for sporadic "stunts."

The political consequences of this achievement will be enormous. It is no exaggeration to state that the carrying out of the "Daily Express" £10,000 competition will lead at once to a new and great link of Empire. But it is not only from sentimental and patriotic reasons that these trials are pregnant with possibilities. With a world shortage of shipping that must persist for some years, and with the existence of great facilities for aircraft production, once the commercial value of air transport over great distances is established, an enormous step will have been taken in solving the admittedly difficult international economic situation which is a legacy of the world war.

At last a big prize has been put up for competition which will be a real incentive to aeronautical progress. Hitherto, with the exception of the Mortimer Singer and Michelin prizes, such prizes as have been offered have been more spectacular than useful. Thanks to assiduous booming, the "Daily Mail" prizes have roused the populace to a brief intense interest in specific "stunts," but the interest has been fleeting, and personally one has never been able to see that any permanent benefit has been conferred on British aviation by these semi-hysterical outbursts.

When the "Circuit of Britain" competition was the centre of sensation in 1911 one pointed out that the prize-money might have been offered in a manner more advantageous to aeronautical progress, but it was explained to one that the idea was to work up a big boom and then get it all over before public interest flagged. The policy seemed sound from the donors' point of view. One cannot scream at the top of one's voice for more than a limited period, and one bows to the "Daily Mail's" experience of mob psychology.

Now, however, British aeronautics has been offered a prize which is a real encouragement to enterprise. On July 16th the "Daily Express" announced that it offers a prize of £10,000 for a series of flights from England to India and England to South Africa and back.

The offer is made by the "Daily Express," a paper which from the earliest days has taken a sane and intelligent interest in aviation. It has never been hysterical over successes, and it has never been depressing over failures. It has not boomed fatal accidents, nor buried good performances. It has treated aviation as a coming method of transport and as an important factor in war.

Before the war the "Express" gave strong support to the needs of the Flying Services, and during the war it did great work in supporting agitations for the good of the Services. Mr. Blumenfeld, the Editor-in-Chief, and Mr. Wilson, the News Editor, have been for years keenly interested in flying, and have dealt with the subject in a sound and sensible way which should have been an example to the rest of the daily Press. To-day they are dealing with the giving of this handsome prize in an equally sound and sensible way.

One confesses to lamentable ignorance as to the precise period at which Lord Beaverbrook, better known as Max Aitken (and in Canada, one is told, as "the cement pier"), became a prevailing influence in the "Express," but it is generally supposed that he is practically the "owner," and such being the case it is only fair to attribute to his personal generosity and foresight a large share of the credit for this handsome gift to aeronautics and for the ideas which are behind it. Lord Beaverbrook has his enemies, as have all successful men, but even his enemies acknowledge his cleverness, and others who are neither his enemies nor personal friends say that he has one of the most brilliant brains of the century.

There is, it is true, nothing particularly brilliant in the idea of offering a £10,000 prize for aeronautics. It has been done before. But, and here is the real point, there is something brilliant in taking an old idea and getting out of it something far more useful than anything it has produced before. Lord Beaverbrook and his colleagues in this scheme deserve well of the people of the Empire.

One's only regret is that aircraft of recently inimical countries are barred. Such elimination of dangerous competitors seems rather a confession of weakness, for surely, if our aircraft are as good as we believe, we need not fear German competition.

Here is the announcement of the prize as published in the "Daily Express" on July 16th:—

On July 17th the "Express" published the following supplementary notes:—

INDIA.

Peculiar importance is attached to the flight to India for these reasons:—

(*a*) The vast potential possibilities of India commercially to the Empire.

(*b*) The delay in both sea and cable routes to India, which has been greatly aggravated by the war. This delay will continue for years to come, to the detriment of both the United Kingdom and India.

(*c*) The fact that it is now established that the defence of

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the Indian frontiers in the future will rest chiefly in the air. The establishment of commercial air routes to and from India will have an enormous moral effect throughout the East, and may well eliminate the possibility of hostile incursions such as that recently undertaken by the Amir of Afghanistan.

SOUTH AFRICA.

South Africa also is keenly alive to the great mutual benefits, both material and sentimental, which will accrue from regular aerial transport to and from the Mother Country.

It is gratifying to note the sympathy shown to the project by prominent Canadian officials in London, despite the omission of Canada from the routes suggested. As stated in the preliminary announcement, this omission was due to the fact that the utility of trans-Atlantic traffic has already been demonstrated. Mr. Lloyd Harris, chairman of the Canadian Mission in London, writes to the "Daily Express":—

"I desire warmly to congratulate the 'Daily Express' on its vision and enterprise in seeking by so generous a prize to encourage aerial intercourse within the Empire. I have just returned from Canada to my work in London, and I feel that my countrymen will welcome the plans announced this morning in the 'Daily Express.' The swifter and more complete the means by which each part of this existing League of Nations known as the British Empire may know each other, the greater will be the future prosperity of all."

One gathers from other paragraphs in the "Express" of the 17th that the Royal Aero Club, by way of its Secretary, Mr. Harold Perrin, approves of the prize. In the nature of things the R.Ae.C. will have the regulation of the competition. It is to be hoped that it will handle it with greater intelligence and enterprise than it has shown in the matter of the Australian £10,000 prize or the Schneider Cup competition.

Meantime, one commends the "Express" competition to the Aircraft Industry. At first sight the rules appear to favour airships. Perhaps they do. But, after all, aerial communication will fall into the hands of those best fitted to deal with it. If the aeroplane cannot beat the airship in this competition, then it proves that the airship is the best aircraft for the job. If so, then good luck to it.

In any case the proprietors and the management of the "Daily Express" deserve the cordial thanks of all concerned with aeronautics, not only for having put up one of the biggest prizes offered, but also for arranging a competition which will be quite the most useful to the development of aerial navigation.—C. G. G.

THE DEATH OF LIEUT.-COL. POLLOCK.

Those who have long been concerned with aeronautics and many of the younger airship officers will learn with deep regret of the death of Lieut.-Col. C. F. Pollock, O.B.E., A.F.C., on July 17th.

Colonel Pollock was one of the keenest amateur balloonists of his generation, and almost certainly held the record for the number of trips across the English Channel in free balloons. His first crossing was made in October, 1897, and, according to that excellent early book on lighter-than-air craft "The Boys' Book of Airships" by Harry DelaCombe (now Lieut.-Col. R.A.F.), he had crossed the Channel by balloon eleven times before M. Blériot made his famous crossing by aeroplane.

As soon after the outbreak of war as the Navy began training airship personnel, Mr. Pollock (as he then was) offered his services as an instructor in the handling of free balloons in the air, a very necessary preliminary to the navigating of airships. He was appointed Flight Lieut. R.N.A.S. Later he became Squadron Commander R.N.A.S., and ultimately Lieut.-Col. R.A.F.

Though by no means a young man, he made constant journeys in R.N.A.S. balloons, taking with him classes of aspirant airship officers, on occasion having as many as six pupils in the car at a time. Thanks to his able and sympathetic instruction, in the art of which he was an acknowledged master, a number of young men were thus taught the essentials of a branch of the King's Services which has done most valuable work in assuring the safety of seaborne supplies during the war. And nobody has better deserved the promotions and decorations conferred upon him than did the late Colonel Pollock.

After several years of this strenuous work Colonel Pollock's health became seriously affected, and of late he has suffered from rapid creeping paralysis. He realised recently that he had but a few months at most to live, and that towards the end he would be quite paralysed. Therefore on July 17th he took his own life.

Doubtless the verdict will be the conventional one of suicide while temporarily insane. It would seem more reasonable to regard Colonel Pollock's death as that of a brave man who preferred to leave this life quickly and in full command of his faculties rather than to remain a little while longer as a burden to himself and to those dear to him. None can doubt his courage or nerve. His Service career has proved both. His manner of ending his life was the supreme proof of those qualities.

As to the cause of his breakdown in health, it seems that here is a case for study by the R.A.F. Medical Service. Much has been heard of the effect of constant flying at great altitudes by aeroplane pilots, and it has been said that a species of temporary paralysis is caused by an excessive amount of such work. One has ventured to suggest on previous occasions that there may be some analogy between this effect and "caisson disease" from which divers suffer owing to the rapid changes of air pressure which they experience in the course of their work. It seems possible that in the case of a man of Colonel Pollock's age the lesser altitudes reached by the balloons used for training might have even greater effect than the immense altitudes reached by active-service aviators would have on a younger man. Also, it seems probable that effects which would be merely transitory in the cases of younger men possessing youthfully elastic tissues would be permanent in an older man who had passed the age when physical recuperation is possible.

The older members of the Royal Aero Club will ever remember Colonel Pollock as a good friend, as a pioneer of British aeronautics, and as a sportsman of nerve, resource, and determination. The Airship Service will revere his memory as of a kindly and diligent instructor of youth who has deserved well of his King and Country. May he rest in that peace which he went to seek.

C. G. G.

PAY IN THE ROYAL AIR FORCE.

The Air Ministry announcement concerning the pay of R.A.F. officers under the reorganisation scheme appears in its proper place in the Naval and Military section of this paper, on page 370. Therein it will be found that in future R.A.F. officers will, as promised by General Trenchard, be able to live on their pay.

An interesting point is also disclosed in General Seely's statement on page 364, where he states that flying pay, as such, is abolished, as all officers in the future will be flying officers—which is as it should be. On the whole, the pay scheme seems very satisfactory, especially for junior officers.

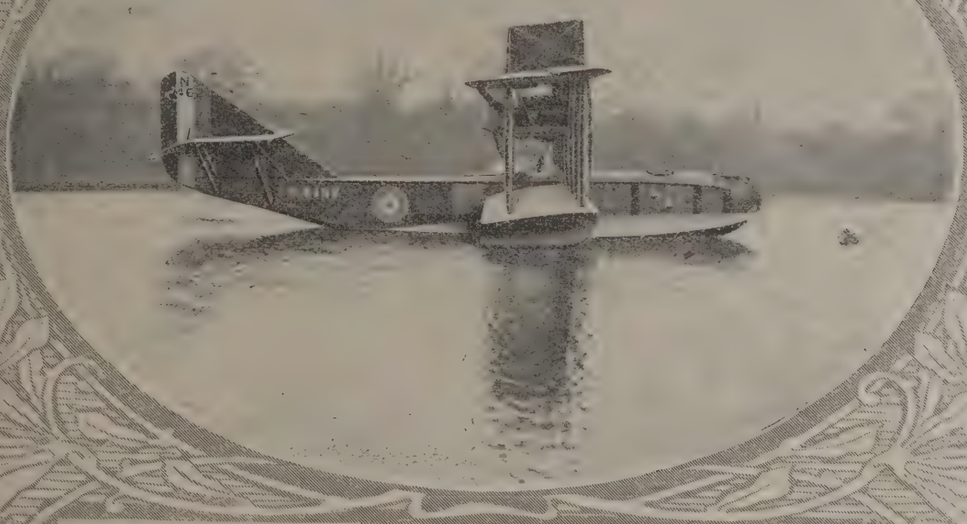
FLYING BETWEEN LONDON AND PARIS.

The following announcement was received from the Air Ministry too late for publication in the last issue:—

The instructions issued on 12th instant relating to the opening of civil communication by air between London and Paris from July 13th-20th inclusive are now modified by arrangement with the French Government in the following respect:—

During the stated period British pilots and passengers will not require to be provided with passports, and His Majesty's Government have arranged to give the same facilities in regard to French pilots and passengers.

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NEWS OF THE WEEK FROM ALL QUARTERS

A Visit from the King of the Belgians.

On July 16th H.M. the King of the Belgians flew from Brussels to Hounslow, en route for Eton College. The visit was unofficial, the object being a visit to Prince Leopold. King Albert returned to Belgium by aeroplane the following day.

Purring over Parliament.

The Glasgow "Evening Times" is disturbed over the possibility of our legislators being disturbed from their slumbers. One of this news-sheet's contributors has written :—

"It would not be surprising, I think, if the Speaker, or whoever the authority be, were to issue an order prohibiting aircraft flying over the Houses of Parliament. Speakers in either Chamber are never interrupted by the noise of outside traffic, not a murmur of which penetrates the sacred precincts, but it happens occasionally nowadays that an aeroplane purrs directly overhead, causing momentary interruptions."

One certainly agrees that the practice of flying over the "sacred precincts" should cease. The profane purr of an aeroplane might remind our legislators that, in spite of all their efforts, they have not yet succeeded in killing civil aviation, and further repressive measures might be taken. Commercial aeroplanes should purr quietly like Pussyfoot if they are to escape further attention from Parliament.

Truthful.

An ex-pilot who had applied for a civil flying job was having his knowledge of aeronautical matters tested by the manager of the firm. When asked to describe the method of lubrication of a certain well-known engine he replied : "Drip feed onto the pilot's right foot." He obtained the vacant post.

A Journalistic Break.

The "Evening Standard" announced on July 16th that Lieut. Madon would carry the French Air Service flag in the Victory March. The newspaper favoured its readers with the following priceless information :—

Lieut. Madon in August last had 40 air victories to his credit. One of his most thrilling exploits was an enforced landing behind the enemy lines in 1917, when he was attacked by a German patrol of twenty men. He leaped into his seat, loosened the brakes with his feet and one hand, adjusted his machine-gun with the other, and charged the patrol at ever-increasing speed. After mowing them down he headed for the French lines in safety.

One would have liked further information about the brakes which he loosened with his feet and one hand. It is true that the old Voisins had hand brakes on the hubs of the landing wheels, but why were feet necessary to release them?

The Flying Coach.

A writer in the "Oxford Chronicle" is responsible for the following :—

"The prospect opens up new vistas of Eights Weeks and Commemorations. The flower-laden barges and the parasols and the brilliant dresses will still stand out in clumps; the canoes will be dexterously manœuvred amid the heavier river-craft, and the forest of punt-poles will sway and wave as the course is cleared for the eights; the perspiring rowers will still swing to and fro, and the banks will still have their sweltering runners, causing the air to reverberate with their yells and their rattles and their bells and their pistols.

"But the coach will have come into his own. Comfortably flying above his boat, his megaphoned instructions will be conveyed to his crew, and above the din stroke will be told to quicken or to lengthen out; and the heavy man at 'six' will hear again the phrases he is so tired of hearing about 'pulling his weight'; and the cox who has just missed his bump will be able to complain that the moment for that twitch at the rudder which spoilt everything was not the moment of his own choosing."

There are, however, obvious difficulties. The sight of aeroplanes flying sufficiently close to the boats to enable the crews to hear megaphoned instructions above the roar of the exhaust would be exciting, but one fears that there might be some unintentional bumps. Also, there might be some difficulty in inducing the aeroplanes to fly at the very low speed required.

If the writer of the article really wishes to see brighter rowing, he should suggest that the eights should tow behind them small kite-balloons carrying the coaches.

When the Divers Dove.

According to the American "Aerial Age," "the 'Guardian Angel' parachute, officially adopted by the British Royal Air Force as the most certain aerial life preserver yet invented, was demonstrated at the Atlantic City Airport on June 19th by Major Ordo Loos, R.A.F., and Miss Sylvia Boyden, of England (*sic*).

"They ascended to a height of one thousand feet in an aeroplane piloted by Eddie Stinson. After circling for a moment both Major Loose and Miss Boyden dove head first from the machine."

After they had "dove" they controve to make good descents and arrove safely on the aerodrome. "Major Ordo Loos," afterwards referred to as "Major Loose," appears to have had a slight accident to his name during the descent, but has recovered sufficiently to identify himself as Major Orde Lees.

The Engines in R.34.

One was amused last week to see in the public newsheets large advertisements of the particular brand of chewing gum that was used to stop a small leakage from one of the water-jackets of the Sunbeam-Coatalen "Maori" engine on the starboard wing car of the R.34 during the historic Atlantic flight.

As is the custom with advertisements in which self-praise is a recommendation, it is stated that the chewing gum in question proved a big factor in the success of what are inaccurately described as the "world's greatest airship flights."

This suggests some appalling advertising possibilities in the future, and we may live to read claims that the success of the first flight from Britain to Australia was entirely due to the superb quality of the scented toilet soap with which a member of the crew cured a minute leakage of petrol, and that the accomplishment of the first aerial circumnavigation of the globe was made possible by the resilient qualities of Dobb's Doughnuts, which were used to replace some broken shock-absorber elastic.

The true story of the much-advertised chewing gum incident has been told by Mr. J. T. Irving, of the Sunbeam Motor Car Co., Ltd., who writes :—

"On my arrival at Pulham, I immediately examined the starboard wing car expecting to find the engine covered by pounds of chewing gum which had been thoroughly chewed previously by the crew before application. To my surprise I could not find a piece of chewing gum anywhere, and, at my request, the mechanic in charge of the engine showed me where this remarkable repair had been effected.

"The water-jackets on the 'Maori' engine are largely composed of flat aluminium plates which are held onto the cylinder by means of a large number of small set screws. It seems that one of these screws was also used to carry a clip supporting a copper pipe, and that in flight it was noticed that this clip was loose. When the mechanic tightened up the screw he twisted off the head of the bolt. This allowed a very small leakage of water —this leakage being in the nature of one drop of water per minute. As the mechanic had so little to do, owing to the steady running of the engine, he set to work and fitted a small plate over this, the plate being secured under the heads of the two adjacent screws, and, just before tightening the screws, he had a brain-w[illegible], and took the piece of chewing gum out of his mouth and slipped it under the plate. Evidently, General Maitland did not see this repair before making his famous log entry, which was probably based on some remark of Lieut. Shotter's.

"The five engines between them have put up a total of approximately 900 hours' running, on this trip only, to which must be added over 600 hours' previous running."

With regard to the failure of one of the engines in the rear car, Mr. Irving writes :—

"The failure of the studs in the big-end bearings of the connecting rod was caused by allowing the engine to run after the white-metal had run out of the bearing. This, of course, renders a failure of this description inevitable.

"The reasons for the white metal 'running' at present are somewhat obscure, as the crew state that the oil pressure was correct at the time of the breakdown, but a point which may have some bearing on the failure is that previous to the actual breakdown of the engine, the engine was caused to race to a high speed owing to an accidental declutching. It is probable that this cracked the white metal in the bearing, and it would, of course, only be a matter of time before this broken metal was hammered out. Up to the time of this mishap the engine had run somewhere near 300 hours."

"IT'S A WALK OVER!"

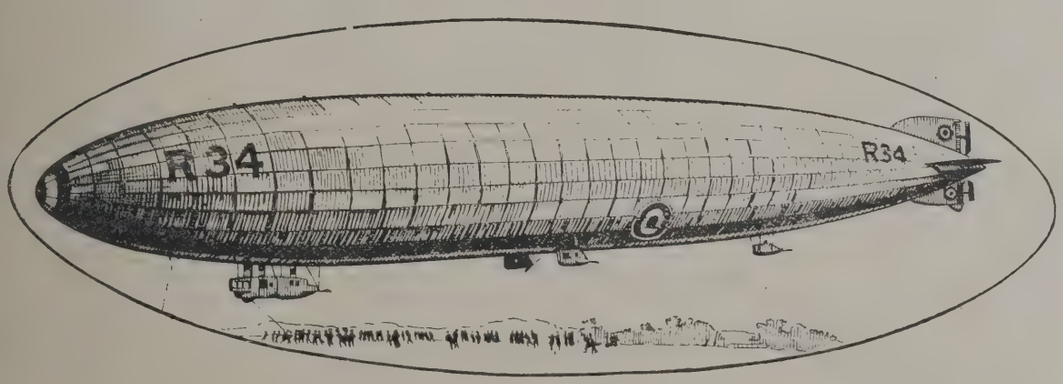
That's the only way to describe the superiority of

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The WORLD of AERONAUTICS (continued)

The Trans-Atlantic Martinsyde.

Mr. Raynham and his navigator, Lieut. Biddlecombe, made another attempt to start on the Atlantic flight on July 17th. The attempt ended as the previous attempts have done.

The Martinsyde rose to a height of 40 ft., then sagged down and crashed, completely wrecking the machine. The axle of the under-carriage snapped and both wheels wrenched off. The air-screw was splintered, the radiator torn out, the aluminium tanks split, and the lower planes shattered at their junction with the fuselage; the latter is also badly damaged. The aviators were unhurt.

The cause would appear to be failure to lift the weight of fuel required for the voyage.

Mr. Raynham has now decided not to attempt the flight. The Martinsyde is now being packed up preparatory to sailing for England. The voyage will be made in s.s. "Grampian."

The Dramatic Instinct.

There is something indescribably ludicrous about an airship, her ungainly bulk, her clumsy manœuvring, and crab-wise progress in a breeze, making her a fit subject for the often ponderous wit of ignorant observers. The aeroplane, on the other hand, conveys an impression of speed in flight and venom in war, inseparable from the noise of the engine. There is a thrill in the crossing of the Atlantic by an aeroplane which is unaccountably absent in the accomplishment of the same feat by an airship, although there can be no question which is the more valuable performance for the immediate future of aerial transport.

Notwithstanding the air of aloofness assumed by technical people, public interest and a good "Press" must play a big part in the development of commercial aviation, and the only way to attract that necessary vulgar attention is by providing material for thrilling headlines, either intentionally or otherwise.

The Air Ministry are to be congratulated upon the extraordinary concatenation of circumstances brought about by a kindly Fate, which have served to raise the magnificent scientific feat of the R.34 from the level of a technical experiment to the giddy pinnacle of fame represented by "scare" headlines in the evening papers. A stowaway, electric storms, distress signals, and a final berthing on the last (almost) drop of petrol, "sweeping the bunkers," as a seaman would say, all made excellent material for the lay Press.

Without such good fortune, the "swinish multitude" might have remembered the voyage of L.59 last year into the heart of Africa, and made, in its ignorance, derogatory comparisons. The quite unintentional publicity might, however, have been augmented by a little deliberate forethought, and this suggestion is worthy of note by other aviation concerns who have sinned in the same manner recently. The week-end is a "dead" time from the newspaper point of view, and should be avoided. Very few people see the Sunday evening papers, and by Monday morning the news tends to become stale.

It is most surprising that the Air Ministry should have overlooked this point, because, under the present régime of Business Government, it has hitherto shown a keen appreciation of the great uses of advertisement. Its skill in appropriating much of the credit of Mr. Hawker's sensational failure, after repudiating all responsibility with indecent haste when things looked black, was a stroke of business which would have delighted the heart of a shady company promoter.

That the dramatic instinct is not dead is obvious, but it is to be hoped, both in the interests of journalists and the Ministry's reputation, that the week-ends will be avoided as times for the provision of good "copy."—EX-PILOT.

Trans-Pacific Flight Prize.

A prize of £10,000 has been offered by Mr. Thomas H. Ince, of Los Angeles, California, for the first trans-Pacific aeroplane flight by an aviator of any nationality. If the attempt is made from the east, Venice, California, must be the starting point, and the landing must be on the mainland of Australia, Japan, or Asia. If made from the west, a start may be made from any of the latter places, and a landing on the mainland of the United States.

The contest will be open from next September to February, 1920. The flight must be completed in 12 days.

Aeroplanes and Forest Fires.

It is reported from the United States of America that after some preliminary reports concerning the possibility of using aeroplanes as an auxiliary in the work of protecting forests by fire, it is now definitely announced by the U.S. Forest Service that the Air Service and the Forest Service will co-operate in work of this character during the coming summer in portions of the national forests of California, Arizona, New Mexico, and other states. Army aerodromes and bases will be used for the undertaking, which will be largely experimental during the coming season. Besides supplementing the work of the forest rangers in locating forest fires, attempts will be made to utilise aircraft in connection with fire-fighting. One plan to be tried is the use of bombs filled with suitable chemicals as a means of extinguishing fires from the air. It is also suggested that fire-fighters may be carried to the vicinity of fires in dirigibles, and lowered to the ground by means of ladders. Aeroplanes will use wireless for reporting the location of fires.

A Warning.

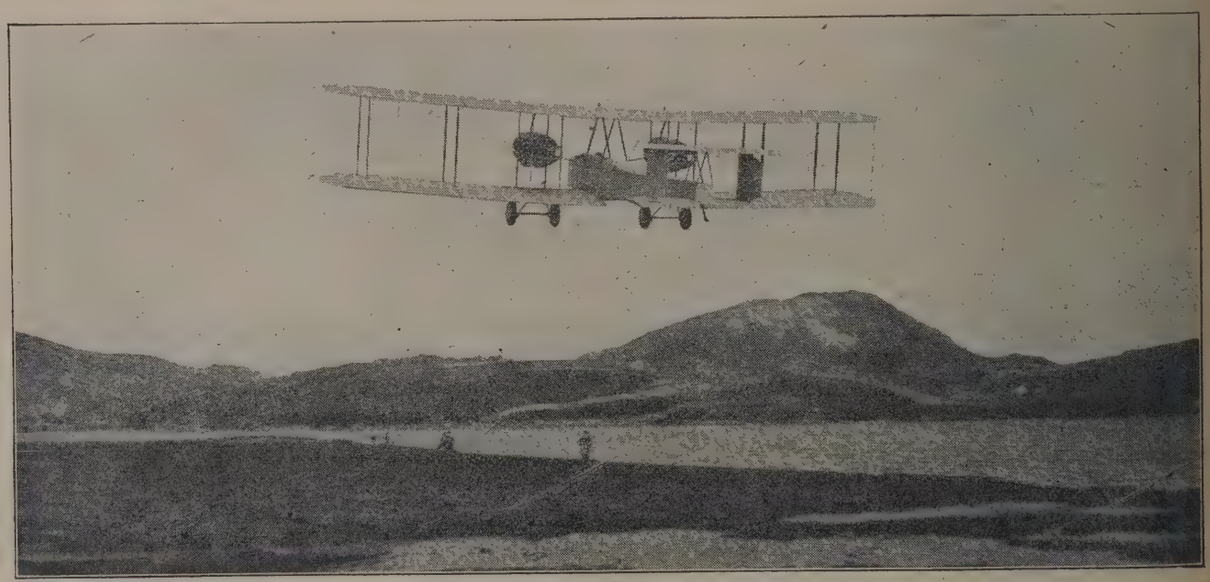
Apropos tennis at Wimbledon, an ex-R.A.F. officer, who is also a keen tennis-player, writes:—

"The Air Force greatly distinguished itself there. During the final of the all-comers single between Kingscote and Patterson, a Bristol Fighter (I think it was) came and stunted round the centre court at about 200 feet to such an extent that play had to be stopped, and then, to crown things, it dropped Victory Loan leaflets, some of which actually fell on the court! Kingscote, who, of course, was an 'Archie' gunner, looked as though he would have given half his kingdom for an 'Archie' at that moment."

The Airship Officers' Club Dinner.

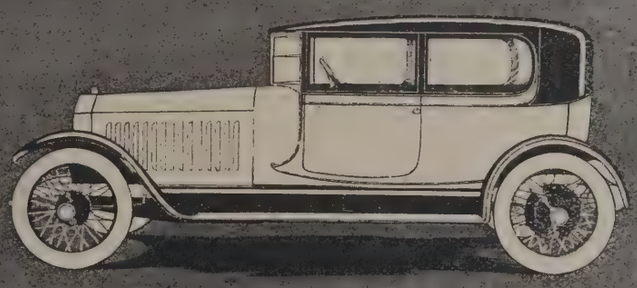
The Airship Officers' Club is giving a dinner at 7.45 p.m. on July 26th at the Connaught Rooms, Great Queen Street, W.C.2. General Maitland, President, and Major Scott and Major Cooke and the other officers of R.34 will be present.

Anybody desiring information should write to Captain C. P. Herron, Hon. Sec., Airship Officers' Club, 4, Dean Stanley Street, S.W.1.



OFF!—A Rear View of Captain John Alcock and Lieut. Arthur Brown leaving the ground in Newfoundland on the Vickers "Vimy" with Rolls-Royce Engines.

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The WORLD of AERONAUTICS (continued)

The R.A.F. City Luncheon Club.

The members of the ex-R.A.F. Officers' City Luncheon Club held a special Victory Luncheon Party on July 17th to celebrate the part played by the R.A.F. in the war.

Major Modin, the chairman and founder of the Club, in proposing the success of British Aviation, said that this was the Club's first official function, and that they had met to celebrate that victory to which each had contributed in his own sphere.

Major-General Sir Sefton Brancker, replying, reminded those present that Great Britain held the paramount position in the air. This country had led the world in its air policy, first of all in giving aircraft the position warranted by its effect during the war, and later by being the first nation to create an Air Ministry and an Air Force, though he added in an aside, "Some of them might think this a doubtful blessing." Great Britain had followed up her success in the war by success in peace, in that a British aeroplane was the first to cross the Atlantic without a stop, and that a British airship was the first to cross the Atlantic and the first to do the journey across the Atlantic and back. He further said that we owed our success to the courage and initiative of our pilots, and he believed that in commercial aviation British pilots would lead the way in the air as British sailors had done at sea. Not only were we good at organising schemes in this country, but we were good at executing them, and the life-blood of commercial aviation would be organisation. Our success in the war was due to our policy of constantly changing our designs. [One may perhaps interpolate the remark that, if the official people had had their way, designs would hardly have been changed at all, and our rapidity in changing designs was largely due to continual agitation.]

General Brancker remarked that the situation to-day was extremely difficult. Much preparation was needed before the world's air routes could operate. The Air Ministry was torn between the demands of those who believed in aviation and the Treasury, which, as he said, had not yet been bitten by the aviation bug. Much money was needed for the formation of air stations all over the world, and private enterprise could not find that money, therefore the Government must assist. Other countries were waking up and doing their best to overtake us in aircraft affairs. He was certain that the Advisory Committee under Lord Weir, which was recently formed, would be most valuable, and it was up to the various members of Parliament who were present to see that aviation got its due allotment of the public money. He felt sure that this Club would do much to affect the Air Force Reserve whenever it came into being.

Lieut.-Colonel Moore-Brabazon proposed the success of the Club in a very humorous speech, and said that the next time the Club met he hoped that he and other members of Parliament would not be placed above the salt, but would be distributed among the other members of the Club. He thought the Club would be an excellent thing, because now that they were all civilians, senior and junior officers would meet on equal terms for once. He hoped that all members then present would in a year's time have induced at least two ex-R.A.F. officers to join. The essence of the Club was to get as many members as possible and so keep the Air Force people together.

Mr. Leslie Guyer, secretary of the Club, said that the Club was formed because it was thought that it would be advisable for them to have some sort of a reminiscence of the old R.A.F. mess. It would be a good thing to have a nice quiet place where they could lunch in peace as they did in an R.A.F. mess before people thought fit to make peace, instead of having to take part in the mid-day lunch struggle in the City. Another ulterior motive was that they hoped it might be possible in time to provide a certain amount of flying for the members, and he thought that this might well be arranged if the biggest proprietors of secondhand aeroplanes in the country were properly approached.

Among those present, in addition to those already mentioned, were:—Lieut.-Col. L'Estrange Malone, M.P., Mr. A. Baldwin Raper, M.P., Colonel W. D. Beatty, R.A.F., Sir Edward Mountain, Sir Charles Wakefield, Bart., and Mr. W. Joynson-Hicks.

It is earnestly to be hoped that the Club will be keenly supported by all ex-R.A.F. officers now engaged in work in the city. In the first place, it is obviously a good thing that officers of the Air Force should keep together to maintain their old comradeship. In the second place, there can be very few ex-officers who would not be pleased to have such an opportunity of meeting day by day those with whom they served during the war, and it is not every ex-R.A.F. officer who has either the time or the inclination to go to a club in the West End, whereas everybody has to have lunch somewhere, and a lunch-hour spent in congenial company is the best possible break in the day's work. Thirdly, if the Club grows to a sufficient size it will be possible for the members to lunch very much less expensively at such a club than they could possibly do at any restaurant.

Purely as a business proposition any of the large catering firms will give very special terms to members of such a club if a sufficient number of meals per day can be guaranteed, and one imagines that the more enterprising caterers would willingly make a specially-cut price for a club of this sort knowing that even if there are only a few members at the start, the fact that they provide good value will rapidly increase the demand, with the result that it will be possible for members of the Club to have a first-class lunch at a third-class price, seeing that the objection to the third-class lunch is generally the company and not the catering.

Therefore from every point of view it is worth the while of ex-R.A.F. officers in the city to join the Club, and all such are invited to write forthwith to the Secretary, Mr. Leslie Guyer, at the ex-R.A.F. Officers' City Luncheon Club, Mansion House Station Restaurant, E.C.

A Curious Position.

At the Wandsworth County Court, on Monday last, before His Honour Judge Harington, an interesting case was heard under the Workmen's Compensation Act.

The action arose out of an agreement between Whitehead Aircraft (1917) Ltd., aeroplane manufacturers, of Richmond, and Horace John Roberts, a sawyer, formerly in their employ.

An application was made to his honour for an order directing Mr. E. S. Salaman, the company's solicitor, to pay into court forthwith £225, being the amount agreed upon as compensation in respect of an accident sustained by the applicant while in the company's employment. Mr. Roberts' left hand was practically rendered useless through being caught in a circular saw. Afterwards the company agreed to pay £175 as compensation. The Registrar of the Wandsworth County Court (Mr. Willoughby), however, did not think that this sum was adequate, and recommended that £225 should be paid in settlement. An agreement to this effect was filed, and a request had since been made by the applicant that this sum should be paid into court. That had not been done, and the judge was now asked to direct that the money should be paid into court forthwith.

Mr. Hartley read an affidavit by Mr. Salaman stating that he (Mr. Salaman) had received a sum of £225 in banknotes from the Whitehead Aircraft Company for payment. In view of the financial position of the company, Mr. Salaman was of the opinion that he ought not to part with the money, as it might be considered a fraudulent preference. On June 26th a receiver and manager of the business of the company was appointed on behalf of the trustee for first mortgage debenture holders, and Mr. Salaman's firm now acted for the receiver and manager appointed under the order of the Court. He (Mr. Salaman) had since received instructions from the receiver and manager not to part with the £225 without the directions of the High Court.

His Honour said that it certainly seemed very hard on the workman that this money had not been brought into court. There was, however, no suggestion of contempt, as there had been no order. What authority had he to order Mr. Salaman to pay over this money?

Mr. Hartley: Your honour is entitled to make an order on the ground that Mr. Salaman received this money before the receiver and manager was appointed by the High Court. If the company had paid the money into court, this position would not have arisen.

His Honour: It is a pity that they did not do so. It will be grievously hard on the workman if he cannot get the money. As the case was to come before the High Court, the matter was allowed to stand over to see what was done.

Congratulations.

FLANDERS.—On June 30th, at 27, York Gardens, Clifton, Bristol, to the wife of Mr. L. Howard Flanders, a son.

Coming Events.

JULY.

Saturday, July 26th.—July Meeting at Hendon.

Saturday, July 26th.—The Airship Officers' Club Dinner at the Connaught Rooms.

AUGUST.

Friday, August 1st.—Amsterdam Aircraft Exhibition opens.

Saturday, August 2nd, Sunday, August 3rd and Monday, August 4th.—Tenth London Aviation Meeting at Hendon.

Tuesday, August 5th.—Handley Page Social and Athletic Club's Sports. Starting at 12 midday at Cricklewood Lane.

Thursday, August 21st.—R.A.F. Annual Athletic Meeting at Stamford Bridge.

Sunday, August 24th to Sunday, August 31st.—The "Avenir's" Tour de France Aérien.

SEPTEMBER.

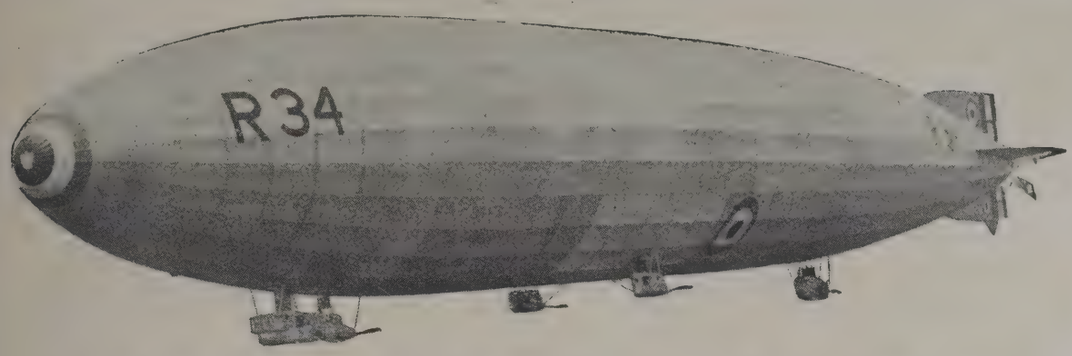
Wednesday, September 10th.—Schneider Cup Competition, Bournemouth.

DATES TO BE ANNOUNCED LATER.

Hendon—Birmingham—Manchester Air Race.

Hendon—Paris—Hendon Air Race.

Hendon—Brighton—Hendon Air Race.

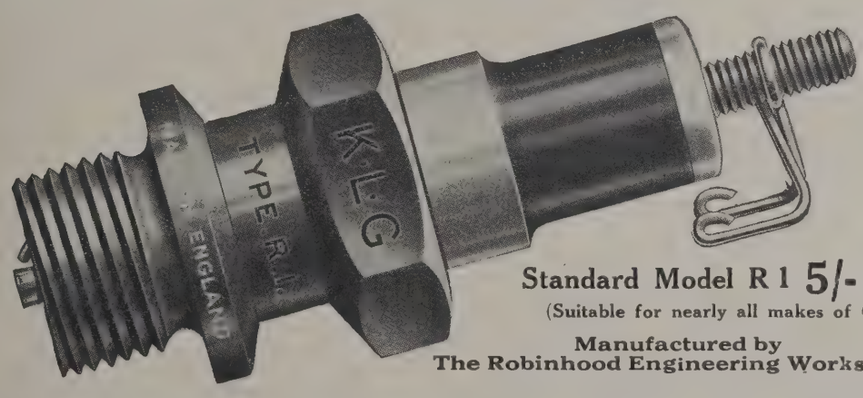


ANOTHER GREAT TRIUMPH for K.L.G. Plugs

Fitted on the "Sunbeam-Coatalen" engines of the R.34 in her great Victory flight over the Atlantic, "K.L.G." Plugs gave every possible satisfaction and largely contributed to the success of the voyage out and home.

It is a noteworthy fact that "K.L.G." Plugs were used on all British Machines flying the Atlantic – first on the Sopwith (Hawker-Grieve) machine, then on the Vickers-Vimy (Alcock-Brown) Machine and on the British Airship R.34

All were available, "K.L.G." were chosen.



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(Suitable for nearly all makes of Cars)
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MORE AIRCRAFT AT THE ACADEMY.

No. 286. "A British Aeroplane Being Pursued by German Machines after Photographing their Positions, August, 1917." Lent by the Imperial War Museum. Captain Louis Weirter. I deny the title as a fact, and I dispute it as a statement. Something will have to be done about this. I must be serious. It is no laughing matter. Well, yes, perhaps it is. I do not know anything about this picture, but I will say of it, as my Lord Macaulay said of Mr. Montgomery's poems, that it "exceeds all human compositions." Honestly I never saw anything like it. Nor, I will wager, did Captain Weirter. But he is a braver man than I. This is a large canvas, and every bit is covered with paint. By rolling over to an angle of 45 degrees a large something (assumed to be a British aeroplane) is got within the confines of the frame. "The light that never was on land or sea" is present. It casts what appears to be shadows on the lower wings of a lurid biplane. But there is some doubt as to this, as closer inspection reveals the fact that there appears to be a similar deposit of dirt at each wing tip. The estimated dimensions of the aeroplane (no wonder the pilot looks worried) are—span, 180 ft.; chord, 12 ft.; length of fuselage, 10 ft. Longitudinal stability is not marked, but very large empennage surfaces are fitted, and to simplify control the rudder is in one piece with the fin. Screw, 10 ft. diameter, revolving in what may be described as an extra geometrical figure. Aeroplane being severely Archied by shells which discharge large consignments of dirty cotton wool which has, one supposes, got through the leaky blockade. Bracing, 1½ in. steel rods. And it is wanted, too. Several shells have transfixed the planes; the fabric has erupted, and its ragged edges are *sticking up*. There's verisimilitude for you! There's proof conclusive that there is a vacuum on the top of the planes! Section of the latter appears to be very nearly truly semicircular. The machine has no landing gear. This, in common with similar fittings on all the other planes in this picture, has been shot away. A feature of the design is that the right lower wing has an overhang of about 25 ft. Left ditto has none. This is considered to be very good for coasting round mountains. The pilot has crushed himself close up against an engine which is in imminent danger of melting and running out of the fuselage!

IS IT A GERMAN TOAST RACK?

He may well try to efface himself, for what is this villainous object that presses on his heels? A German toast rack? Perish the thought! It is a super-Albafokkerstadtschafen driven by—heavens, not our stolen Rolls-Royce! No! It is driven by a pulmonary rotoscope! Realising his awful position, the British pilot urges his machine forward! In order to save weight he hurls his perspective overboard, and attaches his tail plane to the trailing edge of his upper wing. Alas, too late! The Boche has also jettisoned his perspective, which falls with a horrible crash on an uprising consignment of cotton waste. By this manœuvre he gains tremendously! He is enabled to cock his engine up at a sharp angle, and by very clever work he fires his fixed gun sideways through his screw. Has he hit? No, no, no! British pilot tucks his tail even closer in, and sits on the magneto! All will yet be well! The attacking machines are all aerodynamically inefficient. The nearest one has a span about 15 times the gap and the strain is beginning to tell on it. The German pilot has already discarded his tail. But nothing can avail him! Another two inches and he will have to swerve to avoid a solid lump of compressed Manchester goods. England wins! Floreat Etona! God save Ireland!

But what of the other side of the picture? Gawd knows. But I warrant it isn't half as amusing as the front.

No. 326. "Ronald Morgan, 2nd Lieut., South Wales Borderers, 55th Squadron R.F.C." Solomon J. Solomon, R.A. A fine portrait and a good impression of an aeroplane on the ground. This machine would fly after the riggers had put in new struts and a yard or two of bracing wire.

No. 325. "The German Fleet after Surrender, Firth of Forth, November 21st, 1918." James Paterson. No you don't, James! You have put in a nice solid Blimp, envelope encloses a lump of cast lead, but your aeroplanes won't pass. "They shall not pass." Why not read THE AEROPLANE? You would then realise that machines designed in about 1893 are no longer regarded as serviceable.

No. 324. "British Tank Attacking German Strong Point." Lieut. F. Leist. Two enormous (unrecognisable) aeroplanes securely secured to the sky. I would attack them, but they are not the artist's strong point. Leist said, soonest mended. They need mending.

A BASSETT-LOWKE BADLY GAMAGED.

No. 353. "Cavalry of the Air." W. B. Wollen. Inscription: "Our low-flying machines attacked enemy troops and transport. . . ."—*Official Dispatch.* Our low-flying machines missed the Huns in the picture by, according to my estimate, one mile. Our low-flying machines are not full-sized aeroplanes. They are models. I presume them to be Bassett-Lowke Fighters—one of them badly Gamaged. They are neatly fixed in the air by invisible rafwires. Nothing doing, Mr. Wollen. I refrain from the pun. But the Boche would never be worsted by your planes.

No. 364. "Help from U.S. Destroyer." Bernard F. Gribble. Positively a genuine oleomargarineograph. Colour as per Christmas supplement. Turgid, muddy, house-decorator colouring. And no wonder the machine came down in the sea. Look at the bracing, man!

No. 388. "Mobile Veterinary Dressing Station near Bullecourt." Algernon Talmage. Dear old long-faces! In background two very untidy kite balloons, calculated to drive any spinster frenzied. They do so want mothering. And the smallest aeroplane in the whole of the R.A. The dinkiest, weeest little thing. You could wear it on your watch-chain. The only drawback to its picturesqueness is that it stands out about a foot in front of the sky!

No. 756. "H.M.A. R.34." W. Russell Flint. JOLLY GOOD! A real painting by a real artist, who has got a pair of real eyes. If the Royal Aero Club wants something good, here it is. As R. L. S., the only R. L. S., says in "Treasure Island," p. 115:

"Ah!" cried another voice, that of the youngest hand on board, and evidently full of admiration, "he was the flower of the flock, was Flint!"

And he is!

There are several other pictures with aeroplanes in them. No. 733 (Charles Dixon), usual seascape; No. 621 (W. L. Wyllie, R.A.), all the "guts" taken out of the machine, and the details carefully shirked, etc.

But, after seeing No. 756, I got bored stiff with them and packed up.—W. G. ASTON.

THE GUNNER OFFICER'S OUTLOOK.

People who have served in the Air Force may or may not have a working knowledge of the point of view of the people who went through the war on the ground. Those who pertain to the people in the Air Force, such as admiring relatives or interested friends, would do well to acquire a knowledge of the kind of thing that the Air Force has escaped. Hence one recommends both to Air Force people and their belongings a small book called "Plain Impressions," written by one A. S. G. Butler, some time Lieutenant, Royal Field Artillery.

Mr. Butler's book consists of twelve short sketches of the work of an artillery officer, in turn as Forward Observation Officer and as Brigade Staff Officer. These sketches were written at odd times in 1915, 1916, and 1917, and six of them were published in periodicals. They are utterly different in their treatment from the work of the ordinary professional war writer.

Here, for example, is the first paragraph of the book describing existence in an observation post:—

> "5.15 a.m.—I am in a trench with two signallers. It is not in the front line, but a little behind it, and naturally in view of the enemy. There are two dug-outs: one for the signallers from which we observe, and the other for myself. They are about 4½ feet high, and quite dark, except for the doors and the hole to look through. We have been here since yesterday evening. It is not quite light yet. My feet are cold in spite of two socks, a puttee, a thigh boot, and five sandbags on each; but a coat and two blankets have kept the rest of me warm. I am lying on a duckboard with sacks on it about a foot below the roof. Have slept a little like you do in a railway carriage."

Mr. Butler's description of "Shell Shock" in the fifth sketch and his description of "Being Killed" (as he actually was, for a period) in the twelfth are something quite out of the ordinary, and in their grim simplicity remind one of Ambrose Bierce's stories of the American Civil War.

The curious contrast between moods is shown in the final paragraph of a very convincing description of an artillery barrage as seen from behind the guns, and not at the barrage end of them. The barrage apparently had been exceedingly successful. Here is how the mood changes:—

> "It was very soon over. The enemy retaliation was weak; so, after tidying up and mounting guard for the night, we went in to dinner. I enjoyed it after my ride to the waggon-line, and the new port was quite good. Then the letters were brought in, including my yesterday's paper. We looked at the news for a bit, and discussed the murder case that is making rather a stir in London at present. We thought on the whole it was rather a brutal one."

For all our talk about a League of Nations, other wars are still to come, and, for the matter of that, other wars are still going on, though only as a species of side show after what the unthinking journalist is pleased to call "Armageddon." Therefore it is well to read what is really in the minds of the men who do the fighting while they are fighting.

"Plain Impressions" can be had from The Aeroplane and General Publishing Company, Ltd., 61, Carey Street, W.C.2, price 2s. 9d. post free, and one believes that readers of the book will thank one for introducing them to it.

To "Aeroplane" Subscribers.

Since the Armistice, the subscription list of the AEROPLANE has steadily increased: an eminently satisfactory development which we are anxious to encourage.

Of the many books published on the war on the Western front, none conveys a more realistic impression of the work of a particular arm than FLYING COLOURS by Captain H. M. S. Saundby, A.F.C., R.A.F., M.C., published at **£2 2s.** net (Edition de luxe) and **15/-** net (Popular Edition).

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FLYING COLOURS is a permanent memorial of the life of "the pilot in action," as Major-General C. B. Ashmore calls him. It was very costly to produce, and necessarily the price to the public had to be high.

Many would like to possess it who do not feel disposed to put down Two Guineas for the larger edition or Fifteen Shillings for the smaller.

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If the subscriber already has a copy of FLYING COLOURS, and would wish to take advantage of this offer, then he may secure McCudden's "Five Years in the R.F.C." **(7s. 6d.)**; Richthofen's "Red Air Fighter" **(3s. 6d.)**, and Gill's "The Aerial Arm" **(6s. 6d.)** at half price, *i.e.* **8s. 9d.** the three, plus the year's subscription to the AEROPLANE.

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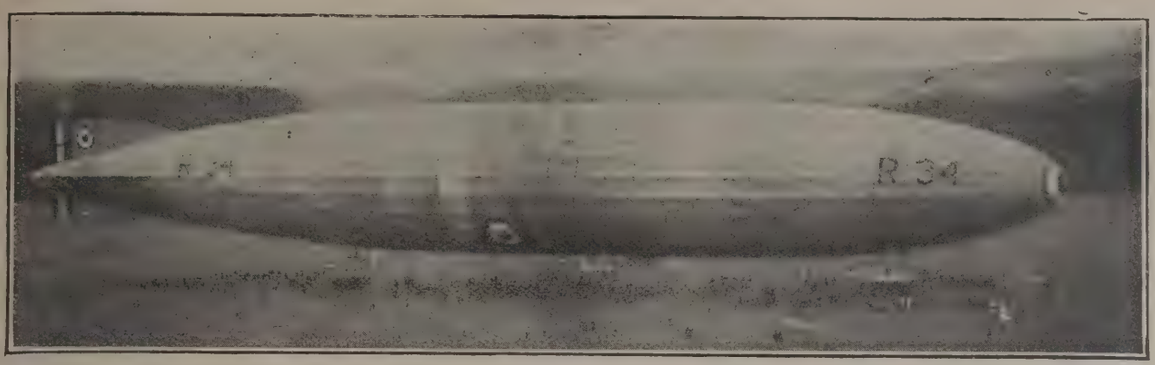
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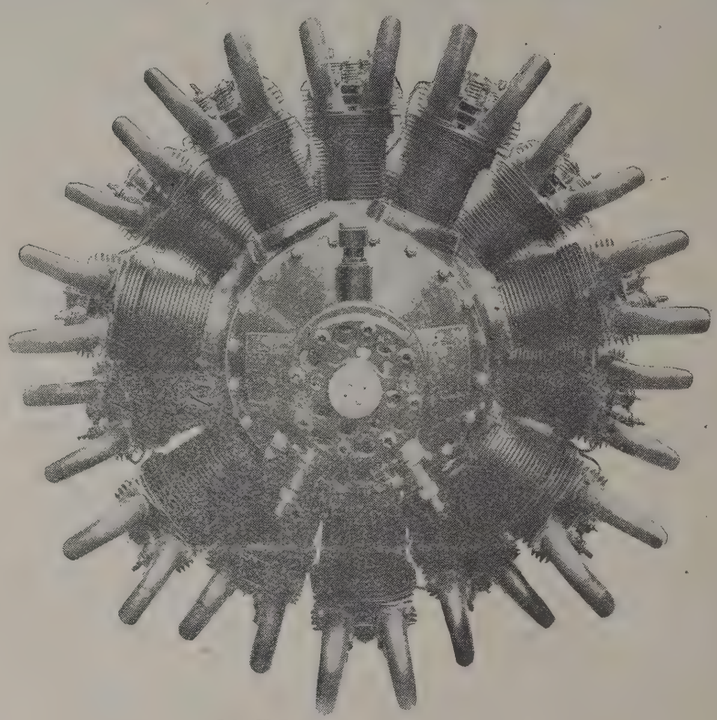
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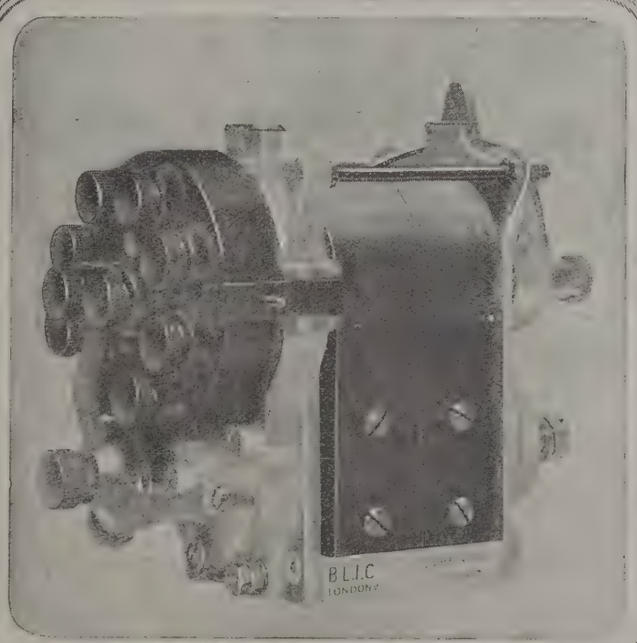
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THE WEEKLY COMMENTARY.

Below will be found a first instalment of a series of articles written for THE AEROPLANE by M. L. P. Frantzen and dealing with the work which has been done in France in developing parachutes for use from aeroplanes.

M. Frantzen is well known in France as an authority on this particular subject, and is in a position to give an accurate account of what has been and is being done in that country.

Machines designed and built by Boulton and Paul, Ltd., of Norwich, are described in this week's issue in the series of articles on "Modern British Aeroplanes." Amongst them the twin-engined "Bourges" bomber deserves particular attention on account of the excellent performance and high manœuvring qualities which it possesses.

Mr. T. S. Harvey continues his account of the Taliedo Aero Show in this number.

AERIAL SAFETY AND THE AEROPLANE PARACHUTE.

Written Specially for "THE AEROPLANE" by L. P. FRANTZEN.

The safety of an aeroplane at this present time depends essentially upon the skill and the prudence of its pilot, beyond all question; but for the complete success of Civil Aerial Transport it is necessary to protect both pilots and passengers, one might almost say, quite independently of their own wills.

Aerial travellers, particularly business men and merchants, demand not merely relative but almost absolute safety. Let us therefore begin by giving them each their own parachutes whilst waiting for such time as the aeroplane has itself developed the life-saving qualities of the parachute.

The distrust of the public is due to its attaching vital importance to accidents. The facts—vividly revealed by brutal statistics of aviation accidents—confirm this view.

All aviation experiences leads to the conclusion that accidents throw serious discredit upon every aerial enterprise. Let us therefore impartially admit the facts and draw the logical conclusions thereupon.

An English aeronautical paper states that many people, although themselves believers in the utility of parachutes, would hesitate to throw themselves out of any aerial vessel. To this one would reply that:—

(1) It is essential that one should know how to use the parachute, and

(2) In any aircraft in danger the instinct of self-preservation is such as would prevent anyone from hesitating to use a parachute when one understood its method of use.

That this is the case is shown by the experiences of kite balloon crews during the war, and civilian aerial passengers will not be faced with the doubled risk of machine-gun fire during their descent.

Aeroplane pilots are not as indifferent to the value of parachutes as one might believe, but they are keenly aware that to throw oneself from an aeroplane making 200 kms. per hour is a hurried performance representing a rather more complex problem than that of leaving by parachute a balloon, whether captive, free, or dirigible.

To cast oneself, attached to a parachute, from a kite balloon—which may be considered as a fixed point in space—or even from a free or a dirigible balloon, where there is small risk either of entanglement or of upset caused by the speed of the balloon, has been an almost daily occurrence during the war.

With an aeroplane parachute it is a quite other matter, and that is why aeroplane pilots, knowing the difficulties, will not rely upon parachutes until such time as the parachute complies with all those conditions essential to safety which the author has already laid down. (See "L'Aerophile," March, 1919.)

One may divide into three classes the types of parachute which have so far been tried for use from high-speed aeroplanes:—

(1) Parachutes carried upon the back of the aviator, so that he has merely to leap overboard and then operate a releasing gear which allows the parachute to emerge.

(2) Parachutes which are carried on the machine at some suitable spot and are attached to the aviator's harness by a rope.

(3) Parachute systems in which the aviator is thrown out of the machine by some form of special mechanism.

The French "Conade" system of pre-war days was of this last type, and similar systems have been worked upon in the United States.

The first system is that which the Germans used on all their fast fighting machines during the last few months of the war.

The British "Calthrop" parachute is of the second type.

In France it is the "Robert" type of parachute which has been found most satisfactory.

The idea of using the ordinary Juchmès parachute, as used from balloons, for aeroplane work was considered, but was rejected because it was recognised that the conditions were totally different.

The French Section Technique de l'Aéronautique are engaged upon the design of a special parachute of which they have great hopes, and at some time soon France will have the pleasure of seeing the first official application of a parachute to the aeroplane.

It is well to recall here the pre-war parachute systems which gave promising results. These were the Robert, Hervieu, Jean Ors, Bonnet, Cayat de Castella, Od Kolek, Lommatsch-Kotelnikoff, and Blériot. Alone amongst these many inventors MM. Robert and Jean Ors have continued their efforts to perfect their systems and have produced types of parachutes of rational design. A résumé of the results obtained by Robert parachutes since 1912 will first be given:—

TEST OF ROBERT PARACHUTES.

First Type (1912-14).—Automatic release and certainty of inflation secured by elastic projecting arrangements

Dec. 23rd, 1912.—From the first platform of the Eiffel Tower.

1st Test: Dropped with sandbag of 45 kgs

2nd Test: Dropped with sandbag of 90 kgs.

Tests both satisfactory.

Sept. 21st, 1913.—M. Emil Brodin threw himself from the top of the transporter bridge at Nantes (60 metres). The parachute was released by M. Brodin half-way down in view of ultimate tests by dropping from an aeroplane. Test very successful.

June 10th, 1914.—Concours de la Securité en Aéroplane, at Buc. M. Champel released an 80 kgs. sandbag from less than 50 metres height, with satisfactory results. Awarded a prize of 2,000 francs.

Second Type (1916-1919).—Greatly reduced stowage, automatic release, steerability. Surface variable at will, allowing more or less rapid descent. Shock absorbers. Rapid and certain unfolding.

(4) At Villacoublay. Sapper Lallemand descended from an R.4, piloted by Adjudant Dussot, at a height of 600 m., and made a normal landing.

(5) May 5th, 1918.—At Pulham (Norfolk), under the control of Major Mostyn, this type of parachute was launched from 35 metres under the roof of an airship shed, opened in 15 metres and landed normally.

(6) Sept. and Oct., 1918.—American Aviation Camp at Orly (Seine et Oise). Series of successful tests under the super-



A Robert Parachute after landing.

vision of Lieut. Starcq, of the American Technical Aviation Service. Results: Orders for the manufacture of 1,000 parachutes. Owing to the Armistice only a few were actually delivered and the order was cancelled. A new order has, however, recently been given.

Official Explanation of the Death of Roger Lallemand, July, 1917.

Upon the representations of the French military aviation authorities that the Robert parachute carried on the aviator's back might inconvenience him in certain manœuvres, it was decided to place it in a drum placed in the fuselage below the aviator

This drum was provided with an automatic release operated by the pull on the cord attached to the aviator when he fell.

Twelve preliminary tests with sandbags were made successfully with this arrangement.

Corpl. Lallemand then undertook to descend with this arrangement.

Preparing to leave the aeroplane, he held the suspension cord in his right hand, with his left hand upon the side of the body, and jumped out sideways and backwards, without letting go the suspension cord, thus prematurely pulling out the parachute, and falling into it.

It was concluded therefore that, instead of letting himself fall like a sandbag, as was intended, Lallemand, instead of being in the proper position below the parachute at the end of the suspension rope, was actually above and wrapped up in the parachute like "a stone in a pocket-handkerchief." This has been confirmed by the Adjudant Pilot Dussot and other eye-witnesses.

This last unfortunate adventure of Robert Lallemand with the Robert parachute in no way reduces the value of the system.

Since this accident the inventor has taken steps to prevent the effect of such imprudences on the part of the parachutist.

The accompanying illustration of a Robert parachute landing shows this parachute at the moment the parachutist is releasing himself from his harness.

The shock absorbers E can be seen plainly. These produce two effects. At launching they reduce the stresses on the pilot's back caused by suddenly opening of the parachute, and on landing they similarly absorb the effects of wind gusts and prevent the parachutist being dragged over the ground whilst he is releasing his harness.

(To be continued.)

PARACHUTES.

The following letter has been received:—

In a recent most interesting article describing the "Autochute," Lieut.-Col. H. S. Holt, the writer, most pertinently draws attention to the fact that for a parachute to be of substantial service in saving life from aeroplanes it is essential that the apparatus should not be liable to entanglement with the machines, nor should there be any risk of the man falling inside the parachute in the event of an inverted opening caused by the machine falling faster than the man.

Parachutes that require extension of the silk body and rigging (some 40 ft. or 50 ft.) before becoming detached from the aeroplane may be successfully used for exhibition drops or to escape from a burning machine, although even with the aeroplane flying level it is not an uncommon occurrence for the silk body of such parachutes to be torn by the tail of the machine.

But with an aeroplane out of control, additional to the danger of the silk body being sucked into the tail, or of the man falling onto the parachute, there is, in the case of a spinning dive, the risk of the silk body being wrapped round the machine.

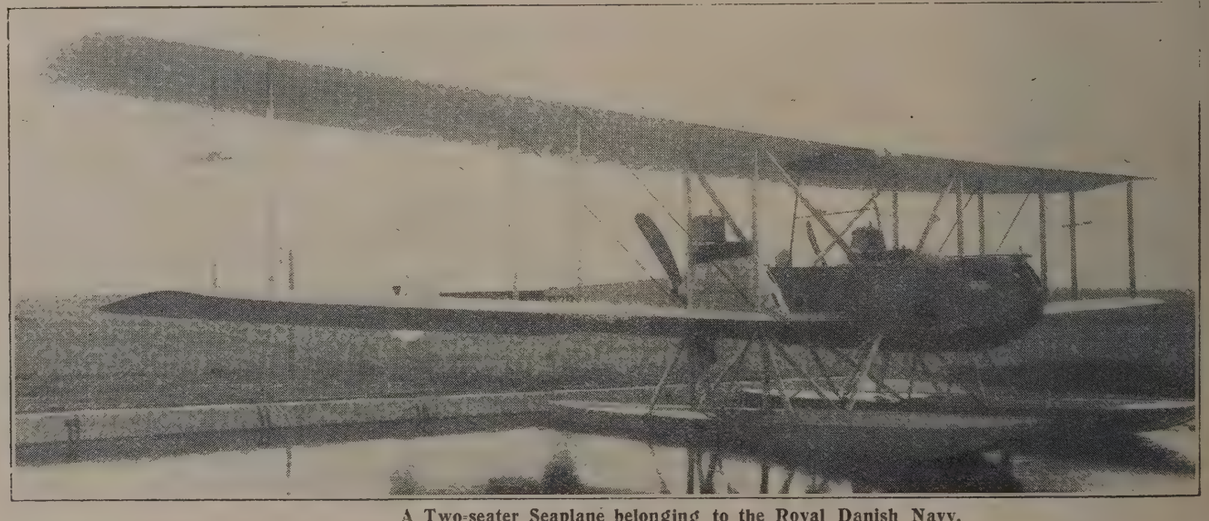
Lieut.-Col. Holt, however, is not correct in his premise that these disadvantages are inherent to all types of single, or simple, parachutes. The "Salvus" Parachute, which we are now manufacturing, is so constructed that at the first tightening of the sling the parachute entirely leaves its case as a compact mass of silk, and only when it is completely detached and several feet away from the aeroplane does the inflation of the silk body begin.

The opening of the parachute is rendered absolutely certain by the mouth of the silk body being held open to a definite area, until its whole length is partially inflated.

When the pull of the "filled out" silk body reaches a pre-determined amount, the lines are extended, and by a simple patented device the initial swing (hitherto experienced with parachutes when launched from aeroplanes) is practically eliminated, and important and carefully made tests have proved the shock of opening to be very slight, so that the weight, complication and expense of special "spring" slings is unnecessary.

One feature which we are sure Lieut.-Col. Holt will appreciate is that the opening of the "Salvus" Parachute is always normal to its line of motion through the air after complete detachment, so that in the case of a machine falling faster than the man, although the detachment from the aeroplane will be upwards relative to the machine, the inflation and subsequent complete opening will be actually downwards, rendering it impossible for the man to fall into the parachute; another point is that the whole apparatus is so simple that without any special gear it can be packed in less than half an hour by any person of average intelligence.

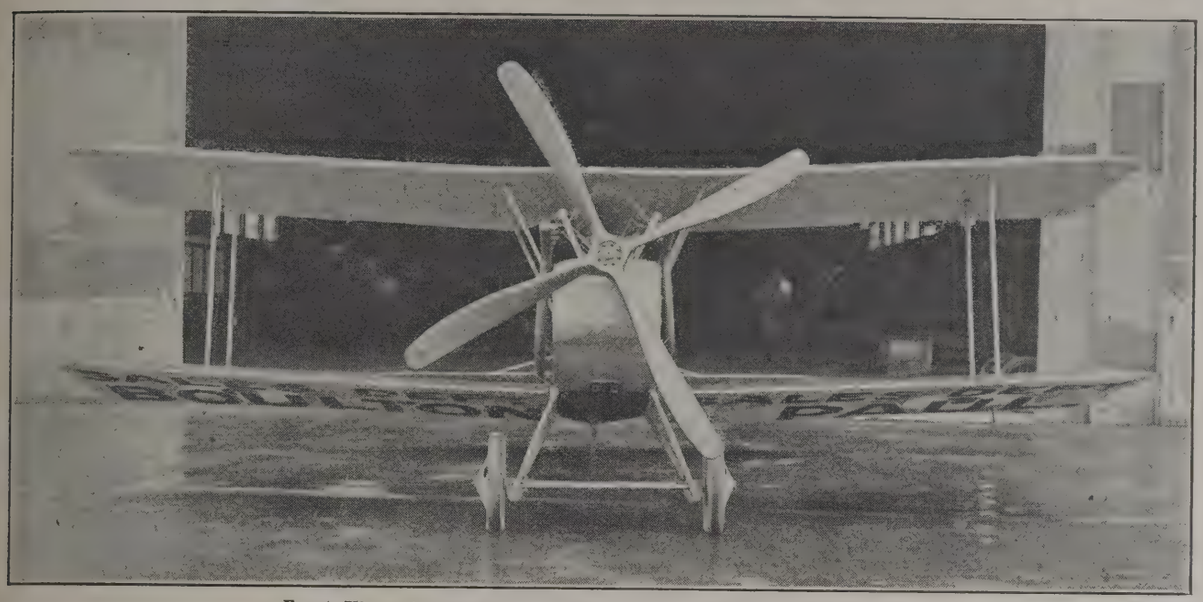
C. G. Spencer and Sons, Ltd.



A Two-seater Seaplane belonging to the Royal Danish Navy.

MODERN BRITISH AEROPLANES.

IX.—Boulton and Paul, Ltd., Norwich.



Front View of a Boulton and Paul "P.6" two-seater (100 h.p. R.A.F. Engine).

Boulton and Paul, Ltd., are a well-known firm of structural engineers, who took up the manufacture of aircraft during the war and who propose to continue that activity in the future.

They acquired a reputation for excellent work, and were encouraged by their success to undertake experimental design work which has led to the production of the machines hereafter illustrated and described.

Their experimental and design department is in the charge of Mr. J. D. North, whose experience of aircraft design dates back to very early times.

THE BOULTON & PAUL P.6 and P.9.

These two machines are generally very similar, although there are appreciable differences in the overall dimensions.

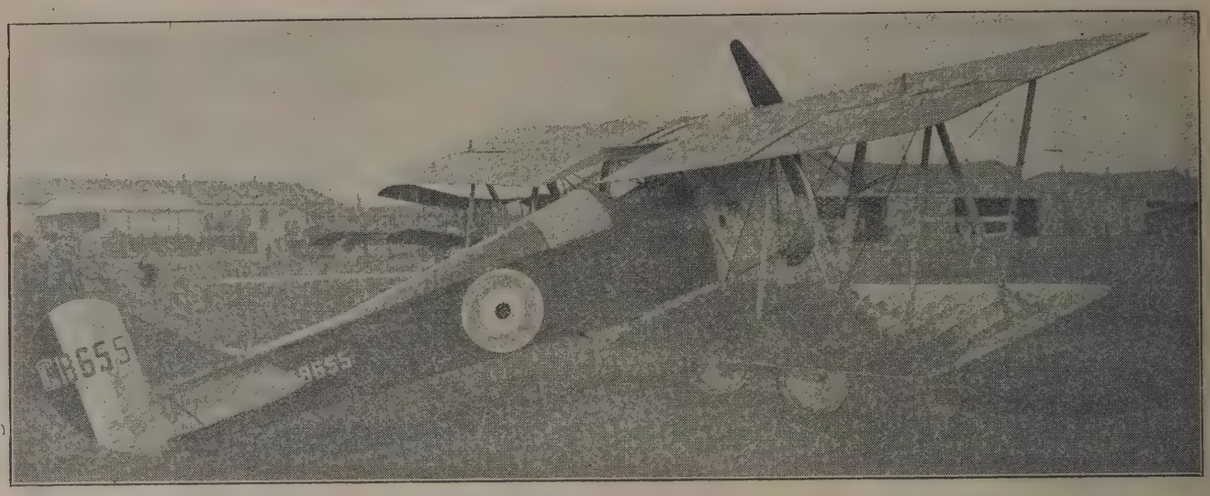
Both are simple and robust two-seater machines fitted with the 100 h.p. R.A.F. engines, and are suitable for training and touring purposes. The staff of Boulton and Paul, Ltd., have used this type of machine for the purposes of their own business and have found them distinctly useful.

"P.6."—SPECIFICATION.

Type of machine	Tractor biplane
Name or type No. of machine	P 6
Purpose for which intended	Air travel
Span	25 ft.
Gap, maximum and minimum	5 ft.
Overall length	19 ft.
Maximum height	8 ft.
Chord	5 ft.



Three-quarter Rear View of a Boulton and Paul "P.6." As may be seen by the legend upon the fuselage this machine is used for business purposes by Messrs. Boulton and Paul.



Three-quarter Rear View of the Boulton and Paul "Bobolink" (230 h.p. B.R.2 engine).

Total surface of wings	235 sq. ft.
Span of tail	11 ft.
Total area of tail	40 sq. ft.
Area of rudder	9 sq. ft.
Area of fin	2.5 sq. ft.
Area of ailerons	7.5 sq. ft.
Maximum cross section of body	7.8 sq. ft.
Horizontal area of body	27 sq. ft.
Vertical area of body	44 sq. ft.
Engine type and h.p	100 h.p. R.A.F.
Airscrew	9 ft. 3 in. Diam.; 1,000 r.p.m.
Weight of machine empty	1,100 lbs.
Load per sq. ft.	7.35 lbs.
Weight per h.p.	17.25 lbs.
Tank capacity in hours	2.37 hours
Tank capacity in gallons	20.1 gals.
Performance :—	
Speed at 1,000 feet	103 m.p.h.
Landing speed	45 m.p.h.
Climb—	
To 5,000 feet in minutes	9 mins.
Disposable load apart from fuel	400 lbs.
Total weight of machine loaded	1,725 lbs.

THE BOULTON & PAUL "P 9."

SPECIFICATION.

Type of machine	Tractor biplane
Name or type No. of machine	P 9
Purpose for which intended	Air travel
Span	27 ft. 6 in.
Gap, maximum and minimum	5 ft. 6in.
Overall length	25 ft.
Maximum height	10 ft.
Chord	5 ft. 6 in.
Total surface of wings	285 sq. ft.
Span of tail	12 ft.
Total area of tail	40 sq. ft.
Area of rudder	9 sq. ft.
Area of fin	2.8 sq. ft.
Area of ailerons	9.45 sq. ft.
Maximum cross section of body	7.8 sq. ft.
Horizontal area of body	37 sq. ft.
Vertical area of body	56 sq. ft.
Engine type and h.p.	100 h.p. R.A.F.
Airscrew	9 ft. 3 in. Diam.; 1,000 r.p.m.
Weight of machine empty	1,244 lbs.
Load per sq. ft.	6.3 lbs.
Weight per h.p.	17.7 lbs.
Tank capacity in hours	3 hours
Tank capacity in gallons	24 gals.
Performance :—	
Speed at 1,000 feet	104 m.p.h.
Landing speed	42 m.p.h.
Climb—	
To 5,000 feet in minutes	8½ mins.
Disposable load apart from fuel	400 lbs.
Total weight of machine loaded	1,770 lbs.

THE BOULTON & PAUL "BOBOLINK."

A small, high-performance single-seater, designed and built towards the end of the war. Like many other excellent machines of similar date, this was never manufactured in quantity.

The illustrations give a very good idea of the general features of the machine.

SPECIFICATION.

Type of machine	Single-seater biplane
Name or type No. of machine	Bobolink
Purpose for which intended	Fighting Scout
Span	29 ft.



Three-quarter Front View of the B. and P. "Bobolink."



The Boulton and Paul "Bourges" fitted with two 320 h.p. A.B.C. "Dragonfly" Engines.

Gap, maximum and minimum	3 ft. 10⅝ in.
Overall length	20 ft.
Maximum height	8 ft. 4 in.
Chord	Top plane, 5 ft. 4½ in.; bottom plane, 4 ft. 1⅛ in.
Total surface of wings	266 sq. ft.
Span of tail	9 ft. 2 in.
Total area of tail	30 sq. ft.
Area of rudder	10 sq. ft.
Area of fin	2 sq. ft.
Area of ailerons	7.5 sq. ft.
Maximum cross section of body	7.5 sq. ft.
Horizontal area of body	30 sq. ft.
Vertical area of body	41 sq. ft.
Engine type and h.p.	230 h.p. B.R.2.
Airscrew, diameter and revs.	9 ft. 0 in. Diam.; 1,350 r.p.m.
Weight of machine empty	1,220 lbs.
Load per sq. ft.	7.25 lbs.
Weight per h.p.	8.35 lbs.
Tank capacity in hours	2.65 hours
Tank capacity in gallons	38 gals.
PERFORMANCE :—	
Speed at 10,000 feet	125 m.p.h.
Speed at 15,000 feet	110 m.p.h.
Landing speed	50 m.p.h.
Climb—	
To 10,000 feet in minutes	9½ mins.
To 15,000 feet in minutes	18 mins.
Disposable load apart from fuel	430 lbs.
Total weight of machine loaded	1,920 lbs.

THE BOULTON & PAUL "BOURGES."

One of the most successful of the twin-engine fighter bomber class yet produced. As twin-engine machines go, the "Bourges" is of quite small dimensions, and of very clean design.

As is more or less standard practice in this class, the accommodation provided is for a front gunner-observer in the nose of the central fuselage, with pilot's seat behind that but in front of the main planes, and a rear gunner's seat just aft of the upper rear spar.

The performance of the "Bourges" approaches that of the single-seater fighter class, and for a large machine the manœuvrability is extraordinary, and the machine can be looped and spun with ease.

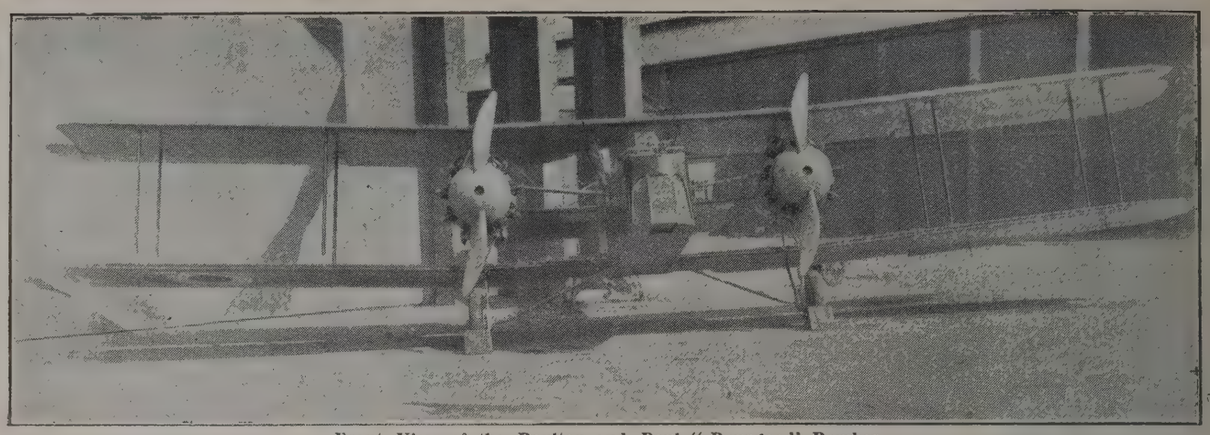
Some early specimens of this type were fitted with the B.R.2 engine of 230 h.p., but in the later machines the A.B.C. "Dragonfly" is used.

SPECIFICATION.

Type of machine	Twin-engined biplane
Name or type No. of machine	Boulton & Paul P 7 "Bourges"
Purpose for which intended	Bomber-fighter
Span	54 ft.
Gap, maximum and minimum	6 ft. 6 in.
Overall length	37 ft.
Maximum height	12 ft.
Chord	Top plane, 8ft.; bottom plane, 6 ft. 6 in.
Total surface of wings	738 sq. ft.
Span of tail	16 ft.
Total area of tail	96 sq. ft.
Area of elevators	96 sq. ft.
Area of rudder	21 sq. ft.
Area of fin	14 sq. ft.
Area of ailerons	27 sq. ft.
Maximum cross section of body	5.3 sq. ft.
Horizontal area of body	73 sq. ft.
Vertical area of body	140 sq. ft.
Engine type and h.p.	2—320 h.p. A.B.C. "Dragonfly"
Airscrew, diameter and revs.	9 ft. 6 in. Diam.; 1,650 r.p.m.
Weight of machine empty	3,420 lbs.
Load per sq. ft.	8 lbs
Tank capacity in hours	9.25 hours
Tank capacity in gallons	190 gals.



Three-quarter Front View of the "Bourges" twin-engine Bomber (two 320 h.p. "Dragonfly").



Front View of the Boulton and Paul "Bourges" Bomber.

Performance :—	
Speed at 10,000 feet	124 m.p.h.
Speed at 15,000 feet	118 m.p.h.
Landing speed	50 m.p.h.
Climb—	
To 10,000 feet in minutes	11 mins.
To 15,000 feet in minutes	21 mins.
Disposable load apart from fuel	1,200 lbs.
Total weight of machine loaded	5,920 lbs.

THE BOULTON & PAUL COMMERCIAL TYPE.

Generally speaking, this machine is an enlarged edition of the "Bourges," fitted with engines of greater power and equipped for commercial and passenger-carrying purposes.

As may be seen by the specification, a very high performance is expected from this type. This is an important feature—not because Messrs. Boulton and Paul expect to run commercial services at 149 m.p.h. with this type of machine; but because with this machine it should be possible to run at 120 m.p.h. at, roughly, half full power, and to approach this speed with one engine only.

It should thus be possible to run really high-speed services without keeping engines continually all out, and to maintain schedule times even if one engine fails completely.

SPECIFICATION.

Type of machine	Twin-engined tractor biplane
Name or type No. of machine	Boulton & Paul P 8
Purpose for which intended	Passenger and commercial
Span	59 ft.
Gap, maximum and minimum	6 ft. 6 in.
Overall length	40 ft.
Maximum height	12 ft. 4 in.
Chord	Top plane, 8 ft.; bottom plane, 6 ft. 6 in.
Total surface of wings	770 sq. ft.
Span of tail	16 ft.
Total area of tail	96 sq. ft.
Area of elevators	96 sq. ft.
Area of rudder	21 sq. ft.
Area of fin	14 sq. ft.
Area of ailerons	27 sq. ft.
Maximum cross section of body	22 sq. ft.
Horizontal area of body	108 sq. ft.
Vertical area of body	180 sq. ft.
Engine type and h.p.	2—450 h.p. Napier "Lion"
Airscrew, diameter and revs.	9 ft. 6 in.; 1,450.
Weight of machine empty	4,000 lbs.
Load per sq. ft.	9.75 lbs.
Weight per h.p.	8.34 lbs.
Tank capacity in hours	4 hours
Tank capacity in gallons	210 gals.
Performance :—	
Speed at 10,000 feet	149 m.p.h.
Speed at 15,000 feet	142 m.p.h.
Landing speed	54 m.p.h.
Climb—	
To 10,000 feet in minutes	8 mins.
To 15,000 feet in minutes	15 mins.
Disposable load apart from fuel	2,000 lbs.
Total weight of machine loaded	7,500 lbs.

THE DEATH OF MR. A. VICKERS.

Mr. Albert Vickers, late Chairman of Vickers, Ltd., died on Saturday, July 12th, at Eastbourne, at the age of 80. It was owing to his far-sighted policy that his company was able to meet the immense demands which were put upon it by the war.

The Vickers' business was established by Mr. Vickers' forebears in the eighteenth century, and when he entered the works at the age of 16 it was a comparatively small steel-making concern.

He built up the business, his policy being to centralise the control of factories engaged on making the various parts of one complicated piece of machinery, until the capital reached over eight millions sterling.

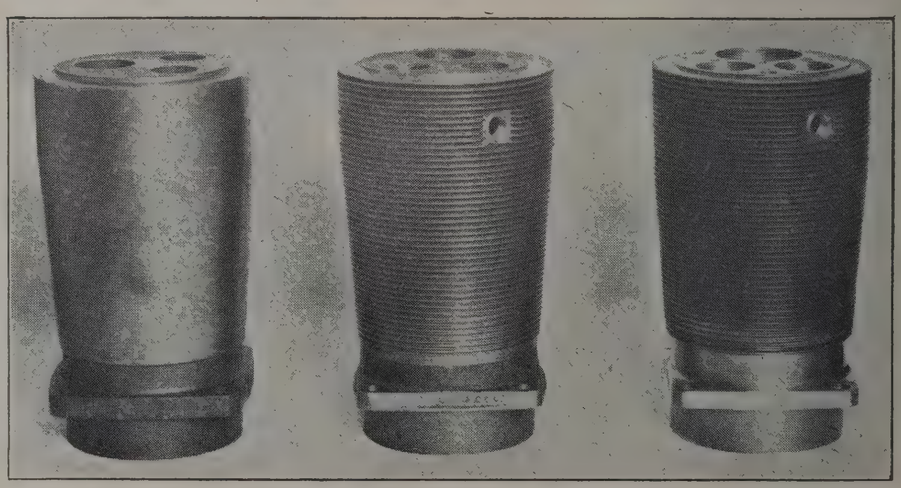
Sir Hiram Maxim brought him his idea for a machine-gun in 1883, and it was Mr. Vickers' financial help and energy which enabled the gun to be planned, patented and made. This machine-gun was afterwards improved and known as the Vickers-Maxim.

In 1911 Vickers, Ltd., formed an aviation department under the late Major H. F. Wood, and the department has also been of very great value to the Nation during the war.

AUSTIN WORKMANSHIP.

The accompanying photograph, which was supplied by the Austin Motor Co., Ltd., shows three successive stages in the process of manufacture of a cylinder for an A.B.C. Dragonfly Engine. From left to right the stages are (1) Blank bored and rough turned outside and valve seatings bored out. (2) Fins machined up and sparking plug socket formed and screwed. (3) The complete cylinder with valve seatings and stud holes finished, and with the fins copper-plated.

The manufacture of cylinders of this type calls for the best of materials and workmanship, and the fact that the Austin Motor Co. carried out the whole process from forging the blank to the finished article shows that they are equipped for the highest class of work.



AMONG THE EXHIBITS AT TALIEDO AERO SHOW.



An S.V.A. Seaplane with Guidoni "Palette" Floats, to which reference is made below.

Following on the preliminary notes on the Aero Show at Milan, which was published last week, Mr. T. S. Harvey writes:

Ing. Caproni's Company stage one or more examples of every type of CA still in use, from the "Baby" mono. to the Liberty-engined 1,200 h.p. triplane, with the exception of the seaplane; that is to say, the "Baby," the 300, of '14, the 400, the 600, and the 900, as well as the Pullman-car triplane. The least known of the designer's progeny is the smaller single-engined trench-bombing triplane which was designed for the Fiat 700 h.p. motor and is sulking with a 300 radial engine. The speed was calculated at 220 kilometres, and the machine was to be a terrible scourge to Austrians, entrenched or otherwise.

Perhaps what is most striking in all the Caproni products is the constant progress in detail improvements. It is quite unusual to find two machines of the same type and identical construction in every way.

One will have, say, a new kind of mudguards, another an unexpected bit of streamlining, or something bettered about the landing gear or radiator fittings, which things point to the continuous study and experiment of a mind ever hunting progress.

E.g., onen oted the narrow dumpy body on the level of the lowest plane of the latest 900 triplanes, combining a bracing-up of the lower regions of the machine with a degree of side surface apparently desirable low down. The retractable steps into the Pullman give an impression of completeness not obtained by any amount of fine upholstering and recessed roof lighting. The triplane shown has no forward two-wheeled skid; sixteen wheels instead are to be counted in the central landing gear.

One was assured on next-to-highest authority that the 100 passenger hydro-triplane is well on its way to its first unsticking. The big barges needed for floating such a large thing are not being turned out by the CA works, contrary to the firm's custom. Messrs. Zari, I believe, make the triplane's floats, which are merely the size of your houseboats.

The Ansaldo Company's various types are all over the Show, being present in every section of the exhibition and in the air above it. In fact, they are almost unbecomingly omnipresent! The firm's Balilla, designed, as was not the S.V.A., by their own Ing. Brezzi, and differing from this latter most perceptibly by the absence of the open V struts, is shown, as several other small fast machines are shown, cocked high up in steep banking positions on two misfit posts. Interest naturally centres in the latest Ansaldo machine, up till now unseen and unheard of, at least by the general public. This is a 300 h.p. biplane with ear-shaped balancing areas to the ailerons protruding from the ends of the upper plane in an ugly if distinctive fashion. The streamlining of the double cables has been more carefully attended to than is usual here. The short stumpy four-leaf metal skid is fitted under the tail of this as of all the Ansaldo machines. Unfortunately only the Guidoni-cum-Forlanini-palette floats for the Ansaldo seaplane are exhibited. It is true that these are the machine's most striking feature, being metal cylinders pointed at both ends, the forward of which turns heavenwards, the latter —contrariwise. The four-leaf tail-skid mentioned above as standerd on Ansaldo and Sva machines seems to be responsible in a large degree for their unusually rapid pull-up, which makes them more suitable for passenger work than might be expected. The braking effect of the skid directly weights gets down to it is very noticeable—even to the ear!

The Ansaldo engine in its latest type, No. 4 E 284, is a 12 cylinder V of 60 degrees water-cooled.

The steel cylinders, separately detachable, have a bore of 140 mm. and stroke of 180 mm. The water-jackets are of pressed steel, and each cylinder has four valves. Two double Zenith carburetters, two magnetos, two water and two oil pumps are fitted.

The connecting-rods of the rank of cylinders on one side are specially strengthened to carry the rods from the pistons of the other, which are connected up to them directly. The cylinders are flanged and bolted to the aluminium crankcase, which is unusually long at the propeller end, forming a sump and allowing the propeller to be set well out and on an abnormally long bearing.

The power developed at normal revs., 1,650, is 520 h.p. By "reving" up to 1,800, 570 h.p. has been obtained. Weight per



The Fiat Co.'s (S.I.A.) B.R. Biplane (700 h.p. Fiat Engine).

normal h.p. works out at 0.98 kilograms. Oil consumption per h.p.-hour, 15 grams. Petrol ditto, 220 grams.

Also used by Macchi for seaplanes. The engine is built at S. Giorgio works at Turin

The Fiat Company's great attraction is naturally the BR, on the data from which machine the trans-oceanic space-annihilator is being built. In appearance the BR is not as handsome as it performs handsomely, but is, owing to its enormous single-engine-developed horse-power, in a class by itself. The machine has been loaded with nearly one and a half thousand kilograms instead of the nine hundred for which it is designed, without feeling the load abnormally.

The Fiat A.14 12-cylinder V gives 685 h.p. at 1,559 revs. per minute, and weighs 730 kilos. sans propeller shaft and exhaust piping. Four Dixi magnetoes are fitted and two Fiat carburetters.

With normal load of 900 kilos. Brach-Papa has got 255 kilometres per hour out of BR, and 261½ with two passengers on a straight course, while the rate of climb is to 3,000 metres in 9 minutes, 4,000 metres in 16 minutes, and 5,000 metres in 25½ minutes.

In her successor metal bulkheads to ensure floating are formed in the central section of the fuselage, which carry reserve fuel supplies and are provided with ripping panels to ensure rapid release when their contents become unnecessary.

Messrs. Nieuport-Macchi present for public study various Nieuports and Hanriots, as well as their very efficient seaplanes, which did excellent work during the last four years in the Adriatic and elsewhere. Nos. M.7, M.8, M.9, M.14, and M.15 are staged, which makes the absence of M.12 even more noticed. The first three are oft-described developments of the earliest Macchi efforts.

M.9, however, is shown with a limousine body, the which covers a multitude of sins nowadays.

M.14 is a small single-seated chaser biplane of about 17 sq. metres surface, doing 188 per hour, with a Le Rhône 110 h.p. engine, and climbing to 5,000 metres in 21 minutes with useful load of 200 kilograms. It is armed with two Vickers guns, and the upper plane is nearly twice the size of the lower, with a very considerable stagger.

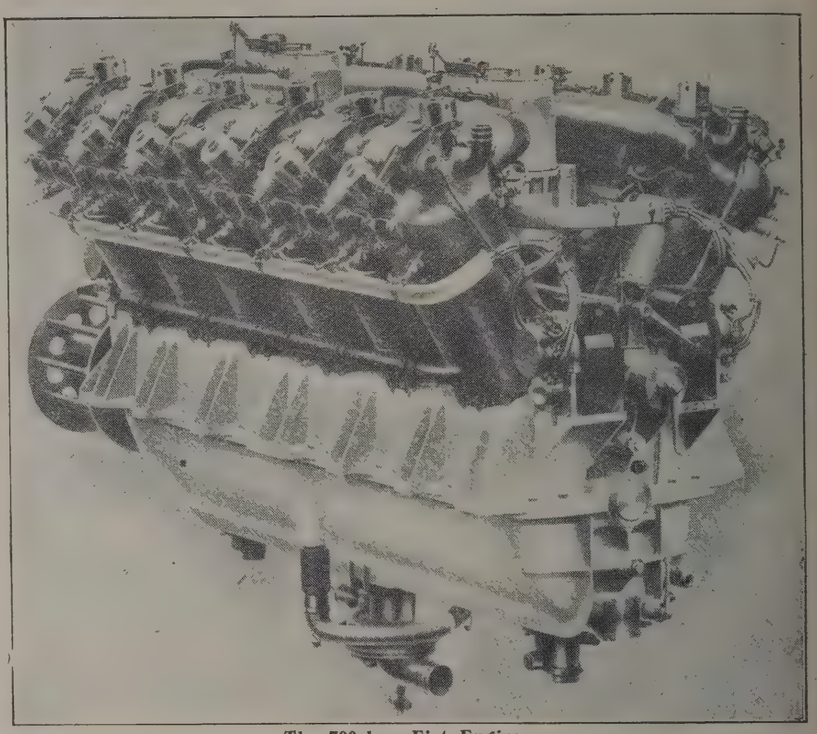
M.15 is a large biplane with Fiat 300 motor, with certain good points still being loudly called for when the Armistice upset war aims. The total surface is 42 sq. m., and the planes are directly super-imposed, the upper being nearly double as large as the lower one. Three mitrailleuses are carried which weigh, with ammunition therefor, 70 of the 500 kilos. of useful load.

Pilots are enthusiastic about the narrow flat-topped body giving plenty of standing and moving-about room for the observer and space for all his tackle, and observers like the nearness of the pilot. To all this one can add that the petrol tank is at the centre of gravity, and that both the rear-firing guns may be aimed parallelly to the line of flight of the machine, one being mounted in the floor of the fuselage, which tapers to a horizontal knife-edge at the tail

Apparently the less said of the absent M.12 the better.

The Press here, technical and non-so, are frankly disappointed in the section devoted to the Trophies of War.

This section gives a wonderfully poor idea of Italy's takings in the fight. One writes "wonderful" because one wonders if it is possibly an intentional affront perpetrated by some still unconvinced admirer of the Hun.



The 700 h.p. Fiat Engine.

Allowing for difficulty of transport and the strongly contested terrain in which the crashed enemy craft came to rest, one could reasonably expect to have found Italy's air forces glorified by a more numerous display of captured seaplanes, of which there must be a number intact. Not many more enemy planes are on view than at the 1917 show, and these, though more varied, are in less eyeable and therefore less educational condition.

Of these fragments the enormous K.G. 338 three-seater seaplane tops the exhibit. It is a single cellule construction of 100 sq. m. surface (in itself remarkable), and the struts to which are at a very open angle, and, as is the case with the wing tip floats, very well streamlined and, like them, calculated to add a very perceptible amount of lift to the craft.

In the boat-body is a 12 cyl. V. 350 h.p. A. Daimler, and the total weight is 1,990 kilos. Speed is given as 140 kilometres per hour, and climb to 1,000 in 14 minutes.

Capt. Banfield's hydro-chaser, with Hero 230 h.p., a single pair of interplane struts parallel to the line of flight, a speed of 176 kilometres the hour, climb to 1,000 in four minutes, and weight of 776 kilos, does not impress one exceedingly.

Brumowsky's scout, with Mero 160, is more interetsing, with great wing flexibility and much striving after weight-reduction. If my memory serves me worthily, these machines were highly thought of by fighting men on account of their good climbing and general manœuvring at extreme altitudes.

Facilities for examination of these and the other remains were inexplicably absent nearly a month after the Show was opened.

Among other departed, whose identity could only be guessed at, was a very mangled thing of enormous span, labelled "Gotha," which occupied the horizon line in the dim depths of the shed where the nine enemy trophy machines reposed.—T. S. H.

(To be continued)

INTERNATIONAL METEOROLOGICAL ARRANGEMENTS.

It is understood that the International Hydrographical Conference, which has been sitting under the presidency of Rear-Admiral Sir J. F. Parry for some weeks, has now concluded.

This Conference has been largely concerned with an effort to standardise the form in which meteorological information is supplied to mariners.

The adoption of a uniform system of units has been discussed, and it is understood that the Conference will record a resolution in favour of the use of the metric system.

It is hoped that as a result of this Conference an International organisation for the dissemination and exchange of meteorological information may be established.

It is hoped that the use of aircraft will in the future provide much valuable meteorological data, and that the International Meteorological Bureau, when established, will reciprocate by supplying aircraft with more accurate and more useful weather forecasts than has been the case heretofore.

OLEAGINOUS COURTESY.

American officers deeply appreciated the courtesy shown by Britain in connection with the trans-Atlantic voyage of the R.34. They said that England had given them all information, and even samples of the oil for engine bearings, which they wanted to analyse for their own purposes.

The oil referred to was Wakefield's Castrol R., which was used on the voyage of the R.34 and on the historic flights of Sir John Alcock and Mr. Hawker.

COMMERCIAL AERONAUTICS & CIVIL AERIAL TRANSPORT

"FINE AND WARMER?"

By "MEDWAY."

A week or so ago I took up my morning copy of the "Times" and read, at the head of the column to which I always refer first, the ominous words, "There is a depression over the wash."

Personally, I have been suffering from this depression for the last two or three years. It has been growing more and more severe with every fluctuation of the labour market, and I fear that, when Germany and America have time to import their latest shirt-destroying and collar-lacerating machinery, the thing will reach an acute stage.

I am, however, digressing. What I took at first to be a statement of a mere platitude, well known to every possessor of a dress shirt, I found to be an intimation of an absolutely new state of affairs. The wash referred to was the one in which some early king—I forget who—lost his luggage. The depression was atmospheric and not mental.

The Depression That Failed.

A further statement announced that the depression in question was growing in intensity and was on its way to London. The column was therefore headed, "Rain or Showers. Colder." In point of fact, that particular day was one of the hottest and most oppressive experienced this year. Not a cloud was to be seen, and the English climate did not even turn on its common stunt of producing rain from a chunk of sky containing no clouds whatever.

That morning, no doubt, the weather experts faced the elements with mackintoshes and umbrellas, contemptuously sorry for the mere man who took things as he found them and neglected any particular precautions.

I am not certain, however, that I am right about this. I question whether the expert meteorologist does not still tend to trust his eyes rather than his logical faculties when he comes to consider the weather from a purely personal standpoint. On some occasions he is more or less bound to do so. For instance, the other day, when the forecast summed itself up as "fine and warm," it rained steadily from six in the morning till eight at night.

Before the war the weather expert merely posed as a prophet, but did not attempt to explain on what he based his prophecies. He generally served up his views in the guise of a lady in Grecian drapery being blown to bits, struggling with an umbrella or garbed in a sunny smile. You could take her advice if you liked.

The Realisation of Ignorance.

Now we are told that the experts know a great deal more about the weather than they did five years back. My own idea is that they have reached that stage in learning at which the student realises he knows nothing. If so, they have certainly made an advance. Having reached this stage, they prefer not to prophesy blindly, but to draw a pretty map crossed by a lot of curly lines with figures at the ends. They argue round this map until they have convinced themselves and their audience that it is quite likely that the weather may do what is expected of it. They generally contrive to give you a forecast which is a fairly accurate description of what it was like yesterday. This is all right so long as the weather is settled, but it is not infallible in a climate like ours.

Thus, I notice in to-day's paper that "the optimistic view that was taken of the meteorological situation yesterday proved within a very short time to be ill-founded." There is something confiding about this sort of statement. It is as though the expert said to the reader, "You and I were quite wrong after all."

I am sometimes inclined to go back to the old device which G. P. Huntley ascribed to a "bwainy" friend of his. "You take a piece of board—about so long—and you put the end of it out of the window, then you close the window down on it. Half an hour later you go back and take in the board, and if it is wet you know it has been waining." The device at least has the merit of simplicity.

The Weather and Commercial Aviation.

I am afraid that there is nothing particularly illuminating in these remarks. The majority of readers of THE AEROPLANE have had good reason to know on more that one occasion to what extent they could or could not trust the weather expert. I should, however, like to suggest that any member of the outside public who thinks of going bald-headed into commercial aviation schemes should take a preliminary course of weather instruction from the "Times" or any other morning paper. He will find in the appropriate column quite a lot of good information, but if he follows the thing day by day he will also find that we are as yet very far from being able to forecast the weather even over our own country, much less in the middle of the Atlantic.

Let him, coupled with this, recognise the fact that a proper understanding of meteorology is almost the first essential to the untrammelled development of long-distance aerial services, and he will see the need for hastening slowly. I do not mean for a moment that things have got to stand still until we know all about the weather, but only that one must be very cautious of accepting vague generalities which would give us falsely to understand that we have already completely solved problems upon which the perfect solution of other problems in course of solution is at least to an extent dependent.

"SURPLUS."

The Director of Publicity, Ministry of Munitions, publishes under the above title and at the price of 3d. a fortnightly descriptive guide to the sales of surplus Government stores.

In many sections fairly comprehensive lists of surplus parts available, together with the fixed prices at which they are to be sold are given.

The publication deals with goods varying from complete rolling mills to articles of domestic furniture, from aerodromes complete to surgical implements, and may reveal a possible source of supply in the most unexpected place to anybody who needs anything.

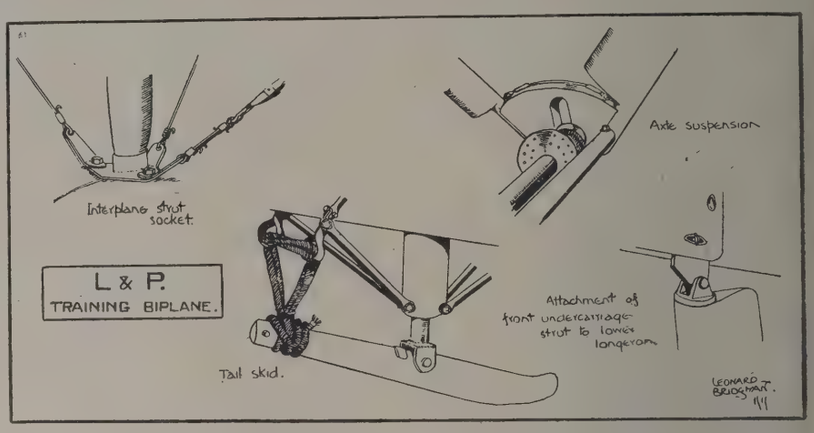
"Surplus" is published on the 1st and 15th of each month, and can be obtained at all bookstalls.

A MACHINE AND TUITION FOR £400.

Most men who wanted to fly before the war, and who did not, owing to the instability of the machines or the cost, were able to avail themselves of the free instruction offered by the R.F.C. or the R.N.A.S. when the war got going; and nowadays, although many ex-pilots have little desire to "flip" any more, many still wish to continue; but not being able to obtain jobs as civilian pilots and not wishing to stay on in the R.A.F., they slide back into the groundwork of civil life.

It is unfortunate for the Schools of Flying that there are so many pilots on the market, for few people will want to learn to fly now, but in a few years when the present schoolboys have grown up there will be quite a rush, and with the progress of civil aviation many more pilots will be required than are wanted at the present time.

The L. and P. School of Flying was established at Hendon before the war, and built their school aeroplanes in their own workshops, giving the pupils an opportunity of gaining inside knowledge of the machine and engine they were to fly. In the first month one pupil was trained, in May, 1918, 54 pilots gained their certificates, and a total of 550 were trained during the war.



When the Government took over the Hendon aerodrome, a move was made to the present site at Stag Lane, just off the Edgware Road, past Hendon. It is a very good spot for an aerodrome, as there are no tall trees or other obstacles to interfere with landing. It is 120 acres in extent.

Previous to this year, flying was taught on Caudron machines fitted with 50 h.p. Gnôme engines, but now a new two-seater tractor biplane has been designed which can be looped, half-rolled and generally stunted.

This machine was designed primarily as a dual-control training machine, but machines of the same type constructed since then have been used quite a lot as passenger-carriers, and since last Easter they have made about 500 flights without so much as a piece of broken wood or bent metal work.

The whole construction of the machine is extremely sturdy and absurdly simple. As a solo machine it has climbed to 9,000 ft., and with two up it has reached 7,000 ft. It has a maximum speed of 65 m.p.h., with a landing speed of something like 30 m.p.h.

The general arrangement of the machine can be seen in the accompanying scale drawings, which also give the principal overall dimensions.

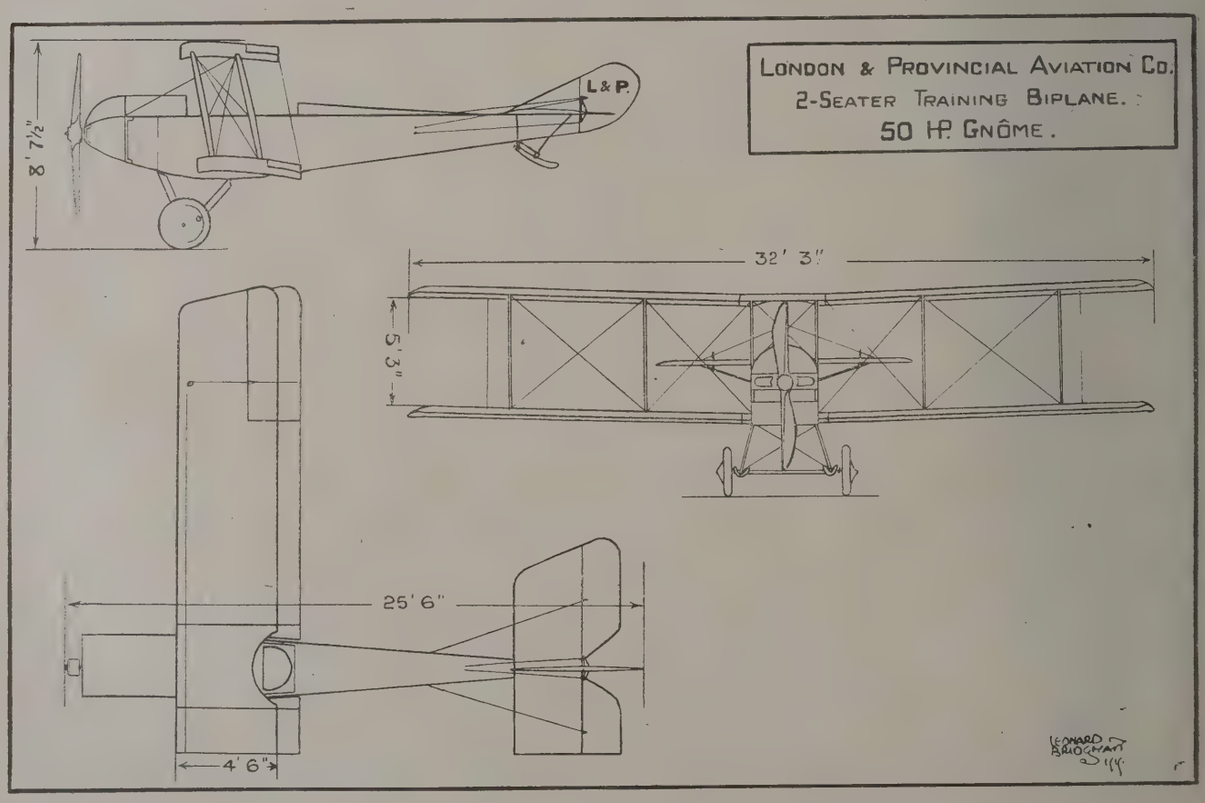
For £400 a pupil is taught to fly, and is then given one of these new machines to take home with him.

The engine is the 50 h.p. Gnôme, and though it cannot be called reliable and wants a mechanic to look after it who has specialised in that engine, and though it must be taken down after every 18 hours' flying, it is nevertheless capable of doing much good work.

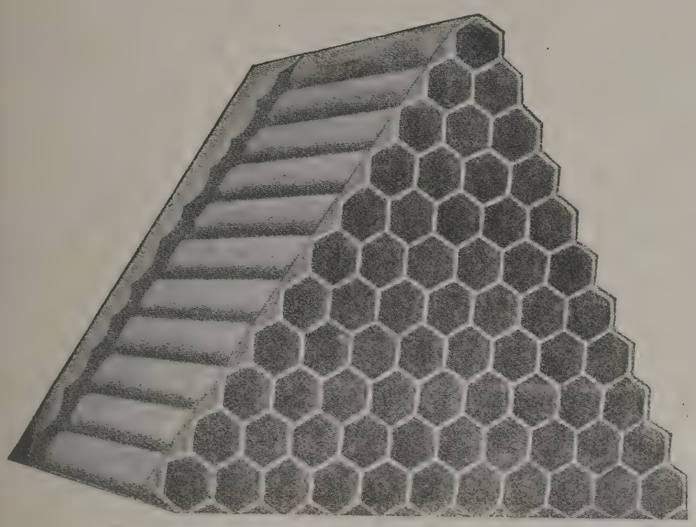
If only a little four-cylinder stationary engine were fitted, the pilot, if he was a pretty fair mechanic, could look after it himself. If he had the rigging overhauled when necessary, here is the ideal little machine to keep on your back lawn to fly yourself and your friends for business or pleasure.

The Air Ministry refuse to license this machine with its 50 h.p. engine, except temporarily and under irksome restrictions, as they do not consider its power sufficient to carry two people successfully, shutting their eyes to its actual performance.

A machine is being built which is designed for an 80 h.p. engine.



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SERVICE PEOPLE IN CIVIL AVIATION.

It is obviously desirable in every way that firms in the Aircraft Industry should fill up any vacancies which occur in their businesses with people from the Flying Services. In the first place those who have served the King during the war have a greater claim to any jobs that may be going than have those who have merely stayed at home and made money. And, secondly, people who have come straight out of the Air Force naturally know more about the needs of aviators than do the stay-at-homes.

Quite apart from any question of patriotism, or one's duty to people who have served in the war, it certainly does pay any firm to engage ex-R.A.F. people whenever possible, simply because they come out of the Service with the very latest practical knowledge of the care and maintenance of machines and engines, or, if they happen to be pilots, with the latest knowledge of flying under difficult conditions.

R.A.F. Personnel at H.P.'s.

One of the first firms to engage ex-officers and men of the R.A.F. on a large scale was Handley Page, Limited, whose machines have been so largely used by the R.A.F. that one might almost say a special class of Handley Page specialists was developed in the R.A.F. during the last year of the war.

So many former R.A.F. people are employed by the firm that one cannot very well give a complete list of them without more or less giving away the whole of the firm's works and business organisation, but one may perhaps note the names of a certain number who have already been more or less in the eye of the public.

Lieut.-Col. Stedman, who was the first engineer officer of the R.N.A.S. to be detailed specially for work on Handley Page machines, and who flew in the very first Handley Page machine with Squadron Commander, now Major, John Babington, D.S.O., went to Newfoundland in charge of the machine which was to attempt to fly the Atlantic.

Major Brackley, one of the most famous Handley Page pilots in the R.A.F., is the pilot of the said machine.

Major Gran, better known perhaps as Lieut. Trygve of the Norwegian Navy and of the Scott's South Polar Expedition, and later as Capt. Grant, R.F.C., went to Newfoundland as the navigator of this machine.

Among those permanently employed in this country in connection with the flying of Handley Pages is Lieut.-Col. Edwards, late Assistant-Director of Flying Operations in the Air Ministry.

Lieut.-Col. Noel, who will be remembered as having a machine of his own at the Acton Aerodrome with Messrs. Beney and Lascelles in the very early days of aviation somewhere about 1909, is also with the firm.

Among the firm's regular pilots are Lieut.-Col. Sholto Douglas and Major Foot, both of whom were famous as Handley Page pilots in the R.A.F. during the war.

Major Park and Capt. Stewart, who recently flew the Handley Page round Britain, are also with the firm.

Many other R.A.F. officers are either working for the firm in this country or have gone abroad on special missions, and a number of R.A.F. airmen are employed as mechanics on the machines. It certainly seems that the Handley Page firm is doing all in its power to find adequate employment for the demobilised personnel of the R.A.F.

Short Bros. and Service Aviators.

Yet another firm which is giving worthy employment to ex-Service people are Messrs. Short Brothers. The most senior of all their Service aviators is Mr. E. B. Parker—the firm's London representative—who was a flying officer in the Naval Wing, R.F.C., before the R.N.A.S. was founded, and incidentally was one of the finest pilots the Navy ever had. He was invalided out of the Navy some time before the war, and on his recovery from what was considered to be a fatal illness he joined Short Brothers and has done excellent work for the firm ever since.

Another distinguished Naval pilot now with the firm is Major S. V. Sippe, D.S.O., one of the three heroes of the famous raid on Friedrichshafen in 1914. Major Sippe was at the end of the war in command of the Northern Seaplane Acceptance Depot at Brough, and throughout the war has been intimately concerned with R.N.A.S. work.

Another pioneer of British aviation who is now with Short Brothers is Major O. T. Gnosspelius, who is in fact the first man who ever flew an aeroplane off British water, Windermere being the site of his adventure. Major Gnosspelius has been doing valuable technical work in connection with seaplanes during the war and should be of great value to this pioneer firm.

Yet another R.N.A.S. officer now with Short Brothers is Lieut. W. P. Kemp, who has had considerable seaplane service during the war.

A Good Start.

Among the firms who are doing their best to provide employment for ex-R.A.F. people credit must be given to the Central Aircraft Company, which firm, after doing very good work in the way of aircraft production during the war, entirely on machines of other people's design, has now come forth not only as a designing firm, but also as the proprietors of a well-organised flying school at Northolt Aerodrome.

The aerodrome manager of the firm's school is Capt. N. C. Riddell, late R.A.F., and the pilots are Capt. A. H. Gearing and Lieut. F. B. Goodwin Castleman. Capt. W. Brian Long has also been flying the firm's machines with success.

The firm has quite an ambitious programme in the way of producing multiple-engined passenger machines as well as school machines and two-seater sporting machines at a moderate price, and it is to be hoped that the enterprise shown by the Messrs. Cattle, who are the proprietors of the firm, will meet with the reward which it deserves, and will thus enable them to provide considerably more employment ere long for demobilised officers and men.

The Central Aircraft Company have made arrangements with the Air Ministry to have the use of the R.A.F. Aerodrome at Northolt, which is certainly one of the finest in the country as regards its suitability for training work, and has an area of about 350 acres, nearly all of which provides decent landing ground. The firm is already training its pupils at this aerodrome, and commencing from June 28th they are also giving daily passenger flights.

Northolt Aerodrome is very easy to reach, being close to Northolt Junction on the Great Western and Great Central railways. It is within about half-an-hour's railway journey of London, and the aerodrome is only five minutes' walk from the station, so that actually it is probably the easiest to reach of all London aerodromes, therefore the firm should find its passenger trips well patronised.

The Martinsyde Staff.

Another firm which is doing its duty thoroughly well to the R.A.F. in the way of finding employment for ex-officers and men is the firm of Martinsyde, Limited. Among those who have been actually engaged by the firm are the following:—

Major C. W. C. Wheatley, who will be remembered in the early days at Brooklands as an Avro pupil, and who has since been on technical work in the R.A.F.

Capt. R. Nisbet, an R.A.F. pilot, who was second in the Aerial Derby.

Capt. C. W. F. Morgan, R.N.A.S. pilot, who was engaged as Mr. Raynham's navigator.

Messrs. P. Stimpson and R. Reyer, R.N.A.S. pilots; and Messrs. E. F. Gill, H. C. Kirby, J. H. Clarke, J. Refoy, and A. Wells, all R.A.F. pilots.

Mr. W. F. Savage, late Chief Inspector, A.I.D., has also joined the firm in a technical capacity.

The L. and P. Engagements.

It is encouraging thus to find that so many firms are doing their best to give employment to ex-officers and airmen of the R.A.F. One of the first firms to make a move in this direction was the London and Provincial Aviation Company, who run the Stag Lane Aerodrome at Edgware as a school of flying, and also for the purpose of giving exhibition and passenger flights.

The following officers have already been engaged by this firm:—

Capt. Robert Oxspring, M.C., who is the assistant aerodrome manager.

Lieut. W. T. Warren, jun., who, though of junior rank in the Service, is the aerodrome manager, having been engaged in aviation long before the war.

Capt. Leslie Brake and Lieut. T. Neville Stack, who have both had long experience of Service flying.

The firm has also two ex-N.C.Os. from the R.A.F. employed in their works.

The L. and P. Company has always had a high reputation for honest, straightforward work in its machines and for good, sound instruction at its school, and one hopes that with the growth of Civil Aviation, after the Air Ministry has been brought to a proper sense of its duties, this firm, together with all those previously mentioned, will find it necessary to engage many more of the former personnel of the R.A.F.

Super-Mariners.

The Supermarine Aviation Works, Ltd., of Southampton, have also taken on quite a number of officers of the Flying Services, though their Civil Transport Schemes are not actually in operation at the moment. Here is the list of their officer personnel:—

Squadron Commanders James Bird and B. S. Hobbs (late R.N.)

Captains F. J. Bailey, P. Brend, and J. E. A. Hoare (late R.A.F.)

Lieut. H. G. Horsey, late R.A.F.

Sec. Lieut. H. C. Biard, late R.A.F.

All these officers were originally in the Royal Naval Air Service.

A Big Avro List.

One of the most imposing lists of ex-R.A.F. people now employed in civil aviation is that pertaining to the Civil Aerial Transport firm which is known as "Avro Joyrides" and operates from Hounslow Aerodrome under the direction of Lieut.-Col. G. L. P. Henderson, M.C., A.F.C. The firm is entirely con-



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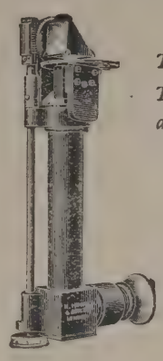
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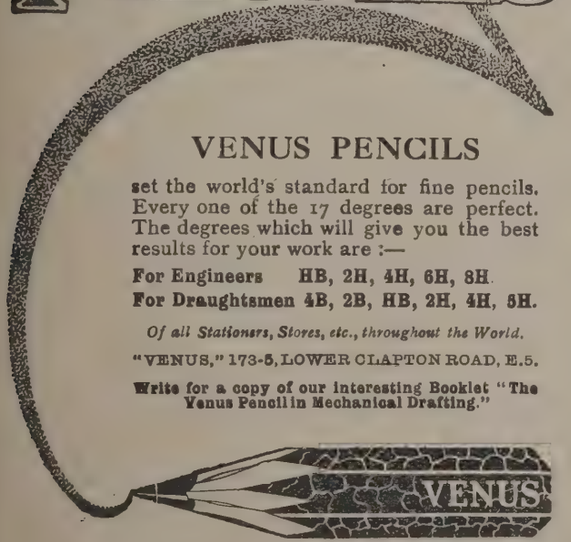
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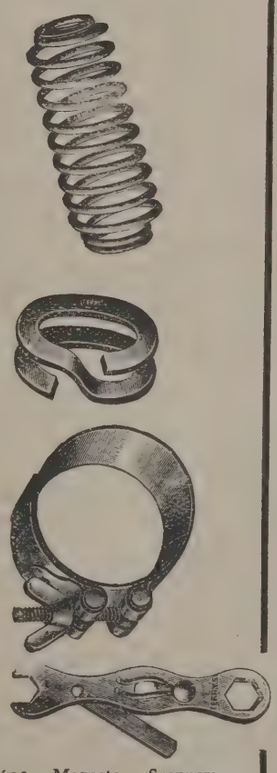
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cerned with running passenger trips in various parts of the country on Avro machines, and it has been extraordinarily successful since it began work, as those who read the weekly reports of civilian aviation in this paper will realise.

Everybody in the firm's employ has been a soldier or sailor, with the exception of a few casual labourers who are merely employed in hauling the machines about, and the pilots are not merely good pilots, but are "A.1 at Gosport" instructors, so that the firm has a very good claim to having the most skilful staff of pilots in the world.

The list of those at present employed is as follows :—

Lieut.-Col. G. L. P. Henderson, M.C., A.F.C., late Wing Commander R.F.C. and R.A.F.—general manager.

Captains R. T. Fagan, D.F.C., A. M. West, and D. I. M. Kennard, late Flight Commanders and R.F.C. and R.A.F. Instructors.

Capt. S. H. Twining, M.B.E., late Wing-Adjutant, R.F.C., and R.A.F.

Lieuts. H. R. Hastings, A.F.C., R. S. Park, A.F.C., E. A. Sullock, A.F.C., A. C. Weeks, and Sparkes, late Flying Officer Instructors R.F.C. and R.A.F.

Airmen R. W. Amey, late W.O., R.F.C. and R.A.F.; A. C. Ayling, late Cpl., R.N.A.S. and R.A.F.; P. Tew, late R.N.A.S. and R.A.F.; A. J. Whittington, late Serjt., R.N.A.S. and R.A.F.; T. A. Badger, late Flt. Serjt., R.F.C. and R.A.F.; E. F. Gordon, late Flt. Serjt, R.F.C. and R.A.F.; H. Rogers, late Serjt., R.F.C. and R.A.F.; H. J. Phillips, 1st Air Mech., R.F.C., and Sec. Lt. R.F.A.; C. F. Lacey, late R.F.C. and R.A.F.; Hughes, late Serjt. R.F.C. and R.A.F.; Field, late 1st Air Mech. R.F.C. and R.A.F.; Sadler, late Flt. Serjt. R.F.C. and R.A.F.; C. V. Jeffreys, late 1st Air Mech. R.F.C. and R.A.F.

Also Miss E S. Smith, late Chief Section Leader, W.R.A.F.

That certainly is a list of which any firm may well be proud.

A. V. ROE & CO.

In addition to the firms already mentioned as having found employment for ex-R.A.F. people, A. V. Roe and Co. have—as might have been expected—done very well in this direction. Here, for example, is the list of those employed by the firm direct, chiefly in connection with the Avro joy-ride undertakings at Blackpool, Manchester, and Hamble :—

BLACKPOOL.

Major W. G. McMinnies.

Captains E. Maitland-Heriot and B. R. Collison.

Lieuts. H. A. Brown, E. P. Adams, E. F. Rogers, G. B. Moxon, J. F. Macrae.

Flight Cadet H. T. Dewhurst.

Flight Serjts. I. Humphreys and M. Hargreaves.

Serjts. E. Neale, W. Plant, W. Appleton, W. W. Smith, A. Magowan, I. Harker, and E. Braithwaite.

Cpls. W. Ringham and T. A. Brophill.

1st A/Ms. H. Yates and I. Shan.

3rd A/Ms. H. J. Carter and A. M. N. Martin.

MANCHESTER.

Flight Cadets P. Linton and T. Hampson.

Serjt. R. Dale.

Cpl. Thompson.

Leading Aircraftsman Parry.

1st A/Ms. Clifford Lucas and V. Downey.

2nd A/Ms. E. Haward, F. Fleming, and G. Makereth.

HAMBLE.

Capts. H. A. Hamersley, M.C., T. Warren Merriman, A.F.C., A. Storey, D.F.C., and R. L. Truelove.

Lieuts. D. H. Sadler, West, R. A. Seaton, R. Freemantle, and J. Gulf.

Serjt. Observer B. C. Freemantle.

Serjt. Mechanics H. G. Gale and G. Warren.

P.O. R.N.A.S. L. Parmenter.

1st A/M G. H. Roberts.

2nd A/M F. Pert.

THE AIRCRAFT MANUFACTURING COMPANY'S LIST.

As would be expected, the Aircraft Manufacturing Company includes amongst its staff a large number of ex-R.A.F. officers, and the following list gives an idea of the widespread ramifications of Mr. Holt Thomas's organisation :—

Foreign Representatives :—Major K. E. Clayton-Kennedy, Colonel H. Delacombe, Major S. G. Kingsley, M.C., Lieut. S. B. Bradley, Lieut.-Colonel R. G. Blomfield, D.S.O., Captain H. H. Shorter, Major F. C. Atkinson.

O.C. Flying Operations :—Major C. Patteson, M.C., A.F.C.

Pilots :—Major H. de Havilland, Captain H. J. Saint, D.S.C., Captain W. G. Gathergood, A.F.C., Lieut. H. Shaw, A.F.C., Lieut. E. H. Lawford, A.F.C., Lieut. C. R. McMullin, Captain C. W. Carlton, A.F.C., Captain Carroll.

Business Organisation :—Captain D. M. Greig, O.B.E., Major H. Jones.

O.C. Photographs :—Captain F. R. Logan.

BOULTON AND PAUL'S LIST.

Boulton and Paul, Ltd., give the following long list of their ex-R.A.F. employees, and deserve congratulations thereon.

Major ffiske, London Manager.

Major K. S. Savory, D.S.O., and Captain R. D. Simpson, D.F.C., Special Pilots.

Captain J. H. Woolner, A.F.C., Special Pilot and Navigator.

Captain A. L. Howarth, Wireless Expert.

Lieut. J. E. Jones, Experimental Research Department, Aerodynamics Section.

Experimental Department, Wind Channel :—Lieut. W. H. Sawyer, 1st A.M. H. D. Foulger, and Cpl. L. A. Crickmore.

Experimental Research Department :—Lieut. Mackinolty, Flight Cadet D. Dove, Serjt. R. R. Riley, Capt. E. L. Simonson, 2nd A/M G. E. Morton.

Experimental Workshops :—C/M E. W. Martin, Serjt.-Major Howes, Serjt. Taylor.

C.E. Drawing Office :—2nd A/M G. Pegg.

Production Drawing Office :—2nd A/M R. W. Mallett.

Experimental Research Department, Aerodynamic Section :—A. Zaiman, B.A., Sapper, R.E., attached to Anti-Aircraft Experimental Station at Shoeburyness.

EMPLOYING BY DESTROYING.

In the first report of the Select Committee on National Expenditure, which was issued as a White Paper on June 12th, there is some severe criticism of the Air Ministry. The committee seem to be greatly disturbed by the continuation of the use of high-powered motor cars by officials.

The number of motor cars kept for the use of the Air Ministry at the present time, the committee state, is 48. Of these, 33 are allotted to 33 officials for their own use, and 15 are pooled for the use generally of the staff. Many of the cars are very large and powerfully engined, consuming a quantity of petrol and wearing out many tyres.

Each of the following officials is said to have a car for his own use :—Mr. Churchill (Rolls-Royce limousine), Maj.-Gen. Seely (Rolls-Royce cabriolet), Maj.-Gen. Trenchard (Rolls-Royce landaulette), Maj.-Gen. Sykes (Rolls-Royce cabriolet), Maj.-Gen. Ellington (Rolls-Royce car), Sir A. Duckham (Crossley landaulette), Sir J. Hunter (Crossley landaulette), and Lord Londonderry (Crossley landaulette).

Except that the publication of this list is a very good advertisement for the Rolls-Royce and Crossley firms, one does not see that it serves a useful purpose. There are certain newspapers that cater for the less intelligent section of the community and which during the war found it more profitable to foster distrust between the authorities and the public than to continue their old policy of fanning the flame of class hatred. These will, of course, flaunt the fact that a few Secretaries of State, Cabinet Ministers, and highly-placed officials and such lumber go about their business in cars, while the energetic, highly efficient and virtuous plumber travels in an L.C.C. tram to fetch the tools he leaves behind when he goes to do a job. These journals doubtless would like to see British Secretaries of State, Cabinet Ministers, and distinguished generals riding on the humble pedal cycle or donkey chaise, in order that the resultant loss of time would give further opportunities for criticism.

In spite of all that is said, our highly-placed officials are busy men, and anybody who has any knowledge of affairs is aware that a highly-paid person's time may be worth more than the price of a few gallons of petrol. The commercial world found that out long ago.

One feels that so long as it is kept within reasonable limits the use of motor transport by important chiefs is more than justified, and that it would be more profitable to level criticism at the sinful waste of public money by the scrapping of new aeroplanes of the latest types. Millions have been thrown away in this manner for every few pounds spent on motor cars.

The Select Committee reported that :—

Following the Armistice, the Air Council met and decided to inform the Ministry of Munitions that they required no more aeroplanes. This decision was, however, not adhered to, and in December last they wrote to the Ministry of Munitions stating that they appreciated "that labour and other considerations may prevent the Ministry of Munitions from arranging a complete cessation of further deliveries, and for this reason the Air Council are prepared to continue to accept aircraft and engines of which continued production is required by these considerations."

"Accordingly," proceeds the report, "machines were taken from contractors which were not wanted, and as national factories were also to be kept going, it was necessary to find work for the people there, with the result that machines taken from contractors to keep the people there employed were sent to the national factories to be destroyed to keep the people there employed."

After Christmas, however, steps were taken to cancel contracts, which were brought down from £150,000,000 to £65,000,000. The number of aeroplanes was reduced from 25,000 to 13,432.

So for about two months after the Armistice it would appear that the country was spending money at the rate of £85,000,000 a month on machines which were scrapped as soon as delivered. The idea of keeping contractors busy on the construction of aeroplanes which were "sent to the national factories to be destroyed to keep the people there employed" would be comic if it were not so sad.

It would have been almost as sensible to give the machines to the Germans to encourage them to keep on fighting for the benefit of trade.

THE

LONDON AND PROVINCIAL AVIATION COMPANY,

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One brand new H. type Avro 2-seater machine (H. 5172) fitted with 110 H.P. Le Rhone Engine and all instruments. Rigged and tested £480

One brand new J. type Avro 3-seater machine (2 passengers and pilot) (J. 5499) fitted with 110 H.P. Le Rhone Engine and all instruments. Will be rigged and tested within a few days £500

All these machines are fitted with streamline wires, and are of the very latest type, built since the Armistice.

CIVIL AERIAL TRANSPORT NOTES.

GREAT BRITAIN.

BIRKDALE AND SOUTHPORT.

The hum of the Avro Air Fleet attracted a huge crowd to the Birkdale Palace Aerodrome, near Southport, last Saturday. Ten thousand people ringed the aerodrome, swarmed on the sand-hills, and thronged the enclosures. The roads approaching the flying ground were blocked with traffic—in fact, no such crowd had been seen at Southport since King Edward VII. visited the city.

The occasion was Lancashire's first aerial fête and gymkhana. Machines came from Morecambe, Manchester, Blackpool, Liverpool, and Preston to compete in the events. Punctually at three o'clock the Avro band, which had flown over from Manchester, struck up a tune as two flights took the air and flew round Southport in formation. The first flight of five machines, led by Capt. E. Maitland Heriot, D.S.C., landed in formation, making a very pretty spectacle.

The next event, a landing competition, in a space of about fifty yards square, gave the spectators some idea of what a modern machine is capable. An imitation fence had been planted in the sand, and competitors had to land as near over it as possible. One or two pilots landed on the near side, and demolished part of the hedge which the officials and judges quickly repaired.

This event was very exciting, both for competitors and spectators, as two or three machines would land side by side within a few seconds of each other.

An acrobatic display followed, all the usual stunts being performed in order, so that the spectators had an opportunity of distinguishing between such manœuvres as a continuous vertical bank, a spiral and a spin.

The big event of the day was a twelve-mile race over the sea and sand. This attracted ten entries, all of whom got off within a few seconds of each other. Lieut. Brown led from start to finish, closely pursued by Lieut. Adams and Capt. Heriot. It was surprising the difference in speed between the machines in view of the fact that they were similar in all respects. The aeroplane "Follow my leader" competition concluded the display, a long string of machines imitating the leader's example in such manœuvres as diving, zooming, turning, and landing.

A silver cup, value 30 guineas, presented by the directors of the Birkdale Palace Hydro, was awarded to Lieut. Brown for the best all-round performance of the day. Fitter Rigby and Rigger Gower, mechanics on the winning machine, were also presented with prizes. Lieut. Adams was judged second, and Capt. Collison third on the day's performance. Major Crossley, R.A.F., and Messrs. C. H. Parr and A. Whittaker, of Birkdale, officiated as judges.

After the event ten machines did passenger flying, and were kept very busy for several hours. The whole exhibition was organised by Major McMinnies, late R.A.F., who is running the "Avro" enterprise in the North of England.

FORMATION OF LANCASHIRE FLYING CLUB.

The first meeting of the Lancashire Flying Club was held at the Birkdale Palace Hydro, Birkdale, Southport, last Saturday after the "Avro" gymkhana. Mr. F. C. L. Young, Lindum Lodge, Bowden, Cheshire, was elected hon. secretary and treasurer. Mr. Young already possesses a machine of his own, and has offered to place it at the disposal of the club's members. It was decided that the subscription for the first fifty members be fixed at ten guineas, without entry fee, and that the club be run primarily for the benefit of ex-service pilots who wish to keep up their flying.

Major McMinnies offered free landings and storage for members' machines at the Avro aerodromes at Windermere, Douglas, Morecambe, Fleetwood, Blackpool, Southport, Liverpool, Preston, Rhyl, etc., and this offer was accepted. It was decided to write to the Air Ministry with a view to obtaining a gift of several machines to the club, with a view to assisting ex-service men to keep up their flying, and it was suggested that the club's machines should be fully insured against all accidents and crashes. All communications should be addressed to the Hon. Secretary, Lancashire Flying Club, at the address given above.

LEEDS.

An aeroplane of unknown make left Leeds on July 18th with two passengers and luggage for Scarborough. Despite the railway strike, they were determined to go on their holiday, and paid £7 10s. per passenger.

LONDON.

HENDON.—Only a few people attended the Victory Meeting on Saturday, July 19th. There were seven entries for the cross-country handicap race of twenty miles, which was won by Capt. H. A. Hammersley on the "Baby Avro." He received the Victory Trophy presented by Percy Edwards and Co. Major R. H. Carr and Captain D. H. Robertson, both on 110 h.p. Le Rhône "Avros," were respectively second and third.

A Grahame-White biplane also took part in the race, and all the machines finished the course, which was five times round Bittacy Hill, and the pylons on the aerodrome.

The first flight to Paris, made possible by the temporary withdrawal of the restrictions, was made on Tuesday, July 15th, from Hendon. Mr. Pilkington, the managing director of Pilkington Brothers, left Hendon, on an "Airco" D.H.9, and arrived at Le Bourget, near Paris, in 2½ hours. The business being completed, a return journey was made on the next day in the same machine.

The first civilian flying certificate issued by the Royal Aero Club since the Armistice has been taken by Private J. Hardy, an Australian soldier, at Hendon.

His Highness the Maharajah of Kashmir and Jamma, with Captain Zuloaga, assistant military attaché of the Argentine Legation, flew from London to Paris on July 13th.

On Friday, July 18th, an Airco D.H.9 carried leaflets required in connection with the North-Eastern Railway strike from Hendon to Durham. This machine then flew to Harrogate, where a D.H.6 arrived on the following day. Both the machines then gave exhibition flights in connection with the Peace celebrations in that town.

CRICKLEWOOD.—A four-engined Handley Page aeroplane piloted by Lieut.-Colonel W. S. Douglas, M.C., D.F.C., left the Aerodrome for Brussels at 7 a.m. on Saturday, July 19th, and arrived there at 10 a.m. Lieut.-Colonel Douglas intends to give a flying display over Brussels, and "Professor" Newell, who accompanied him, will make a descent in a parachute.

MARGATE.

Amongst those taken up in Avros at Manston during the week ending July 19th were three youthful passengers aged fifteen months, four years, and six years. The four-year-old insisted on going up again the same afternoon and was looped.

CANADA.

It has been announced in Toronto that an international air race starting simultaneously from Toronto and New York will be held on August 25th, with the Prince of Wales as starter.

BELGIAN CONGO

According to "La Conquête de l'Air" (Brussels), a seaplane service is to be established upon the Congo.

The service is to provide postal and passenger services, and is also to undertake photographic survey work.

The initial costs are to be defrayed by the Royal funds, and a committee of direction for the organisation of the service has been appointed by Royal decree. This committee consists of Colonel A. E. M. van Crombrugge, Major Paulis, and Commandante Jaamotte.

DENMARK.

Oberleut. Göring, the well-known "jagd" pilot and late chief of the Jagdgerschwader of von Richthofen, represented German aviation at the Copenhagen flying week and exhibition. On May 8th he left Schwerin on a Fokker D.VII with a 185 h.p. Bayer motor, and arrived at Copenhagen (250 km.) in the record time of 1⅛ hour.

According to "Der Motor Wagen" of June 20th, this record and his various exhibition flights made a good impression on the Copenhagen public. The German Aviation Industry can point out with pride the admiration and interest shown for German aerial technique and German Aerial Industry in the first foreign competition in which it enters.

In a report from Copenhagen dated July 17th Reuter states that the Danish Ministry of Justice has issued an order provisionally forbidding flying with passengers, and stipulating that foreign aviators desiring to fly to Denmark must obtain official permission.

A regular air service is intended to be started between Reykjavik, the capital of Iceland, and the eastern ports of the United States.

Two hydro-aeroplanes have already been obtained and will be tested in a flight round Iceland. The route will be from Reykjavik to the southern tip of Greenland, where a station will be established; from thence to Newfoundland, and then on to the United States. The distances of the first and the second stages are roughly 500 nautical miles.

FRANCE.

Captain Marchal left St. Raphael (Var) at 5 a.m. on July 19th on a seaplane, in an attempt to cross the Mediterranean to Bizerta, Tunis, and return on the same day. He followed the Sardinian coast. Five torpedo-boat destroyers were stationed along the route, the total distance of which is about 900 miles. He arrived at Bizerta at 3.30 p.m.

The news given in these notes some weeks since, and afterwards denied in the French Press, was well founded. For personal rea-

Steels of Proved Merit.

When buying a steel, there may be several makers whose claims appear equal. Prices for the same apparent quality may show small differences, but price is not the deciding factor to users of high reputation.

Base your decision on what a steel has DONE.

Two well-known steels have just demonstrated one more argument for their adoption in YOUR engines.

The Rolls-Royce Eagle Engines which won the Atlantic Flight mainly employed these steels.

They proved the reliability of Firth's Nickel Steel for connecting rods, and other important parts, and of Firth's F.C.N.-5 Steel for camshafts, timing wheels and other case-hardened parts.

These and other special steels are at your service NOW, equally carefully made, equally consistent in quality and equally free from defects.

THOS. FIRTH & SONS, LTD.,
SHEFFIELD.

Ever since the R 34 left at frequent intervals the American weather bureau, a most admirable organisation, regarding which you ought to hear the opinions of Mr. Harris, has sent radios giving forecasts based upon more data than are usually available at short notice on your side of the Atlantic. The bureau here works with the utmost personal goodwill, because, to quote its officers, "England has shown the United States remarkable courtesy in allowing an American observer to travel both ways on the first flight, and also given us every information down to samples of the castrol oil for engine-bearings, which we want to analyse for our own purposes."

OVER THERE
R34 in America

THE "DAILY TELEGRAPH" of July 12th contained the cable reproduced here from its correspondent in NEW YORK.

THE LUBRICANT WHICH HAS AROUSED SUCH GRATIFYING INTEREST IS

WAKEFIELD
Castrol
REGD. (R)

which was specially selected for the Sunbeam motors on this famous voyage. THIS IS THE OIL USED BY ALCOCK, HAWKER, AND ALL THE WORLD'S LEADING PILOTS BECAUSE IT IS THE BEST.

C. C. WAKEFIELD & CO., Ltd.,
Wakefield House, Cheapside, London, E.C. 2, England.

sons M. Esnault Pelterie has resigned the Presidentship of the Chambre Syndicale des Industries Aéronautiques. His loss will be greatly felt, for he was always one of the most outstanding figures in French Aviation, and had occupied the presidential chair over ten years. Rumour says that there will be no more Rep machines, as M. Esnault-Pelterie proposes to give his patents to the world to develop. This would not be surprising, in view of the fact that he has already sacrificed a great part of his personal fortune in experiments just for the love of the science.

The French Government did not allow flying over Paris during the fêtes, just as flying was not allowed over London last Saturday, July 19th, but the late Lieut. Navarre had intended flying over the heads of the troops through the Arc de Triomphe, a feat requiring a very small machine, and far more skill than that of flying through the Tower Bridge.

In spite of the restrictions, the "Goliath" and several Farman touring machines, as well as a twin-engined Caudron, flew over the procession whilst it passed through the Avenue de la Grande Armeé and the Champs Elysées. Only a few watching the Victory procession in Paris noticed Captain Fonck carrying the Aviation Corps flag, and Lieut. Arondel, with the Aerostation flag, the only representatives of the great part that aviation played in the war.

M. Etienne Poulet, the holder of the duration record, left Paris for London a few hours after the procession had passed, with photographs for the "Daily Mail." Meeting with very bad weather, he did not arrive at Hounslow until late, but his name is reported to be the first on the aerial customs list there. Later he returned to Paris in 3 hrs. 10 min. The machine accompanying him landed at Calais owing to the bad weather, and the "Evening News" photographer completed the journey on the leave boat.

An aerial postage service was started in June between Paris and Le Croisic, with a stop at Le Mans, where the mails are transferred to other machines. Twenty-seven trips were made in June, four machines being in the service.

M. Louis Damblanc has been working for two years on a helicoplane which he has named "L'Alerion," and which *when successful* will fulfil the following conditions:—Fly vertically with variable ascentional speed; fly horizontally at an average speed of 30-60 m.p.h.; remain stationary in the air; and descend vertically at a variable speed as slow as the pilot wishes. In December M. Roidor Seville will publish the second congress of human flight, which studies especially this aspect of aeronautics.

The French Aerial League Cup is reserved for aviators of French nationality, and will be open for two years, the winner being he who holds it on May 15th, 1921. The holder will be the pilot who, starting from France, flies to the French territory furthest from Europe with a sealed barograph. An addition of 10 per cent. distance will be given in respect of each passenger weighing at least 65 kilogs.

Caudrons are reopening their civilian schools on the first week in August. Instruction will be given on small G 3 type machines. All the flying schools in France closed automatically on the outbreak of war.

GERMANY.

The following article appeared in the "Dusseldorfer Nachrichten," of July 8th:—

Although civilian or peace aviation has not turned out as expected, an effort ought to be made to encourage it, since not only the aeroplane works, but also the wood industry, optical works and motor works, and a score of other trades or industries now depend on the success or failure of the aeroplane as a commercial vehicle.

At the moment, of course, the long-course trips, Berlin to Northern coast, etc., are working satisfactorily, but when the train services are again in order, very few people will be left who will pay the very high aeroplane fares, or the expensive aeroplane postage.

The future of aerial transport for Germany lies more with the extreme long-range of the dirigible, and the long voyages. The future lines, for German air traffic are not "inland" lines, but international lines such as Berlin-Athens—which would considerably shorten the London-India line—Berlin-Lisbon, which will shorten the way to South America.

A message from New York dated July 15th stated that it was advertised in certain German newspapers published there that a Zeppelin freight and passenger service between New York and Hamburg would be started on October 18th, and that bookings would be received after September 18th.

The advertisement was inserted by Hans Kahrs, of the Monopol Export and Import Union, which has its office in New York, but it is not believed that the American Government will permit the establishment of such a service even if it were seriously attempted.

Kahrs was appointed by a wealthy American banker, whose name he would not divulge, to act as agent for this trans-Atlantic dirigible freight and passenger service, which was to be financed by American, British, and German capital. He also said that a tentative price of £18 4s per ton was set as the rate for trans-ocean air freight, but he did not yet know the passenger fare.

Germany is making a determined attempt to establish aviation on a commercial basis. Routes from Berlin are in operation to Weimar, Frankfurt, Leipzig, Warnemünde, Hanover, Westphalia, Hamburg, and Breslau. There are also services between Weimar and Frankfurt, Hamburg and Warnemünde, Leipzig and Weimar, and Hanover and Westphalia.

The services are operated by the Deutsche Luftrhederei, a combine of various German aeronautical firms.

Return tickets are issued and are valid for a period of 30 days. Flying kit and motor transport to and from the aerodrome are provided, and are covered by an inclusive charge, of which the following are representative: Berlin-Hamburg, single, 450 marks; (£22 10s.); return, 700 marks (£35). Berlin-Breslau, single, 500 marks (£25); return, 750 marks (£37 10s.). Berlin-Weimar, single, 450 marks (£22 10s.). Serial tickets available for ten flights on any of the routes operated by the combine are issued at 3,600 marks (£180). These tickets are transferable, and work out at an average reduction of 20 per cent.

Luggage is carried free of charge, but the total weight of passenger—who is carried at his own risk—and baggage combined must not exceed a certain limit. Mails and parcels are also carried by the company, which is working in conjunction with the Hamburg-Amerika Line, through whose offices bookings may be effected.

On the Berlin-Weimar route, which appears the most popular, the number of flights from February 5th to the end of April was 538, while between Hamburg and Berlin from March 1st to the end of April there were 262 flights.

The temporarily suspended postal service between Hamburg and Berlin was to be resumed on the 5th inst.

New services were to be run between Hamburg-Westerland, Berlin-Warnemunde-Heiligendam, and Berlin-Swinemunde, with motor-car connections to Tylbeck, Heingsdorf and Bansin. They depart from Hamburg at 9 a.m., and from Berlin at 3 p.m.

Passengers and parcels are accepted up to an hour before starting time.

The German Luftrhederei Berlin advertises week-end trips to the Baltic seaside resort Swinemunde.

Every Saturday a large aeroplane, fitted with a cabin to hold six passengers, will leave Berlin Johannisthal at 4 p.m., and will reach Swinemunde an hour and a half later. The travellers will be able to spend Saturday, Sunday, and up to Monday morning with their families, the aeroplane taking them back in the morning and carrying them to Berlin in time to attend to business there before noon.

HOLLAND.

Germany is not being allowed to exhibit in the Amsterdam Aircraft Exhibition. This is curious, owing to the progress made by aeronautics in Germany and the fact that the peace treaty has been signed.

AERIAL POST TO HOLLAND.

According to the "Morning Post" of July 17th, the two "Vickers" seaplanes which arrived at Amsterdam from Felixstowe on July 14th, made the flight in connection with an official mission concerning the proposed aerial postage service between England and Holland.

According to the "Nieuwe Rotterdamsche Courant" of July 5th, the directors of the Amsterdam Aviation Exhibition have contracted with Vickers, Ltd., the Aircraft Manufacturing Co., Ltd., the Blackburn Co., Ltd., the Gosport Aircraft Co., and Handley Page, Ltd., for demonstrations on the flying ground of the exhibition. These firms will exhibit both aeriplanes and seaplanes. The Italian Fiat Co. will exhibit their 430 h.p. aircraft engine. The Chairman of the Italian Aero Club has consented to sit on the Exhibition jury.

According to "De Telegraaf" of July 7th, a new single-seater biplane made on a new design by N. V. Med. Antom. en Vllegtuig fabr. at Trompenburg, was successfully put through its tests on the previous day. It is fitted with an engine of 130 h.p. of Clerget type, and develops a speed of 190 km.p.h. The machine has a very strong appearance and is intended to be used as a fighting aeroplane for the Dutch Government.

ITALY.

According to the "Popolo Romano," Signor Gabrieile d'Annunzio is reported to have accepted the post of director of civil aviation in Sardinia.

This is the first time we have heard of the first steps towards an aerial service for the conveyance of fish. Fresh sardines will soon be found at all the fishmongers. One would imagine that it may be difficult to obtain pilots for such an odiferous service.

The envoys of the S.I.T.A., a company for exploiting Italian aero activities in Brazil, have arrived there. The S.I.T.A. is a branch of or from the Macchi Caproni and Gallinari firms and others. Senator Terre and some well-known men are taking active part in the concern.

The newspapers announce the departure for China of a mission which is accompanied by machines and mechanics, and may even start a school there.

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Children Half Price.

MOTOR CARS:
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JULY MEETING

Saturday Next, July 26th, 1919

(3.30 P.M.) AT THE

LONDON AERODROME

AND AIR STATION
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FOR THE HENDON TROPHY (4 P.M.)

AIR RACES
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Every
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Weather permitting.

SPECIAL FLYING
DISPLAYS
Every
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PROMENADE.
MILITARY BAND.

PASSENGER FLIGHTS DAILY.

TICKETS 21/-

Signor Gabrielle D'Annunzio, who recently resigned his commission in order to be freer for certain propaganda work dear to his heart, is now planning a Rome-Tokio squadron flight for September. One believes that his pilots will be recruited from among the naval party which crossed the Alps to Geneva a few days back on a seaplane—a "Savoia" 13 1-P motor and passenger-Taddeoli.—T. S. H.

ROME TO LONDON IN THE DAY.

Lieut. Brack-Papa, the pilot, and Lieut. Bonaccini left Rome on July 15th on their flight to London with the Fiat-built 700-h.p.-engined biplane, which is claimed to be the fastest machine in the world, with an all-out speed of over 160 m.p.h. The engine is the most powerful yet fitted to an aeroplane.

The journey was actualiy started from Turin, at the Fiat works, which is, roughly, 360 miles from Rome, and the average speed over that part of the journey was 161 m.p.h.

Owing to bad weather a stop had to be made at Paris, whence they flew to Kenley aerodrome (225 miles) in 1¾ hours. The journey from Rome to Paris (687 miles) took seven and a half hours. Among the letters carried was one from the Italian Prime Minister to Mr. Lloyd George

The Italian pilot Emilio Taddeoli has flown from Sesto Calende to Geneva, crossing the Alps in his journey on a Savoia seaplane, Type 13, fitted with Isotta Fraschini motors.

Signor Taddeoli left the S.I.A.I. firm's establishment at 9.10 a.m. on July 13th, and flying over the Sempione reached Geneva at 10.6 a.m.

SCANDINAVIA.

According to the "Ekstrabiadet," a German company is scheming to establish a regular airship service between Berlin, Odense, Copenhagen, and Stockholm. Successful trial flights have been made recently with a giant Zeppelin intended for the service, which is fitted with seven engines and able to carry 100 passengers besides its crew. It is presumed that the route will be opened in two or three weeks.

A regular aerial service was started on June 30th by the Austrian pilot, Dr. Konig, between Goteborg and Stockholm. When the works in Goteborg are ready he hopes to start the following regular services:—Stockholm-Malmo, Malmo-Goteborg, and Christiania-Copenhagen.

U.S.A.

The greatest flying exhibitions ever witnessed in America were announced to take place on Saturdays July 19th and 26th in the police aerial exhibition at Sheepshead Bay, Speedway. Over 100 aeroplanes were available.

During the week ending June 21st the forest patrol stationed at Sacramento, California, made twenty-one flights over the National forests, and discovered four fires, which were reported to the Forestry Service.

The Lincoln (Nebraska) Aero Club has opened a flying ground, and the citizens of Nebraska are very enthusiastic on flying, and want more passenger flights than can be given on the six Curtiss aeroplanes. Three more machines have been ordered.

The Universal Aviation Co. have obtained the Morrow Aviation Field at Detroit, which was opened to the public on June 21st. They have four aeroplanes at present, but six more are expected soon.

There is accommodation for sixty machines, and private owners are making arrangements to keep their machines there. A regular passenger service between Detroit and Cleveland will start at once.

Owing to the success of the aerial mail between Cleveland and Chicago (325 miles), over which fifty-eight trips have been made without a single mishap, it is expected that a mail service will be started in the autumn between Omaha and St. Louis, which will shorten the time taken by letters from the Atlantic to the Pacific coasts by 16 to 24 hours.

Twelve rebuilt De Havilland machines, fitted with Liberty engines, are on the Chicago-Cleveland route, and carry each day 400 lbs. of letter mail, which amounts to about 16,000 letters. The machines land in the heart of Chicago at Grant Park, thereby saving a great deal of time. Experiments are being carried out to enable the aeroplane to take aboard the mail bags whilst in flight, but this is only possible so far with machines carrying 1,000 lbs. of mail or less.

The Curtiss Aeroplane and Motor Corporation has already established agencies in the Far East, Scandinavia, Australia, and Cuba, and is now planning to extend operations to South America, where bases will first be established at Buenos Aires and Rio de Janeiro, and later in Uruguay, Chile, Peru, and Paraguay. Demonstrating machines will also be sent to Columbia, Venezuela, and Bolivia.

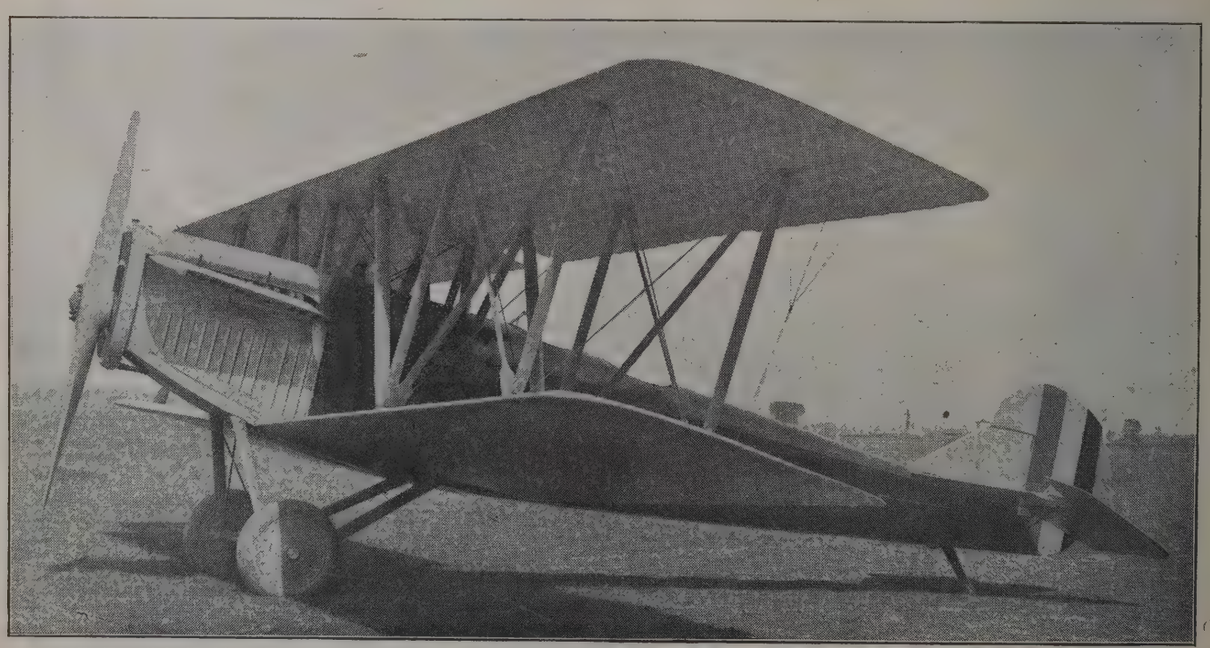
Pioneer aeroplane tours are being planned in America by the Aerial League, of which Rear-Admiral Robert E. Peary is president, to use the surplus Army and Navy machines, to popularise aviation and to give the 64,000 ex-service pilots and cadets a chance of keeping up their flying.

From the canvass made it was found that many wished to participate in these tours for varied reasons, and they are going to start the tours this summer with aeroplanes equipped with motors from 90 h.p., of which the Government has thousands for sale.

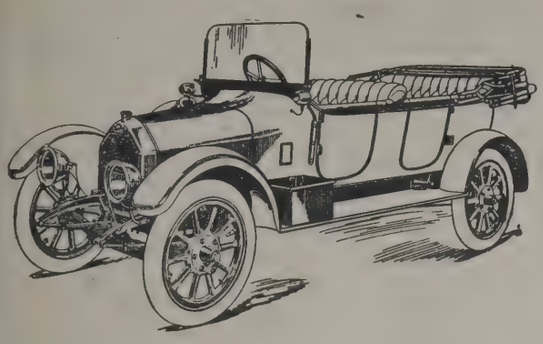
Hundreds of cities all over the United States have applied to the Aerial League for assistance and advice in establishing municipal flying grounds. Seaplane tours or cruises will be started as soon as possible.

To begin with, the tours will be divided into four classes:—one-day tours, week-end tours, one-week tours, and three thousand mile tours (ten days). The average travel for one day in these aerial tours will be 250 miles, so as to allow plenty of time for recreation on the ground.

All the tours will start from Atlantic City Airport, in formation, and will pass over and land at New York. The Curtiss Aeroplane and Motor Corporation is planning to enable tourists to hire an aeroplane for one, two, or three months to participate in the tours, at a cost of less than £400 for two people, including insurance.



ROME TO LONDON.—The S.I.A. Biplane (700-h.p. Fiat Engine) on which Lieut. Brack-Papa flew from Rome to London in the day on July 15th.



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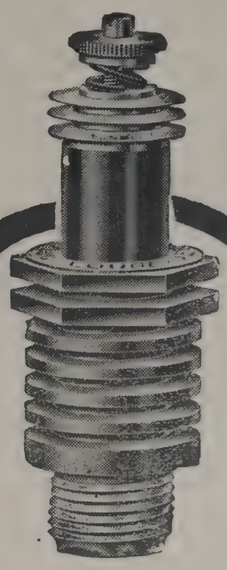
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AIRCRAFT FINANCE

WHERE IS OUR EXPORT TRADE?

It has been remarked facetiously that statistics can sometimes be made to show everything and in reality prove nothing whatever. This is ostensibly true. The political "figure-twister," commonly known as a political economist, can make one pleased or angry or simply muddle-headed according to his book.

The Board of Trade Returns.

Furthermore, it has been said that statistics are as dry as dust. This may also be true, but when one has before one the Board of Trade Returns for June and studies the condition of the export business of the aircraft it is rather different.

A Small Total for June.

During June there were exported to the Colonies and foreign countries "aeroplanes, airships, balloons, and parts thereof" to the value of £41,526. The comparison is with £35,658 in June, 1918, and £14,647 in June, 1917. Even if one is feeling top-hole and is cheered by the return of warm weather, this is not impressive. On the contrary, it seems so trivial—the more so because the total embraces airships as well as aeroplanes and parts thereof, and even a schoolboy ought to know, after reading all about the cruise of the R.34 and the extra twiddly bits served up by the desperate reporter, that one cannot acquire many private airships for the summer holidays with only £41,526. Not that the average schoolboy has that quantity of pocket-money even if his pater is a profiteer. But the point is made.

The Half-Yearly Comparison Better.

One is rather more gratified, however, with the half-yearly results, for the exports during the six months aggregated £293,646. This compares with £163,458 for the corresponding period of 1918 and £247,573 for that of 1917. Admittedly this sounds a little better, and, moreover, one discovers a big drop in the imports, which, of course, is easily explained by the fact that the war is over. June imports of aeroplanes, airships, balloons, and parts thereof amounted to only £1,410 compared with £864,296 in the same month of 1918 and £2,670 in 1917.

Large Purchases Abroad.

Nevertheless, the aggregate imports for the half-year amounted to no less than £1,949,938 in comparison with £1,989,777 in the first half of 1918 and £62,167 in 1917. It is fairly evident, therefore, that some very big contracts could not be cancelled quickly enough, unless, of course, someone had a fancy for foreign stuff. It is a pity. Such a total is formidable, and it would have been better had the production been diverted to domestic industry.

Trivial Re-exports.

However, one still assumes that it could not be helped, but before closing the illuminating volume, which consists mostly of figures, it is worth while discovering how much stuff of foreign and Colonial origin was re-exported. The total under this head for six months was £400 compared with £1,000 in 1918 and £6 in 1917. Had some more of the imported "aeroplanes, airships, balloons, and parts thereof" been re-exported, someone would have made more profit, and possibly British industry would have received more orders. One says this might have happened. It might not have worked out in such a way.

Conclusions.

The conclusion forced on one after an examination of these statistics is that the export business of the aviation industry is as yet a negligible quantity. This is unfortunate. The necessity of enlarging the foreign business is obvious. If properly developed on efficient lines, with due respect to local requirements and local conditions, and without that essentially British characteristic of trying to palm off on the foreigners, not what the foreigner really wants, but what the British exporter wants him to want, there is a good future.

Wait and See.

Happily the industry is more amenable to reason, doubtless because of the disclosure of German business methods during the war. It is pleasant to reflect that certain interests are building up a foreign business on sound lines, and it is to be hoped that with the exceptional experience gained and the degree of perfection attained the results will be satisfactory in South America, China, Europe, and elsewhere, to the discomfiture of rather keen and lively competitors. WM. J. DAVIES.

CURRENT TOPICS.

A Subdued Feeling.

Although the National Loan has been a greater success than most people expected, the Financial World has not run into ecstasies of buoyant activity. On the contrary, business is smaller, which may conceivably be the result of patriotic gluttony in Loan subscriptions, and the feeling is not by any means enthusiastic.

The Position of Vickers.

Aircraft shares are out of favour and out of fashion, too, for the Whitehead affair is not calculated to make a good impression. However, some things look decidedly cheap. Vickers, for instance, are selling under 36s. Assuming the 12½ per cent. tax-free dividend is maintained, the purchaser would get almost 7 per cent. net on the money laid out, equal to almost 10 per cent. on an investment subject to the deduction of tax. No longer does one hear anything of a bonus arising out of the enormous profits that the company must have made and hidden during the war. The amalgamations and consequent rearrangement of the capital has afforded an excellent opportunity for burying these profits in the business for the benefit of posterity

Some Domestic New Issues.

Petters, Ltd., the oil engine people who have a big interest in aircraft production at Yeovil, are issuing 125,000 7½ per cent. cumulative preference shares of £1 and 12,500 £1 ordinary shares. S. Smith and Sons (Motor Accessories), who are also concerned with aviation, intend to increase the capital to £1,000,000 from £500,000. There will be created 100,000 new £1 ordinary shares and 400,000 £1 6½ per cent. cumulative and participating preference shares. When the ordinary shares receive 6½ per cent. these preference will be entitled to an additional ¼ per cent. in respect of every extra 1 per cent. paid on the ordinary. It is said that two new businesses have been acquired. The English Electric Co., which has a big interest in flying boats, being a combination of the Coventry Ordnance Works, Dick, Kerr and Co., and the Phœnix Dynamo Co., is offering £1,000,000 5½ per cent. debentures at 94.

The Whitehead Aircraft, Ltd.

In the Companies Winding-up Court of the Chancery Division, the petition for the compulsory winding-up of Whitehead Aircraft (1917), Ltd., came up again and was postponed for a fortnight.

Mr. Owen Thompson, K.C., said there seemed to be some prospect of a scheme going through by which all the creditors and debenture holders would be paid, and there would be a surplus for the shareholders. It might be that some scheme would be put forward ennabling everybody to be paid in full.

Mr. Gore-Browne, K.C., said a very powerful combination was negotiating to buy the assets. The prospect of the purchase at a cash price was very satisfactory, but he doubted whether a fortnight would give sufficient time to complete the investigations.

AIRCRAFT IN PARLIAMENT

The following written answer was given on July 9th :—

ROYAL AIR FORCE.—EXPERTS.

Captain WEDGWOOD BENN asked the Under Secretary of State to the Air Ministry whether any steps are being taken to retain for the public service the advantage of the expert designers and craftsmen engaged upon airship and acroplane construction during the War?

Major-Gen. SEELY: It is for the Admiralty to reply as regards airships. As regards aeroplanes, the position during the War generally was that the expert designers were in the employment of the contracting firms, experts on such general questions as aero-dynamics, strength of materials, etc., being retained by the State. It is hoped to maintain this position under the peace organisation.

* * *

The following written answers were given on July 10th :—

WENDOVER AERODROME.

Mr. BRIANT asked the Under Secretary of State to the Air Ministry if the aerodrome at Wendover is intended to be a permanent training centre for the Air Force; and, if so, for how many men is it intended to provide?

Major-Gen. SEELY: The answer to the first question is in the affirmative. The answer to the second will depend on the Peace strength which may be approved for the Royal Air Force.

BRITISH CELLULOSE COMPANY.

Lieut.-Col. W. THORNE asked the Parliamentary Secretary to the Ministry of Munitions what was the total capital outlay of the British Cellulose Company on August 1st, 1916; how much of this had been provided by the State, either in rebate of Excess Profits Duty or in any other form, and what were the total liabilities of the State in respect to this outlay; whether any further capital outlay has taken place since August 1st, 1918; and, if so, does any liability rest upon the State to recoup the whole or part of any such outlay?

Mr. KELLAWAY: I would refer my hon. and gallant friend to the answer given on July 3rd to his question on this subject. Until the Committee appointed by the Government have reported I do not think it desirable to make any statement.

* * *

The following oral answers were given on July 14th :—

ROYAL AIR FORCE (MAJOR F. C. H. SINCLAIR).

Sir WILLIAM DAVISON asked the Pensions Minister why it is that no decision has been arrived at with regard to the application for a pension of Major F. C. H. Sinclair, Royal Air Force, who was invalided out of the Royal Air Force on June 24th, 1918; and when that officer is likely to have his application dealt with.

Sir J. CRAIG: This officer relinquished his commission on July 24th, 1918, but his papers were not received in the Ministry of Pensions until April 13th, 1919. No application was made by the officer to the Ministry in the meantime. The result of the medical board which has now been held is to find the disability not due to nor aggravated by service, and a gratuity of £225 has been awarded and will be paid immediately. The amount may be increased as the result of further inquiry which is being made of the officer.

Captain LOSEBY: Is the hon. gentleman aware that the delays in this and similar cases are causing widespread and intense dissatisfaction?

Sir W. DAVISON: Can the hon. gentleman say if questions of this kind are not dealt with automatically on an officer being invalided out?

Sir J. CRAIG: With respect to the first question, every possible effort is being made to prevent anything of the kind occurring. We are working very hard to overtake the work. The answer to the second question is that the arrangement works automatically, but it has required considerable adjustment between the War Office, the Air Force, and ourselves. We hope, very shortly, to have perfect machinery.

* * *

The following written answers were given on July 14th :—

NAVAL, MILITARY AND AIR FORCE EXPENDITURE.

Commander BELLAIRS asked the Secretary to the Treasury whether the Controller-General has the assistance of expert naval, military, and Air Force officers to assist him in his work of criticising the expenditure of the three Departments.

Mr. BALDWIN: The Controller and Auditor-General has no officers of His Majesty's Forces engaged upon the audit of naval, military, or Air Force expenditure.

AIRSHIP CONSTRUCTION, BARROW-IN-FURNESS.

Mr. T. WILSON asked the Secretary of State for War whether he can indicate the policy of his Department in connection with the building of airships; whether he is aware that, owing to the change over from war to peace conditions, numbers of workpeople are unemployed in Barrow-in-Furness; and whether he can hold out any hope of expediting the construction of airships at Barrow-in-Furness, and thus facilitate the employment of the workpeople now unemployed, and who have in the past been employed on airship construction.

Dr. MACNAMARA: I have been asked to answer this question. As regards the first part, I am not quite sure what information it is that my hon. friend desires. As regards the second and third parts of the question, so far as we are concerned, Messrs. Vickers' airship shed is not large enough for the construction of rigid airships of the sizes now required by the Navy, and it is therefore impossible, under present conditions, to order further rigid airships for construction at Barrow-in-Furness.

WEEKLY HALF-HOLIDAY.

Major-Gen. SEELY (the Under Secretary of State to the Air Ministry), replying to Mr. Waterson, said: The men at Warsash are granted leave from camp on an average of three days out of four, including night leave. There is no Air Ministry weekly order giving the men a half-day on Wednesdays, but at Warsash the men get two free Wednesday afternoons out of three.

STORE BUILDINGS, REGENT'S PARK.

Major-Gen. SEELY (replying to Sir William Pearce) said: The Royal Air Force will make every endeavour to remove their stocks from Regent's Park by September 1st, the date fixed. The buildings will be handed over to the Ministry of Munitions.

* * *

The following oral answer was given on July 15th :—

TECHNICAL PAY.

Sir F. HALL asked the Under Secretary of State to the Air Ministry what amount of technical pay, if any, it has been decided to award to technical officers in Class A of the Royal Air Force; whether the same is to be retrospective from Sept. 1st, 1918, and will include technical officers demobilised before the decision has been arrived at; and, if so, whether an officer who would thus be entitled to additional pay can claim the same together with gratuity based on the larger amount of pay.

Major-Gen. SEELY: I am not yet able to announce the general scheme of pay for the future, but hope to be able to do so shortly, and will my hon. and gallant friend defer his question to a later date?

* * *

The following written answer was given on July 15th :—

DIDSBURY AERODROME.

Major-Gen. SEELY (replying to Major Nall) said: The Didsbury Aerodrome (which is the Whalley-Range Cricket Club premises) will be required for R.A.F. purposes until Nov. 30th, and has been available for civilian flying since May 1st. The future use of this and similar aerodromes is receiving careful consideration.

* * *

The following oral answer was given on July 16th :—

WAR MEDAL ISSUE.

Lieut.-Col. MEYSEY-THOMPSON asked the Secretary of State for War whether he was aware that dissatisfaction exists at the delay in issuing the medal for the European War; and whether this medal will shortly be issued to all the men who are clearly entitled to it.

Mr. CHURCHILL: It is hoped very shortly to issue the Army Order authorising the grant of this medal with permission to wear the riband. I have signed the necessary papers issuing the Order to-day, so that it will be possible for the men to wear it on Saturday.

* * *

The following written answer was given on July 16th :—

AIRSHIP CONSTRUCTION AND MANAGEMENT.

Mr. LYLE asked the Under Secretary of State for Air whether he will give the Estimate for 1919-20 for airship construction and management; and whether he will state the policy of his Department in respect to this branch of airwork, either from a military or from a commercial standpoint.

Major-Gen. SEELY: Expenditure on airship construction for the current year is, under present arrangements, borne on Admiralty Votes. The question of future policy is under consideration.

* * *

The following oral answer was given on July 17th :—

CELLULOSE.

Mr. BONAR LAW (replying to Sir D Maclean) said that he would try to have the Report of the committee which was appointed last August to inquire into the cellulose question circulated as soon as possible, it is hoped this month.

* * *

The following written answers were given on July 17th :—

ANTI-FIRE DEVICES.

Mr. RAPER asked the Under Secretary of State to the Air Ministry whether his attention has been called to the destruction by fire of a British postal aeroplane in the South of France; and whether he is satisfied that all anti-fire devices are used on such machines.

Major-Gen. SEELY: From the preliminary reports received by the Air Ministry it would appear that the aeroplane in question caught fire after "crashing." The provision of "self-sealing" petrol tanks is a great safeguard against fire accidents of this kind, but the progress with this type of tank has been so recent that it has only been possible to fit them in the very latest design of aeroplane. All future designs will provide for "self-sealing" petrol tanks.

AMSTERDAM EXHIBITION.

Captain W. BENN asked the Under Secretary of State to the Air Ministry what steps the Controller of Civil Aviation is taking to assist commercial firms to show machines at the forthcoming exhibition at Amsterdam.

Major-Gen. SEELY: Assistance is being given to private firms by the release of machines and engines, where they have passed the experimental stage, and can be spared from the Royal Air Force. Negotiations have been in progress with the Dutch Government for the opening of civil communication by air between England and Holland during the period of the exhibition.

AEROPLANE CONTRACTS.

Major GLYN asked the Under Secretary of State to the Air Ministry what is the policy of the Air Ministry in regard to either the giving or withholding orders to those small aeroplane manufacturing establishments that are associated with foreign aeroplane companies; whether he is aware that many of these smalled concerns are in an indifferent financial position and are only being kept going in a small way in the hope of later on obtaining a Government contract; and whether it is more in the public interest that these buildings should be used for other purposes whenever definite offers to obtain possession of these factories have been made.

Mr. KELLAWAY: I have been asked to answer this question. I do not quite understand this question, but I may say that the supplies of aeroplanes, contracted for under War conditions, are, and will be for some time to come, sufficient to meet the requirements of the Royal Air Force, without placing further contracts. The use to which the private factories are put is a matter entirely for the owners of the factories.

* * *

On July 17th, in the course of his speech introducing the Civil Services and Revenue Departments Estimates, Mr. ILLINGWORTH (the Postmaster-General) said :—

The question of air mails is one which, naturally, has occupied our attention very much during the war. This has been placed entirely, and quite rightly, under the care of the Air Force. It does not do to have half a dozen people interfering with one thing. The results which have been achieved—I believe mainly privately—in flying the Atlantic have been very remarkable.

The first attempt by Hawker, unfortunately, was not a complete success, but he managed to deliver a small number of letters which he was bringing, and they were quite safely delivered in London. I received a letter from the Postmaster-General of Newfoundland, to which I replied in suitable terms.

The next attempt, by Captain Alcock, was completely successful. He flew in sixteen hours from Newfoundland to Ireland, and managed to deliver his mails in a very satisfactory condition and in a short time.

What I consider to be one of the most remarkable achievements was that just accomplished by the R 34—the lighter-than-air ship—which

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went from here to America in an incredibly short time, made a round, and came back to this country again. I sent a letter to the Postmaster-General of Canada by the R.34, and a few hours after she arrived back in this country his reply was delivered to me at the General Post Office in London.

Of course, these things do not make the question of air mails a practical proposition, but it has been shown that there are great possibilities. In the course of time, if the progress made is as rapid as has been made in the flying branch of the Army, before many years the long-distance post, at any rate, will be carried by either lighter- or heavier-than-air machines.

Captain W. BENN: What about internal mails by air in these islands?

Mr. ILLINGWORTH: At present the great difficulty is the state of the atmosphere. I am told there is great difficulty in navigating in a hazy atmosphere and also in landing. I am informed that when that is overcome it will be a practical proposition for the longer distances. I do not know what means are taken to fly and land in thick weather, but I gather that it will not be beyond the resources of the people of this country to do that.

Captain WEDGWOOD BENN, in the course of his speech, said:—I want now to touch on a matter which is not a complaint, but which, I hope, will have a stimulating effect on the policy of the right hon. gentleman's Department, and that is the question of aerial mails.

The War Secretary made a speech the other day in which he said, proudly, that we were at the head of aviation in the world. I am sure we would like to lead, and I am sure we have got some of the best manufacturers in the world, but I am not at all sure that in practical ways we are at the head of aviation, particularly in this matter of aerial mails.

We all know that developing new aerial routes is a very expensive matter. It will be, in my judgment, a very useful development indeed, and I think the commercial possibilities of an aerial mail service in particular are considerable, because a mail does not weigh very much; it is not like carrying passengers. But you cannot expect private firms to do this out of their own funds; it is too expensive.

The risks are too great, and it is a service which properly should be undertaken by the Post Office, in conjunction, of course, with the Air Ministry. Of course, being, as I am, a most firm believer in the necessity or unity in the Air Service, I should be against the right hon. gentleman in his Department starting a little air service of his own.

It must, of course, be done by the Air Ministry, but then the Postmaster-General should be an employer of the Air Ministry, and use them for this very necessary service. I ventured to interject a remark during the right hon. gentleman's speech, touching this matter, and he replied that it could not be done owing to the atmospheric conditions.

I think he has rather overstated the difficulties. It is not necessary for an aerial mail service to fly high. It is not necessary to have very swift machines—it is advisable to have them for long distances—but a sort of machine like the D.H.10, which lands very slowly, and could be used for this purpose, would very much diminish all the dangers of which the right hon. gentleman spoke.

I think you could get a very large measure of success—I will not say 100 per cent., but certainly 90 per cent. of success. I wish the right hon. gentleman would turn his attention to that, because the Air Estimates are very large—£65,000,000—and you can only justify estimates of that size if the Air Ministry sees that we do not fall behind other countries in civil aviation. It would be lamentable if we allowed the great lead we secured during the war to be taken from us.

Let me tell the right hon. gentleman of some of the things that are happening in the world in the direction of aerial mails. In the forefront is the United States. It is more than a year ago since the United States instituted a daily aerial mail between Washington and New York, with one stop at Philadelphia. As people very often say that these islands are not big enough to have an aerial mail, it is interesting to notice that the distance between Washington and New York is about 210 to 220 miles, and the whole of last and during this year this service has been run with very great success.

I want to mention the various countries in which the thing has been done, in order to bring to the right hon. gentleman's notice the possibility of doing it. During the war there was, I believe, a daily mail service between Vienna and Budapesth; in Denmark a daily service between Copenhagen, Gothenburg, and Christiania; in France there were several, including a very constant service, used for Government purposes, between London and Paris; in Germany a daily mail service between Berlin and Munich, with an average time of four and a half hours.

In Greece a daily mail service has been attempted. In Italy, the submarine difficulty was overcome by sending mails to Sardinia by aeroplane, and, as a matter of fact, there were many other services. As regards Brindisi and Valona, one can see the enormous advantage of sending mails over the neck of the Adriatic. In Spain there are two projected lines. Surely the example of these foreign countries should be sufficient to encourage this country to make a bold start.

It seems really lamentable that even now, with the war over, and with hundreds of surplus machines, we should not make a start. The Air Ministry has got large contracts with the manufacturers, and the manufacturers, I believe, are ordered to continue them. I think I am right in saying that in many hangars in this country machines are pouring in, are being heaped up and are deteriorating, and never see the air at all. Yet the right hon. gentleman has not utilised any of these machines even for an experimental air service.

This is such a fascinating subject that if I did not check myself I am afraid I should weary the whole Committee, but they have even got so far as to have aerial stamps. In Newfoundland they produce stamps for the Atlantic air post. In Tunis they have a converted 25 centimes postage stamp. In Switzerland they have a stamp for the air post between Zurich and Lausanne, and elsewhere, so that other countries are getting to work in every way to develop this air service which we are neglecting.

The right hon. gentleman will no doubt say in reply to this. "It is all very well, but what would happen would be that you would start thing, everyone would send their letters, there would would be a great many failures, and the whole idea would be discredited." That is the sort of answer I anticipate.

Let me give him some figures which I got only a fortnight ago showing the success of the service in the United States. These are not newspaper reports, although those reports are very often more illuminating than official documents, but these figures I am giving have all the sanctity which belong to papers issued by Government Departments. The first annual report of the aerial mail service between Washington and New York has been published, and this is what it says:

"Out of a possible 138,000 miles for flying "(that is the number of journeys added together) "128,000 miles were actually flown—a performance of 92.73 per cent. Out of 1,263 trips, only 55 were abandoned owing to the weather, and during the twelve months there have been only 17 forced landings, and the balance-sheet"—(this will surely induce the right hon. gentleman to consider it favourably)—"shows a surplus of 10,000 dollars."

That is all I have to say, but I do think it is much more than merely a wild dream of those who, like myself, are enthusiastic over aviation. I think it is a practical step, which the right hon. gentleman would do well to consider seriously.

The following answer, which was given on July 21st, is taken from the "Times," the Official Report being too late for publication:—

SERVICE CONDITIONS FOR THE AIR FORCE.

Major-Gen. SEELY (Under Secretary of State to the Air Ministry), replying to Mr. Raper, said:—The rates of pay, pension, and allowances for officers of the reconstituted Royal Air Force have now been approved, but, as the details are too lengthy to be brought within the compass of an answer to a question, I will ask my hon. and gallant friend to allow me to circulate the full statement with the votes.

An important feature of the new system is that, whereas at present the various branches have each had their own rates of pay, in future there will be uniform rates for all branches, with the exception that certain branches, such as medical works and schoolmasters, will continue to have special rates as hitherto.

Except for these branches, all officers joining the Royal Air Force in future will pass the flying test. The rates have been fixed with reference to the present high cost of living, and will be subject after five years to change, either upwards or downwards, according as the cost of living rises or falls.

Subsequent revisions will be made at three-yearly intervals on the basis of Board of Trade food prices. The new rates are intended to apply to those officers who are given permanent or short-service commissions in the force as reconstituted or who are seconded to the Royal Air Force from the other Services.

With regard to the pay of other ranks, I hope to be in a position to make a statement during the present week.

THE ROYAL AERO CLUB.

A special meeting of the committee was held on Tuesday last, July 15th, 1919, when there were present:—Brig.-General Sir Capel Holden, K.C.B., F.R.S (in the chair), Major-General Sir Sefton Brancker, K.C.B., Mr. Ernest C. Bucknall, Lieut.-Col. Spenser D. A. Grey, D.S.O., R.A.F., Lieut.-Col. T. O'B. Hubbard, M.C., R.A.F., Lieut.-Col. F. K. McClean, Lieut.-Col. Alec Ogilvie, Col. C. R. Samson, D.S.O., R.A.F., Mr. A. Mortimer Singer, Mr. T. O. M. Sopwith, and Mr. Harold E. Perrin, secretary.

ELECTION OF MEMBERS.—The following new members were elected:—Major Thomas Morgan Barlow, R.A.F.; Capt. John Claude Beddard, R.A.F.; Lieut. Edgar Hastings Cambridge; Lieut.-Com. Kenneth Mackenzie-Grieve, R.N.; Lieut. Albert Charles Guyer, R.A.F.; Lieut. Harold William Hern, R.A.F.; Nicolas Herzmark; James Inglis Ker, J.P.; Francis Martin Luther, Lieut. John Marsden, R.A.F.; Emil Adam Merckel; Lieut. William Thomas Simpson; Capt. Maurice Hugh Stephens, R.A.F.; and Lieut. Bernard Noel Wills, R.A.F.

ROYAL AERO CLUB AND SOCIETY OF BRITISH AIRCRAFT CONSTRUCTORS.—An agreement has been entered into between the Royal Aero Club and the Society of British Aircraft Constructors defining the activities of the respective bodies. A joint committee has been appointed to act as the channel of communication by which the two bodies are kept in touch and to advise generally upon matters affecting their common interests. The following are the representatives of the club on the Joint Committee:—Lieut.-Col. F. K. McClean, Lieut.-Col. J. T. C. Moore-Brabazon, M.P., Mr. J. H. Nicholson, and Lieut.-Col. Alec Ogilvie.

N.C.4.—The following letter was read from Lieut.-Com. H. C. Read, U.S.N., commanding N.C.4:—

U.S.S. Zeppelin,
At sea, en route New York, June 18th, 1919.

Royal Aero Club,
3, Clifford Street, W., London, England.

Gentlemen,—I am taking this opportunity, the first peaceful moment since first arriving at Plymouth, to thank you on behalf of myself and the crew of the N.C.4 most heartily for your welcome to us during our stay in London.

As a consequence of the care with which the members of the club looked after our welfare, the visit to London will always remain the brightest spot of the entire trip. Hoping some day to be able to repay you, at least, in part, I remain.—Very sincerely yours,

(Signed) H. C. READ,
Lieut.-Commander, U.S.N., Commanding N.C.4.

R.34.—The following cablegram was sent to Brig.-Gen. E. M. Maitland, C.M.G., D.S.O.:—

"Royal Aero Club sends heartiest congratulations to Major Scott and crew of R.34.—ATHOLL, Chairman."

The following reply was received from General Maitland:—

"President, Royal Aero Club, London,—Scott and crew R.34 much appreciate kind messages congratulation.—GENERAL MAITLAND."

COMMITTEE MEETINGS.—It was decided that meetings of the committee should be held in future on alternate Wednesdays, instead of Tuesdays.

CLUB BANQUET TO BRIG.-GENERAL E. M. MAITLAND, C.M.G., D.S.O., MAJOR G. H. SCOTT, AND THE CREW OF H.M.A. "R.34."—The club will entertain the officers and crew of H.M.A. "R.34" at a banquet at Prince's, Piccadilly, W., on Wednesday, July 23rd, 1919. Particulars are being forwarded to members by post.

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Total subscriptions received to July 8th, 1919 ...	£15,066 4 9
Collected at Church of England parade services at Headquarters, South-Western Area, Royal Air Force, Salisbury	6 11 6
Lieut. H. A. Turrill, R.A.S.C.	2 2 0
Total, July 15th, 1919	£15,074 18 1

PRESENTATIONS TO THE CLUB.

The following books have been presented by the publishers to the Club Library:—

"The Year Book of Wireless Telegraphy and Telephony, 1919." (Published by the Wireless Press, Ltd.)

"Practical Aviation." Including Construction and Operation. By J. Andrew White. (Published by the Wireless Press, Ltd.)

"Les Moteurs à Explosion dans l'Aviation." By A. Masméjean and E. Bérèhare. (Published by H. Dunod and E. Pinat.)

"Résumé des Connaissances Scientifiques utiles aux Aviateurs et Mécaniciens de l'Aéronautique." By Ed. Marcotte and E. Bérèhare. (Published by H. Dunod and E. Pinat.)

"The Wonder Book of Aircraft." Edited by Harry Golding. (Published by Ward, Lock and Co., Ltd.)

AN OPPORTUNITY FOR YOUNG MECHANICS.

It is difficult to think of a reason why the London Regiment should be so interested in the future of the R.A.F. (T.F.), but it is doubtless a good thing for one well-established Territorial regiment to interest itself in the inauguration of another, however different their ultimate aims may be.

The First Aircraft Construction Wing, which was opened on June 20th by Maj.-Gen. Sir Hugh Trenchard at 25, Camden Rd., St. Pancras, is backed by many well-known and influential people. Most of the biggest aircraft firms have interested themselves in this wing, and have shown their interest and appreciation by giving large sums of money, aeroplanes, engines, spare parts and workshop appliances.

Throughout the war there was never much difficulty in obtaining pilots and observers, but there was a great shortage of good mechanics, for many joined up at the beginning of the war in infantry regiments and many were kept on work of national importance in the factories. There will never be any difficulty in obtaining men who will want to be trained as pilots; but the mechanics who served during the war in the R.A.F. have mostly had quite enough of the Air Force, and find they can earn far more money in factories and in other civil engineering jobs.

This shortage of mechanics shows the necessity for training youths as such, for a R.A.F. (T.F.) cannot consist of pilots alone, and the first step in the right direction is to open these wings to procure the mechanics.

The following article by "Percy Vere" gives the details of the scheme :—

Formation of Sections for Elementary Instruction.

A movement which will have a far-reaching importance in the near future was brought into being recently, when the Chief of the Air Staff (Major-General Sir Hugh Trenchard, K.C.B., D.S.O.) opened the headquarters of the First Aircraft Construction Section in connection with the Cadet organisation of the Territorial Force Association of the County of London.

Soon after the Armistice steps were taken to form an Aircraft Construction Section in connection with the local Cadet battalion at St. Pancras. The Air Ministry were approached with a view to ascertaining what support, if any, would be forthcoming in the event of such a section being formed, as the question of equipment was all important. The response was really splendid. Every encouragement was given to the scheme, and a valuable gift of instructional equipment made.

Various important firms were also approached with a view to obtaining the grant of instructional stores, and the following firms replied with generous gifts :—Vickers Ltd., Sir G. W. Armstrong-Whitworth and Co., the Beardmore Engine Co., the Sopwith Aviation Co., A. V. Roe and Co., W. G. Allen and Co., of Bedford, the British Caudron Co., the Grahame-White Co., Ruston and Hornsby, the North British Rubber Co., and Berwicks of Park Royal. This equipment forms the instructional material used by the section to-day.

It has been proved by the large number of Cadets coming forward for instruction already that the scheme is likely to be popular.

The Classes.

Classes are held from week to week, conducted by qualified ex-flying and other officers and other ranks of the Royal Air Force who have now accepted commissions in the Cadet organisation of the County of London Territorial Force as instructors, assistant instructors, lecturers, and demonstrators. The subjects taught include aero engines, rigging, theory of flight, navigation, instruments, signalling (including wireless), drill and physical training. Sports and games are also freely indulged in.

The strength of the first section is 85 Cadets, 7 N.C.Os., 2 warrant officers, and 7 officers. The organisation is clearly defined on approved lines, and proving quite satisfactory.

The establishment of each section comprises the officer commanding, a chief technical officer, and officers in charge of the various sub-sections. These are assisted by junior officers, and also technical sergt.-majors. The principal qualification for entry as an officer in these aircraft sections is that the applicant should have served in the Royal Flying Corps, Royal Naval Air Service, or later in the Royal Air Force.

The movement has already commenced to expand, and steps are now being taken to bring the whole of the Cadet units in the County of London into line, and sections dealing exclusively with aircraft are being formed in connection with all the Cadet battalions affiliated to the well-known London Territorial battalions.

It is interesting to note that about 50 per cent. of the Cadets now under instruction have served during the war in a civilian capacity in some of the best-known aircraft factories in London, and they are continuing their studies with a view to further advancement. It is found, in this connection, that the Cadets are exceedingly keen, and attend the lectures given regularly. For some time recruiting has had to cease, but arrangements are now concluded whereby lads from seventeen to twenty years of age may enrol.

The Need for Good Mechanics.

The aim of these sections is to prepare the Cadet to be a specialised mechanic, for it is realised by those concerned that a mechanic must know the fundamentals of his own duties thoroughly; no other consideration can compensate for a defect in this. The pilot depends, finally, on his aeroplane; his mechanic, therefore, should know sufficient to see that it is always kept in perfect order. These sections are in being at the moment at any rate for the express purpose of training the Cadet, in his spare time, in all matters relating to aircraft to enable him later in life, without loss of time, to take up responsible duties either in the Royal Air Force or in aircraft manufacturing works almost from the beginning instead of being a drag on his squadron or works for weeks.

In the formation of new sections great stress has been laid as to definitely deciding at the outset on a system to be adopted. Sections have, therefore, endeavoured to organise their system, develop their methods, and set themselves some kind of standard, as well as keep a proper balance for all subjects taken. The individual members of staffs—probably inexperienced in instructional work—may view their particular subjects in false perspective, i.e., they may unconsciously endeavour to produce a first-class mechanic in twenty-four hours. This cannot be done.

Co-operation between all sections will be established, and this should tend to raise the standard of all to that of the best. The civil and military aircraft authorities decide what is wanted in the development of aircraft, and the sections will do their best to comply to the best of their ability in the time. By close co-operation and co-ordination the experience of all the sections is at the disposal of each, and gives rise to a healthy emulation among the various staffs.

Visits to Works and Aerodromes.

Arrangements are made from time to time for Cadets to visit works and aerodromes, and cinematography also plays a very important part as an aid to instruction.

The movement is full of possibilities, and as it is now only in its infancy it is difficult to imagine to what extent it may prove its usefulness. It has, however, been more than proved that recruits can be obtained, clearly indicating its popularity. It has also been seen that Cadets get so keen as to wish to transfer into the Royal Air Force for training as learner mechanics, as quite a number have already done so. Those interested in civil and military aviation realise this, and it is hoped that the lead already given by official and private concerns will be a means of bringing into being a much larger movement for the training of the lads. At the moment, therefore, it deserves every encouragement, and the visit of the Chief of the Air Staff and the Director of Training has already been a means of drawing the right type of lad who is anxious to qualify in one of the most interesting crafts of our time.

ESPRIT DE R.A.F.

A year or two ago, very many members of the R.A.F. looked forward to a future in their Service.

In the words of the average flying officer, "What a hope!"

The Selection Board have shown such dainty discrimination in their selections, that a number of the older members have fled to the friendly cover of civilian clothes, and the gold oak-leaves and banana-adorned badges of their caps grow dim in the recesses of some forgotten cupboard.

And those other old pilots who were oak-leafless murmur "Blow the Bolo," or alliterative words to the same effect, and thankfully retire into private life again.

It seems a pity that many who would have continued in the R.A.F. should have been frightened out of it by the thought of those with whom they would associate; and good traditions for a new Service are not being created by the type of officer frequently seen.

With luck he may occasionally speak comprehensible English, and his clothes would make an excellent lubricant for any engine. In many cases his service overseas dates from the signing of the armistice, and he is receiving a bonus for reaping where others sowed before him. He, in fact, is the soul-inspiring foundation of a new Service, and he is known to the public as "the gallant British airman."

His confrère, who was ass enough to be demobilised and is sorry for it can be seen with the R.A.F. badge in his buttonhole, on his cuff-links, in his tie, or worked on his socks, and perhaps he wears a pair of wings on his waistcoat. This is not necessarily typical, but it is all sufficiently noticeable amongst many of the Selection Board's choice.

Meanwhile, those who once had a pride in their Corps, are rapidly selling their uniforms to old clothes merchants, and wondering what has become of that pride.

Anyhow, God bless the R.A.F.

— R. R.

NAVAL & MILITARY AERONAUTICS

GREAT BRITAIN.

FROM THE COURT CIRCULAR.

BUCKINGHAM PALACE, July 17th.

His Majesty conferred decorations as follows :—

THE DISTINGUISHED SERVICE CROSS.—Capt. Cecil FitzHerbert, R.A.F.

THE MILITARY CROSS.—Capt. Thomas Lander, Highland Light Infantry, attd. R.A.F.

MARLBOROUGH HOUSE, July 17th

Brigadier-General E. M. Maitland and Major C. H. Scott, Royal Air Force, were received by Queen Alexandra to-day.

BUCKINGHAM PALACE, July 16th.

Admiral Sir James Startin and Brig.-Gen. E. M. Maitland and Major C. H. Scott, R.A.F., had the honour of being received by The King this morning.

BUCKINGHAM PALACE, July 19th.

Their Majesties gave a Luncheon Party in the State Dining Room in honour of the Representatives and Leaders of the Allied Armies, at which the Prince of Wales, the Prince Albert, the Princess Mary and Field Marshal the Duke of Connaught were present, and the following had the honour of being invited :—

The Right Hon. Winston Spencer-Churchill, M.P. (Secretary of State for War and Air), and Major-General Sir Hugh Trenchard.

NAVAL.

ADMIRALTY, July 17th.

The King has been pleased to give orders for the following appointment to the Most Excellent Order of the British Empire, in recognition of the services of the following officer during the war :—

O.B.E. (MILITARY DIVISION).

Flt. Lt. A. W. Cassy, R.N.A.S. (now Capt., R.A.F.).—For valuable services with No. 14 Kite Balloon Section in Mesopotamia from Aug. 1916, to Feb., 1917.

The King has been pleased to approve of the award of the following decoration to the undermentioned Officer :—

DISTINGUISHED SERVICE CROSS.

Lt. D. R. Verey, R.N.V.R. (now Capt., R.A.F.).—For distinguished services with No. 14 Kite Balloon Section in Mesopotamia from Aug., 1916, to Feb., 1917.

Flt. Sub. Lt. M. Lyon, R.N.A.S. (now Capt., R.A.F.).—For distinguished services with No. 14 Kite Balloon Section in Mesopotamia from Aug., 1916, to Feb., 1917.

ADMIRALTY APPOINTMENTS.

The following appointments have been made :—

JULY 16th.—Surgn. Lieut. (Temp.).—E. D. Granger, temp commission and appt. terminated on transfer to R.A.F., Oct. 1st, 1918.

JULY 17th.—Surgn. Lieut. (Temp.).—A. Ritchie, M.B., to "Vindictive."

BOSN.—W. C. Hawkins (actg.), to "Ark Royal," July 18th.

* * *

On July 15th H.M.A. N.S.11 was lost at sea with all hands owing to an explosion. N.S.11 left Pulham Airship Station shortly after midnight on July 15th to assist in mine-sweeping operations, and the explosion, which was heard along the coast, occurred near Sheringham at about 12.30 a.m. No official statement has been issued regarding the cause of the accident.

The names and address of officers and ratings of N.S.11 are as follows :—

Capt. W. K. Warneford (commander), Lansdowne House, Huyton, Liverpool.

Capt. A. S. Elliott, who had recently been staying with his wife at Harleston, Norfolk.

Flt. Serjt. O'Connor, Macfarlane Road, Wood Lane, Shepherd's Bush.

Serjt. Lewry, Leesland Road, Gosport.

Serjt. Waghorn, Star Inn, Crayford, Kent.

Aircraftsman J. Jacques, Victoria Road, Longeaton.

Aircraftsman Cameron, Beasley Street, Gorton, Manchester.

Aircraftsman Connelly, Midfield Cottage, Inveresk, Midlothian, Scotland.

It has been definitely ascertained that the airship foundered four miles north-west of the village of Salthouse, between Wells and Sheringham.

The following message has been received from the King in regard to the loss of Coastal Airship N.S.11 :—

> His Majesty the King desires to express his deepest sympathy with the relatives of those officers and men who lost their lives in the airship N.S.11 while employed in mine-clearing operations.

N.S.11 was built by the Admiralty at Kingsnorth, Kent, in 1918, and had some good work to her credit, including a voyage of 1,285 miles along the coasts of Denmark, Slesvig-Holstein, Helgoland, North Germany, and Holland, the time taken being 41 hours. It was N.S.11 which recently made the flight over London flying the newly-resigned R.A.F. flag.

Dragging operations off Cromer were begun on July 19th by several minesweepers. If any wreckage of N.S. 11 is discovered a diver will be sent down. An attempt will be made to recover the engines in order that they may be examined.

* * *

The Air Ministry announced on July 21st :—

One of the F.5 flying boats engaged in the Scandinavian trip reached Christiansand from Dundee yesterday at 5.30 p.m., having accomplished the journey of 430 sea miles in seven hours and a quarter. As the flight was made through thick fog and driving rain, the performance is regarded as a particularly good one.

* * *

Two Naval flying boats from Felixstowe arrived at Schellingwoude, the Dutch Naval aerodrome near Amsterdam, on July 14th. The crews consisted of five persons, including Colonels Waterhouse and Raikes. The pilots were Major Moon and Captain Maxton. Captain Freeman and Lieut. Parker were among the crews. The time taken on the journey was, roughly, an hour and three-quarters.

* * *

The British Naval flying-boat F.5-N.90 (Rolls-Royce engines), piloted by Captain Baily, R.A.F., with Major Sitwell, D.S.C., R.A.F., in command, arrived at Copenhagen at 5.30 p.m. on July 19th. An official from the Foreign Office and two N.C.Os. were also carried.

The course followed was Felistowe to the Dutch coast, along the Dutch coast to Borkum, along the German coast to the Kiel Canal, and so to Copenhagen. Bad weather was encountered and much rain. An altitude of between 600 and 2,000 ft. was maintained.

The flying-boat left Copenhagen for Helsingfors at 11.10 a.m. on July 20th.

* * *

Owing to the difficulty of bringing any type warship up to London for the Peace celebrations, the next best course was adopted, and a very representative collection of what may be described as the "last sigh" in naval architecture and construction was congregated at the mouth of the Thames off Southend, and at certain times on certain days were open to public inspection.

Perhaps the most interesting feature was the presence of H.M.S. "Furious," variously described by the intelligent Press and the more intelligent public as a light cruiser, battle cruiser, etc., commonly known as a "Hush-Hush" ship, whatever that may mean, and officially known as an "aircraft-carrier."

Two folded Short seaplanes on the deck added to its mystery and greatly impressed the public.

Most of the battleships and battle cruisers sported a couple of ship-planes, mostly "Camels" and "1½ strutters," although "Revenge" carried a Parnall "Panther" on the fore barbette.

The ignorance of the British nation in general, in things that really concern the premier Naval Power in the world, is remarkable, and if one has the patience a very amusing time may be spent in listening to scraps of conversation concerning the very interesting array of all types of craft from "Furious," "Royal Oak," etc., down to the "K" submarines and the speedy Green engined C.M.Bs. which lay in four lines from a point opposite Leigh to well past Shoeburyness.—L. L. B.

MILITARY.

FROM THE "LONDON GAZETTE."

WAR OFFICE, JULY 15TH.

The King has approved of the award of the Military Medal for bravery in the field to the following Warrant Officer, Non-Commissioned Officers, and Men, Royal Air Force, for services in France, except where otherwise stated :—

9991 Cpl. L. Briffault (41st Squadron); 35291 Flt.-Serjt A. Carey (15th Balloon Co.); 23271 Serjt. A. Clark (11th Balloon Sec.); 31415 Cpl. W. Clayton (4th Squadron); 47099 A.M./2 F. E. Cursley (149th Squadron); 24982 Cpl. C. J. F. Gibson (8th K.B. Sec.); 10098 Cpl. G. L. Goodger (59th Squadron); 37515 L.A.C. P. E. Groves (65th Squadron); 10618 Cpl. E. J. Iredale (No. 1 Aircraft Depot); 13677 Ch. Mech. P. Junor (15th Balloon Sec.); 7740 L.A.C (actg. L./Cpl.) R. King (15th Wing); 96727 A.M./2 C. S. Lacey, (attd. 199th S. By. R.G.A.); 129247 A.C./2 B. H. Patman (45th Balloon Sec.); 36344 Flt.-Serjt. P. F. Renwick (14th Balloon Co.); 13345 L.A.C. (actg. Cpl.) H. Saunders (17th Squadron); 11081 Serjt. R. Sutherland (7th Squadron); 20827 A.C.1 H. P. White (1st K.B. Sec.); 134872 Cpl. H. S. Wildman (7th Squadron); 53074 A.M./2 J. Wood (41st Squadron); 54048 A.C.2 H. W. Youngs (Balloon Sec.), 404221 A.M.2 G. I. Tracey (Wireless Sec.) (Mesopotamia).

WAR OFFICE, July 15th

REGULAR FORCES.—OVERSEAS FORCES.—CANADA.—Brit. Columbia R.—Temp. Lt. (actg. Capt.) R. I. Van-der-Byl ceases to be secd for duty with the R.A.F., June 23rd.

Can. Art.—The following temp. Lts cease to be secd. for duty with the R.A.F.—R. H. Luxton, A. H. Hinton, June 27th.

Brit. Col. R.—The following temp. Lts. cease to be secd. for duty with R.A.F. :—O. A. Rowan, March 27th; A. Grundy, June 27th.
Corps Can. Rly. Troops.—Temp. Lt. W. J. Hough ceases to be secd. for duty with R.A.F., June 27th

WAR OFFICE, July 16th.

REGULAR FORCES.—Infantry.—Service Battalions.—Shrops. L.I.—Temp. Lt. E. G. Rumfitt resigns his commn on appt. to R.A.F., May 8th, 1918.

* * *

OFFICIAL COMMUNIQUÉ.

The following communiqué was issued at Simla on July 19th :—
Sniping and minor attacks occurred in the vicinity of Ali Masjid (south of the Khyber). Our aeroplanes bombed hostile gatherings at Chora.

* * *

A Bolshevist wireless message recently stated that a British aeroplane had been obliged to land in consequence of engine failure near the Northern Dvina. The crew of three aviators was taken prisoner.

* * *

The final assault of the Kuban Cossacks upon the fortress town of Tsaritsyn was assisted by aeroplanes and tanks.

* * *

On July 18th Mr. Churchill, Secretary of State for War, had a narrow escape in an aeroplane accident near Croydon. The pilot was badly injured and Mr. Churchill was severely shaken.

* * *

It is now believed that the cutting of telegraph wires between Midleton and Youghal on the night of July 19th was part of a well-planned but unsuccessful scheme to raid the military aerodrome near Killeagh.

On the morning of July 20th motor-cars full of men were seen passing through neighbouring villages, and four motor-cars stolen from city garages during the night of the 19th have since been found abandoned on roads in various parts of the country, while a fifth bearing a Waterford registration mark was also discovered on the roadside some miles from Killeagh.

The damage to the wires is estimated at £100

AIR FORCE.

FROM THE "LONDON GAZETTE."

AIR MINISTRY, July 15th.

The King has been pleased to approve of the following awards of the Distinguished Flying Cross, conferred by the General Officer Commanding the British Army in Mesopotamia :—

THE DISTINGUISHED FLYING CROSS.

Capt. J. S. BEATTY, 72nd Squadron.—During the operations near Sheroat, Oct. 24th to 30th, 1918, he rendered gallant service in harassing the enemy by machine-gun fire from very low altitudes, being vigorously fired upon the whole time. Capt. Beatty has always been conspicuous for gallantry and devotion to duty. On April 21st, 1918, he destroyed one enemy machine and brought down another out of control.

Lt. S. BULL, 30th Squadron.—Whilst engaged in bombing and machine-gunning hostile tribesmen at Khan, near Bushire, on March 6th, 1919, he saw that a brother officer had been shot down. Hoping that he might be alive, he attempted to land on absolutely unsafe ground at very close range fire from the enemy, but after touching the ground 12 yards from the crashed machine he saw at once that no hope could be entertained that the occupant was alive, by reason of the condition of the wreck, and he was accordingly compelled to abandon further action. The attempt at rescue involved much risk, as had he actually landed it is improbable that he would have been able to take off again, apart from the attention which the tribesmen would have given him at that time.

Capt. F. NUTTALL, M.C., 30th Squadron.—A gallant flight leader who has rendered valuable services in carrying out the most arduous duties in action, and has commanded his flight with great skill under exceptionally difficult conditions. On April 27th, 1918, near, Kirkuk, whilst engaged in attacking enemy troops from a low altitude, he was shot down, wounded.

Lt. M. S. MACKAY, 72nd Squadron, and Lt. R. P. POPE, 72nd Squadron (E. Surr. R.).—During the operations in Baku between August 25th and September 13th, 1918, they flew continuously over the enemy's positions, bombing and machine-gunning from low altitudes with great effect, in the face of very vigorous fire from the enemy throughout the whole period.

FOREIGN DECORATIONS.

The King has granted unrestricted permission for the wearing of the following decorations, conferred on the officers and other ranks indicated for valuable services rendered in connection with the war :—

CONFERRED BY THE PRESIDENT OF THE UNITED STATES.

AMERICAN DISTINGUISHED SERVICE MEDAL.

Maj.-Gen. Sir H. M. Trenchard, K.C.B., D.S.O. (R. Sc. Fus.).
Maj.-Gen. Sir J. M. Salmond, K.C.B., C.M.G., C.V.O., D.S.O. (R. Lanc. R.).
Maj.-Gen. Sir F. H. Sykes, K.C.B., C.M.G. (15th Hussars)
Lt.-Col. P. H. L. Playfair, M.C. (R.A.).
Maj. (actg. Lt.-Col.) E. R. Peal, O.B.E., D.S.C.
Maj. D. V. J. Blake (Aust. F. Corps).
The Rt. Hon. Lord Weir of Eastwood, P.C., late Secretary of State for the Royal Air Force.

CONFERRED BY THE PRESIDENT OF THE FRENCH REPUBLIC.

CROIX D'OFFICIER, LÉGION D'HONNEUR.

Maj. (actg. Lt.-Col.) E. R. Peal, O.B.E., D.S.C.
Lt.-Col. (actg. Brig.-Gen.) J. G. Weir, C.M.G., C.B.E. (R.A., T.F.).

CROIX DE CHEVALIER, LÉGION D'HONNEUR.

Capt. (actg. Maj. R. Addenbrooke-Prout, O.B.E., M.C.
Maj. F. C. Baker, D.F.C., A.F.C. (D.C.L.I.), 102nd Squadron.
Lt.-Col. A. V. Bettington, C.M.G.
Maj. B. L. Huskisson, D.S.C.
Maj. G. H. Loxley.
Lt. (actg. Capt.) D. R. MacLaren, D.S.O., M.C., D.F.C. (46th Squadron).
Lt.-Col. H. A. Van Ryneveld, D.S.O., M.C.

CROIX DE GUERRE AVEC PALME (FRENCH).

Lt. (actg. Capt.) W. G. Albu (N. Russia); Lt (actg Capt.) O. M. Baldwin, D.F.C. (9th Brig., France); Lt. A. M. Bannatyne (206th Squadron, France).
Lt. (actg. Capt.) G. L. Graham, D.F.C. (9th Brig., France); Lt. (actg. Capt.) W. B. Green, D.F.C. (9th Brig., France).
Maj. S. G. Hodges, M.C., A.F.C. (Wilts, Salonika); Col. (actg. Brig.-Gen.) R. E. T. Hogg., C.M.G. C.I.E. (I.A., France); Maj. (actg. Lt.-Col.) A. V. Holt, D.S.O. (Roy. Hs., France); Maj. B. L. Huskisson, D.S.C. (France).
Sec. Lt. (Obsr.) J. McDonnell (North Russia); Lt. (actg. Capt.) D. R. MacLaren, D.S.O., M.C., R.F.C. (France); Lt. H. A. Miller (North Russia); Sec. Lt. H. J. Miles (100th Squadron, France); Lt.-Col. R. P. Mills, M.C., A.F.C. (Roy. F's, France).
Sec. Lt. (Obsr.) N. D. Nunan (North Russia).
Capt. R. A. Preeston (France).
Sec. Lt. E. C. M. Reid (North Russia).
Lt. (actg. Capt.) E. J. Salter (9th Brig., France)
Lt. H. W. Tait, D.F.C. (11th Bal. Sec., France); Sec. Lt. F. F. Tattam (North Russia).
Capt. H. W. Woollett, D.S.O., M.C. (Linc. R., France).
64052 A./M.2 V. R. Bates (16th Bal. Sec., France); 2249 S./Mech. H. W. Bush (98th Squadron, France), 23964 A.M.1 W. Lambert (11th Bal. Sec., France); 140801 Serjt.-Mech. E. R. MacDonald (98th Squadron, France); 15399 Serjt. S. B. Percival (Manc. R.) (attd. 27th Squadron, France) (killed Aug. 14th, 1918); 25013 Serjt. L. C. Ovens (103rd Squadron, France); 224398 Pte. C. H. Taylor (97th Squadron, France)

THE MEDAILLE D'HONNEUR.

41300 A./M.2 G. K. Balls (56th Squadron) (en bronze); 42624 A./M.1 A. Cook (31st Bal. Sec.) (en bronze); 44463 A./M.3 C. Dickenson (100th Squadron) (en bronze); 1888 Ch. M./M. F. L. Dorber (2nd A.S.D.) (en vermeil); 1749 Ch. Mech. F. Francis (3rd R.L.P.) (en argent); 5888 Ch. Mech. C. M. Hayden (100th Squadron) (en argent); 3959 A./M.1 L. E. Hodges (12th Squadron) (en bronze); 8089 Ch. M./M. W. P. McElwee, (1A./D.) (en argent); 18305 Flt.-Clk. T. H. Phelps (2A./D.) (en argent); 13769 A./M.1 E. L. Porter (10th Squadron) (en bronze); 24255 A./M.1 J. Saltzberg (1A.S.D.) (en bronze), 37581 A./M.3 W. S. Taylor (55th Squadron) (en bronze); 26570 Cpl. F. Timms (2A./D.) (en bronze); 23000 Clk./1 H. J. Walters (1A./D.) (en bronze).

AWARDER THE MEDAILLE MILITAIRE.

202763 Serjt. P. J. Adkins, D.S.M., D.F.M. (Woolacombe); 406711 Serjt. A. S. Allan, M.M. (Perth); 313629 Serjt.-Mech. L. G. S. Boshier (Reading); 104285 A./M.2 T. Ferguson (Glasgow); 313774 A./C.1 R. A. Hollingsbee (Stifford, Essex); 407061 Serjt. G. Howard (Bradford-on-Avon); 10865 Cpl.-Mech. S. H. Howling (Peterborough); 26670 Cpl. (actg. Serjt.-Mech.) T. J. Hyde (Portadown); 207597 Serjt.-Mech. C. J. E. J. Jones (Cardiff); 76185 A./M.1 T. McDermott (Wakefield).

NOTE.—Officers and other ranks of the Royal Air Force whose names have appeared in the "London Gazette" as having been awarded Foreign Decorations, but who have not received them, are requested to inform the Secretary of the Air Ministry on Oct. 1st, 1919, should the decorations not be received meanwhile. The designation of the Decoration and the date of the "Gazette" in which the announcement appeared should be specified

(To be continued.)

* * *

R.A.F.—The following temp. appts. are made at the Air Ministry :—Staff Officer, 1st Class (T.).—Maj. A. Struben, O.B.E., June 1st
Staff Officer, 2nd Class (T.).—Capt. H. T. Humfress, June 1st.
The following temp. appt. is made :—Staff Officer, 2nd Class (T.).—Capt. W. J. B. Curtis, O.B.E., June 1st.
FLYING BRANCH.—Capt. W. R. Read, M.C., A.F.C., to be actg. Maj. whilst empld. as Maj. (A.), June 4th.
Capt. B. E. Baker, D.S.O., M.C., A.F.C., to be graded for purposes of pay and allces. as Maj. whilst empld. as Maj. (A.), May 1st.
Capt. A. N. Gallehawk to be graded for purposes of pay and allces as Maj. (A. and S.) whilst specially empld., May 15th.
Capt. R. S. Smith to be graded for purposes of pay and allces. as Maj. whilst empld. as Maj. (K.B.), May 1st.
Capt. W. R. Mackenzie, D.S.C., to be Capt. (S.), from (Ad.), June 6th.
Lt. D. C. W. Sanders to be actg. Capt. whilst empld. as Capt. (A.), from Oct. 3rd, 1918, to April 30th.
Lt. L. Balfour to be actg. Capt. whilst empld. as Capt. (K.B.), May 1st.
Lts. to be graded for purposes of pay as Capts. whilst empld. as Capts. (A.) :—V. W. Burgess, A. L. Chick, A.F.C., M. V. McKeon, E. H. Russell, May 1st.
Lt. J. S. Giffard to be graded for purposes of pay and allces. as Capt. whilst empld. as Capt. (K.B.), from May 1st to June 13th.
Lt. H. L. Macro, D.F.C., to be graded for purposes of pay and allces. as Capt. whilst empld. as Capt. (S.), May 1st.
Lt. A. G. Lamplugh ceased to be graded for pay and allces. as Capt. (A.), June 20th.
Lts. to be Lts. (A.), from (Ad.) :—E. P. Moxey, May 21st; H. R. Lycott-Martin, M.C., June 27th.
Lt. L. H. Phelps to be Lt. (O.), from (Ad.), Jan. 21st.
Sec. Lt. C. J. Craft to be Lt., May 17th.
Sec. Lt. H. Wensley (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt. (A.), Feb. 7th.
Sec. Lt. C. O. Rigden (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt. (A.), Feb. 7th.
H. D. E. Rolland (Lt., Quebec R.) is granted a temp. commn. as Sec. Lt. (O.), Nov. 6th, 1918, and to be Hon. Lt.
R. A. Coward (Sec. Lt., E. Lan. R.) is granted a temp. commn. as Sec. Lt. O.), Nov. 7th, 1918.
The following relinquish their commns. on ceasing to be empld. :—Lt. W. McL. Walbank (Lt., Can. F. Art.), March 31st; Lt. J. C. F. Owen (Capt., Can. A.S.C.), April 30th; Lt. (Hon. Capt.) G. M. Brawley (Capt., Cent. Ont. R.), May 15th; Lt. C. B. Green (Lt., Cent. Ont. R.), May 16th; Sec. Lt. (Hon. Lt.) J. B. McKenzie (Lt., West Ont. R.), June 1st; Sec. Lt. (Hon. Capt.) C. A. Mackintosh-Walker (Capt., Cameron Highrs.), June 12th; Lt. H. A. E. Matthews (Lt., Dorset R.), June 20th; Lt.-Col. A. C. Barnby (Maj., R. Marines), June 21st; Maj. A. H. Morton, M.C. (Capt., R.H. and R.F.A.), June 22nd; Sec. Lt. (Hon. Lt.) T. Varcoe (Lt., R.H. & R.F.A.), June 23rd; Sec. Lt. (Hon Lt.) G. H. Bisaillon (Lt. Can. Forestry Corps), June 27th; Lt. T. S. Russell-Rigby (Lt., Alberta R.), July 3rd; Lt. H. R. Kincaid, M.C. (Lt., E. Ont. R.), July 4th; Lt. D. H. Macintyre (Lt., Arg. and Suthd. Highrs.), July 7th.
Transfrd. to the unempld. list.—Sec. Lt. T. Welch, Jan. 13th; Lt. (actg. Capt.) F. B. Towers, Jan. 28th; Sec. Lt. C. A. Sander, Jan. 30th; Lt. J. Turner, Feb. 12th; Sec. Lt. P. Cunningham, Feb. 13th; Lt. A. L. T. Taylor, Feb. 18th; Lt. V. C. Tiarks, Feb. 19th; Sec. Lt. R. L. Hayden, Feb. 21st; Capt. A. W. Wright, Feb. 27th; Sec. Lt. J. A. Tomson, March 7th; Maj. R. E. Childers, D.S.C., March 10th; Sec. Lt. (Hon. Lt.) F. S. Tooley, M.C., March 15th; Sec. Lt. F. Brown, March 16th; Sec. Lt. E. Tomkins, March 22nd; Sec. Lt. (Hon. Lt.) C. S. Groves, April 5th; Lt. G. O. Shiner, April 7th; Lt. J. R. Hodgkinson, Sec. Lt. A. Thompson, April 8th; Sec. Lt. J. H. Hartle, Sec. Lt. L. S. Macdonald, Sec. Lt. G. M. Miller, Sec. Lt. R. E. Walker, April 9th; Sec. Lt. N. A. S. Kelly, April 10th; Capt. J. K. T. Glen, Sec. Lt. D. W. Thomas, April 11th; Lt. D. Ive, Lt. R. L. Kent, Lt. J. W. Sanders, April 12th; Sec. Lt. M. H. F. De Haerne, Lt. B. I. Johnstone, April 13th; Sec. Lt. H. A. Sanders, April 14th; Sec. Lt. H. W. Howes, Lt. A. Ibbotson, April 15th; Sec. Lt. A. N. Kelsey, Sec. Lt. C. H. P. Killick, Sec. Lt. F. D. Kilts, Sec. Lt. J. Sandford, Sec. Lt. J. D. Todd, April 15th; Lt. (Hon. Capt.) W. E. B. Barclay, M.C., Lt. R. G. Holt, Lt. W. J. H. Horrocks, M.C.,

Sec. Lt. F. J. Tilley, April 16th; Sec. Lt. (Hon. Lt.) W. U. Hodson, M.C., Lt. F. J. Hopgood, Sec. Lt. R. C. Iles, Sec. Lt. A. Tibbles, Sec. Lt. A. E. Titchmarsh, April 18th; Sec. Lt. F. Camerson, Sec. Lt. A. K. Colley, Lt. H. G. Corsan, Lt. J. L. Grant, Capt. A. R. S. C. Kennedy, Lt. E. S. Sawtell, Sec. Lt. F. W. Tucker, April 19th; Lt. F. Horsley, April 20th; Lt. W. H. Taylor, Lt. A. E. Turvey, Sec. Lt. C. R. Wolfendale, April 24th; Lt. S. H. Taylor, April 25th; Lt. J. C. Hopkins, Sec. Lt. M. C. Kerr, Lt. (Hon. Capt.) E. A. Thomas, April 20th; Lt. (actg. Capt.) C. J. Thompson, A.F.C., Lt. D. C. Townley, April 27th; Lt. J. A. Dear, Sec. Lt. A. W. Sawyer, Lt. (actg. Capt.) H. W. Taylor, Sec. Lt. A. Terry, April 29th; Lt. T. B. Burns, Lt. F. M. Green, Sec. Lt. A. A. Tutte, D.F.C., April 30th; Sec. Lt. J. R. Taylor, May 1st; Lt. E. G. S. Gordon (H.L.I.), Capt. H. W. Kingdon, May 3rd; Lt. A. G. Hodgson, Capt. C. S. Iron, May 6th; Sec. Lt. (Hon. Lt.) E. Knowles, Lt. C. G. Slade, Sec. Lt. P. M. Tidmarsh, May 7th; Sec. Lt. H. A. Graham, Lt. R. R. King, Sec. Lt. (Hon. Lt.) G. A. R. Slimming, Sec. Lt. C. Thomas, Sec. Lt. A. N. Thomson, May 8th; Lt. N. S. Garrett, Lt. K. E. Tanner, May 9th; Sec. Lt. H. Griffiths, Lt. D. H. Howitt, May 11th; Sec. Lt. J. Grant, Capt. F. R. Sadd, Sec. Lt. G. F. Taylor, May 12th; Lt. G. G. Callender, Capt. F. J. Dean, May 13th; Capt J. Hodson, Lt. T. H. Thorpe, Sec. Lt. W. E. De Turberville, Sec. Lt. J. H. V. Wood, May 14th; Lt. C. W. Skeet, Sec. Lt. C. H. Slater, Sec. Lt. M. H. C. Slaytor, May 15th; Lt. G. Irwing, Lt. E. H. King, Sec. Lt. H. E. Talbot, May 16th; Sec. Lt. P. B. Townsend, May 17th; Capt. W. Durrand, M.C., Capt. M. W. Turner, May 18th; Sec Lt. A. Critchley, Sec. Lt. H. R. French, Lt. W. R. Kingsland, May 19th; Capt. G. Breadner, Sec. Lt. F. H. V. Coomer, Sec. Lt. H. F. Peasel (substituted for notification in "Gazette," May 20th); Sec. Lt. S. W. Gee (substituted for notification in "Gazette," May 13th); Sec. Lt. W. R. Godard, Sec. Lt. C. Guild, Capt. J. G. Ireland, A.F.C., Sec. Lt. J. W. King, Sec. Lt. S. Thomas, May 20th; Sec. Lt. J. G. Crossley, Sec. Lt. F. J. Dawson (substituted for notification in "Gazette," May 9th), May 21st; Lt. P. N. Hoyle, Sec. Lt. W. Kidd, Lt. S. E. Taylor, May 22nd; Sec. Lt. G. W. H. De Carter, Lt. E. R. V. Collett, Sec. Lt. (Hon. Lt.) C. G. Tanner, Sec. Lt. C. E. Whyte, May 23rd; Lt. G. T. Shuttleworth, Sec. Lt. A. Whiteley, May 24th; Sec. Lt. C. F. L. Chester, Sec. Lt. H. C. Killen, May 25th; Lt. P. Burrowes, Sec. Lt. R. C. Freemantle, May 26th; Lt. W. E. G. Cutler, Sec. Lt. S. H. L. Kelly, Lt. P. Kershaw, Lt. (actg. Capt.) T. Owen, M.C., Capt. H. A. B. Robb, M.C., A.F.C., May 27th; Sec. Lt. C. J. Craft, Lt. (Hon. Capt.) B. F. G. Cunliffe, Lt. J. N. Garnett, Sec. Lt. J. R. King, Lt. H. Tomlinson, May 28th; Sec. Lt. R. L. Brown, Lt. B. D. Clark, Sec. Lt. C. F. Gates, Lt. G. W. T. Glasson, Lt. G. C. Hope, Lt. F. G. Taylor, A.F.C., Sec. Lt. W. Taylor, Lt. G. V. Wheatley, Lt. H. D. White, May 29th; Sec. Lt. C. P. Butler, Lt. B. G. Chalmers, Lt. D. Chisholm, Sec. Lt. I. J. Sankey, Lt. R. A. Slipper, Sec. Lt. W. A. Taunton, Sec. Lt. C. M. Taylor, May 30th; Sec. Lt. (Hon. Lt.) R. E. Carles, M.C., Sec. Lt. D. Neale, Lt. G. R. O'Sullivan, Sec. Lt. R. R. H. Taylor, Sec. Lt. M. H. Tench, Lt. H. C. Tussaud, May 31st; Sec. Lt. S. R. Clutterbuck, A.F.C., Lt. F. Sidebotham, Sec. Lt. J. R. Smith, June 1st; Sec. Lt. R. E. Cole, Sec. Lt. S. G. Cook, Sec. Lt. A. R. C. Greene, Sec. Lt. A. C. T. Isaac, Capt. G. M. Kingsmill, Sec. Lt. S. H. Thornton, June 2nd; Lt. A. M. G. Cosgrave, Lt. L. G. Gallwey, Sec. Lt. A. D. Kennedy, Capt. T. Kennie, Lt. P. S. Kershaw, Lt. C. K. Medlen, Lt. W. H. Oatley, Sec. Lt. A. P. Thompson, June 3rd; Sec. Lt. C. J. Baldcock, Lt. H. Izard, Lt. G. F. Sams, June 4th; Sec. Lt. J. C. Campbell, Sec. Lt. C. W. S. Chalmers, Sec. Lt. E. E. Jones, June 5th; Lt. D. F. Anderson, Lt. R. T. Stubington (Hants R., T.F.), June 6th; Lt. A. V. Crebbin, Capt. W. H. Tolhurst, Sec. Lt. G. A. Treadgold, June 7th; Capt. A. L. Taylor, June 8th; Sec. Lt. B. O. Bracey, Sec. Lt. G. G. Cooper, Lt. P. L. Goudie, Lt. T. P. Issac, Lt. B. W. P. Kirby, Lt. J. N. Ogilvie, Sec. Lt. J. R. A. Savidge, June 10th; Sec. Lt. A. N. Burningham, Capt. C. T. Holmes, Lt. F. W. Knox, Lt. (Hon. Capt.) N. Senior, June 11th; Sec. Lt. M. R. Brown, Sec. Lt. S. de V. Clarke, Lt. J. B. L. H. Cordes, Lt. R. N. Iverach, Sec. Lt. (Hon. Lt.) L. Kershaw, Capt. H. F. Saunders, Lt. F. J. Truss, June 12th; Sec. Lt. E. S. Banfield, Lt. G. A. Boast, Sec. Lt. W. T. Brownlee, Lt. H. G. Burrell, Sec. Lt. M. E. Challis, Sec. Lt. H. H. Clarke, Sec. Lt. R. Cohen, Sec. Lt. N. Cook, Sec. Lt. G. A. Coulter, Lt. R. V. Cullinan, Sec. Lt. T. Gray, Sec. Lt. D. H. Houston, Sec. Lt. L. Inggs, Sec. Lt. (Hon. Lt.) H. W. Kelly, Lt. G. K. Kernick, Sec. Lt. H. L. Knight, Lt. G. K. MacGregor, Capt. C. R. Morrish, D.S.C., Sec. Lt. N. E. Ohman, Lt. N. C. Saward, Lt. R. T. Shepherd, Lt. E. M. Slatter, Sec. Lt. (Hon. Capt.) H. W. Stockdale, Sec. Lt. K. R. Thomas, June 13th; Capt. P. Brend, A.F.C., Sec. Lt. A. C. Buchanan, Sec. Lt. L. T. Caithness, Sec. Lt. C. U. Church, Sec. Lt. E. M. Connell, Sec. Lt. J. S. Cooper, Sec. Lt. L. G. Crowder, Sec. Lt. V. M. V. Field, Lt. V. Gordon, Sec. Lt. H. J. C. Kelly, Sec. Lt. C. D. Kinmont, Lt. J. L. Sawyer, Lt. D. T. Simpson, Lt. F. C. Stanton, D.C.M., Sec. Lt. A. H. Wood, Sec. Lt. O. Wood, June 14th; Lt. S. C. Spink, Lt. J. H. Williamson, Lt. F. F. Woodyer, June 15th; Sec. Lt. A. J. Cundill, Sec. Lt. G. E. Izzard, Sec. Lt. G. A. Munro, Lt. (Hon. Capt.) A. Storey, June 16th, Sec. Lt. A. Chettle, Lt. M. J. Clark, Sec. Lt. H. H. Salmon, Lt. J. A. Turnbull, June 17th; Lt. P. V. Burton, Sec. Lt. A. B. Campbell, June 18th; Sec. Lt. (Hon. Lt.) C. C. Blizard, Sec. Lt. W. P. E. S. Waller, June 19th; Sec. Lt. (Hon. Lt.) R. S. Cole, Sec. Lt. J. S. Corrigan, Sec. Lt. J. A. Neill, June 20th; Sec. Lt. C. Buckingham, Lt. W. Guy, June 21st; Capt. H. J. Butler, A.F.C., Lt. W. F. L. Castle, Lt. F. L. M. Harris, June 22nd; Sec. Lt. G. Biddell, Capt. P. C. Garrat, June 24th; Capt. J. E. Barrs, D.S.C., Capt. J. R. Blunt, Lt. E. G. W. Coward, Lt. A. W. P. Cumming, Sec. Lt. H. J. Graves, Lt. R. Morrogh, Lt. C. O. Rusden, Lt. F. Tapping, Lt. W. C. Tempest, June 25th; Sec. Lt. H. V. Bell, Lt. J. K. Finlay, Sec. Lt. S. T. Stidolph, Lt. B. Thomas, June 26th; Sec. Lt. W. Barrett, Lt. W. A. Clark, Lt. E. S. Vincer (R. Dub. Fus.), June 27th; Sec. Lt. T. V. Beatty, Lt. H. A. Cooper, Lt. A. R. Kelly, Lt. A. C. Kilburn, Capt. A. A. Wallis, June 28th; Sec. Lt. (Hon. Lt.) G. H. Tarras, Sec. Lt. G. E. C. Wisdom, June 29th; Capt. J. S. D. Berrington, Capt. P. G. K. Bridgwood, Lt. V. C. Chapman, June 30th; Sec. Lt. E. Head, Sec. Lt. R. M. King, Sec. Lt. W. S. Marshall, Sec. Lt. R. S. F. Nickoll, Lt. K. T. Nicol, Capt. W. Perham, July 1st; Sec. Lt. G. A. Kelly, Sec. Lt. E. J. Orr, July 2nd; Lt. T. H. Barton, Lt. J. S. Coumon, Sec. Lt. R. H. Cross, Lt. C. E. Kelly, Lt. G. O. Newton, D.F.C., Lt. J. S. Tarbolton, July 3rd; Lt. W. J. McSweency, Sec. Lt. E. Purton, July 4th; Sec. Lt. C. H. Moore, Lt. A. L. Taylor, Maj. E. G. Tove, Capt. A. C. Wyness, July 5th; Sec. Lt. W. F. Bates, Sec. Lt. E. F. Coyle, Sec. Lt. F. C. King, July 6th; Lt. L. R. Curtis, July 7th; Sec. Lt. A. G. Clarke, Sec. Lt. R. E. Goodfellow, Lt. C. Thomas, July 9th; Lt. A. V. Bickley, Sec. Lt. H. V. Hinwood, Sec. Lt. A. Ingram, Lt. N. D. K. Kennedy, Lt. G. N. McBlain, Sec. Lt. G. I. Murray, Sec. Lt. J. L. Norton, Sec. Lt. R. R. Nott, July 10th; Lt. F. B. Baragar, A.F.C., Lt. H. K. Boysen, Lt. E. K. Davidson, Sec. Lt. F. St. L. Devenish, Lt. F. F. Didcott, Sec. Lt. G. R. Duthie, Sec. Lt. R. R. G. Duthie, Sec. Lt. H. C. Edmeades, Sec. Lt. S. R. Hooper, Sec. Lt. L. M. Kelly, Sec. Lt. F. G. Noble, Sec. Lt. H. L. O'Connor, July 11th; Sec. Lt. E. Arnold, Lt. A. P. Bell, Lt. W. M. Blackie, M.C., Lt. W. Breckenridge, Lt. I. N. Clark, Sec. Lt. A. R. W. Dalley, Sec. Lt. N. W. Davidson, Lt. H. E. Davies, Sec. Lt. R. B. I. Daville, Sec. Lt. I. G. Dennis, D.F.C., Sec. Lt. G. F. De Siena, Sec. Lt. A. M. Duggan, Lt. A. M. Dunstan, Lt. H. J. Emery, Sec. Lt. A. C. Evans, Sec. Lt. A. G. Everett, Sec. Lt. A. H. Fitton, Sec. Lt. P. J. Flahiff, Sec. Lt. R. H. Ford, Lt. E. P. Fulton, Sec. Lt. L. G. Howard, Sec. Lt. R. D. V. Howard, Sec. Lt. G. H. Hunter, Sec. Lt. H. V. Jacobs, Lt. M. E. Jones, Sec. Lt. G. P. Kells, Sec. Lt. J. R. Kennedy, Sec. Lt. J. H. Knowles, Sec. Lt. J. W. MacEwen, Sec. Lt. F. A. McHugh, Lt. W. G. Mackenzie, M.C., Sec. Lt. O. J. McNally, Sec. Lt. G. H. Manly, Sec. Lt. J. E. Manson, Sec. Lt. F. W. Mesinger, Sec. Lt. G. Moore, Sec. Lt. G. J. Moore, Sec. Lt. H. V. Morehouse, Sec. Lt. E. T. Morris, Sec. Lt. W. E. Mosher, Sec. Lt. H. M. Mosley, Lt. R. C. Muir, Sec. Lt. W. Muirhead, Lt. J. P. Murphy, Sec. Lt. L. A. Myles, Sec. Lt. T. F. Naylor, Sec. Lt. J. F. Nelson, Lt. C. H. H. Ney, Sec. Lt. C. G. Nuttall, Lt. D. A. O'Leary, Lt. H. B. Oldham, Lt. J. R. Park, Sec. Lt. G. Pascal, Sec. Lt. J. G. Pearson, Sec. Lt. H. H. Pheeney, Sec. Lt. W. L. Phelan, Sec. Lt. H. Pinkerton, Sec. Lt. G. McG. Pinkerton, Lt. N. P. Playford, Sec. Lt. W. P. B. Pugh, July 12th; Sec. Lt. S. M. Anderson, Sec. Lt. T. H. Blatchford, Lt. M. J. Du Cray, Sec. Lt. S. C. Foster, Lt. J. C. Griffith, Lt. D. L. Hobson, July 13th; Capt. J. M. Allport, Sec. Lt. J. L. Davis, July 14th.

Capt. G. H. Morton (Brit. Columbia R.) relinquishes his commn. on account of ill-health, July 1st.

Lt. J. A. B. Colin relinquishes his commn. on account of ill-health, and is permitted to retain his rank, June 19th.

The following Lts. relinquish their commns. on account of ill-health contracted on active service:—G. M. Shaw (Cent. Ont. R.), March 12th (substituted for notification in "Gazette" of June 20th); J. Y. Baird (Sco. Rif.), July 9th, Lt. R. S. Herring, M.C. (Lon. R.) (caused by wounds), July 17th.

Lt. R. Tyack resigns his commn., July 16th.

Lt. P. A. H. de Metz to take rank and prec. as if his appt. as Lt. bore date July 1st, 1918.

Lt. H. S. Symons to take rank and prec. as if his appt. as Lt. bore date April 1st.

Lt. E. A. Clear to take rank and prec. as if his appt. as Lt. bore date June 13th.

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—H. A. Lye (caused by wounds), July 4th (substituted for notification in "Gazette" of Jan. 10th); W. H. Saunders (contracted on active service), July 8th.

The following Sec. Lts. resign their commns.:—J. H. Doughty-Davies, J. Hunt, July 16th.

Sec. Lt. J. B. O'Neil is dismissed the Service by sentence of a Gen. Court-martial, June 23rd.

The rank of Lt. T. G. Murray is as now described, and not "Sec. Lt." as stated in "Gazette" of Feb. 14th.

The rank of Lt. W. I. Goddard is as now described, and not "Sec. Lt." as stated in "Gazette" of July 4th.

The notification in the "Gazette" of Oct. 25th, 1918, concerning 47532 Cadet G. C. Boyer is cancelled.

The notification in the "Gazette" of March 18th concerning Sec. Lt. S. G. Shand is cancelled.

The notification in the "Gazette" of April 25th concerning Sec. Lt. L. S. Macdonald is cancelled.

The notification in the "Gazette" of May 23rd concerning Sec. Lt. J. A. De Gaye is cancelled.

The notification in the "Gazette" of June 13th concerning Lt. F. E. Short is cancelled. (The notification in the "Gazette" of June 3rd to stand.)

Administrative Branch.—Majs. to be Majs., from (S.O.):—A. B. Winch, March 19th; H. A. Moore, C.B.E., M.C., July 1st.

Lt. (Hon. Capt.) C. H. Lewis to be actg. Maj. whilst empld. as Maj., May 1st.

Capt. W. G. Scott to be actg. Maj., without pay and allces. of that rank, whilst empld. as Recruiting Officer, May 1st.

To be graded for purposes of pay and allces. as Capts., and to be actg. Majs., without pay and allces of that rank, whilst empld. as Recruiting Officers:—Lt. F. T. Chapman, Lt. R. Tait, Lt. G. B. Redgrave, Lt. A. R. Harris, Lt. F. V. Bell, Sec. Lt. A. E. H. Hales, May 1st.

Capts. to be Capts., from (S.O.):—K. B. Harbord, March 15th; R. S. Lindsell, O.B.E., June 1st, G. C. Corry-Smith, July 1st.

Lts. to be actg. Capts. whilst empld. as Capts.:—K. A. Meek, F. H. Sims, May 1st.

Lt. A. G. Maddock to be actg. Capt. whilst specially empld., from (T.), from Dec. 21st, 1918, to April 30th.

Lts. to be graded for purposes of pay and allces. as Capts. whilst specially empld.:—A. G. Maddock, to June 13th; H. B. Stutfield, May 1st.

Lts. to be graded for purposes of pay and allces. as Capts. whilst empld. as Capts.:—G. W. T. Pireira, J. J. Wilson, H. W. G. Ripley, May 1st.

Lt. (Hon. Capt.) (actg. Capt.) G. M. Smyth to be Lt., from (S.O.), and to relinquish the actg. rank of Capt., April 1st.

Lt. G. A. F. Hudson to be Lt., from (S.O.), June 25th.

Sec. Lt. H. O. Warren to be Sec. Lt., from (A.), Nov. 25th, 1918 (substituted for the notification in the "Gazette" of Feb. 18th).

Transferred to unempld. list:—Sec. Lt. R. E. Jeffrey, Feb. 8th; Lt. G. H. Tait, Feb. 18th; Sec. Lt. (actg. Lt.) H. W. L. Tottenham, Feb. 27th; Lt. (actg. Maj.) W. H. Taylor, March 19th; Sec. Lt. A. S. Turner, March 30th; Sec. Lt. (actg. Lt.) S. M. Stringfield, April 1st; Maj. A. M. Grenfell, D.S.O., April 2nd; Sec. Lt. (Hon. Capt.) A. P. Thompson, April 13th; Lt. C. F. Cunningham, April 17th; Sec. Lt. T. A. Kennedy, April 19th; Lt. G. S. F. Tomlin, April 25th; Lt. (actg. Capt.) S. H. Twining, Sec. Lt. A. K. Whiteman, April 30th; Lt. H. L. T. Templeton, May 1st; Sec. Lt. E. J. Slee, May 2nd; Capt. P. N. B. King, Sec. Lt. C. F. Whalley, May 3rd; Lt. W. J. Guthrie, May 9th; Lt. J. G. Burchett, M.C., May 10th; Sec. Lt. H. N. Cliffe, Sec. Lt. A. M. Hooper, May 15th; Sec. Lt. J. C. Cooke, May 16th; Sec Lt. G. D. King, May 20th; Sec. Lt. H. G. Hooker, Sec. Lt. L. J. Timms, May 21st; Sec. Lt. (Hon. Lt.) W. L. Kendrick, May 22nd; Capt. A. G. Shortt, May 23rd; Lt. F. R. Bush, Lt. B. Whitaker, May 25th; Sec. Lt. C. W. Kerr, Lt. A. E. Kennedy, May 26th; Sec. Lt. S. Cooper, Lt. S. Thompson, May 27th; Lt. D. H. Thomas, May 28th; Sec. Lt. A. B. Cocke, May 30th; Sec. Lt. (Hon. Lt.) J. L. P. Cort, Maj. V. J. Kelly, May 31st; Sec. Lt. P. M. Cooke, Lt. H. J. Ough, Sec. Lt. C. F. W. Toone, June 3rd; Lt. F. H. Bushell, June 4th; Sec. Lt. W. H. Dibben, June 6th; Sec. Lt. C. L. R. Treleaven, Lt. (Hon. Capt.) M. A. Trotter, June 7th; Sec. Lt. J. Tunbridge, June 8th; Lt. R. R. Byrne, June 9th; Capt. G. A. Brown, Lt. A. J. Trainer, June 10th; Sec. Lt. A. J. E. Bryant, Lt. J. J. A. Crozier, Sec. Lt. G. Overton, June 11th; Sec. Lt. P. A. Miller, June 12th; Sec. Lt. G. C. Betts, Sec. Lt. J. R. Brent, June 13th; Sec. Lt. F. L. Catterall, Lt. N. L. Kelly, June 14th; Lt. R. Massey, June 15th; Lt. C. F. Bulmer, June 16th; Lt. E. P. Spriggs, June 17th; Sec. Lt. E. H. Hebden-Phillips, June 10th; Sec. Lt. W. N. Crimp, June 20th; Sec. Lt. G. V. Yeabsley, June 21st; Lt. C. Baines, Lt. A. C. Corbetta, June 24th; Lt. (Hon. Capt.) R. G. Kitson, June 27th; Lt.-Col. W. E. S. Burch, Sec. Lt. W. P. Gonzalez, June 30th; Capt. E. C. Baker, Lt. F. Badham, Sec. Lt. H. H. Wake, July 1st; Sec. Lt. A. T. Belton, Lt. A. W. Chadwick, D.F.C., Sec. Lt. A. Dayton, Lt. H. Goodwin, July 2nd; Lt. J. W. D. Farrell, July 3rd; Sec. Lt. P. Mendoza, July 4th; Lt. J. H. Underwood, July 8th; Sec. Lt. J. C. Duncan, Sec. Lt. W. E. H. Dymock, Sec. Lt. P. E. Keeping, July 11th; Sec. Lt. R. H. Gray, Lt. H. E. Gridley, Lt. S. E. Cane, Sec. Lt. A. E. Hopkins, Sec. Lt. T. R. Nichols, Lt. G. R. C. Oliver, Lt. F. P. Watts, July 12th; Sec. Lt. P. M. Burgess, July 14th.

The following Capts. relinquish their commns. on account of ill-health:—R. L. Kennedy (Lt., Hrs.) (caused by wounds), July 3rd; J. W. W. Bridges (Coldstream Gds.) (contracted on active service), July 10th.

Lt. H. M. Tysoe to take rank and prec. as if his appt. as Lt. bore date Nov. 12th, 1918.

Sec. Lt. F. C. Hilbert relinquishes his commn. on account of ill-health, and is permitted to retain his rank, June 11th.

The following Sec. Lts. resign their commns.:—C. W. Garrood, A. Giles, July 16th.

The notification in "Gazette," Dec. 24th, 1918, concerning Sec. Lt. G. Barfoot-Saunt is cancelled.

The notifications in "Gazette," March 14th and March 28th, concerning Sec. Lt. A. P. Manners are cancelled.

The notification in "Gazette," April 18th, concerning Capt. P. Le G. Gribble is cancelled.

The notification in "Gazette," May 23rd, concerning Lt. C. F. Morris is cancelled (notification in "Gazette," June 20th, to remain).

TECHNICAL BRANCH.—Majs. to be actg. Lt.-Cols. whilst empld. as Lt.-Cols., Grade (A):—A. S. Morris, O.B.E., C. G. Smith, O.B.E., R. F. Stapleton-Cotton, May 1st.

Capt. L. H. B. Cosway to be actg. Maj. whilst empld. as Maj., June 1st.

Capt W. W. Hall to be actg. Maj. whilst empld. as Maj., Grade (A), May 1st.

Lt. T. L. F. Burnett to be actg. Maj. whilst empld. as Maj., Grade (B), May 1st.

To be graded for purposes of pay and allces. as Majs. whilst empld. as Majs., May 1st:—Capt. (Hon. Maj.) C. C. Colley (Grade A), Lt. R. W. Davies (Grade A), Capt. J. C. Forsyth (Grade B).

To be actg. Capts whilst empld. as Capts., Grade (A):—Sec. Lt. J. A. Atkinson, from Dec. 10th, 1918, to March 8th (substituted for notification in "Gazette," May 30th); Lt. J. H. Secker, May 1st.

To be actg. Capts. whilst empld. as Capts., Grade (B):—Lt. J. R. Frankish, Lt. E. E. Porter, to May 28th; Lt. H. G. Wood, Sec. Lt. J. H. Lytle; May 1st.

Lts. to be graded for purposes of pay and allces as Capts. whilst empld. as Capts., Grade (A):—C. C. Bracebridge, C. M. Seth-Ward, to May 12th; (Hon. Capt.) R. Godfrey, J. Shields, H. G. Thomas, May 1st; H. A. Adams, May 13th.

To be graded for purposes of pay and allces. as Capts. while empld. as Capts., Grade (B):—Lt. O. W. de Putron, Sec. Lt. (actg. Lt.) W. A. Fowler, May 1st.

Lt. A. W. Allan to be Lt., Grade (A), from Grade (B), March 2nd.

Lt. T. Kerr-Jones to be graded for pay and allces. as Lt. while empld as Lt., Grade (A), from April 4th to 30th.

Lt. A. Garrity to be graded for pay and allces. of Lt. while empld. as Lt., Grade (B), Oct. 3rd, 1918 (substituted for notification in "Gazette," Dec. 17th, 1918).

Lt. E. L. Pollard to be Lt., Grade (B), from (O.), May 22nd, 1918 (substituted for the notifications which appeared in "Gazettes" June 28th, 1918, and Feb. 28th).

Sec. Lts. to be Lts.:—P. W. Atkinson, Dec. 30th, 1918 (substituted for notification in "Gazette," Jan. 3rd); E. G. Hellard, Feb. 16th.

Sec. Lt. C. Littlejohn to be actg. Lt. while empld. as Lt., Grade (B), May 1st.

Transferred to unempld. list:—Lt A. E. Turner, M.C., M.M., Jan. 18th; Sec. Lt. A. P. Manners, Feb. 18th; Lt. D. Taylor, Feb. 22nd; Lt. E. Cooke, March 17th; Lt. (actg. Capt.) R. J. Shanks, March 31st; Sec. Lt. J. S. Hodgson, Lt. C. H. Knight, Sec. Lt. S. Kennedy, April 10th; Sec. Lt. (Hon. Lt.) C. W. Burgess, April 12th; Capt. E. W. Sharp, Sec. Lt. (actg. Lt.) T. Walker, April 16th; Lt. (actg. Capt.) W. H. Hoffert, April 17th; Sec. Lt. A. H. James, April 18th; Sec. Lt. P. B. Harris, Sec. Lt. W. A. Isaac, April 23rd; Maj. (actg. Lt.-Col.) A. K. Hall, O.B.E. (substituted for notification in "Gazette," June 24th); Sec. Lt. (actg. Lt.) T. G. Kennard, April 30th; Sec. Lt. H. S. Given, Sec. Lt. T. F. Taylor, May 2nd; Sec. Lt. W. N. Edwards, Sec. Lt. F. Sharpe, May 3rd; Lt. H. E. Tabor, May 8th; Sec. Lt. H. P. Greenhill, Capt. G. A. Turner, May 11th; Lt. W. J. King, Lt. D. J. Reason, Sec. Lt. F. C. Thornton, May 13th; Lt. S. H. Thomas, Lt. G. J. Woods, May 14th; Sec. Lt. S. H. Child, May 15th; Lt. J. W. McKee, May 20th; Sec. Lt. (Hon. Lt.) R. P. Cooper, May 23rd; Lt. T. Woodman, May 25th; Lt. A. E. Reynolds, May 26th (substituted for notification in "Gazette" May 30th); Sec. Lt. S. G. Bunster, May 27th, Lt. W. N. Connah, Lt. A. T. Crook, Lt. E. Gallagher, Lt. H. K. Gibson, May 28th; Lt. B. S. Crimp, May 29th, Capt. G. Caird, Capt. J. W. Taylor, June 1st; Maj. R. Bird, Sec. Lt. A. R. N. Challacombe, Lt. G. Glen, June 4th; Capt. G. H. Creighton, June 5th; Sec. Lt. E. C. Owens, Sec. Lt. H. Tomlinson, June 6th; Sec. Lt. W. B. Close, June 7th; Capt. R. Rainford, June 10th; Sec. Lt. S. W. Crawford, June 12th; Capt. P. G. Burton, Lt. C. W. B. Tubbs, Capt. H. S. V. Thompson, June 13th; Sec Lt. W. M. Brodie, June 15th; Sec. Lt. T. G. Callard, Lt. P. W. H. Twyman, June 16th; Lt. T. H. Cooper, Sec. Lt (Hon. Lt.) R. P. Graham, Sec. Lt. H. H. Kalber, Sec. Lt. B. T. Scott, June 17th; Capt. J. A. Cooper, June 19th; Sec. Lt. A. W. Mansfield, Lt. F. C. Thomas, June 21st; Sec. Lt. J. W. J. Bates, June 24th; Lt.-Col. B. C. Bartley, June 25th; Capt. A. H. Chapman, June 26th; Sec. Lt. A. L. Cooke, June 28th; Maj. P. C. A. Bridgeman, Capt. A. L. Bligh, Capt. G. F. Underwood, Lt. J. H. Tindall, July 1st; Maj. W. F. Vernon, July 3rd; Capt. A. P. Thurston, July 4th; Lt. S. Turner, July 6th; Lt. J. M. Atherton, July 10th; Lt H. S. Elliott, Sec. Lt. C. T. A. Hart, July 12th.

Lt. S. T. Hosken relinquishes his commn. on account of ill-health, and is permitted to retain his rank, July 2nd.

Sec. Lt. (Hon. Lt.) A. Dingwall relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain the rank of Lt., July 7th

The notification in "Gazette" of June 13th concerning Lt. G. Thomas is cancelled.

The notification in "Gazette" of May 16th concerning Lt. J. W. McKee is cancelled

The notification in "Gazette" of April 4th concerning Sec. Lt R. L. T. Latour is cancelled (notification in "Gazette" of April 1st to remain).

MEDICAL BRANCH.—Transferred to unempld. list:—Capt. (actg. Maj.) A. H. Todd, April 30th; Capt. F. Irvine, May 3rd; Lt. A. G. Graham, May 9th; Lt. H. W. Toms, May 14th; Lt. O. F. Conoley, June 8th; Capt. J. C. H. Allan, M.B., June 10th; Capt. J. A. Gordon, June 18th; Capt. D. Cameron (R.A.M.C., T.F.), July 4th.

CHAPLAINS BRANCH.—Transferred to unempld. list:—Rev. E. H. Wright May 12th; Rev. J. Shelly, M.A., May 21st.

MEMORANDA.—The following Overseas Cadets are granted temp commns. as Sec. Lts., with effect from Feb. 15th, and relinquish such commns., with permission to retain the rank, from the day following termination of the standardised voyage in the case of those claiming immediate repatriation, and from the day following demobilisation in all other cases:—A. L. Ballard, 213d7 T. L. Clayton, 2884 E. G. Farrant, 904643 A. Geddes, 178205 G. Pfaff, 50134 C. E. Rutherford, 316808 J. T. Tosswill

The following Cadets are granted hon. commns. as Sec. Lts.:—175005 A. E. Colley, 205218 C. Kemp, 530240 H. B. Riddle, Dec. 12th, 1918; 728613 S. E. Perris, Jan. 1st; 176849 P. Garside, Jan. 2nd; 137657 C. E. Butler, Jan. 3rd; 316006 J. E. Briggs, 25349 F. C. Brereton, 73065 F. L. Cannon, 137320 D. F. Cornell, 911769 A. J. Goodman, 172145 C. H. Hall, 10130 R. H. Hawken, 513386 H. E. Ryerson, 531122 R. H. Speck, Jan. 6th; 9876 R. Fraser, Jan. 7th; 137302 C. N. Crisp, Jan. 8th; 3086 L. C. Edwards, Jan. 9th; 316013 E. Martin, 767111 P. D. Pratt, Jan. 10th; 403495 T. C. Dolphin, Jan. 11th; 1500 L. Grimes, 25527 R. Harrison, 1555 S. F. Payne, 128539 W. L. Plummer, Jan. 13th; 137535 E. Phillips, Jan. 14th; 531467 H. J. Blackwell, 153984 J. R. Clarke, 126370 E. G. Day, H/330262 C. Harrison, 154149 W. Nixon, 154966 L. A. Workman, Jan. 15th; 8842 E. G. Wills, Jan. 16th; C. A. Dodd, 117082 D. M. Freeling, Jan. 17th; 174453 F. A. Curran, 512560 P. Lee, Jan. 18th; 137016 D. McNeill, Jan. 19th; 179280 H. W. Peterson, Jan. 20th; 5/23910 A. L. McCallum, 137447 H. Fishback, Jan. 21st; 250849 H. Scragg, Jan. 22nd, 137393 L. M. Herrod, Jan. 23rd; 305599 J. R. Harrison, Jan. 24th; 117609 W. W. Adam, 176069 J. F. Allen, 117249 G. E. Brockway, 175492 A. Brown, 110323 F. F. Bowling, 128815 J. Brown, 135672 R. M. Burton, 117071 L. Bloomfield, 128203 J. Bradley, 175800 J. W. Baird, 137311 A. J. B. Campbell, 175911 H. Dade, 175251 H. J. Disley, 31694 E. T. Deeley, 3351 B. Ellis, 355604 F. J. Gichard, 175923 G. E. Gregory, 73644 A. D. Gordon, 72337 J. Gardener, 110639 W. C. Hood, 250477 R. Hill, 302786 L. H. W. Hatton, 12483 E. Haythornthaite, 140030 J. Howard, 533054 W. E. Holmes, 137742 S. W. Hickman, 25526 G. Harrison, 80800 S. Herbert, 10029 J. Hope, 117800 N. Hodgson, 137390 H. A. Howe, 128648 T. Jamieson, 51888 W. H. Kirkwood, 1465 W. H. C. Leadbeater, 87061 J. W. Lamb, 128026 J. Learmonth, 128025 J. E. Littlejohn, 128931 T. Martin, 9763 A. J. Muirant, 111001 B. C. H. Marsh, 147193 J. McLaurin, 75163 H. Massey, 73075 C. S. McKay, 176851 C. S. Needham, 97085 W. A. Rayn, 137536 W. L. Rayner, 242172 S. Sykes, 40584 C. Smith, 176856 R. C. Sidney-Wilmot, 43251 E. M. Wood, 137512 W. R. Worley, 137521 M. C. Wheeler, 176292 F. W. Wise, 176293 E. K. White, 117487 W. K. Westwood, 95185 S. W. Williams, Jan. 25th; 31301 T. R. Harper, 3/70366 P. R. John, 15587 W. G. Stark, 39153 C. Sutherland, 45921 D. G. Tregelles, Jan. 27th; 128335 R. D. Alexander, 625070 J. M. Bevan, M/2099694 W. E. Barnes, 767477 A. J. Browning, 128455 R. G. Britnell, 175366 C. Bonnikson, 128942 N. K. Blair, 175679 H. W. Britcher, 35859 L. H. Bunning, 205941 A. E. Cowlishaw, 128355 C. Cockman, 36502 J. F. Clayton, 128287 H. V. Davies, 175910 D. Duggans, 176587 H. L. S. Dewes, 14089 E. C. Dick, 290173 A. W. Dawson, 4398 W. H. Ford, 28278 J. H. Ferguson, 137200 G. S. Fiske, 175915 F. L. Frost, 176233 J. Ford, 175183 R. A. Fry, 117061 A. C. Gale, 176331 G. E. Gray, 137775 F. W. V. Grouchy, 175192 H. W. Hall, 128631 G. Hutchinson, 175747 W. A. Hakin, 137737 A. F. Hull, 175926 J. Hampton, 175380 A. E. Hawkins, 304630 H. C. Housden, 776298 R. E. Holroyd, 50172 H. W. Isaac, 128875 A. D. Joiner, 35623 C. H. Jones, 65016 J. W. Johnson, 176687 J. C. W. Joyce, 176423 F. S. Keeling, 12486 R. A. Kendrick, 102798 G. Lush, 108254 J. Lloyd, 137575 E. C. Lindop, 176798 H. R. Murray, 1216 Maudsley, 24825 J. C. McGregor, 53112 A. Murchie, 47253 H. Michaelson, 175535 R. L. McKissack, 155689 S. Morris, 175207 F. Maund, 110390 D. Muir, 175823 T. J. A. McGlennon, 053805 A. E. Newland, S/4/072530 H. Pearce, 137641 S. Pendry, 26435 R. H. W. Punnett, J. Petterson, 305104 P. G. Russell, 137712 W. H. G. Roach, 117330 J. Robinson, 40800 L. F. Roberts, 176813 H. Rayner, 176825 W. Robson, 74621 N. E. Starkey, 137503 C. G. Sheward, 137162 D. V. Smith, 26448 F. R. Spencer, 53256 A. Sharp, 66942 C. O. M. Steward, 35548 L. A. Smith, M/103466 C. B. Siddons, 137644 C. D. Thomas, 117032 L. M. Thompson, 19108 W. A. P. Thomas, 140044 C. G. Westall, 176468 L. H. Willis, 176144 G. Winyard, 176720 G. Ware, 175101 H. B. Wallace, 4683 W. Worsley, Jan. 29th; 110006 S. O. Scott, Jan. 31st; 94263 P. Briggs, 137726 R. E. Ebrall, Feb. 2nd, 37609 A. T. Barlow, 137668 E. J. Brooks, 54161 J. S. Barker, 8/111428 W. C. Budd, 137551 A. E. Cook, 137680 J. Coe, 176613 J. R. Cooper, 29234 L. A. E. Crump, 41374 S. C. Campbell, 110296 C. B. Cook, 137648 J. Dooley, 175687 R. W. Dawe, 175047 J. Dixon, 91413 A. E. Darby, 6251 A. G. Denby, 35702 J. Dobbie, 175118 S. Enoch, 1900 A. Erwin, P/18037 W. G. Farley, 137133 A. E. G. Gretl, 10201 H. J. Griffiths, 137265 E. C. Graham, 128362 W. Hague, 11940 J. G. Hillam, 100466 H. Hibbs, 15318 E. L. Hill, 175600 W. Honewell, 175554 E. Lovett, 176240 F. W. James, 128536 C. J. Little, 624706 H. S. Montgomery, 110982 E. F. Nurden, 316746 C. E. Newling, 137757 F. H. Parsons, 535055 K. L. Pebody, 100160 L. A. Rogers, 55702 W. Stedmond, 246058 R. Smith, 128320 R. Sober, 390722 H. C. Saul, 176377 R. A. M. Sankey, 110008 P. E. Thompson, 926368 A. W. L. Thompson, 536616 J. W. Tolyfield, 324162 J. Williams, 137511 A. P. Wilsish, 77176 T. B. Ward, 176148 A. Wright, 99905 W. Wallon, 137051 J. P. V. Wollam, Feb. 4th; 175173 G. Bertwhistle, F/4020 D. H. Cowin, 137094 N. H. Richardson, 176118 F. P. Reeves, 98767 W. Wilson, 117757 N. E. Jones, 117773 J. H. Craig, 128074 C. E. Findley, 100313 J. D. Cheshire, 137264 R. A. Dolman, 22006 D. M. McCurrie, 26616 A. F. Breeze, Feb. 5th; 402860 W. Beresford, 176037 V. Sickle, 175727 W. R. Young, Feb. 6th; 53904 H. V. Armstrong, 176915 R. Arthur, 176860 R. Bocking, 176200 H. Barker, 96548 H. C. Chatterton, 176400 G. R. Carpenter, 137602 H. Derry, 93878 J. H. Fitton, 176705 E. C. Fitch, 50897 G. Finch, 58081 W. H. Garrett, 76668 Henzell, 61329 J. W. Hurd, 137276 H. A. Hamilton, 176906 R. C. Houston, 50802 J. C. Hill, 176670 C. K. Harrison, 176332 H. C. Hoult, 110239 H. Joyner, 176357 A. McMillan, 128887 J. Morland, 128538 R. D. Mann, 117691 P. T. Russell, 128300 A. Sherbourne, 200625 S. S. Smith, Feb. 7th; 155050 E. A. W. Beasant, 137668 A. F. Barron, 128821 J. Barton, 175806 H. McD. Campbell, N. P. Jones, 175065 J. Livingstone, 175448 H. W. Malin, 177117 J. L. Mitchell, 177331 W. I. Muir, A. R. Pratt, J. B. Shaw, F. C. Stubbs, 128330 J. Thompson, 12645 R. S. Thompson, 38198 B. T. Whittaker, Feb. 8th; 175703 A. Hardaker, Feb. 9th; 352530 S. Adams, 128346 C. Burns, 128119 H. E. Barber, 18205 F. C. Bird, 128827 F. Carlyle, 311305 J. D. Cousins, 357855 J. S. Cox, 137166 J. N. C. Cummings, 136774 D. A. Cuttis, 1276 R. S. Craddock, 137667 W. Clarke, 22458 R. J. Causby, 117676 W. N. Chilcott, 8/3876 F. H. Dight, 128358 G. W. Dainty, 53418 J. E. J. Donald, 175874 D. A. Davis, 175377 J. A. Derry, F/40850 P. R. Dutton, 86174 E. D. D'Aintree, E. Eadon, 282437 G. L. Evatt, 137725 C. J. Evans, 176527 H. R. Ebbles, 8826 E. J. Edwards, 18050 R. Fantozzi, 110236 G. W. Graham, 110020 L. H. Gubbins, 175259 T. M. Gibson, 355486 J. D. Gilbert, 12086 T. Hughes, 137304 W. J. Hamblin, 117257 J. J. Hayes, 229241 J. Henderson, 6542 J. R. Jeans, 36610 E. R. James, 62487 C. R. James, 92505 R. Kent, 59964 T. Lewis, 825509 J. Leitch, 11079 J. T. MacLaren, 77365 O. Lancaster, 7311 S. J. Mew, G/05159 C. J. Mantle, 5/07841 C. J. Moody, 137432 G. W. Newton, 19775 H. Pentony, 137076 H. H. Phillips, 033264 M. A. Pugh, 512669 C. G. Roach, 176273 H. J. Refoy, 137482 W. J. Riley, 37722 W. Rawlings, 4332 H. W. Ross, 117275 J. Sladden, 110665 D. E. Scott, 43493 S. W. Smith, 177953 J. C. Spray, 36679 J. Somerville, 928244 H. J. Skinner, 137033 D. H. Turner, 100236 J. D. G. Taylor, 32237 J. C. Taylor, 766908 F. V. Taylor, W. G. Wardle, 137150 G. Wall, 26869 C. Wilkinson, 790233 E. C. Watkinson, 11499 J. E. Waldron, Feb. 10th; 175496 R. G. Bavnton, 11734 E. E. Badby, 52620 C. Cruickshank, J. J. A. Gough, E. H. T. Jewell, W. B. Lewis, 175612 K. Malzard, 1471 M. A. Mosley, 90542 J. E. Neil, 176697 H. A. Newton, 200988 T. H. Platts, 9830 S. F. Rawlings, 5144 G. Roughton, 36516 R. Vincent, V. Waddell, F. H. R. Williams, Feb. 11th; M2/105063 J. C. Asher, 175167 R. J. Barham, 176643 W. Colville, 176416 C. J. Hall, 100405 V. R. Kettle, 137515 E. M. Ward, Feb. 12th; 01051 F. L. Cramer, 175177 P. K. Challen, 117977 N. J. Emery, 137341 R. Fletcher, 175184 W. Fogg, 175263 A. Gardner, 316070 J. Gordon, 175042 H. Mootz, 537022 G. I. Pullen, 17502 A. Sutton, 1031 L. C. Scott, Feb. 13th; 356704 F. M. Evans, 187906 R. F. Frances, 423124 T. Gardner, 100507 F. Greene, 665766 D. Hunter, 137280 R. G. Harman, 156284 J. Hill, 128399 W. Leedham, 216811 L. F. Maves, 28026 H. M. McKay, 35630 H. Rayner, 24053 A. T. Robinson, Feb. 14th; 175033 C. W. Allison, 96523 S. C. Butler, 126150 W. J. G. Bricher, 177615 J. H. Bone, 175363 H. W. Brown, L. J. Cannell, 137627 J. F. Carr, 137174 G. H. E. Cox, 176318 W. O. Cromwell, 50052 G. F. Cott, 176227

H. L. Dawe, 176224 F. Dean, 433458 J. H. Earley, 205768 J. R. H. Ellis, 137733 H. W. R. Flint, 117119 W. Fletcher, 1089952 M. W. Flood-Page, F/5931 W. J. Gayes, 176086 S. M. Garrett, 110499 N. Golding, 51544 L. T. Hill, 22937 J. J. Hall, 176337 F. Horn, W. N. Lumsden, 94114 P. G. Laybourn, 137574 J. H. Lockwood, 68105 H. McRobbie, 137777 V. I. Ovenden, 69892 A. J. Overall, 128983 C. H. S. Pickett, 553713 E. A. Rowsell, 176121 G. W. R. Robinson, 100564 A. V. Rawson, 38459 A. J. Rack. W. Surgeon, W. Sugden, 15081 H. B Thomas, 128497 J. Wade, 136717 L. E. Wallis, 176145 J. O. Wood, 176399 W. C. Wood, Feb. 15th; K/1123 H. G. Dennis, Feb. 19th; 51717 R. Bolton, Feb. 20th; 117654 N. Cooper, Feb. 21st; 54315 J. S. Bruce, C. Child, 70558 A. L. Pink, Feb. 22nd; 176240 J. W. Hobson, 45112 W. K. Parkinson, G/73701 D. W. Patston, Feb. 24th; 137359 G. P. Gower, 5813 R. Hill, 117747 V. C. R. Waller, Feb 26th; 35377 H. C. Burgess, 117495 W. Davies, 39908 A. Hirst, 21361 F. Middleton, Feb. 27th; 49048 F. W. Nutbourne, March 5th, 116270 J. Briscoe, 200468 F. Hatton, 99762 J. Stewart, March 7th; 594658 S. G. J. Cogswell, 26373 P. Lancaster, 66300 E. A. Suter, March 8th; 175004 H. W. Cattell, 08931 G Holmes, H. Richards, March 12th; 176239 F. Hughes, 176096 W. P. James, E. F. Knight, 176272 G. Robinson, March 13th; 117557 E. Copsone, March 14th; 52235 W. G. Carpenter, 117840 H. M. Lumb, March 15th; 171977 A. T. Leng, March 18th; 70568 H. D. E. Barton, 131981 C. Norman, N. G. Preater, 3182 J. A. Taylor, March 20th; 175656 R. C. Ogg, 128307 G. A. Robbins, March 21st; 6342 W. H. M. Jones, 36459 R. W. Scott, March 27th; 104334 G. J. Blaud, 536921 R. Green, March 28th; 110494 L. Drinkwater, March 29th; 4594 L. W. Baggot, T/R104758 G. Challenger, L. J. Hartnett, 5156 W. J. Jones, April 1st; 6941 H. B. Bell, M. Shaw, April 2nd; 110094 J. N. Dixon, April 3rd; 032134 W. Brown, 12348 A. W. Marsden, 175563 H. F. Thom, 253943 J. W. Tullock, April 4th; 155942 S. G. Myers, April 5th; C. V. Stan, April 7th; 25684 H. D. Cleveley, 51100 T. S. Callender, 46409 S. T. Musson, 10368 T. S. Sharpe, April 8th; 103653 C. G. Croft, 156308 F. R Cotgrove, 25871 C. C. Hance, 45083 F. Loneon, 17403 W. A. Luff, 175286 W. Pearson, 221582 A. R. H. Tristram, April 10th; 175671 G. R. V. Bolster, 90398 C. Kentish, 330522 J. S. Penty, 3026 C. F. Whiston, April 11th; 50453 T. Mill, April 14th; 2470 J. K. Hollis, April 15th; 9385 W. Bortfield, 175374 A. C. Curtis, 117180 L. Hislop, 45590 V. Reed, 137589 K G. Russell, April 29th; 80500 E. A. Bale, April 30th, 434248 J. Green, May 1st; 18877 J. A. Cunningham, 52587 A. M. Murdoch, 52672 J D. Renwick, 137797 F. Seckington, May 2nd; 28484 J. A. Thompson, May 3rd; 175090 S. Gauthony, May 21st

Lt.-Col. (actg. Brig.-Gen.) C. G. Hoare, C.M.G. (Maj., Ind. Army), relinquishes his commn. on ceasing to be empld., April 24th.

Temp. Hon. Lt. H. Pearse relinquishes his commn. on ceasing to be empld., June 16th.

Transferred to the unempld. list:—Sec. Lt. T. W. Sands, April 2nd; Capt. G. H. L. Sweet, from (S.O.), May 5th; Lt. (Hon. Capt.) L. Pell-Ilderton, from (S.O.), May 12th; Capt. O. A. Butcher, D.S.C., from (S.O.), June 5th; Maj. F. B Burton, from (S.O.), June 7th.

Capt. (actg. Maj.) P. Le G. Gribble relinquishes his commn. on account of ill-health, and is granted the rank of Maj., April 19th.

Capt. Hon. R. G. Lord St. Oswald (Capt., C. Gds.) resigns his commn. and is permitted to retain his rank, July 16th.

Lt. A. Graham relinquishes his commn. on account of ill-health, and is granted the rank of Capt., July 7th.

The notifications in "Gazette" of June 17th concerning the following Officers are cancelled:—Capt. W. G. Scott, Lt. F. T. Chapman, Lt. R. Tait, Lt. G. B. Redgrave, Lt. A. R. Harris, Lt. F. V. Bell, Sec. Lt. A. E. H. Hales.

The notification in "Gazette" of June 6th concerning P.F.O. J. W. D Archibald is cancelled.

The notification in "Gazette" of June 13th concerning Maj. R. E. Childers, D.S.C., is cancelled.

AIR MINISTRY, July 18th

The King has been pleased to approve of the award of the Victoria Cross to the late Captain (actg. Major) Edward Mannock, D.S.O., M.C., 85th Squadron Royal Air Force, in recognition of bravery of the first order in aerial combat.

On June 17th, 1918, he attacked a Halberstadt machine near Armentières, and destroyed it from a height of 8,000 feet.

On July 7th, 1918, near Doulieu, he attacked and destroyed one Fokker (red-bodied) machine, which went vertically into the ground from a height of 1,500 feet. Shortly afterwards he ascended 1,000 feet and attacked another Fokker biplane, firing 60 rounds into it, which produced an immediate spin, resulting, it is believed, in a crash.

On July 14th, 1918, near Merville, he attacked and crashed a Fokker from 7,000 feet, and brought a two-seater down damaged.

On July 19th, 1918, near Merville, he fired 80 rounds into an Albatross two-seater, which went to the ground in flames.

On July 20th, 1918, east of La Bassée, he attacked and crashed an enemy two-seater from a height of 10,000 feet. About an hour afterwards he attacked at 8,000 feet a Fokker biplane near Steenwercke, and drove it down out of control emitting smoke.

On July 22nd, 1918, near Armentières, he destroyed an enemy triplane from a height of 10,000 feet.

Major Mannock was awarded the following distinctions for his previous combats in France and Flanders:—Military Cross (Gazetted, Sept. 17th, 1917); Bar to Military Cross (Gazetted Oct. 18th, 1917); Distinguished Service Order (Gazetted Sept. 16th, 1918); Bar to Distinguished Service Order (1st) (Gazetted Sept. 16th, 1918); Bar to Distinguished Service Order (2nd) (Gazetted Aug. 3rd, 1918).

This highly distinguished officer, during the whole of his career in the Royal Air Force, was an outstanding example of fearless courage, remarkable skill, devotion to duty, and self-sacrifice, which has never been surpassed.

The total number of machines definitely accounted for by Major Mannock up to the date of his death in France, July 26th, 1918, is 50—the total specified in the "Gazette" of August 3rd, 1918, was incorrectly given as 48, instead of 41.

THE PAY OF THE ROYAL AIR FORCE.

The following official statement with reference to the revised rates of pay for officers of the Royal Air Force was issued on July 21st.

1. The rates of pay, pensions, and allowances for officers of the Royal Air Force have been under review, and the standard rates now authorised are as shown in the accompanying statements. The present system, under which the various branches each had their own rates of pay, has been replaced by a uniform system of rates for all branches, with the exception that certain specialist services (such as medical and dental) will continue to have special rates as hitherto. These specialist services will be dealt with separately, except in so far as reference is made to them below.

2. The rates have been fixed with reference to the present high cost of living, and it has been decided that 20 per cent. of the rates of pay and retired pay will be considered as due to the present high cost of living, and will be subject after five years to change, either upwards or downwards, according as the cost of living rises or falls. Subsequent revisions will be made at three-yearly intervals on the basis of Board of Trade food prices.

3. The new rates will not apply to officers awaiting demobilisation or who are temporarily retained. They are intended for those officers who are given permanent or short-service commissions in the force as reconstituted, or who are seconded to the Royal Air Force from the other Services.

PAY.

The rates will be as follows, and will apply generally to officers (including staff officers) performing duties of the present Flying, Technical, and Administrative branches:—

Rank.	Pay per diem. £ s. d.
Cadet	0 5 0
Cadet after 1 year	0 10 0
Second Lieutenant	0 18 0
Lieutenant	1 3 0
Lieutenant after 2 years as such	1 5 0
Captain	1 9 0
Major	1 14 0
Major after 5 years as such	1 16 0
Lieutenant-Colonel	2 0 0
(Rising by 1s. per day after each year to a limit of £2 10s.)	
Colonel	2 15 0
Colonel after 2 years as such	2 18 0
Colonel after 4 years as such	3 1 0
Colonel after 6 years as such	3 4 0
Brigadier-General	3 4 6
Brigadier-General, Command Pay	0 5 0
Major-General	5 0 0
Lieutenant-General	6 0 0
General	7 0 0

SPECIAL RATES FOR QUARTERMASTERS.

	Rank.	Pay per diem. £ s. d.
On appointment	Lieutenant	0 19 0
After 4 years	"	1 1 0
" 8 "	Captain	1 3 0
" 12 "	"	1 5 0
" 15 "	Major	1 10 0
	Lieutenant-Colonel	1 15 0

(The establishment of Lieutenant-Colonels will be a very small one.)

SPECIAL RATES FOR CHAPLAINS.

	Rate per diem.
On entry	1 0 0
After 3 years	1 3 0
After 6 years	1 6 0
After 9 years	1 9 0
After 12 years	1 12 0
After 15 years	1 15 0
After 18 years	1 18 0
After 21 years	2 1 0
After 24 years	2 4 0
After 27 years	2 7 0
After 30 years	2 10 0
Chaplain-in-Chief	£1,000 per annum.

Temporary Chaplains in the Royal Air Force will receive a gratuity of £50 for each complete year of service, subject to conditions to be hereafter published.

Medical officers will receive the same rates of pay as may be approved for the Medical Service of the Army.

PAY OF OFFICERS EMPLOYED AT THE AIR MINISTRY.

RATE.

DIRECTORS, £2,000 per annum
DEPUTY DIRECTORS, 1st Class, £1,500 per annum
DEPUTY DIRECTORS, 2nd Class, £1,200 per annum
} Consolidated rates.

OTHER OFFICERS.—Down to and including the rank of Major.—Full pay and allowances, *plus* £100 per annum. Below the rank of Major.—Full pay and allowances, *plus* £75 per annum.

ATTACHED OFFICERS.—Full pay and allowances of their rank, *plus* 10s. a day up to three months; thereafter they will come on to the ordinary Air Ministry Scale.

ALLOWANCES.

The allowances will be as given below, and will be reviewed periodically:—

TABLE MONEY.—Is under consideration.

SUBSISTENCE AND TRAVELLING ALLOWANCES.

	Up to 8 nights in one place.	After 8 nights.	Daily absence 5-9 hours.	Daily absence over 9 hours.
	s. d.	s. d.	s. d.	s. d.
A. Rank of Col. (or similar staff grading) and upwards	30 0	15 0	6 0	15 0
B. Below rank of Col.	22 6	12 6	4 0	11 6

LODGING, FUEL, LIGHT, AND RATION ALLOWANCES.

HOME STATIONS.—The standard rates will be as follows:—

	Lodging.	Fuel and Light. (average)	Rations.
	Per diem.	Per diem.	Per diem.
2nd Lts. and Lts. ..	3s. 6d.	1s. 0d.	No change
Capt., Maj. and Lt.-Col.	4s. 6d	2s. 0d.	No change
Other Officers	No change	Increase of 1s. per diem.	No change

NOTE.—Married officers over 30 years of age for whom no married quarters are available and who are therefore obliged to provide accommodation for themselves and for their families may draw lodging, fuel, and light allowances.

SERVANTS' ALLOWANCE.—2s. for each authorised servant at home and abroad if no servant is provided.

FIELD ALLOWANCE.—To be granted to all officers on active service in the field, and to be issuable whenever officers are under canvas. The rate is still under consideration.

CHILDREN'S ALLOWANCE.—Existing rates of children's allowance will continue until the end of 1919, after which they will be abolished. In the meantime children's allowance will be continued, and officers now receiving the allowance will not become ineligible for it if the effect of the increases in pay now granted is to raise their salaries beyond the limit of income laid down for the grant of the allowance.

COLONIAL ALLOWANCE.—The same as for the Army.

CONVEYANCE OF FAMILIES.—The cost of conveying the wives, families, and baggage of officers will be charged to the public only in respect of changes of station in this country.

FURNITURE ALLOWANCE AND CHARGES.—Furniture allowance and furniture charges are abolished. In future, all quarters, including the commanding officer's quarters, will be furnished.

MESS ALLOWANCE.—This allowance is abolished.

TRAVELLING CONCESSIONS.—The question of the continuation (*a*) of the rule allowing officers proceeding on leave two free passes a year, (*b*) of the reduced fare for officers travelling on leave, is still under consideration.

PENSIONS.

(Applicable to officers performing duties of the present Flying, Technical, and Administrative Branches.)

A.—GENERAL OFFICERS.

Lieutenant-General.—£975 after 24 years' service, increased by £22 for each year beyond 24, with a maximum of £1,195.

Major-General.—£790 after 22 years' service, increased by £22 for each year beyond 22, with a maximum of £1,010.

Brigadier-General.—£650 after 20 years' service, increased by £22 for each year beyond 20, with a maximum of £950.

An officer must complete three years' service in any of these ranks before being entitled to the special pension attaching to it. This condition will not, of course, affect his title to the pension earned by service in the ordinary way, and an officer may reckon service as lieutenant-general or major-general towards his service in a lower rank if that would entitle him to special pension for that lower rank.

B.—COLONELS AND LOWER RANKS.

There will be a minimum qualifying period for pensions—20 years.

Subject to this the scale is as follows:—

	Age	Retired Pay.	Service.	Addition for each extra year of service.*	Reduct'n for each deficient year of service.*
Cols. retire at 55, max. ret. pay £900	55	£790	24	22	15
	54	765	24	22	15
	53	742	23	22	15
	52	720	23	22	15
Lt.-Cols. retire at 48, max. ret. pay £600	51	697	22	22	15
	50	675	22	15	15
	49	637	21	15	15
	48	600	21	15	15
Majs. retire at 45, max. ret. pay £450	47	562	20	15	15
	46	525	20	15	15
	45	487	19	15	15
	44	450	19	15	15
Capts and subalterns ret. at 40, max. ret. pay £400	43	412	18	15	15
	42	375	18	15	15
	41	337	17	15	15
	40	300	17	15	15

* Limited to 5 years.

Gratuities to officers who retire before qualifying by length of service for Service pensions:—

A gratuity of £75 for each completed year of service will be awarded, with a maximum of £1,000, provided that no officer is to be allowed to resign with a gratuity unless he has completed 10 years' service.

While these pension scales will be applicable generally to officers appointed to perform the duties of the present Flying, Technical, and Administrative branches, including chaplains, the following will be dealt with under special regulations which will shortly be issued:—

Officers seconded from the Navy and Army. Officers who may be appointed as Quartermasters on the special Quartermasters' rates of pay.

Commissioned Warrant Officers, Warrant Officers, and Ratings from the Royal Navy on regular engagements who have been given temporary commissions in the R.A.F.

Warrant Officers, N.C.Os. and Men from the Army on regular engagements who have been given commissions in the Army or were given temporary commissions in the R.A.F.

It should also be noted that these scales do not apply to specialist services such as Medical and Dental officers, Pay officers, and Schoolmasters.

NOTES.

1. The application of these standard rates of pay, pensions, and allowances to the existing and future personnel will be carried out under administrative regulations which will shortly be published.

2. The new rates will begin to take effect from the date of the first "Gazette" containing the names of officers appointed to permanent and short service commissions in the Royal Air Force. They may begin at somewhat later dates for officers not dealt with in the first "Gazette."

THE PEACE PROCESSION.

On July 19th, the Peace Procession through London took place. Detachments of the Royal Navy, Army and R.A.F. took part. Detachments from the various foreign Powers were also present.

The following formed the R.A.F. contingent:—

Major-General Sir J. M. Salmond, K.C.B., C.M.G., C.V.O., D.S.O. Brig.-Gen. C. L. Lambe, C.B., C.M.G., D.S.O. Col. C. R. Samson, C.M.G., D.S.O., A.F.C. Brig.-Gen. C. A. Longcroft, C.M.G., D.S.O., A.F.C. Brig.-Gen. E. Maitland, C.M.G., D.S.O.

REPRESENTATIVE DETACHMENTS.

Lieut.-Colonel C. L. N. Newall, C.M.G., R.N., and Staff.

Representative Detachments of the following:—No. 5 Squadron; No. 7 Squadron; No. 9 Squadron; No. 11 Squadron; No. 12 Squadron; No. 18 Squadron; No. 22 Squadron; No. 25 Squadron; No. 29 Squadron; No. 43 Squadron; No. 57 Squadron; No. 59 Squadron; No. 62 Squadron; No. 70 Squadron; No. 84 Squadron; No. 88 Squadron; No. 92 Squadron; No. 110 Squadron; No. 208 Squadron.

PARKS AND DEPOTS.

Airships; South-Eastern Area; South-Western Area; Midland Area; Northern Area; 29th Group; 11th Group.

CHAPLAINS AND MEDICAL SERVICES.

WOMEN'S ROYAL AIR FORCE.

Pilots and crack squadrons were poorly represented.

VACANCIES FOR R.A.F. DOCTORS.

The Air Ministry announces that the Royal Air Force requires the services of a limited number of medical practitioners, including those who have already served. All candidates must be fit for general service at home and abroad, should be under 35 years of age, and must be willing to fly if called upon to do so.

The terms of service are as follows:—

Candidates who have served before will be commissioned in their previous substantive rank; those who have not served will be commissioned as lieutenant.

The period for engagement to be for one year or until no longer required, whichever shall first happen.

Pay to be at the rate of £550 a year, inclusive of all allowances, except travelling allowances and expenses when travelling on duty, and rations or the allowance in lieu.

Outfit and kit allowance will be issued to candidates who have not received them for previous service.

Applications should be addressed to the Secretary, Medical Department, Air Ministry, London, W.C.2.

THE REMOVAL OF THE AIR MINISTRY.

The Air Ministry is being removed as quickly as possible from its present home at the Hotel Cecil to three adjoining buildings in Kingsway—Empire House, India House, Canada House. On and after Wednesday, July 23rd, therefore, all communications should be addressed to the Air Ministry, Kingsway, W.C.2.

The official entrance to the Ministry will be in Empire House, but letters and parcels should be delivered at the Canada House entrance.

AIR MINISTRY ANNOUNCEMENTS.

The Air Ministry calls the attention of all persons who have served, but are no longer serving in the Royal Air Force, the Royal Naval Air Service, and the Royal Flying Corps, or who have been employed either directly or indirectly, by the Government in research or experimental work in connection with flying, or engaged in the manufacture of aircraft, or parts, or accessories of aircraft, to the fact that no information obtained through secret and confidential service publications or technical apparatus, or in any other manner consequent upon their employment by the Government, as above mentioned, may be disclosed to any other person without the written consent of the Air Ministry.

Disclosure of information so obtained may constitute an offence under the Official Secrets Act, and attention is directed to the obligations and penalties imposed by that Act.

* * *

The Air Ministry made the following announcement on July 17th :—

It is notified for general information that the Investiture for the presentation of Distinguished Flying Crosses and Air Force Crosses to Officers of the Royal Air Force will be held at Buckingham Palace on Thursday, 24th instant. There will be no Investiture on the 19th instant, but Officers who have applied already, and are not summoned for the 24th instant, will receive orders to attend later from the Lord Chamberlain's Office, as numbers and occasions permit.

It is particularly important that Officers should understand that they cannot be allowed to present themselves for Investiture unless they receive a summons to attend from the Lord Chamberlain's Department. It will be realised that it will not be possible for attendance to be ordered for 24th instant for all who have applied, and Officers who do not receive instructions to attend on that date will understand that their names remain noted for another occasion, and that no further action is required of them. It is not practicable to indicate beforehand when Investitures will be held at which any individual will receive his decoration.

There are now sufficient applications in hand to occupy a considerable time, and no further names are, therefore, required until about Sept. 1st, 1919.

Service Dress should be worn by Serving Officers and by Officers demobilised or released from service if so desired—otherwise Morning Dress (frock coat or morning coat) should be used.

Investitures for the Order of the British Empire will be arranged next October, and applications for attendance may be submitted to the Air Ministry at any time after Oct. 1st, 1919.

* * *

The Air Ministry announced on July 17th :—

His Majesty the King has been graciously pleased to signify his pleasure that a medal be granted to record the bringing of the war to a successful conclusion, and the arduous services rendered by His Majesty's Forces.

2. The medal in silver will, provided the claims are approved by the competent Royal Air Force authorities, be granted to the under-mentioned classes who either entered a theatre of war on duty or who left their places of residence and rendered approved service overseas, other than the waters dividing the different parts of the United Kingdom, between August 5th, 1914, and Nov. 11th, 1918, both dates inclusive :—

(a) Officers, warrant officers, attested and enrolled non-commissioned officers and men of the Royal Naval Air Service, Royal Flying Corps, or Royal Air Service.
(b) Members of women formations employed under a direct contract of service with the Royal Air Force Medical Service.
(c) All who served on staffs of Royal Air Force hospitals and all members of recognised organisations who actually handled sick and wounded.
(d) Members of duly recognised or authorised organisations.

3. The medal will also be granted to all officers, warrant officers, attested and enrolled non-commissioned officers and men of the Royal Naval Air Service, Royal Flying Corps, and Royal Air Force, who—

(i.) Have been actively engaged in the air against the enemy whilst borne on the strength of an operational unit in Great Britain.
(ii.) Have been employed in flying new aircraft to France.
(iii.) Have formed part of the complement of an aircraft-carrying ship.

4. The medal in bronze will be granted to all British subjects who were enrolled as followers or members of Native Labour Corps units and who served in theatres of war.

5. The riband will be : centre orange, watered, with stripes of white and black on each side and with borders of royal blue.

6. Instructions as to the submission of claims and the disposal of the medals will be issued in due course.

* * *

The Air Ministry made the following announcement on July 19th :—

The gallantry of a German prisoner of war in this country, who rescued one of our flying officers from being burned alive, has procured him release from his prison camp forthwith, a free passage to Germany, together with a sum of money and a silver watch, in recognition of his behaviour.

A British aeroplane crashed and took fire at a Wiltshire aerodrome, where the prisoner and others are employed. The pilot was entrapped and in danger of a terrible death when the prisoner in question, Private Brückman, of the 99th Infantry Reserve Regiment of the German Army, went to the disabled officer's assistance, and effected his rescue at great personal risk to himself.

BISLEY.

The first stage of the St. George's at Bisley, at which 10 shots at 300 yards are fired, took place on July 16th. The highest score was obtained by Lieut. A. B. Lewis, R.A.F., 45 points. Capt. J. Pearce, R.A.F., got 43 points.

The following are among the King's Hundred :—

Capt. C. E. Stewart, late R.E., attd. R.F.C.; Major H. R. Northover, R.A.F.; Lieut.-Col. A. C. R. Garrod, R.A.F.; and Major W. A. D. Edwards, late R.A.F.

Major H. R. Northover, R.A.F., was second in the contest for the King's Prize at Bisley on July 18th, with 248 points, and was awarded the N.R.A. Badge and £25. Lt.-Col. A. G. R. Garrod, R.A.F., was sixth with 245 points, and was awarded the N.R.A. Badge and £5.

In the revolver team competition on July 19th, the Royal Navy was first, the Royal Marines second, the Army third, and the R.A.F. fourth. The Pixley was won by Major A. T. Whitelock, R.A.F.

Captain H.R.H. the Prince Albert, K.G., presented the prizes in the absence of H.R.H. the Prince of Wales, K.G.

FRANCE.

The following is from a Paris correspondent :—

General Haller, commanding the Polish Army, was recently given his first flight in a Breguet machine by Adjudant Sallares.

A squadron of four seaplanes belonging to the French Navy have left Toulon for Cette. Two alighted in the harbour at Berre and two others in that of Carro.

Lieut. Franval, on a 120 m.p. Morane, has left for Pampeluna to give an exhibition. He intends to stop at Cazaux and Angoulême. Later he will give an exhibition before the King of Spain at Santander.

Military biplanes, new, complete with 120-130 h.p. engines, are being sold to private enterprises for the price of a Ford car.

Mention was recently made of various flights that were to be carried out under the auspices of the French Aviation Authorities, and a list of routes, pilots, and machines selected was given. These flights have been further divided into two categories—sporting and scientific.

The sporting flights are :—

Comdt. Vuillemin and Lieut. Dagnaux (Breguet), Paris-Constantinople-Cairo, by Naples and Salonika; Capt. Lafon (S.E.A.), Paris-Constantinople, by Venice and Belgrade; Lt. Bouzac (Spad-Herbemont), Paris-Fez; Lt. Patauchon (Breguet), Paris-Casablanca; Lt. Lemaitre (Breguet), Paris-Dakar; Lt. de Romanet (S.E.A.), Paris-Rome; Lt. Flachaire (S.E.A.), Paris-Amsterdam; Lt. Marinovitch (S.E.A.), Paris-Venice-Prague; Lt. Fonck (Nieuport), Paris-Madrid.

On the scientific side there will be trials of navigation by compass and radiogonometry by Capt. Lejeune (Paris-Constantinople), Sergt. Jaouen (Paris-Tunis-Casablanca-Paris), and Capt. Hebrard (Paris-Toulon).—F. T. N.

U.S.A.

On June 20th the U.S. Senate Naval Affairs Committee voted 35 million dollars for Naval aviation during the coming year.

* * *

The visit of H.B.M.A. R.34 to the United States has had the effect of arousing American interest in the big airship.

Admiral Benson, Chief of the U.S. Naval Operations, announced on July 14th that Congress had authorised the construction of large hangars and the construction or purchase of two large airships. He also stated that at first the airships will be used for experimental purposes.

* * *

The U.S. House Military Affairs Committee during the end of June increased the appropriation for the U.S. Army Aviation Service to 55,500,000 dollars.

Special provision in the new Army Bill allows $982,000 for the purchase of the Curtiss-Ellwood aviation plant at Buffalo, $1,260,000 for the purchase of the Dayton-Wright aeroplane plant at Dayton, $3,500,000 for the purchase of the airship landing-ground and sheds in Burlington County, N.J., and $470,000 for the aerodrome at Rockwell Field, San Diego, Cal.

* * *

The Air Service of the United States War Department are retaining permanently 26 aerodromes. Fourteen will be retained temporarily for storage and other purposes, and none will be abandoned or sold at present.

JULY 30, 1919.

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ON INTERNATIONAL AIR NAVIGATION AND CIVIL AVIATION.

On July 24th the Air Ministry issued the text of "The International Convention for the Regulation of International Air Navigation," as agreed "by the representatives of the Allied and Associated Powers serving on the International Commission dealing with aerial navigation and appointed as a sub-Commission of the Peace Conference."

It is stated that "the Convention has been agreed to by all the representatives, subject to certain reservations. The Convention has not been formally approved by the Supreme Council of the Peace Conference. It has, however, been agreed that it should be issued for the information of the public of the Allied and Associated States."

Hitherto it has been the custom of this paper to publish the text of all important official documents for the benefit of its readers. In this case it is impossible to do so, for the convention covers 43 pages, each somewhat larger than a page of THE AEROPLANE. Therefore one can only quote important points in the document and comment thereon.

The official "white paper" containing the full text can be had for ninepence from any bookseller, or for a shilling post free from the Publishing Department of THE AEROPLANE, 61, Carey Street, W.C.2. It should be unnecessary to say—but knowing the carelessness of aviators one does so none the less—that everybody who has to do with Civil Aviation ought to have a copy of this document, for on the understanding and observation of its provisions depends the smooth running of all future aerial traffic outside this country.

It cannot be too widely known that ignorance of the law is no defence against prosecution for breaking it. Therefore every pilot who hopes for a job in civil aviation, every ground engineer who hopes for a job with a civil aerial transport firm, every owner or prospective owner of an aeroplane who hopes to fly abroad, and in fact everybody in any way concerned with the flying, equipment, management, or sale of commercial aircraft ought to be thoroughly well educated in the contents of this all-important document before they venture on any international work.

A MATTER OF LIFE OR DEATH.

It ought to be fairly plain to anybody with moderate intelligence that the whole future of aviation, the whole life of the Aircraft Industry, and, as a corollary, the efficiency of our Flying Services in the next war, depends on International Air Navigation. If we develop our international air navigation in an intelligent and enterprising way we shall become the world's leading Air Power. If we are content to fiddle around with "joy-rides" and "exhibition stunts" in our own country for the next few years, then we can say "Good-bye" to Air Power and sink again into the fourth-rate position which we held before the recent war.

America will acquire our foreign trade in commercial aircraft just as she acquired the world's motor trade through the self-sufficiency, lethargy, obtuseness, and conceit of British motor makers. Germany will acquire the world's trade in war machines just as she acquired the world's trade in guns, small-arms, and ammunition before the war.

It is true that Germany is forbidden by the Peace Treaty to make war aircraft, but the German is much too clever to be defeated by such a clause in a treaty. A high-speed racing aeroplane or a specially designed acrobatic machine only needs a gun or two and it becomes forthwith a first-class fighting machine. And just as sawing the forward gunner's cockpit off a big bomber makes it into a perfectly peaceful passenger machine (*vide* certain illustrations in this paper), so sticking a projecting nose onto a passenger machine will make it a self-protecting bomber.

Remember how, when Napoleon decreed that Prussia should only have an Army of 20,000 men, the Prussians introduced the short-service system and put 100,000 men through their Army in a few years. Germany will do something very similar in the matter of aircraft.—And we shall be mighty glad of it in years to come, when the real race-war against the Slavs comes upon us.—But meantime Germany will be capturing our foreign trade in aircraft.

Therefore it is a matter of life and death to the British Aircraft Industry whether we get going on International Air Navigation before our competitors or not. And precisely when we get going depends very largely, if not entirely, on the Air Ministry, and more particularly on the Department of Civil Aviation.

DEPARTMENTAL HINDRANCES.

So far, we have no reason to be pleased with the work of our Civil Aviation officials. One is prepared to make every allowance for Sir Frederick Sykes, Controller-General of Civil Aviation, for he has been up against many difficult problems. In the early days of his Department most of his time had to be spent in Paris debating this very Convention which is now under discussion. Also, he had no staff with which to carry on the work of his Department in his absence.

Being a singularly far-sighted man, he, no doubt, decided that the ultimate good of Civil Aviation would be better served by influencing the International Conference in the right direction than by stopping at home and confining his energies to regulating joy-rides and exhibitions. Wherein he was absolutely right. But while he has been away the mice at home have been not so much playing as gnawing at the roots of our Aircraft Industry.

When most of the work of the International Conference was done General Sykes had a bad smash at Kenley, and that must have hindered his work still further. And since he has recovered and has been trying to build up a staff for his Department it seems that he has had

foisted upon him just about the most useless set of individuals who have ever been collected into a Government office.

It is only fair to say that General Sykes's Department is not always directly to blame for the hindrances which have been placed in the way of civilian flying. But it is certainly indirectly to blame, for its duty is to develop civil aviation, not merely to control it. And a very important part of that duty should consist in removing hindrances which are raised by other Departments in the Air Ministry. The Department of Civil Aviation should be, in fact, a kind of foster-mother which should take up the defence of any civil aviation venture which was being put-upon by other Departments.

A Case in Point.

Take for example the case of the machines and engines which certain firms in the Aircraft Industry were forbidden to use in the Aerial Derby, just when British aeroplanes needed a big International advertisement as an off-set to the fine performances put up by our friends in France and Italy. The reasons given by the Supply Department, which seems to have been the Department which prohibited the use of these machines, were so utterly futile that they could hardly have deceived even a Member of Parliament or a daily journalist. It should have been the duty of the Civil Aviation Department to defeat the Supply Department and to have obtained permission for the machines to fly. Yet the Civil Aviation officials did nothing to help.

Everything good that was done during the war was only done by one Department defeating another, and it was commonly said that the war on the Bolo Sector of the Strand Front was the bitterest of any. So in civilian flying, success will only be attained if the Civil Aviation Department makes up its mind to defeat all the other Departments.

A Public Scandal.

Take another example. The Supply Department, in an effort to achieve economy, doubtless praiseworthy though it may lead to a particularly dirty form of graft, appears to be buying in the cheapest market, regardless of quality, and in doing so seems to be going the right way to work to kill enterprise and originality, which means killing progress in Civil Aviation, and so destroying the efficiency of the equipment of the Royal Air Force.

In a very forcible letter, which under the intriguing title "Embusqué's Grab" appears on page 438 of this issue, a necessarily nameless victim of the Supply Department describes in detail how well-designed and well-made components of aircraft are practically stolen by the Department and farmed out to be made as cheaply as possible. And, in one of the strongest and most closely reasoned of the many brilliant articles which have appeared under his pseudonym, "Strasbourg" lays out, on page 413, the idiocy of the officials who practise these false economies. But one notices that he refrains from pointing out, as he might have done, that the outsider who will take on the cheap and nasty reproduction of another man's good design is quite possibly the very type of man who will bribe minor officials to influence the order in his direction and who will bribe minor inspectors to pass bad work.

Such methods of doing official business spell death and damnation to British Aeronautics and all concerned therewith. Cheap reproductions of aeroplanes, engines, fittings, or instruments mean fatal accidents in the Royal Air Force, and a bad name for British aircraft abroad. Depriving the actual designers of their just due in the way of orders and profits means putting them out of business, and so killing progress. As the advertisement of the London and Provincial Aviation Co. said, when they retired from business with their profits in their pockets instead of spending their profits on hoping for the best, "One might as well play for nothing as work for nothing."

The Handicap of a Uniform.

It is precisely when such things as this occur that the Department of Civil Aviation should step in and see that the Aircraft Industry has fair play. But apparently none of the officials in that Department have either the brains, or the pluck, or the initiative, to start out and raise a row in the interests of Civil Aviation.

Moreover, it seems that the said officials are still handicapped by being in uniform, and so cannot, even if they they had the pluck, do their duty properly. Obviously a captain or a major or a lieutenant-colonel in one Department cannot go to a General of one sort or another in a different Department, and tell him that his subordinates are either a set of amazing fools or else a crowd of crooks.

A civilian could do so, just as easily as one can oneself, though perhaps he might do it more politely. And that is what ought to be told to the Chiefs in the Supply Department. And the sooner they realise the fact the better.

The Official Rubbish Heap.

During the war one pointed out over and over again that the technical people in the Air Ministry with very few exceptions were the "throw-outs" of the Aircraft Industry and of the Motor Trade. Almost everybody who was any real good was producing aircraft, and not sitting in the Hotel Bolo.

To-day the position is obviously worse. Since the Armistice removed the immediate need for dodging trenches even those who could not get jobs in the Aircraft Industry have cleared out of the Hotel Bolo. A vast percentage of the Air Ministry "experts" have returned to their pre-war avocations as motor touts, book-makers, advertisement canvassers, and so forth. Consequently the people who are still left in the technical jobs, and have the fate of British Aeronautics in their hands, are those who are so astoundingly bad that they cannot get a job of any sort anywhere except in the Air Ministry.

There are, of course, a few exceptions, such as regular officers in the R.A.F. whose whole career is wrapped up in the King's Service, and a few enthusiasts who see that it is their duty to stay in the R.A.F. and try to make a success of its technical work. But, taking it by and large, one is fairly safe in saying that whereas the various Technical Departments during the war were merely the scrap-heap of the Aircraft Industry, they are now the rubbish-heap of all British trades. And nobody will agree more cordially with this dictum than will the few remaining good men who are condemned to work with this commercial residue.

A Crying Need.

Naturally this state of affairs cannot continue. It cannot be allowed to continue. And, above all, the people who have up to the present made such an unholy mess of commercial aeronautics within the British Isles cannot be allowed to extend their dire influence to International Air Navigation.

There is a crying need for drastic reform in the three Departments which affect commercial aeronautics, the Civil Aviation Department, the Supply Department, and the Aeronautical Inspection Department. The purely Military (including the Naval) side of the Air Ministry is doing very well indeed. So is the Research

Department—which, one hears, is displaying an intelligent appreciation of good work and is operating in a way which would have made a vast difference to the R.A.F. in the Field if only it had been in similarly capable hands during the war.

The Air Ministry to-day rejoices in a Department of Information under a very able officer who has already done much valuable work. One would like to suggest that perhaps the most valuable information which this Department could issue at the moment would be a complete list of all the officials in the three Departments before-mentioned, together with an account of the qualifications for his job of each of the officials in that list. One believes that the resultant document would be both entertaining and educative, as well as funny without being vulgar.

Reform Agitation.

In any case reform is needed, and reform will have to come. All reforms are preceded by agitation, as witness every reform, from Wat Tyler's Rebellion and earlier, down to the Yorkshire Coal Strike. The agitations of 1915 and early 1916 resulted in the Air Enquiry Committee of 1916 and the reforms which resulted in the R.F.C. winning the command of the air in 1917.

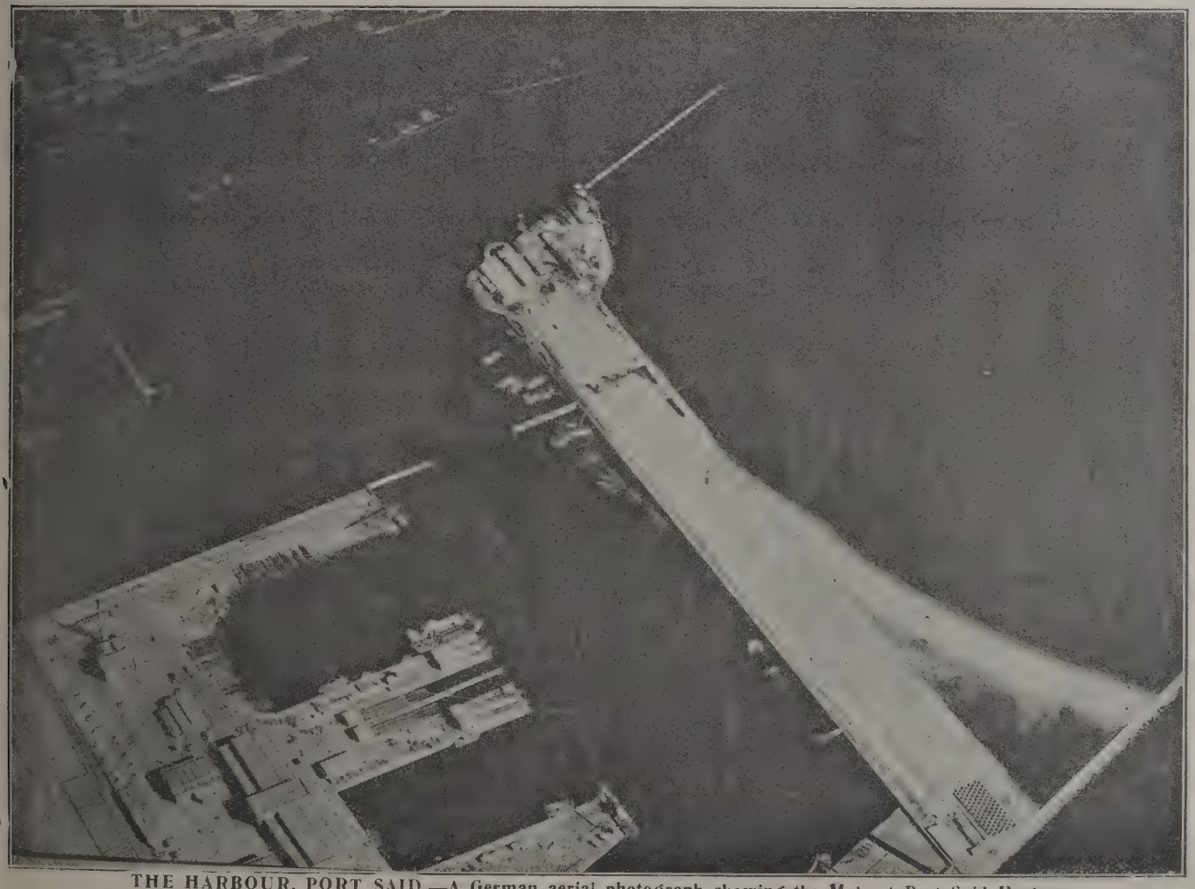
Something of a very similar nature seems to be afoot to-day. One hopes that it will not be necessary to hold another Air Enquiry, but if it becomes necessary it ought to be more amusing than the 1916 Enquiry, if only because the manufacturers will have no fear of losing Government orders, because at the present rate of progress they will have none to lose. Those whose Departments are at fault will do well to set their houses in order without waiting for the agitation to develop further, for thus they may hold their jobs. If they do not reform their Departments themselves they are bound to suffer accordingly, for even though they may not themselves be to blame they are none the less officially responsible for the misfeasances of their underlings.

Lack of Faith.

It is true that the Air Ministry is not alone to blame for the present state of affairs. In a particularly amusing article, on page 445 of this issue, that humorous but eminently practical writer "Medway" discourses on "Men of Little Faith," and one fears that he is only too right in his belief that some people in the Aircraft Industry themselves lack faith in the future of commercial aeronautics. Magnificent chances of securing foreign business are being lost, largely through lack of enterprise. And that lack of enterprise is simply caused by lack of faith, for those who are losing the opportunities have shown plenty of enterprise in other directions.

The Aircraft Industry must convince itself that there is money to be made out of International Air Navigation. It is no use sitting still and waiting for the money to make itself out of Government orders, and out of foreign Governments who, it is hoped, will come over here and beg us to let them buy aeroplanes.

Not long ago one was arguing with a very astute business man who was hesitating whether to spend some of his war profits on commercial aviation, One pointed out to him that if he got hold of a railway concession in, say, China he would not hesitate to spend a few millions and would not expect any return for his money for three or four years, and that he could well afford to do the same with aviation. His reply was simply that if he built a railway he would know that as soon as the railway began running he would be assured of a definite number of third-class fares and a definite amount of goods traffic.



THE HARBOUR, PORT SAID.—A German aerial photograph showing the Mole at Port Said Harbour.

The reply was ingenious, but not convincing. One holds firmly to the belief that it is possible to go out and *make* a market for civil aerial transport if one sets to work the right way. And it is just this faith which is lacking in so many who could afford to go out and make their own markets if so disposed.

The Monopoly Question.

Major C. C. Turner, in his latest article in the "Observer," raises another point which has a bearing on the present "hold-up" in commercial aeronautics, if one admits his premises. He says:—

"There is too much evidence of internal strife, which is certain to increase as the situation, owing to the lack of Government encouragement, makes it increasingly difficult for individual firms. There are some who say this situation has been brought about deliberately. There is a struggle to secure absolute control by one monopoly working side by side with the Government establishment. The movement goes so far as to include the aeronautical bodies. The Royal Aero Club is probably regarded as a nuisance, since its insistence upon the care for the sporting and private side of flying runs counter at almost every point to monopoly, State or private. The Royal Aero Club gets stronger and stronger, in spite of insidious influences and counter-mining. The Royal Aeronautical Society is, in the nature of things, easier prey.

"But the nation's best interests are too closely concerned with the maintenance of a virile industry, with room and freedom for every capable designer and for the greatest versatility and diversity of talent, for anyone who has those interests at heart to submit to influences that, working on no matter how reasonable-seeming excuses and motives, are essentially inimical to the country's welfare."

The "congealed inuendo," as Mrs. Malaprop called it, is not hard to follow. According to Major Turner, if one reads aright, some firm or other is trying to "corner" commercial aeronautics, and to queer everybody else's pitch in the process. The only question is, which firm?

Obviously one thinks of Mr. Holt Thomas's group first. The Aircraft Mfg. Co., Ltd.; Aircraft Transport and Travel, Ltd.; Airships, Ltd.; The Gnôme and Le Rhône Engine Co., Ltd.; Peter Hooker, Ltd.; and perhaps a few more of which one is ignorant, make a formidable list of producing firms. And when one considers Major-General Brancker, Brigadier-General Festing, Lieut.-Col. O'Gorman, Mr. Alfred Turner, and sundry other ex-officers and ex-officials, one perceives a galaxy of talent which might well make a successful effort to secure a monopoly of civil aerial transport.

But then again there is Sir Samuel Waring's group, the Alliance Aeroplane Co., the Bat Co., the A.B.C. Engine Co., and a few more; and a number of astute business men concerned therewith. Also there is that benevolent autocracy known as Handley Page, Ltd. And there is a little affair called Vickers, Ltd., which has a few stray Admirals, Generals, officers of lower rank, any quantity of M.Ps., and several millions of capital, which it can use to fight or to create a monopoly. And there is a concern named William Beardmore and Co., Ltd., which carries some weight. And another familiarly known as Armstrong-Whitworths. Not to mention the variegated ramifications pertaining to Boulton and Paul, Ltd., and the solidly compact Sopwith Co., Martinsyde, Ltd., and sundry others.

Any or all or each of them might be severally, separately, or conjointly trying to create a monopoly. And the more they try the better for trade. Competition is the life-blood of business, and commercial progress in aeronautics as in everything else depends on a chronic infraction of the Tenth Commandment. Therefore good luck to whomsoever may be trying to secure a monopoly. By trying they will stir up competition. And that will be just exactly what is wanted to stir up the Air Ministry.

International Air Navigation.

Meantime International Air Navigation is not yet a practical proposition. Although the Convention has been signed it has not yet been ratified or passed for necessary action, or whatever it is called, by the various High Contracting Powers. Apparently one cannot yet pack one's grip and take an air trip to one's old home town in a foreign country, nor can one start from Lympne (pronounced Limb) in Kent after lunch for a tour of the battle-fields of France before returning to dinner. International politics still intervene.

Perhaps by the time International Flying becomes legal the Departments of Civil Aviation, Supply, and Aeronautical Inspection will have reformed themselves and all will have become well. But one doubts it. Even International Politics work more quickly than does the internal reform of Government Departments. Still, the said Departments cannot plead that they have not had fair warning.

One notices that so far one has said nothing about the text of the International Air Convention. Perhaps therefore one had better postpone writing about it till next week. One hopes that by then all readers of these notes will have procured a copy and so will be better able to follow the arguments thereon.—C. G. G.

THE QUEEN OF NORWAY AND AVIATION.

Her Majesty Queen Maud of Norway, accompanied by the British Chargé d'Affaires, Mr. Esmondovey, went for a flight in an aeroplane on July 24th.

AN R.N.A.S. DINNER.

It is proposed to hold a dinner for officers of the late R.N.A.S. who were at Hendon between August 4th, 1914, and March 31st, 1915. It is proposed that this dinner be held at the Café Royal on August 16th next. The tickets should work out at about £2 2s. to include wines and breakages. Would any officer desirous of attending such a dinner write Captain H. H. Square at 3, Clifford Street, as soon as possible?

PAY IN THE R.A.F.

The following letter has been received:—

Sir,—In last week's issue of The Aeroplane I note you say, "That officers in the Royal Air Force will now be able to live on the new rates of pay. This does not apparently appear to be the view of the remaining officers in the Force.

An infantry captain is encouraged to marry at that rank, but can you inform me how a married Air Force captain can live, according to his position, on 29s. a day (a decrease of 4s. 6d. per day on present pay)? Woe to him, indeed, if he is blessed with children!

I am detailing a rough statement of my brother's expenditure, and defy anyone to show extravagance or unnecessary items. I am also omitting any sum for the education and clothing of his two children:—

	£
Mess expenses (yearly)	72
Uniform	60
Rent and rates	65
Maid	20
Household expenses (food, etc.)	200
Clothing (wife)	60
	477

These items are absolutely at the lowest computation, and the balance of £54 is supposed to cover incidental expenses, travelling, income-tax, etc. Obviously it is inadequate.

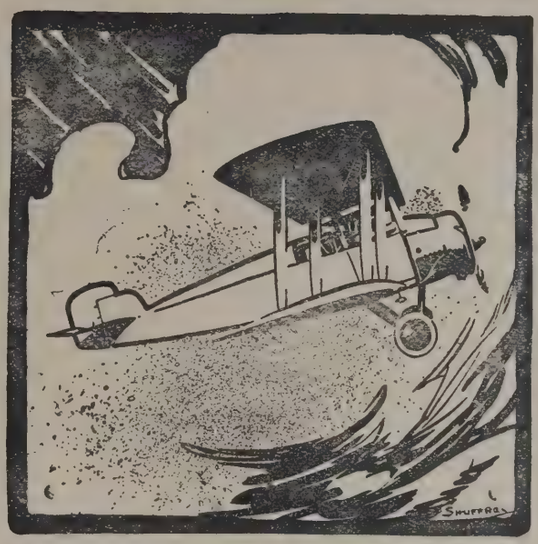
My brother has completed some hundreds of hours' flying, and, to the best of my knowledge, is still competent. He is also a pre-war soldier, and is acquainted with army routine in all its phases. However, unless someone can suggest a sane and sensible solution of how to live on the existing rates of pay he will have to leave the Force.

Apologising for writing at such length.

Late Major, R.E.

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THE PAY OF THE ROYAL AIR FORCE.

By HENRY FORESTER.

Pay for officers in the fighting services of great countries has never through the ages been an affair of first importance. To fight for the king and for the nation has been both the privilege and the duty of those born in gentle estate. It was the price paid for lineage, and it was at the same time an exclusive joy. None can imagine even the most material of paymasters assessing in the metal of commerce the national daily value of Sir Philip Sidney. Neither Wolfe nor Sir John Moore nor Nelson nor his Grace of Wellington would have served the king with less devotion had the rates of pay been less than they were, or had even they been non-existent. These were leaders in the art of war, the inspiration of the age, and it is perhaps unfair to quote them as instances of the futility of daily money values in the military Services of the Crown, but it is nevertheless true that soldiers or sailors have never in recent centuries selected their professions with a view of earthly prosperity. Piracy, the Stock Exchange, the law, and other professions of a similar nature all held and still hold greater and more certain possibilities of wealth. It is the soul and not the substance which makes the great soldiers.

Yet it is unfair to historic truth to forget that inadequacies of pay in the lower ranks were made up in time of war by loot gained by vigour in action. Loot to-day is the privilege of the civilian who serves his country best by remaining far from the fields of war in a security gained at the cost of those in whom the old spirit of service survives. Hence it is necessary that the soldier of to-day should be paid a living wage. No longer is the officer drawn exclusively from a class in which wealth was common. The noble and the gentle classes of to-day are in general possessed of but moderate means, and it is no longer possible for them to serve the country entirely at their own expense.

The Great War has passed, and with it many of the habits and customs of long gone days. The world is changed, and the conditions of existence are no longer the same. It is no longer possible to rely on the spoliation of a defeated enemy for the maintenance of officers and men of the victorious army. Wars are too few to make such a system profitable to the military or charming to the civilian. Hence the three Services have in the past few weeks reorganised the conditions of service which formerly were the rule. On July 21st the Air Ministry issued a minute outlining the new scale of pay in the Royal Air Force in so far as officers were concerned, and it is with that minute that I propose to deal in this paper.

The most prominent feature of the new scale is the disappearance of flying pay. No longer is any officer to receive any additional remuneration because he is called upon to fly. With the exception of certain specialist services of a non-executive kind (such as the chaplains, the dentists, and the doctors), all officers of equal rank in the Royal Air Force will receive an equal rate of pay. It is true that in order to allay criticism it is laid down that all executive officers in the Service shall be trained as pilots, and will be liable to carry out flying duties at any time. But in practice the difference from present conditions will be but slight. No man can do two things at once with adequacy and efficiency, and it is absurd to expect staff officers or those specially engaged in administrative or technical work to do the duties of a pilot as well, even though these duties may be intermittent.

Many flying officers have held the opinion that the risks attendant on their mode of life should be recompensed by additional payment. They have regarded with faintly concealed contempt such officers as have been engaged exclusively in non-flying duties. They have never given proper credit to these others for the hard work and the mental capacity which was demanded by an efficient execution of the work allotted to them. As a parallel instance, it is generally known that the man in the trenches thinks that the staff officer lives an easy and guarded existence, and that his uses in life are not very high. It is a fallacy which, like the majority of fallacies, is strongly held by the majority of people.

The service of the King is not and cannot be a career of profit. It does not produce millionaires. Glory may be achieved, but never fortune. Heroism cannot be scaled in money values, nor can devotion to duty. Nor



FLYING IN NEW ZEALAND.—Another View of Auckland taken from one of the Walsh Brothers' Flying Boats.



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does it cost a hero (flying) any more to buy a beef-steak than it does the humbler non-flying officer. Hence in arranging a scale of pay the simplest and fairest plan is to provide each rank with the emoluments necessary to decent existence, irrespective of the specific duties of each category of the rank. It is a privilege to be heroic, and bravery is not a financial asset. Each officer in the Service, so long as he does his duty, is essential in the scheme of things, and he could not well be eliminated if success is to be attained. One is therefore convinced that the Air Ministry have chosen the right course in this matter.

The special rates of pay (consolidated) paid to staff officers in the Royal Air Force have disappeared, save in the case of officers serving at the Air Ministry, who all receive additional pay ranging from £75 to £100 a year. This is intended to represent the additional cost of living in London. Directors and Deputy Directors who sit in solitary glory in whatever evacuated hotel or other building may from day to day house the Air Ministry receive special rates, irrespective of ranks. Directors have an increase of £500 per annum in some cases and £1,000 in others, the fixed rate being £2,000 a year. Corresponding improvements are made in the case of Deputy Directors.

But these aristocrats of the administration are not interesting. It is with the lower ranks of officer that one must first deal. Second lieutenants of all types now receive the rate of pay formerly given to junior flying officers—18s. a day—while all lieutenants receive 23s. a day, rising to 25s. after two years' service in the rank—that is to say, a final increase of 1s. a day over the former highest rate for the rank. Thus flying officers gain but little in the new rates, while administrative subalterns double their previous pay. There will be jubilation amongst the office files, and the adjutant will feel that he has not lived in vain. Even staff officers do not lose under the new system, though the fact that they do not get higher pay for their more responsible and more wearying work will reduce the desire to be posted to the staff.

(To be continued.)

CONCERNING KITE BALLOONS.

By the Late W. L. Wade.

To the older readers of THE AEROPLANE the early history of the kite balloons in this war is fairly well known, but for the benefit of those who have but recently acquired an interest in aeronautical matters it may be well to point out that the invention of the kite balloon, as an improvement on the ordinary spherical captive observation balloon, must be credited to the Germans.

The first of these balloons was used a considerable time before the outbreak of war, and the Germans employed quite a number of them in the military manœuvres of the years immediately preceding hostilities.

In 1914 neither the British nor French Armies possessed a single kite balloon, and considerable scepticism evidently existed as to their probable usefulness in war time.

Curiously enough, the only kite balloon in the possession of the Allies at the outbreak of war belonged to the Belgian Army, to whom it had been sold by Germany, probably in a moment of commercal enthusiasm.

The Germans very quickly put large kite balloons, which incidentally were known by the name of the firm which produced them, Parseval-Siegsfeld, into operation on the Western front, and they soon proved a valuable adjunct to aeroplanes in connection with artillery spotting, and in practice they were found to be a great deal more difficult to destroy by hostile artillery fire than might be imagined. In those days also, anti-aircraft measures of all kinds had not reached a very high state of effectiveness, so that the Parseval-Siegsfeld kite balloons were found to enjoy a considerable degree of safety.

The Result of an Agitation.

Although the operations of these machines quickly attracted the interest of many soldiers on active service, particularly certain progressive artillery officers, it was difficult to arouse enthusiasm in high places concerning their possibilities, and a public agitation arose, in which THE AEROPLANE took a prominent part.

Finally the Royal Naval Air Service decided to add one more to its wide range of activities, and therefore established a Kite Balloon Section, an experimental and instructional station being established at Roehampton under Lt.-Col. (now Brig.-Gen.) E. M. Maitland, with Squadron-Commander DelaCombe as his "Number One."

A number of balloon units were organised and personnel trained, and before long a number of balloons were sent to France to assist a somewhat sceptical Army in the punctual and correct delivery of its shells.

The possibilities of the kite balloon as a purely Naval weapon were also appreciated, and certain steamships were adapted to carry a balloon for observation purposes at sea, one of the ships being sent at an early date to the Dardanelles, where some extremely amusing episodes arose as the result of the lack of faith on the part of certain "stick and string" Naval officers.

After a short experience with the Naval balloons the military authorities were so impressed with the results that they promptly took measures for the acquisition of a supply of balloons manned by personnel drawn from the Royal Flying Corps; whereupon the Naval balloonists were told to look for other spheres of activity.

On the Western Front.

Before very long the chain of kite balloons which appeared to the rear of either side of the fighting line became such a source of annoyance and danger to the troops which served as the targets of the guns which were directed by the different balloons, that all belligerents arrived at a mutual decision to clear their opponents' balloons out of the sky, and all sorts of unpleasant tactics were adopted with this end in view.

The offensive was made both from the air and from the ground. Incendiary bullets had not then reached a high state of development, and after more or less ineffectual attempts to bomb the balloons from overhead, aeroplanes were specially fitted up with batteries of rockets which proved to be fairly successful.

From the ground anti-aircraft guns attacked the balloons in the air, and long-range artillery of the ordinary type made it their business to shell the winches on the ground with the object of severing the mooring cables. These latter guns were, on the whole, much more successful than the anti-aircraft guns, and rendered it necessary for the balloon operators constantly to alter the position of their winches.

Balloon casualties became unpleasantly frequent, and as the destruction of their crews was usually a secondary result of the destruction of the balloons, it became necessary to devise a means of escape for the observers when their balloons were set on fire.

Then, for the first time in the war, the parachute was put into general use, and although it constituted a measure of safety to the balloon observers it also added one more trial to their lives, owing to its then comparative uncertainty of operation; and it must be remembered that practice jumps were necessary, these being a great deal more trying to the nerves than forced jumps at moments of danger.

As a rule, the early parachutes opened properly provided they were given sufficient time, but on occasion the time taken was so long that the unfortunate observer fell some hundreds, and occasionally some thousands, of feet before he received any support. It must have been enough to deprive almost any man of his reason to feel himself whizzing through the air and to look up overhead and see his parachute trailing behind him looking very much like a crumpled sheet.

At the present time, of course, the parachute has become as reliable in its operation as almost any other form of mechanical apparatus, but it must have been a veritable nightmare in the early days.

Important Improvements.

The kite balloon as produced by the Germans was a fairly crude arrangement, and it was promptly improved by the Allies, notably as a result of the work of Capt. Caquot, of the French Army, who redesigned the balloon in such a manner as to increase its stability, and to reduce its head resistance, which resulted in the diminution of the strain on the mooring cable and thenceforth throughout the war it was regarded as indispensable to the efficient use of artillery.

In the meantime the Royal Naval Air Service had been left to go its own way with the development of the kite balloon as a naval instrument, which chiefly found service in connection with anti-submarine patrols and escorts to transport and mercantile shipping, and no other measure did more to destroy the morale of the crews of enemy submarines. In this connection the kite balloons did not operate only from special ships, but they were also towed from the sterns of destroyers, patrol boats, and in certain instances by merchant ships.

The last use to which kite balloons were put was in connection with defence against hostile bombing aeroplanes, kite balloons being set up in rows, which supported rows of steel wires technically known as "aprons," which were calculated to obstruct the passage of aeroplanes in the dark. These kite balloon aprons resulted both in moral and material damage to the raiders.

Taking it all round, therefore, the kite balloon has been a decidedly important factor in the war, and it is not beyond possibility that further may be heard of its activities in connection with civil aerial transport.



B.T.H. Magnetos

all-British in design and workmanship, were used **on the first Airship to cross the Atlantic, the R. 34,** on the aeroplanes which secured the British altitude record, and the first and second prize-winners of the Victory Aerial Derby at Hendon.

The above performances add to the record of B.T.H. Magnetos, and support the high opinion in which they were held by pilots during the war for reliability in service.

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B T-H

The WORLD of AERONAUTICS

NEWS OF THE WEEK FROM ALL QUARTERS

An Aerial Black Maria.

It is reported from the United States of America that for the first time in history a prisoner is to be transported by aeroplane from the place where he was captured to the appointed court of trial.

It is believed that by this system of giving joy rides to criminals the pre-dry average of crime may be kept up, as it is said that since the happy days of dampness law-breaking has decreased, and unless some inducements are given to criminals it it feared that some of the police will be thrown out of employment.

Heavy-Weight Aviators.

A writer in "Country Life" states that:—"Increase in size in airships means an increase in their crew, but not necessarily proportional to that in the ship itself. Thus, whereas the crew of the R.34 weighed, say, five tons—which is a generous allowance, as we are not actually quoting from definite figures—the crew of an airship of five times the size and nearly ten times the lifting capacity might be reasonably expected not to exceed 10 tons."

One agrees that the estimate of five tons as the weight of the crew of the R.34 is a generous one, as it implies that each member of the crew, even including the cat, must have weighed about 25 stone.

The Flying Ring.

According to "The Aerial Age" of America:—

"The recruiting service of the Army has planned a novel stunt in connection with their recruiting campaign. A boxing match aboard an aeroplane will take place over Camp Dix, providing the New Jersey State Boxing Commission enters no objection, though how far above the earth the authority of the commissioners may run is a question.

"Lieut. John S. Donaldson, of the First Pursuit Squadron, challenged all-comers to meet him with gloves. The challenge was accepted by Lieut. Leroy M. Wightman, a machine-gun officer handy with the padded mits. The boxers will be belted within a tiny ring in the tonneau of a large bombing plane so that there will be no danger of a plunge to earth in case of a knockout. The flying ring will be driven by Sergeant John Moore, and it is planned to have the referee and timers in another plane that will keep alongside the boxers' plane so that they can judge the points and time the rounds."

The chief difficulty seems to be the provision of view points for spectators. If hundreds of aeroplanes carrying sport-loving passengers circle round the "flying ring" there may be an exciting time.

Flying Chaperones.

An American periodical reports that:—"Because a student at Vassar took a long air ride with a young lieutenant in the U.S. Air Service, the possibilities are that aeroplane joy rides may become prohibited by the social laws of Vassar College. The student's name has been withheld, but because of her exploit the students have considered inserting rules for aeroplaning into the laws, which are made and enforced by the students' association.

"An army aviator was flying over the college grounds, and landed in the driving park. He asked one of the students strolling nearby whether she would care to go up with him, and she accepted. It is not yet decided whether this is a violation of the rule against going riding unchaperoned, but aviators are advised for the present to use three-passenger planes."

The point that is not clear is whether each young army aviator is expected to carry his own chaperone in his three-seater or if he is to rely upon local resources for the supply of one when the exigency arrives.

One suggests that the former is the more practical scheme, and that an official corps of flying chaperones should be organised, and that they should wear the observer's wings, with perhaps a heart in place of the conventionalised eye.

Conductors to——

In view of airship accidents a number of writers in the lay Press have been suggesting that all airships should be fitted with lightning conductors. The columns of hot air written on this subject would form excellent conductors, doubtless, but the people who make the brainy suggestion do not point out a practical method of conveying the electric fluid to earth. An unearthed conductor would be an invitation to lightning. Can it be that this sort of thing is part of the Bolshevic propaganda?

In the Fashion.

Reuter has announced a strike of mail pilots in the United States of America. It was declared on Friday, July 25th, following on the refusal of the Post Office Department to reinstate two pilots who had been discharged on account of refusing to ascend in fog recently. The New York-Chicago air mail service is affected.

His Master's "Hum."

"A. R. E. M.," in the "Dundee Advertiser," has been telling some dog stories. He writes:—

"During the war most air stations had their full complement of canine mascots. Quite a number of these dogs were confirmed fliers, and I knew several of them who had done enough hours in the air to qualify for their 'wings' long before the Armistice.

"A . . . remarkable animal is a fox-terrier which belongs to one of our best-known airship pilots. The first time this dog was taken for a flight he got so terrified that he jumped out of the ship and fell fully twenty feet to the ground.

"When he was taken up on subsequent occasions the precaution was taken of tying him in, but, strangely enough, he showed no fear afterwards, and made no efforts to get swiftly back to earth. This dog has up to date done considerably over 100 hours' flying.

"The most remarkable thing about him, however, was this. By some wonderful means he always knew his master's airship when it was coming home. Two or three ships might come in from patrol perhaps at dusk, and he would pay no attention to them. Then presently his master's ship would be sighted, and away he would go down to the landing-ground to welcome it.

"None of those who noticed him doing this time after time knew how he was able to distinguish one ship from the other. Perhaps there was something in the hum of the engine that he recognised, or perhaps it was just instinct—but the fact remains that he undoubtedly did know."

An Aerial Grand Stand.

According to a correspondent of "The Times," "an aerial wedding was the feature of the New York police athletic meeting . . . . . when Miss Wily Schaeffer, of this city, and Lieutenant George Burgess, of the United States Aviation Corps, were married in mid-air with the assistance of the wireless telephone. The ceremony was performed by the Rev. Alexander Wouters in the presence of thousands of people at a height of 2,000 feet.

"The young couple ascended in one machine while the clergyman was a passenger in a second aeroplane, from which, using a wireless telephone, he read the marriage service and heard the bride and bridegroom exchange their vows. The witnesses, the best man, and the bridesmaid remained on *terra firma*, where, together with the crowd which filled the grand stand, they could hear every word of the service by means of megaphones attached to wireless telephone receivers."

After reading of the attendance of "thousands of people at a height of 2,000 feet," one is disappointed to read in the second paragraph that these wedding guests were in a grand stand on the ground.

One wonders how much further this kind of imbecility can go.

In Haste.

According to the "Aerial Age," of America, "Lieut. Warren P. Kite, for twenty-two months instructor at Kelly Field, eloped with Miss Orpha Kate Arnold, ranch owner and oil operator of Larned, Kans. After a 55-minute flight he landed at Hays, where the ceremony took place. Lieut. Kite arrived at Larned nine days previous to the wedding, in order to participate in local home-coming celebrations, during which he became acquainted with the bride."

One's experience of American methods of non-production of aeroplanes during the war led one to believe that the reputation for "hustle" previously held by the U.S.A. was overrated. But Lieut. Kite is evidently one of the much-advertised "do-it-now" type. To have eloped by aeroplane with a lady he had met only nine days previously indicates enterprise. One's good wishes are with the couple.

A Generous Gift.

Captain Sir John Alcock and Sir A. Whitten-Brown have given £2,000 to the employees at Vickers' Weybridge works who constructed the aeroplane in which they crossed the Atlantic. The firm is supplementing the amount to make it sufficient to pay one week's wages to all the employees at the works.

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The WORLD of AERONAUTICS (continued)

On Peace Night.

In the "Referee" of July 20th, "Dagonet" wrote:—

"I have always respected peace, but on the night of July 19th I looked down upon it. I looked down upon it from the heavens above. What a sight! At first I hesitated about looking down, because I was afraid it would make me giddy. But it didn't. My giddy days are evidently over. I felt so comfortable that I was able to write in the notebook that I took up with me. I thought of writing a full account of peace night as I saw it from the aeroplane and dropping the sheets down one by one addressed to the Editor of the 'Referee,' with a written request that anyone picking them up would carry them at once to the 'Referee' office. But I realised that there might be more difficulty in getting about down below than I was experiencing up above. So I reserved my description for a more convenient occasion, and asked my friend to put me down near Salisbury Square. He explained that it was within the four-mile radiance—I beg pardon, radius—and that he couldn't, but that he would drop me on the edge of the radius. And he did."

The Production of Gas.

The world of aeronautics and the production of gas—or hot air in lieu thereof—have long been indissolubly connected. The present note deals, however, with that rarer, more silent, and efficient branch of the subject which has to do with the chemistry and manufacture of hydrogen.

Major P. Litherband Teed, A.R.S.M., A.I.M.M., has during the war been very intimately connected with the production of the hydrogen used for the inflation of the numerous lighter-than-air craft which have been used in H.M. Service during the war, and in "The Chemistry and Manufacture of Hydrogen" (Edward Arnold; price 10s. 6d.) he has embodied the latest and most up-to-date information as to the qualities of hydrogen and the various processes by which it may be manufactured.

The chemistry of hydrogen in its inorganic combinations and in certain of its more important organic compounds is dealt with briefly, but in a manner intelligible to those whose chemical knowledge is of the most elementary. Both the chemistry and the practical methods employed in the various methods which may be used for the commercial production of the gas are described in detail and the advantages and disadvantages of each process are discussed.

The book gives lists of the existing patents which affect the various papers, and terminates with an appendix giving the physical constants of hydrogen in a form applicable to aeronautical use.

A Literary Effort.

The story of their pioneer attempt to cross the Atlantic is told by Mr. H. G. Hawker, M.B.E., A.F.C., and Lieut.-Commander K. Mackenzie Grieve, A.F.C., R.N., in their book, "Our Atlantic Attempt," published on July 15th (Methuen. 3s. 6d. net).

The preface is written by Major-General the Right Hon. J. E. B. Seely, C.B., C.M.G., D.S.O., M.P., the Under-Secretary of State for Air. Mr. Hawker has written most of the chapters, and seems very pleased with everyone, and showers praise on the "Daily Mail," the machine, and everything connected with the flight.

Lieut.-Commander Grieve tells about the difficulties of navigating, and supplies some notes on the flight.

The story is somewhat disconnected, and there is some duplication of facts, but it is quite interesting reading.

Captain Gordon Aston's introduction is extraordinarily sound and well written.

The Projected Australian Flight.

The following letter has been received:—

Sir,—With reference to the scheme for the formation of an Imperial Aerial Survey Corps which I have seen outlined in a contemporary service paper I trust that I may be permitted to express an opinion on this matter, which, as a traveller and a soldier, is one which is deeply interesting to one such as myself.

It is indeed gratifying to note the position the Australian Government has taken with regard to the projected Australian flight, and as one who is conversant with the general policy of the Commonwealth Government, I think we shall find that our Overseas Dominions will be scoring over the Mother Country as regards commercial aviation. I say this having in mind the persistent procrastination of the responsible authorities at Home dealing with this crucial matter.

We have sufficient evidence to confirm what I have previously said when we read that the Australian Government are doing everything that is possible to assist their flying men in obtaining a thorough training before undertaking the more serious work of piloting machines across the southern seas.

If only our own official mandarins would take a more broad-minded view of the matter and dispense with the innumerable Governmental channels there is every reason why we too should now open a much brighter prospective future for those numerous pilots who at present see no hope of utilising their war experience on a profitable basis. By this principle we can show our Colonies that we have a sporting Government out to play the game by our fighting men in addition to furthering our aviation future.

F. W. NICHOLSON (late B.E.F., and W. Australia).

The War and Victory Medals.

The following letter has been received:—

Sir,—May I bring to your notice the fact that the men who manned the anti-aircraft searchlights and guns in England are not included in the award of the British war and victory medals?

Many of us during the war volunteered for service overseas, but were refused on the grounds that we were just as much on active service repelling hostile aircraft at home as if we were in France.

Now, at the end of the war we find ourselves with nothing to show for our services, while several people who "entered a theatre of war" and are entitled to the medals never heard a shot fired.

In view of the fact that the old R.F.C. and R.A.F. airmen who composed the Home Defence squadrons are to receive the medal, surely we, who contributed in no small measure to the success of the Anti-Aircraft Defence, are entitled to some recognition?

EX-SAPPER.

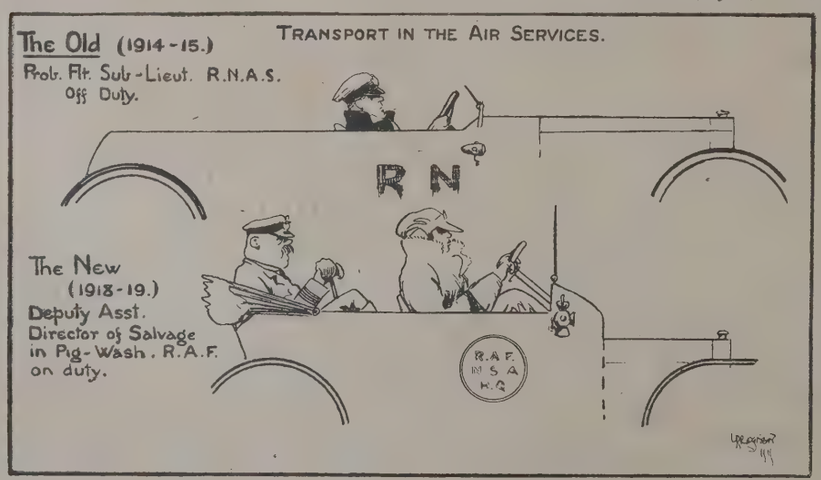
Pensions for R.A.F. Officers.

Sir,—I should be glad if you would kindly allow me to draw the attention of your readers to a misleading paragraph in THE AEROPLANE entitled "Pensions for R.A.F. Officers."

No doubt, a number of ex-officers will regard this announcement as a genuine offer to consider their claims, but the majority will probably regard it as a farce, which I can prove it is.

In June, 1916, whilst serving in France as a private, my O.C. advised me to apply for a commission. I acted upon his instructions, and applied to the R.F.C. people, who sent me chasing over half of France to be examined by various doctors. Not satisfied with their findings, which, strange to say, all agreed that I was A1 and fit to fly, the Great Ones told me to report in London at the Hotel Cecil, where I was again examined by a civilian doctor, the only gentleman I ever met in the R.F.C. holding an official position, as distinguished from the R.F.C. who did fly. This doctor agreed with my former examiners, and I was sent back to France to await developments. About the last week in July I received a telegram from the War Office to inform me that I was a full-blown second lieutenant. A few days later a letter arrived from the War Office containing instructions *re* kit and reporting orders.

Whilst in training in England, I experienced pains in my body, which became so acute that I was one day carried from the aerodrome to my quarters, a draughty, leaky hut, and I lay there until the doctor arrived. Certain other events transpired, and I was sent for a Medical Board to the Hotel Cecil, where I was pronounced "Unfit any duty for three months." At the expiration of this period I was again "boarded" and pronounced "Unfit for any duty for six weeks." Eventually I was kicked out as "Unfit as pilot or observer" and granted £33. For over twelve months I was under my own doctor's in-





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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

The WORLD of AERONAUTICS (continued)

structions and received treatment for rheumatism. I was treated at various military hospitals for the same complaint, and although I frequently sent particulars of my case to the Ministry of Pensions, accompanied by medical certificates, I could not get any satisfaction until I threatened to state my case in the Press. Then the "Heroes of the Great War" sat up, rubbed their eyes, and did something in this fashion.

One morning at 10 o'clock an orderly in the R.A.M.C. arrived at my home and presented me with a note instructing me "to report at the 2nd Western General Hospital, Manchester, at 9.30 a.m., February 12th, 1918, for a Medical Board." It was then half an hour after time, but I went to the hospital and received a "ticking-off" from a colonel for coming late. I allowed the gentleman (?) to finish his speech, and then pointed out to him what had taken place. He merely grunted, "Sit down; I'll see you presently," and he left me. A few minutes later I was joined by a captain of the R.A.M.C. on leave from the East, and seeking an extension of leave on the grounds of being "unfit to travel." The colonel then returned, accompanied by a corporal, and after a few words with my captain acquaintance he turned to me and said, "Oh, yes, now and how do you feel?"

They all three then sat round a table, and the corporal R.A.M.C. began to question me. I at once asked the colonel if this sitting was my Board, and he replied, "Yes, we are conducting this hospital, not you." To which I replied, "Well, sir, if you can derive any satisfaction from that, you are welcome to it; but I shall take this matter further. You first of all bungle the appointment, then you press into service an officer who is not fit for duty on his own admission, and, to crown the lot, you sit there whilst a corporal performs the duties of a qualified medical man." The corporal then picked up a sheet, which, I presume, was my medical history, and said, "He is all right, sir; only post-influenza." I was then told to go, and a few days later I received a letter from the Ministry of Pensions which read, "As your disability was not due to nor aggravated by Military Service, you are not eligible for any further grant from the funds at the disposal of this Department." The Ministry of Pensions has in its possession all these facts and offers from me to prove all that I have said, and an offer to place my correspondence before them, and yet nothing is done. I was never treated for influenza in my life, but my protests are of no avail.

Now, if any of your readers expect genuine consideration after what I have written and can prove, they are indeed optimists of a high order. In conclusion let me say that I have been in communication for the past two years with the Ministry of Pensions.

AN ENGINEER.

Martinsyde, Ltd.'s, Athletic Sports.

On July 19th, Martinsyde, Ltd., of Woking and Brooklands, held their annual athletic sports meeting under the auspices of the Martinsyde Recreation Club. The meeting was a great success despite the fact that it was held on the day chosen for the official celebration of Peace, and also that the weather was not all that might have been desired.

THE ROYAL AERO CLUB.

A meeting of the Flying Services Fund Committee was held on Wednesday last, July 16th, 1919, when there were present:—Lieut.-Col. T. O'B. Hubbard, M.C., R.A.F. (in the chair), Mr. Chester Fox and Mr. Stevenson (Assistant Secretary).

GRANTS AND ALLOWANCES.—The following Grants and Allowances were made:—

(41) An allowance of £3 a month for three months to the mother of a C.P.O.II in the Royal Naval Air Service who had been killed on active service.

(45) A Grant of £5 to an Ex-1st Class Air Mechanic in the Royal Flying Corps who had been incapacitated on active service.

(74) A Grant of £10 to the mother of a Corporal in the Royal Flying Corps who had been killed on active service.

(83) An allowance of £3 a month for six months to the widow of a 1st Class Air Mechanic in the Royal Flying Corps who had been killed on active service.

(116) An allowance of £4 a month for six months to the widow of a 3rd Class Air Mechanic in the Royal Air Force who had been killed on active service.

(132) An allowance of £1 a month for six months to the mother of a Private in the Royal Air Force who had died on active service.

(134) An allowance of £2 a month for six months to the widow of a Sergeant in the Royal Flying Corps who had died on active service.

(138) The school fees, etc., for at least one year, of the child of the widow of a Private in the Royal Air Force who had died on active service.

(188) An allowance of £1 a month for six months to the widow of a Private in the Royal Air Force who had died on active service.

(220) An allowance of £2 a month for twelve months, to pay the rent of her house, to the mother of a Sergeant in the Royal Air Force who had been killed on active service.

(221) An allowance of £1 10s. a month for six months to the widow of a Sergeant in the Royal Air Force who had died on active service.

(223) An allowance of £2 a month for six months to the widow of a 2nd Class Air Mechanic in the Royal Air Force who had died on active service.

(226) An allowance of £2 a month for six months to the widow of a Corporal in the Royal Air Force who had died on active service.

(227) An allowance of £2 a month for six months to the mother of a 2nd Class Air Mechanic in the Royal Air Force who had been killed on active service.

(229) An allowance of £2 a month for six months to the mother of a 2nd Class Air Mechanic in the Royal Air Force who had died on active service.

(230) An allowance of £1 10s. a month for three months to the mother of a 3rd Class Air Mechanic in the Royal Air Force who had been killed on active service.

(231) An allowance of £2 a month for three months to the mother of a 2nd Class Air Mechanic in the Royal Air Force who had been killed on active service.

(232) An allowance of £1 10s. a month for three months to the widow of a 1st Class Air Mechanic in the Royal Air Force who had died on active service.

(253) An allowance of £1 a month for six months to the widow of a Private in the Royal Air Force who had died on active service.

The Deatn of Madame de la Roche.

On July 18th Madame de la Roche, wrongly called Baroness by the daily Press, was killed while flying as a passenger with M. Barrault, at the Crotoy Aerodrome. The pilot also was killed.

Originally an actress, she learned to fly on a Voisin of the earliest type—fitted with side panels, Vivinus engine, and all the other horrors of immaturity—at Mourmelon in the autumn of 1909, taking her pilot's certificate on October 21st of that year. Towards the end of the year or the beginning of 1910 she had her first serious flying accident and broke her leg. Undeterred she flew again immediately after her recovery, and in June, 1910, she was a competitor at the second aviation meeting at Reims. Here on one fatal day she was brought to ground through becoming involved in the backwash of another machine, the pilot of which was, perhaps unjustly, thought to have brought about the accident deliberately. Her injuries were serious, both her legs and one of her arms being fractured.

Though she might at this stage have relinquished the practice of aviation without discredit, she again took to the upper atmosphere so soon as she was fit. This time she transferred her loyalty to the Farman firm, and created several world's records for height and duration in women's classes. She and Madame Dutrieu were keen rivals, and shared such glory as was then open to women in the new art.

Recently, on a Caudron biplane she raised the height record for women pilots to 16,000 feet.

During the war it is said that she made a series of endeavours to enter the French Aviation Service, but naturally without success.

Singularly beautiful, she was imbued with a high spirit of courage. She descended to no cheap methods of self-advertisement, and devoted her sincerest efforts to the furtherance of the best interests of aviation. Though she excelled in what is at present essentially a man's sport and profession, she never lost that feminine charm which enthralled all who knew her. Beauty alone gains many adherents, but when it is allied with the subtle attraction which made all France the slave of Ninon de l'Enclos there are none who fail to be enthralled.

Coming Events.

AUGUST.

Friday, August 1st.—Amsterdam Aircraft Exhibition opens.

Saturday, August 2nd, Sunday, August 3rd, and Monday, August 4th.—Tenth London Aviation Meeting at Hendon.

Tuesday, August 5th.—Handley Page Social and Athletic Club's Sports. Starting at 12 midday at Cricklewood Lane.

Saturday, August 16th.—R.N.A.S. Officers' (Hendon) Dinner at the Café Royal.

Thursday, August 21st.—R.A.F. Annual Athletic Meeting at Stamford Bridge.

Sunday, August 24th to Sunday, August 31st.—The "Avenir's" Tour de France Aérien is due to start.

Saturday, August 30th.—Hendon-Brighton-Hendon Air Race at Hendon Aerodrome.

SEPTEMBER.

Wednesday, September 10th.—Schneider Cup Competition, Bournemouth.

Saturday, Sept. 20th.—Hendon-Manchester-Hendon Air Race at Hendon Aerodrome.

DATE TO BE ANNOUNCED LATER.

Hendon-Paris-Hendon Air Race.

JACQUES SCHNEIDER INTERNATIONAL RACE.

The race for the Jacques Schneider International Trophy will be held on Wednesday, September 10th, 1919, at Bournemouth. The course will be over a circuit of about 30 miles, starting from Bournemouth, and taking in Swanage and Christchurch

Messrs. S. E. Saunders, Ltd., the well-known yacht and aircraft builders, of Cowes, Isle of Wight, have kindly placed their new erecting shops and slipways at the disposal of the Club for the accommodation of the competing machines.

Machines representing the British Empire must be ready not later than September 1st, 1919

The Committee of the Royal Aero Club will select the three competitors to represent the British Empire, and reserves to itself the right to hold eliminating trials

Entries are to be made to the Royal Aero Club, 3, Clifford Street, London, W.1, not later than July 31st, 1919. Each entry must be accompanied by the Entry Fee of £20.

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THE R34 DINNER.

On Wednesday, July 23rd, the Royal Aero Club entertained the officers and crew of R. 34, together with a number of distinguished guests, at a dinner at Princes' Galleries. Unfortunately, owing to the extremely bad acoustic properties of the room, it was extremely hard to hear what anybody was saying.

The Duke of Atholl, chairman of the Royal Aero Club, in proposing the toast of the guests, said that, thanks to the Air Ministry, we had not got stagnation in aviation in this country. (One may here interpolate the remark that, as his Grace of Atholl said, we have not got stagnation, we have in fact, got full speed astern. Perhaps being a Scot the chairman was merely being sarcastic.)

Continuing, the Chairman said that throughout the voyage the R. 34's sorrows were our sorrows, and everybody had followed their adventures with the deepest interest. At the same time there was nothing new under the sun, and many of the R. 34's adventures were quite old. He himself remembered as a small boy going to the Royal Aquarium and seeing a beautiful lady dressed in blue descend from the air after being fired out of a cannon. The Americans similarly saw a beautiful figure in blue descend from R. 34 when she arrived. Also, they had heard that the favourite position for the officers of R. 34 was asleep under the table. There was certainly nothing new about that.

Becoming serious, the Chairman said that the feat was one of the greatest skill and endurance. We had to thank our late enemies for giving our Air Force its chance. The first Zeppelin that came over this country did more good than any other mistake which the Germans made. This voyage of R. 34 brought America closer to England, and he congratulated the officers, crew, designers, and constructors of R. 34.

Mr. Davis, the American Ambassador, supporting the toast, referred to the personnel of R. 34 as being the most distinguished company who had ever visited America. Referring to the chairman's recollections of his childhood, he said that he himself at country fairs remembered beautiful ladies in spangled tights descending by parachutes from balloons, but he had never been able to reach the spot where they fell before they had been picked up.

Mr. Davis referred to a note of Horace Walpole's written in 1785, in which he said that three more balloons had gone up that week, and added, "Now that we have an aerial fleet, what signifies the loss of the sea?" (It would be well if people in these days realised the truth of that remark.) The Ambassador concluded by saying that America's only complaint was that the distinguished gentlemen of R. 34 had not remained longer on their shores.

Major-General Seely, as fluent as ever, was another supporter. He said that the most striking feature of the voyage was the reception of the crew in the United States, and the voyage was worth while a hundred times over. He remarked that the officers of R. 34 said that their crew were the finest chaps they had ever sailed with.

Major-General Sir Hugh Trenchard who also supported the toast was received with prolonged applause. He said that the crew of R. 34 not only commanded success, but deserved it. The R.A.F. was not only first as a fighting service, but remained first in the paths of peace, and this voyage was the keystone of the arch in the path of aircraft progress in the world's peace. He was certain that there must have been perfect confidence and co-operation between all ranks in the ship.

Confidence would always win, and confidence was only got by sound team work, and that again was only got by hard work all round. The crew of R. 34 had learned to work thoroughly together. They had added to the best traditions of the flying services in the war, and had set a new tradition for the Royal Air Force.

Mr. H. White Smith conveyed the congratulations of the Society of British Aircraft Constructors, and was proud that the constructors had a partnership in this great deed. The constructors could now turn their attention to commercial purposes. We were not yet ahead in airships, and the R. 34 was very like the Zeppelins of 1916. There was need for development in aircraft and in engines also. People rather lost sight of the possibilities of airships, but they had a great future.

R.34's Replies.

The toast of the R.34 having been duly honoured, Brig.-General Maitland, D.S.O., in replying, laid particular emphasis on the fact that he was only a passenger on R. 34, and that none of the credit for the voyage was due to him He stated that this fact gave him a better opportunity of observing the splendid work done by the officers and crew, and he paid a most glowing tribute to Major Scott commanding R. 34. He recalled that an American paper had described Major Scott as "a portly, ruddy-faced individual." Personally he thought that these qualities gave one confidence in Major Scott. His men had followed him from the Old World to the New, and from the New to the Old, and he believed that they would follow him from this world to the next. Major Scott was quite imperturbable in any emergency. General Maitland also gave thanks to the Admiralty Wireless people, to the Marconi Company, and to the Beardmore and Sunbeam firms for their shares in the enterprise.

Turning to the voyage itself, General Maitland said that the Air Ministry had sent them, firstly, to get scientific data, secondly, to demonstrate the possibilities of rigid airships, and, thirdly, to visit Newfoundland and America. They had learnt a great deal, considering that airships were still experimental. For instance, they had learnt that electrical storms could be surmounted. They always felt perfectly safe with Major Cook as navigator. Major Harris, their meteorologist, was a real wizard in his own science, and he believed that meteorology would become a popular study. Captain Durrant's wireless worked well, but their directional wireless was none too good. Their experiences made them appreciate all the more the magnificent performance of Read, Alcock, Brown, Hawker, and Grieve.

As to the utility of airships, he thought that they would be useful in locating ice fields, which were a danger to navigation, and in forestry and survey work. Also airships were certainly a method of avoiding seasickness, and if for this reason only he thought airships had a commercial future. As regards the position of our airships, he thought that we were now well on terms with Germany and ahead of all other nations. The present time offered a fine opportunity for British enterprise. The rôle of the airship was that of a long-distance non-stop vehicle. Aeroplanes would work in with airship lines. Each type had its own advantages. General Maitland concluded by paying a warm tribute to the reception which they had all had in America.

Major Scott, skipper of R. 34, said that he had absolute confidence all along in his ship and crew. The brain of an airship pilot had to be full of figures, and he had to be for ever calculating what to do with the ship. For example, owing to the variations in temperature an airship was always inclined to fly nose down in the evening and to fly nose up in the morning. Electrical storms had the effect of throwing the ship about suddenly without warning, and their effects would have to be closely studied.

Major Scott further said that nothing could have been more perfect than the arrangements made for handling the ship in America, where she was moored out for a hundred hours without shelter of any kind. He said that Major Cook's navigation was marvellous, as was Major Harris's meteorology. Officers and men backed him up enthusiastically right through; in fact, he had to order Captain Shotter, the engineer officer, to go to bed.

Major Cook the navigator, remarked that on this voyage he did not use any "new-fangled gilguys." He stuck to the old-fashioned sextant for his navigation. He had had good advice from Lieut.-Commander Grieve. He had had a patent gyroscopic horizon sent to him before starting, but, unfortunately, the inventor had forgotten to explain how it worked. He found that a cloud horizon worked quite sufficiently well. An ordinary bomb sight was quite useful for judging drift and speed.

Major Harris, the meteorologist, said that the upper air was like a great unexplored world, but he believed that future study would make it possible that the danger areas could be buoyed out. Cloud strata should always be observed, as the clouds indicated almost better than anything else the actual state of the atmosphere. There was an enormous amount of investigation to be done. He suggested that there should be a meteorological officer on every airship until they had plotted things out a bit. He also suggested that meteorological information from land stations might well be boosted up by two or three hours. All countries should help in compiling the world's meteorological knowledge.

Major-General Brancker, proposing the health of the chairman, referred to his memory of transferring the Army airships to the Admiralty, when, as he said, the airship personnel were "handed over, kicking and biting, to the Navy." As regards the future of aeronautics, he said that we had now got to face hard facts. We had been absolutely on top in the war, and we must keep there in peace. The future of the British Empire depended on aviation, and the future of aviation depended on the Air Ministry, the Royal Air Force, and the Royal Aero Club.

MANNERS AND CUSTOMS IN NEW YORK.

Sir Charles Allom, of White, Allom and Co., and the Gosport Aircraft Co., was ejected from the lobby of the St. Regis Hotel on June 25th, following a heated argument arising out of the action of two girls in soliciting subscriptions to Mr De Valera's £1,000,000 loan for the "Irish Republic."

The girls displayed a Sinn Fein emblem which caused Sir Charles to protest to the manager, Mr. Hann, that persons inimical to the interests of the Allies were being harboured.

Some further words passed, in the course of which Sir Charles declared that such persons were traitors, whereupon he was grasped by three porters, who pushed him out to the pavement.

Sir Charles offered considerable resistance, and his hat and cane were left in the lobby. The incident was watched by a fashionable crowd.

To "Aeroplane" Subscribers.

Since the Armistice, the subscription list of the AEROPLANE has steadily increased: an eminently satisfactory development which we are anxious to encourage.

Of the many books published on the war on the Western front, none conveys a more realistic impression of the work of a particular arm than FLYING COLOURS by Captain H. M. S. Saundby, A.F.C., R.A.F., M.C., published at **£2 2s.** net (Edition de luxe) and **15/-** net (Popular Edition).

Among the art books published in the last year or two, none can claim to be a more faithful reproduction of the artist's colour scheme and that indefinable thing atmosphere.

FLYING COLOURS is a permanent memorial of the life of "the pilot in action," as Major-General C. B. Ashmore calls him. It was very costly to produce, and necessarily the price to the public had to be high.

Many would like to possess it who do not feel disposed to put down Two Guineas for the larger edition or Fifteen Shillings for the smaller.

How to meet their views? We make a special offer to any subscriber for one year to the AEROPLANE: namely to give him the right to purchase either edition at half price.

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Subscribers who have given their orders through the trade, and not direct to the AEROPLANE Office, must sign the form below or a copy thereof, and hand it with the balance on account of the book to their retailer for transmission to the AEROPLANE.

If the subscriber already has a copy of FLYING COLOURS, and would wish to take advantage of this offer, then he may secure McCudden's "Five Years in the R.F.C." **(7s. 6d.)**; Richthofen's "Red Air Fighter" **(3s. 6d.)**, and Gill's "The Aerial Arm" **(6s. 6d.)** at half price, *i.e.* **8s. 9d.** the three, plus the year's subscription to the AEROPLANE.

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THE RE-ORGANISATION OF THE R.A.F.

The leader in THE AEROPLANE of Wednesday, June 18th, makes one think, and reporting, as it does, General Trenchard's speech at the Independent Air Force dinner, makes one read what one might otherwise skip with alacrity. What is the gist of it all? What is likely to develop in the R.A.F.? As a 4-year victim of uniform (in aviation), one wonders.

I, unlike you, have always had faith in the Royal Air Force—the single control of flying instead of the dual muddle existing in 1914. But my ideal has lived as an ideal only, and has been poor in health ever since April 1st, 1918.

The single Air Force is right, without question. One force for land, one force for sea, one force for air—that is the ideal. Intercommunication of the widest sort follows after—sailors fighting alongside soldiers on land, soldiers transported on ships by sailors, the airmen dealing with both. Let's put that idea down as the basis of this talk—a single independent Air Force is right and necessary. Now to talk about its practical realisation, in the present circumstances.

A practical air force will train its own people, in its own schools, for its own job, yet keeping always in touch with its sister services. The education required will be a liberal one—more liberal than either Army or Navy, and yet lighter than either in that deep knowledge of any particular subject should not be requisite. The force will be composed of engineers as its head people, with a personnel of pilots, mechanics, clerks, etc., etc.

For once the engineer—the son of Martha—should come into his own. He made flying and he alone has nursed the baby. Civil aviation must surely be run by the Air Force, so far as its regulation is concerned. Regulation implies a good deal, and must certainly in this case control a great deal.

All air stations, civil and military, must be supervised by the Air Force, and therefore the Air Force will, more largely than either Navy or Army, be a force for both peace and war.

Perhaps even, in view of the League of Nations, it may be a peace arm, more than a war preventative. Passenger carrying, the dream of the novelist, is never likely to bulk largely in air councils of the future. It can only be done at a prohibitive price, and therefore cannot become a large business. But mail service must gradually develop to an unimagined extent, and, by its size and importance, necessitate control by a large State Department.

The Air Force logically comes into its own here. In war—fighting, reconnaissance, spotting, bombing, etc.—in peace, the transport of the world's news and communications—that must inevitably be the future. How does all this apply to General Trenchard's speech?

Not one word has been reported as to any utterance of the General's regarding civil aviation! Many of the older officers in the R.A.F. are hanging on to office simply because they are reluctant to leave aviation, and yet can see no possible opening for civil aviation divorced from the State. How can there be any opening if it is accepted that the future lies as the present exists.

One hears wild talk by various officers in high position regarding the future (General Trenchard is not ranked amongst them by the writer) including statements to the effect that flight is safer than any other transport, and passenger flight is a commercial possibility; but attempts to establish a definite mail service appear to be lacking.

Unless some strong action is quickly taken by the Air Force authorities, much—I guess most—of the metaphorical ground gained by mechanical flight will be lost.

The large engineering firms, roped into aviation for the war, will abandon an ungrateful child, and take to their legitimate and more profitable offspring. These large firms can be made the backbone of the aviation industry now by encouragement, and the declaration of a practicable policy. War alone cannot support a large industry, and, in my opinion, passenger carrying by aeroplane will also fail.

A State mail service, on the other hand, will mean a constant supply of machines, and a growing demand as the service widens. This will bring in its train the necessary maintenance of aviation works, and all they include.

Let me suggest that a definite movement should at once be made to start a State mail service, and that a definite pronouncement of policy appertaining thereto should be given.

The present situation is intolerable—one not to be borne. Our heads speak about things with the beautiful carelessness born of no work. Passenger carrying from England to Australia, lobsters from France to England, fruit from California to England—it's all talked about. *Meanwhile*, nothing's done.

There have been various stunts, such as London to Madrid, London to Egypt, etc. Has anyone ever worried to work out these flights? A few facts might be useful here.

The London-Egypt flight worked out at 2½ miles per hour—I don't know the cost.

The Atlantic crossing by Alcock (assuming his mail to weigh 50 lbs.) works out at £500 per ton mile.

The N.C.4 flight across the Atlantic works out at £700 per ton mile if the useful load carried amounted to 50 lbs.

These are facts ascertainable by everybody. Meanwhile, colonels sit and answer minutes—minutes as stupid as the answers given by the colonels. Majors are in charge of sections, sections that are represented by half a dozen letters of the alphabet—and that mean as much. Captains are in charge of subsections—a busy one deals with one item of aeroplane equipment.

Everyone asks as to a policy—none is declared. In the meantime the lighter-than-air section (to which I was originally attached) makes capital (temporary capital, be it said) out of public ignorance. "R.34 flies to Germany." "Wind put up the Huns," etc., etc.

A refreshing article appeared in the "Daily Mail" signed by Lieut.-Commdr. Kenworthy on "lighter-than-air." Like all aircraft matter at the present day, it is hard to give the exact cost of flights, but I will attempt an estimate of cost of lighter-than-air flight.

A rigid costs about £400,000.
The shed costs about £400,000.
The landing party of 500 men costs about £100,000 per year.
The life of the machine (by Hun figures) is about one year.
The available flying days (according to Hun figures) at 24 hours per day, is about 50 as a maximum.
The average speed (according to Hun figures) is about 40 m.p.h.
The average load carried (useful) is about 10 tons.

ESTIMATE OF SERVICE WITH ONE RIGID AIRSHIP BETWEEN POINTS 5,000 MILES APART.

Assumptions made.—1. Average speed of 40 miles per hour.
2. Average load of 10 tons (useful).
3. Flying days (24 hours per day), amount to 50 per year.
4. Effective life of airship is 50,000 miles' flying, or 1,250 hours in one year.

	Cost per year.	Per cent of total cost.
Rigid.—Life one year. Cost £400,000, including repairs, new engines, etc., and value as scrap...	£400,000	45
Sheds.—Life 15 years. Cost £400,000. Two sheds	53,300	6
Handling crews.—500 men at £200 per year. Two crews	200,000	22
Mechanics.—50 at £300 per year. Two squads...	30,000	3
Riggers.—50 at £300 per year. Two squads	30,000	3
Pilots.—10 pilots at £600 per year	6,000	1
Petrol.—50,000 gallons at 2s. 6d.	6,250	1
Oil.—2,500 gallons at 5s.	625	1/10
Insurance.—30 per cent. of value of airship	120,000	13
Offices.—At £2,000 a year. Two offices	4,000	5/10
Management.—Say	10,000	1
Aerodromes.—£10,000 a year, including water, light, etc. Two aerodromes	20,000	2
Car Services.—£2,000 a year. Two services	4,000	5/10
Gas, and gas plant.—Say	15,000	1 9/10
	899,175	100
Say ...	£900,000	

Miles flown per year ..... 50,000.
Cost per mile ..... £18.
Load carried ..... 10 tons—500,000 ton miles.
Cost per ton mile ..... £1.80—36s.

The total cost of flight per ton mile now amounts to 36s., which is equal to an estimated cost of heavier-than-air flight at 100 miles per hour (NOT 40 M.P.H.) average speed.

Lighter-than-air policy could not exist for a moment were people akin to men of the world in charge of affairs. As it is, we drift on, hoping and praying for a leader.

Let it be stated again—let the ghosts of the pioneers of flight state it again—the whole object and use of flight lies in extreme speed.

You can push a load of one ton, on rails, at 20 m.p.h, for one mile for 1d. (ascertained cost).

You can push a load of one ton, on rails, at 50 m.p.h. for one mile for 10d. (estimated cost).

You can fly a load of one ton, in the air, at 100 m.p.h., for one mile, for 40s. (estimated) by aeroplane.

You can fly a load of one ton, in the air, at 40 m.p.h. for one mile, for 36s. (estimated) by airship.

You can fly a load of one ton, in the air, at 400 m.p.h. for one mile for £100 (estimated) by aeroplane.

The conclusion is obvious. The load carried is too small, and too expensive, to be worth while from the passenger point of view, but is quite sufficient for the mail.

Mail—reduced as necessary by microphotography—is the future load, and mail carrying must be carried out by State Government.

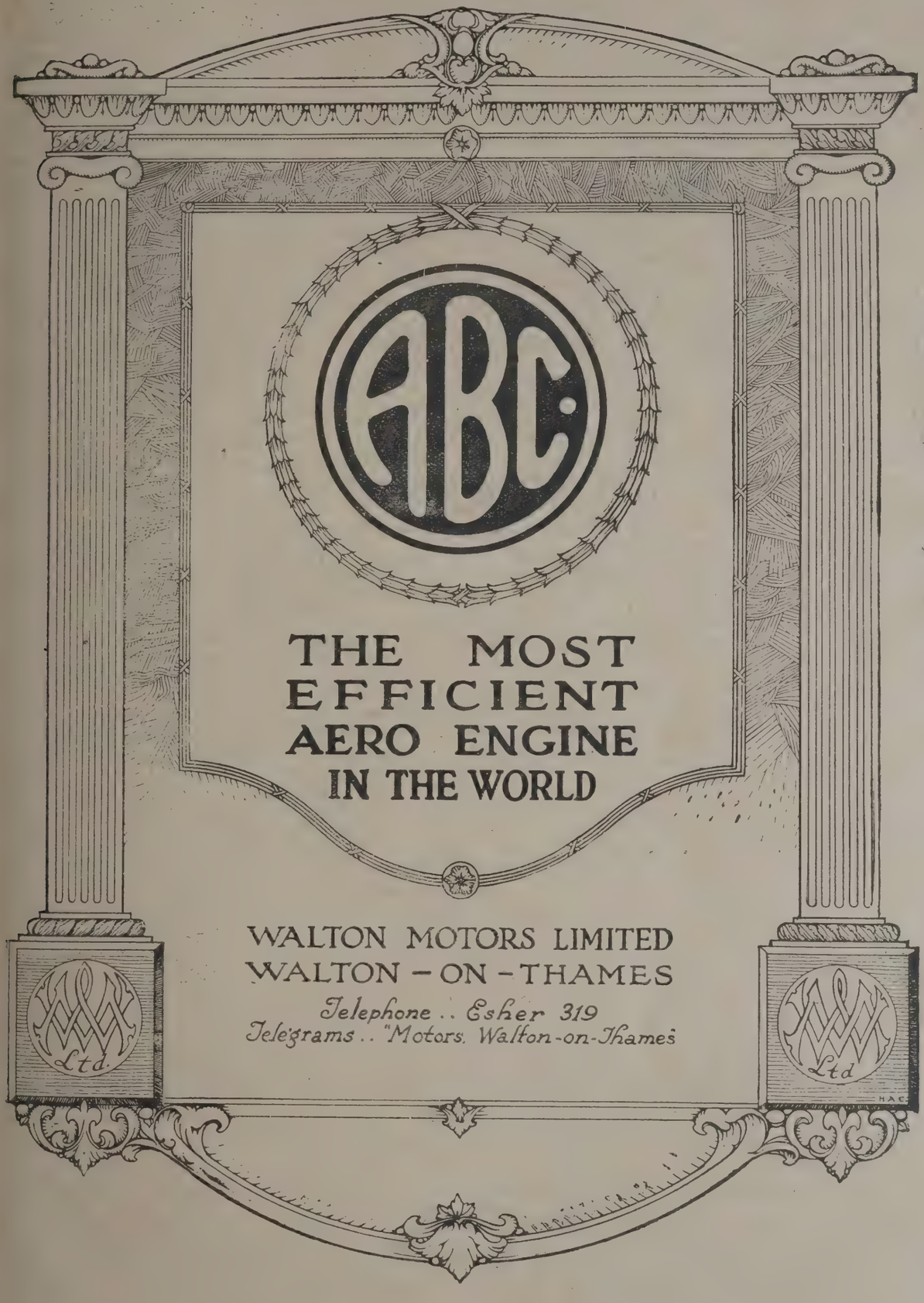
Admitted that private firms may tender for the carriage of mails as for present G.P.O. services, but the super-control of all must come under the Air Force, and the Air Force will therefore run war and peace services at the same time.

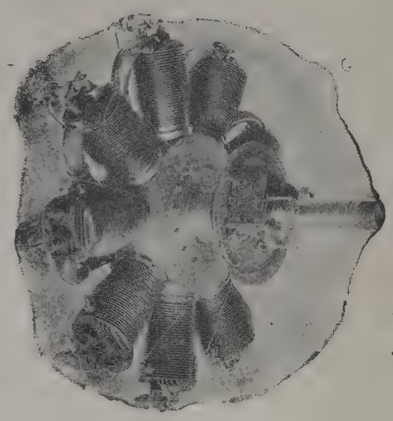
And yet—not a word from our chiefs *re* this! Only wild statements in the Press, and no results.

Unless the matter is tackled—strongly—immediately—the new Air Force will dissolve, the public will be disgusted, and flight affairs put back half a century.

A State air mail service should be started by the Royal Air Force *now*.

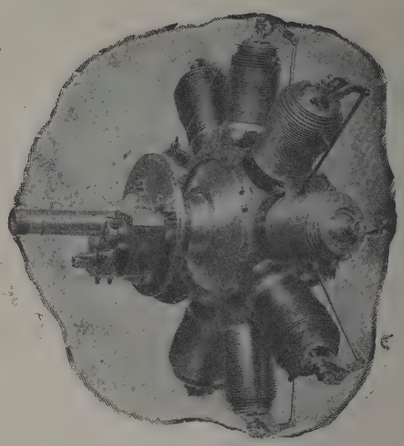
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THE WEEKLY COMMENTARY.

The subject of the leading article by "Strasbourg" in this issue is one which applies to a very much wider field than that of Aeronautical Engineering. It has, however, its definite bearing upon this subject, and the sting thereof is mainly to be found in its tail.

A letter from an anonymous correspondent, which complains of a practice to which "Strasbourg" has drawn attention, will also be found in this issue.

It becomes daily more and more clear that the methods adopted by British Government Departments for the encouragement of industry constitute a grave menace to the prosperity of the country.

The series of articles upon "Modern British Aeroplanes" has been interrupted temporarily in this issue. As a slight variant a page of illustrations of certain machines which are typically German in design, with a brief comment on the peculiarities, is given.

The article by M. Frantzen on French parachute systems is continued on page 435.

ON THE EVILS OF LOW PRICES.

AN ESSAY IN ECONOMICS WITH AN AERONAUTICAL APPLICATION.

By "STRASBOURG."

Great Britain has just emerged from a great war into what is—so one is assured—a victorious and a profitable Peace.

As a result, if not entirely of that Peace, at least of some of the methods employed in attaining it, the price of every commodity in the country has approximately doubled, and Industry, if not actually at a standstill, is in a parlous state.

The British were ever a feeble-minded race, and in no manner is this so plainly shown as in the effect upon them of figures.

Figures constitute the simplest and the most definite of the many forms which can be used for the expression of fact. The Briton being just sufficiently instructed to imagine that he knows what a figure means, particularly if that figure bears the prefix £, is most easily put into fear by their use.

When, however, there is question of some matter too complex to be expressed in such a simple form which needs, therefore, be talked around, he, understanding nothing, but being soothed by the sound of many voices, uttering familiar, but usually meaningless, words, willingly and of a light heart, embarks on the most perilous and speculative of enterprises.

Thus this great nation is paralysed with fear at the idea of an advance in the price of coal of 6s. per ton, having barely noticed three times that increase in the past few years, but rejoices exceedingly at the signing of a Treaty of Peace, which, were it to be enforced according to the popular interpretation thereof, would probably involve the world in irretrievable disaster.

There be those who doubt the reality of such rejoicing. To such one can only point to the worthy citizens of Luton, whose enthusiasm led to the use of their own Town Hall as a bonfire.

On the other hand, no one can doubt the reality of that fear—panic were an almost better word—which is caused by the present high level of prices.

Even in Government departments its effects have been noticed. That such effects should in the main have tended to a still greater rise is interesting, not in itself particularly curious, but may have a very definite relation to the hitherto unexplained phenomenon that this country, despite its collective idiocy, continues to prosper.

It is an old and apparently a well-substantiated belief that there is something of the nature of a special providence which watches over the welfare of drunkards and fools.

Is not the explanation merely that the efforts of such are usually so ill-directed that they produce an effect quite contrary to that which might be expected; and, similarly, may not the prosperity of this country be due to the fact that its policies—social, industrial, and foreign—have been invariably directed with idiotic intent, and invariably carried out in an imbecile manner? Thus the results produced have generally been excellent and the exact contrary to those which logically might have been deduced from the proclaimed intentions upon which those policies have been based.

A general high level of prices throughout the markets of any community may indicate one of two things.

Either there is an actual shortage of supplies, or that the community lives well, works well, earns well, and pays well. Money is cheap amongst such a community.

To a very large extent prices are high in this country and throughout the world because there is a shortage of all classes of consumable goods.

For the last four and a half years a very large proportion of the world's labour and of its manufacturing appliances have been diverted from the production of useful articles to the manufacture of goods intended either to be themselves reduced, or to reduce other goods, to smoke and ashes.

This part of the world's industry has been so effec-

tively directed that to-day that surplus over the bare needs of existence which normally provides man with those comforts and conveniences which distinguish his life from that of the brute has nearly ceased to exist.

For that shortage there is one remedy, and one only. That remedy is work—work efficiently directed to make up the past four and a half years' waste.

Provided the work is done and the goods are produced, the prices will fall—effectively if not nominally.

If the goods are not produced, or are ill and inefficiently produced, it were fatal for prices to fall.

High prices at least discourage extravagance and waste, and extravagance and waste mean merely useless production.

Low prices artificially maintained in the face of a shortage of goods can but penalise the thrifty and economical to the benefit of the wasteful and extravagant.

The Low Price Fallacy.

This country has already suffered too much from low prices. In particular it has, and still does, suffer from low-priced and nasty labour.

Low-priced labour is nearly always uneconomical labour.

Low-priced colliers, working in meanly equipped collieries in Britain, produce roughly one quarter of the output of coal per man per year which is produced by higher-priced labour in decently equipped collieries in the United States of America, and produce that quarter at a higher cost.

Low-priced labour lives—has to live—under mean conditions, and grows a mean habit of mind.

Low prices, cheap labour, and a mean-minded population all go one with the other, and this country has far too much of all three.

The lowness of prices and the cheapness of labour do, it is true, appear to be vanishing, but the mean-mindedness is not declining.

The type of mean mind from which this country has most to fear is not the mind of the striking trade unionist so much as the mind of that semi-educated class which it has pleased some power—it were irreverent to suggest the Almighty—to put into effective control of our Government, its various offshoots, our commerce, and our industry.

The herd is acutely aware of the present shortage of supplies of all kinds. To its mind, if mind it can be called, this shortage appears not as a matter to be made good by hard work and thrift, but one remediable by Act of Parliament decreeing that prices shall fall.

Our good Government, being entirely composed of people just sufficiently intelligent to choose the simpler paths of temporary popularity, ordains that prices shall fall, and makes good the resulting deficit by piling on taxation.

Thereon further yowls of anguish from the herd, alleging extravagant expenditure on the part of the Government and its departments, the which, to placate the populace, are set about economising.

Of their methods in this effort the greater number are ludicrous, but there is one such method—and it is a method from which the Aircraft Industry has suffered much—which, if persisted in, must lead to disastrous consequences.

At the outbreak of war the British Aircraft Industry was a very small affair, and the number of those who had experience in the design and manufacture of aircraft was entirely insufficient to meet the war demands of the country.

Those concerns which had such experience were set to designing machines such as were needed, producing as many of them as was possible; to supplying drawings or samples to all sorts and conditions of people who could divert their labour, plant, and tools to the purpose of making aircraft or aircraft components.

The majority of such firms were pure copyists, and, having no experience of a specialised and refined industry, it became necessary to improvise a very complicated official inspection department. Thus alone was it possible to maintain a passable standard of workmanship.

Their ignorance of all the problems and principles of aircraft construction made necessary that wonderful organisation known as the Technical Department of the Department of Aircraft Production, in order that they might be assisted over those difficulties and problems.

All such new-comers to the Industry were thus supplied, often very ineffectively, with that knowledge and experience which the pioneer firms had purchased for themselves at a cost not to be expressed in terms of cash.

This state of affairs was justifiable under the conditions of the late war. Those whose faith and foresight had laid the foundations of the Industry were rewarded—perhaps inadequately, but at least appreciably—for their enterprise.

To-day this state of affairs can no longer be tolerated.

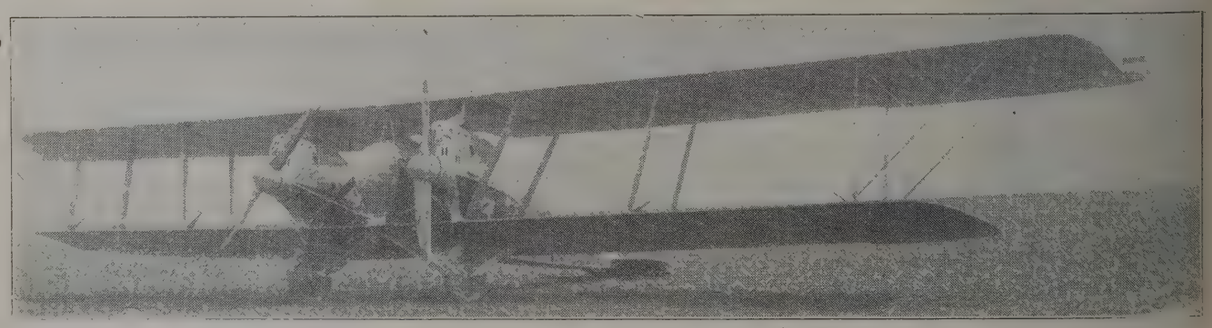
It cannot be expected that any business concern shall maintain a competent experimental and design staff to work out those problems which must be solved if the Industry in which they are concerned is to prosper unless they are to reap some fair proportion of the reward of their own enterprise.

An Air Ministry Fraud.

The Air Ministry is at this present moment engaged in an effort to defraud such as have carried out design and experimental work of all reward for their labour.

The process adopted is simply to persuade firms to attempt the production of some machine, instrument, or appliance which is thought to be necessary.

When any such article is produced to their satisfaction, a small order is placed with the originators, and



A MODIFIED GERMAN BOMBER.—A twin-tractor Gotha Bomber showing the abolition of the front gunner-observer's cockpit. It is noticeable in this and other pictures recently reproduced that the German designers are now devoting much attention to cleanness of outline in their large machines.



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complete drawings and specifications are called for, on the pretence that these are necessary for inspection purposes.

These drawings are reproduced, and are then issued to all and sundry who may care to tender for the manufacture of the article.

Contracts are placed on the basis, common to all mean-minded concerns, of the lowest tender.

As an inevitable result the bulk of the orders go to firms who have spent nothing upon experimental and design work, who know to a nicety how far they may venture in submitting bad work and poor materials to the inspecting authority, and who stand to lose nothing in reputation by the faulty functioning of their products because they have no reputation to lose, and, even had they, they can always disclaim responsibility for the design.

It is recorded that the principal of one firm which found itself in the act of suffering from this process laid his case before the particular official of the department encharged with the matter, and pointed out the hardship involved.

In reply the said official replied: "Well, of course, it's rather hard on you, but what would you? Business is business after all. If you go to an Oxford Street tailor and ask him to quote you for a suit, he will ask you ten guineas. If you go to a tailor in the suburbs you can get a suit made of similar material and of the same cut for five. Wouldn't you buy the five-guinea suit?"

To the parliamentary or other popular type of economist an argument unanswerable—except at the cost of votes, popularity, or the like testimonial to incapacity.

Fortunately he who was thus admonished possessed, possibly unconsciously, some truer sense of proportion, and replied: "As a matter of fact I don't do either. I go to a Saville Row tailor and pay fifteen guineas.

"What I do *not* do is to buy one first-class suit that fits me, rip it to pieces, and make patterns from it, and then have it reproduced by East End aliens of shoddy and at sweated prices."

Just as it is undesirable from the national point of view that there should be an East End populated by people of doubtful nationality, of dubious habits, sustaining a filthy existence by dint of underpaid bad work, and ever ready to initiate either a riot or an epidemic, so is it undesirable in the Aircraft and in all other industries that there should be any attempt made to reduce prices by methods which deprive the honest worker of a fair reward for work well done.

A GLOSSARY OF TECHNICAL TERMS.

Whenever a new and experimental industry gathers together into one or two colonies an assemblage of imaginative and ingenious people, it is extremely likely that that industry will within a short while improvise a specialised vocabulary.

Such a vocabulary is usually picturesque—frequently vivid—often unprintable—and always arouses the wrath of those of a pedantic mind.

The vocabulary developed amongst the pioneers of British aviation, congregated at Brooklands, Eastchurch, Hendon, and the like, was all these things and often more.

Brooklands, Eastchurch, and Hendon—as they once were—have departed for ever.

Aviation has become respectable—the leaders of the industry are now to be found ensconced in comfortable chairs in expensive offices rarely very far from Piccadilly, and it has become necessary that its proceedings should be described in terms which could not cause the readers of the "Daily Mail" to blush

It is in many ways regrettable—it is certainly less amusing; it is, however, inevitable.

A loose terminology—loose in any sense—inevitably leads to confusion of one kind or another.

This has been the case with the Aeronautical Industry to a very marked extent.

It has increased and become an important branch of engineering in far too short a time for the vocabulary of its pioneers to have settled down to definite and generally understood terms.

The publication by the Royal Aeronautical Society of "A Glossary of Aeronautical Terms" is thus an important and a welcome event. This glossary represents the labour of some years.

As far back as December, 1909, the Aeronautical Society appointed a committee to draw up a list of words more or less special to the technics of aeronautics. In September, 1914, the list issued by this committee was enlarged, and again in October, 1916, it was felt that it was necessary to extend the list still further.

The Technical Terms Committee of the Royal Aeronautical Society was thereupon appointed, and has continued its labours to the production of the Glossary now in question.

It has worked in collaboration with the Aircraft Committee of the Engineering Standards Association has been recognised by them as the Aeronautical Terms Sub-Committee of the Engineering Standards Association, and has been assisted by officials of the Air Ministry.

A member of the American Aviation Headquarters in London has acted as liaison officer between the American National Advisory Committee on Aeronautics, and generally every effort has been made to render the results of their work as universally acceptable as possible.

It is recognised that a glossary such as this can only be provisional, as only the language of a dead nation or the vocabulary of a dead industry can be fixed, and it is proposed to issue successive editions of the Glossary with improvements, extensions, and emendations as these are suggested or found necessary. The Glossary itself covers a very extensive field, and has been made to embrace all the adjuncts to aeronautics, even where these adjuncts are common to other branches of applied science.

The general principles which have guided the Technical Terms Committee in compiling this work are summed up by the Committee itself as follows:—

The compilation of the Glossary has been framed on the following basis:—

(a) The coining or creation of new terms has been avoided.

(b) Terms which though used in aeronautics have the same sense as in their ordinary usage have been excluded with few exceptions.

(c) When current usage has been lax, a term has been restricted to that employment which was either dominant or most logically defensible.

(d) Terms already in common use have been crystallised by clearly defining their application.

(e) Cross reference has been made to many colloquialisms which have a reasonably wide use, but formal status has not been given to them.

(f) An agreed series of symbols has been introduced for those mathematical calculations which relate to aerodynamics.

(g) Terms of which the meaning in aeronautics has been narrowed down to some specialised significance have usually been included.

(h) The names, used in aircraft stores, of parts and materials have been listed and defined where necessary.

(i) Meteorology and its terms have been included as a part of the science of Aeronautics.

It remains only to be said that generally the terms which have been standardised appear to be on the whole well chosen and clearly defined.

There are certain cases where improvement might be made—as, for instance, on page 44, where "small end bush" of an aero-engine is defined as "a part in the connecting rod easily replaceable in the event of wear, employed when the gudgeon pin is fixed relatively to the piston." Not only does this leave one free to apply the term to any part in a connecting rod which may be easily replaceable and which is employed under the particular conditions laid down therein, but it expressly excludes that large number of small end bushes, properly so called, which are not easily replaceable.

Unquestionably, the Glossary should have a place in the library of every student of Aeronautics.

A GERMAN RUMOUR.

It is reported from Zurich (via Paris) that certain large German firms, including Krupps, are engaged on experimental work with an internal combustion turbine suitable for aeroplanes, and that machines fitted with this engine have already been built.

If there is any foundation for this statement, it is highly improbable that the turbine employed is actually an internal combustion engine.

It is just possible that a satisfactory diluted gas or oil turbine may have been produced, in which fuel is burnt under compression in a combustion chamber into which water is injected in fairly large quantities.

This has the effect of greatly reducing the temperature of the gas flowing past the turbine blades and immensely simplifies the construction of the turbine.

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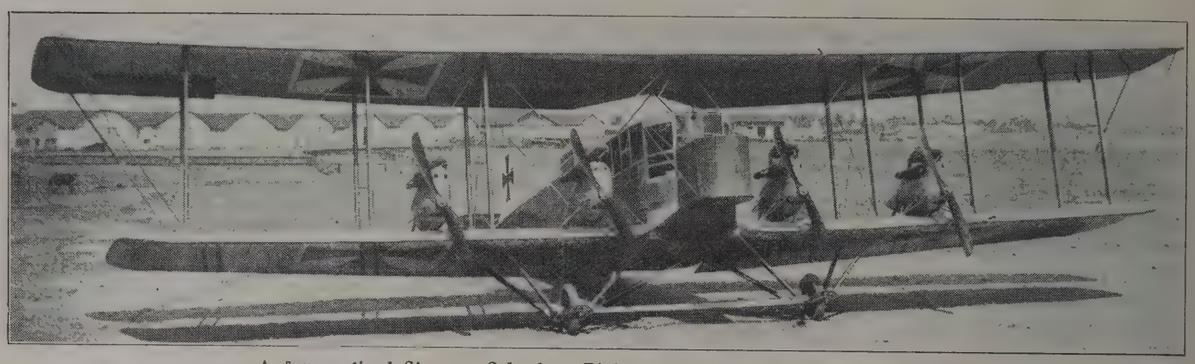
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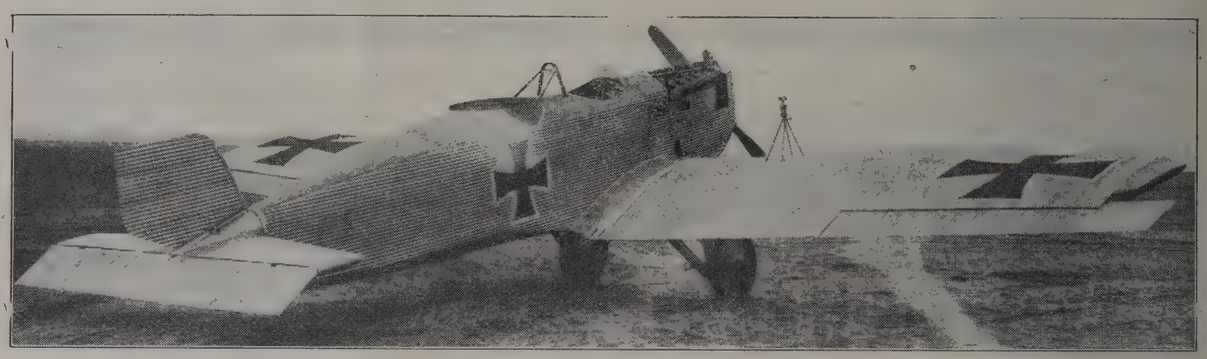
SOME INTERESTING GERMAN MACHINES.



A four-engined Siemens Schuckert Biplane with 4-110 h.p Mercédès Engines.



A Linke Hoffmann Multiple-engine Biplane with engines inside the fuselage.



A Junker-Fokker All-metal Monoplane.

The pictures reproduced upon this page are typical of certain developments of German aeroplane design. The four-engined Siemens-Schuckert biplane represents one of the earliest efforts at producing a multiple-engined machine, and is largely based upon Sikorsky practice.

At the same time as this machine was being built (early 1915) the Siemens-Schuckert firm were experimenting with a number of engines enclosed in the fuselage driving airscews on the wings by gearing. Though not a Siemens-Schuckert product, the Linke-Hoffmann "Giant" is of this type—so far unexploited in any other country.

The third picture gives an excellent idea of the general features of the All-metal Junker-Fokker monoplane, devoid of all wing bracing. The corrugations in the thin sheet metal forming the fuselage, wing and tail coverings can be plainly seen. The parasol monoplane is one of the steps in the development of the Junker-Fokker type.



The All-metal Fokker Parasol Monoplane (rotary engine).

AERIAL SAFETY AND THE AEROPLANE PARACHUTE.—(*Continued*).

By L. P. FRANTZEN.

THE FRENCH ORS PARACHUTE (1918 TYPE).

The Ors parachute is 10 metres in diameter, and is made of French silk.

This parachute is folded up upon 12 circular wood frames which are attached one to another by small cords. It being so folded, the 12 frames are placed together and the suspension ropes carefully folded so as to avoid their becoming entangled.

The Ors type of parachute has two special features—(1) certainty of opening and (2) positive extension (*i.e.*, it is drawn out directly by the weight of the falling aviator).

In opening, air passes through the wooden rings and inflates the upper portion of the parachute first, the parachute opens gradually and produces a gradually increasing negative acceleration.

This type is amongst the most interesting and most certain of aeroplane parachutes.

M. Jean Ors himself has even descended from an aeroplane in one holding on by his hands alone.

TRIALS OF THE ORS PARACHUTE.

1st test. Parachute 10 metres diameter. Parachute opened gradually and with little shock, and descended at an average of 15 ft. per second.

2nd test. Parachute, 8 metres diameter, fitted beneath the body of a Bréguet biplane. Dropped at about 300 ft. The parachute opened gradually and descended at an average speed of 17 ft. per second.

3rd test. Parachute 9 metres diameter. Dropped from 325 ft. The parachute commenced to open at once, and opening was completed in 4 seconds, the upper part inflating first, and the parachute extended itself steadily to its full spread as it dropped. The opening is so slow that the shock produced is very slight.

THE JUCHMES BALLOON PARACHUTE (MILITARY TYPE).

(*Invented by M. Juchmès, Airship Pilot.*)

Description. The case containing the parachute is made of rubber-proofed fabric, and is placed at the side of the nacelle. It is in form a truncated cone, fitted with wooden rings at each end. The case is fixed to the nacelle by a pyramid of cords which terminate in two rings.

The parachute is arranged at the base of the cone, and is held in the throat of the wooden ring by a spring clip which will stand a pull of 30 kgs. There emerges from the cone only a rope 3 metres long, which is attached to the aviator's harness by a snap-hook.

Dimensions of the case:—Height, 0.60 m.; diameter, summit, 0.25 m.; base, 0.40 m. Overall length of drawn out parachute:—Parachute, 5 m. cord fans, 5 m.; suspension ropes, 8.95 m.; harness rope, 3.0 m. snap-hook, 0.05 m. Total: 22 m.

The parachute has roughly a diameter of 10 metres. It is made in five zones, made up in panels, each 1 metre wide, making a total length of 5 metres when the closed parachute is pulled out. The four inner zones are of fine silk. The exterior zone is in heavier silk, or *ponghée*, with a corded edge.

The upper part of the parachute is pierced with a hole of about 0.5 metres diameter, which is cross-tied with cords. The suspension is in the form of 8 fans each of three branches, leading to eight suspension cords.

This parachute, which has saved the lives of numerous kite balloon observers, has also been tried from aeroplanes, but although it has given some results, it does not seem to be sufficiently developed for this application.

In the technical and practical tests a diagonal system of support and an internal collar were used, but the arrangement gave too little elasticity, and resulted in too sudden an opening, although the shock was not very great.

On July 31st, 1918, Captain Aviator Sarret made a test in Lorraine by leaving a two-seater Salmson biplane from a height of 500 metres with a Juchmès parachute with no special arrangements. This exploit gained for him the Cross of the Legion of Honour.

THE "SERVICE DE L'AVIATION MILITAIRE" PARACHUTE (S.E. AE. TYPE).

The model first tried was derived from the Juchmès balloon parachute, but a number of holes around the summit were added. These holes were fitted with an elastic device which allowed of their expanding under pressure. This arrangement was designed to halve approximately the shock of opening, but, on the other hand, it increased the rate of descent. The shock-absorbing qualities were good, but it was necessary to increase the diameter to reduce the mean speed of descent.

This parachute was 7 metres diameter, with a radius of curvature of 9 metres, and was made in 12 sectors, with 12 suspension ropes. It was made of cotton fabric, and weighed, with its envelope, about 20 lbs.

The parachute is folded accordeon-wise in a waterproof envelope. The suspension ropes are folded up in a separate compartment of the envelope. A cover is fitted to the envelope, held in place by cords.

This parachute has been tried from various heights. It was fitted in a compartment behind the observer in a Bréguet, and so arranged that it could be dropped over one side and hang just below the fuselage when the dummy or weight was to be dropped.

A dynamometer was fitted into the suspension system, which registered the maximum shock.

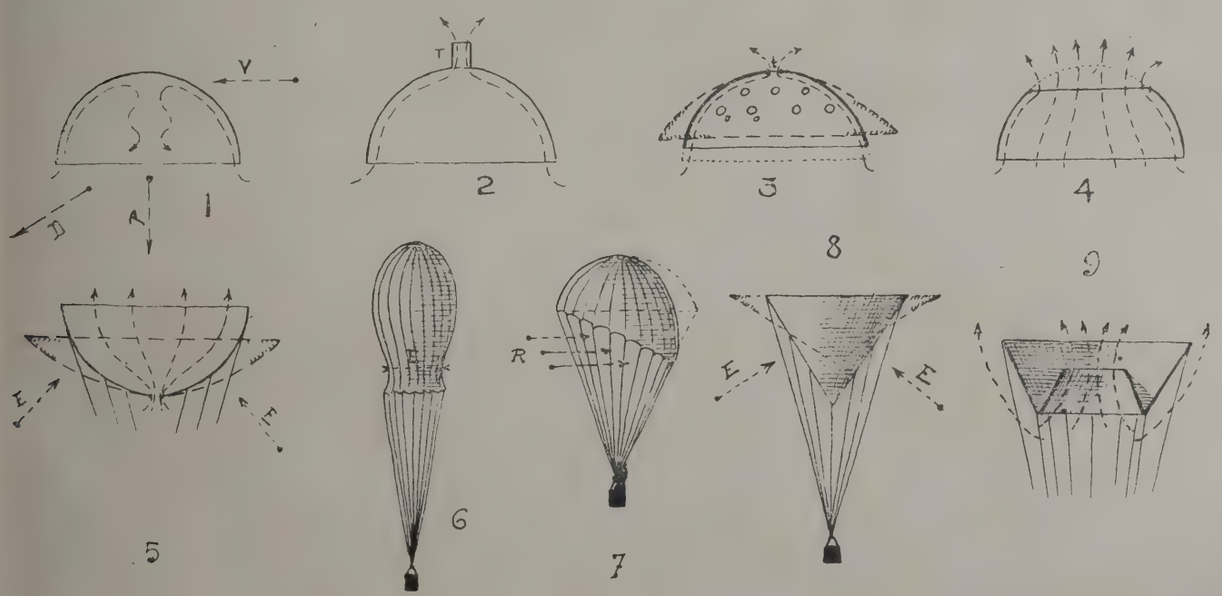
At the first trial the parachute dropped a long way before opening. Then it opened suddenly and with a fairly large shock. The speed of descent averaged 15 ft. per second.

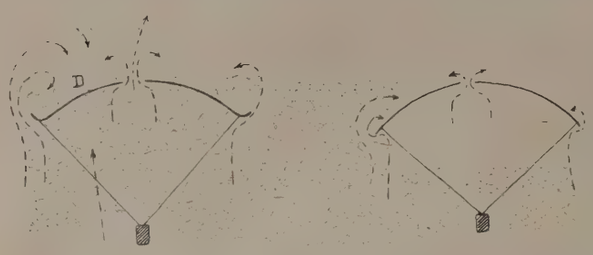
As a result it underwent several modifications, and was again tried upon a Bréguet, upon which it was fitted in the same place and manner.

Launched from 150 ft., it made a bad opening, which produced a sudden change of speed and a shock which reached 1,000 lbs.

It was necessary then to make radical alterations in the system, and particularly in the suspension.

A further test was made at 600 ft., the parachute being carried in the cockpit. It was hung out over the body just before releasing





10 11

The result was bad, because the parachute fell owing to the small cords which held it in the case breaking through getting entangled in the tail, an accident which obliged the pilot to make a forced and brutal landing, thus demolishing the machine.

This has been the only accident in all the long series of tests made by the commission charged with the examination of aeroplane parachutes, but it formed a good lesson as to the precautions which must be taken in the future. It should be said that this parachute should be perfected shortly, and that it ought to be completely satisfactory.

To conclude this essay a diagram is given here of the divers forms which can be given to parachutes. The reader will be enabled to take account of the advantages and disadvantages of each system, and will probably conclude that the problem of the aeroplane parachute is still far from being settled, even in regard to the shape of parachute to adopt.

Description of the Diagram.

Fig. 1.—Primitive type of parachute. Hemispherical (inverted bowl) without hole in the top for the passage of the air current.

Disadvantage: Great pendulum oscillations due to eddies set up within the parachute.

Fig. 2.—Garnerin parachute, with "Lalande hole" (T), giving a better air flow.

Fig. 3.—Modern parachutes: Types 1: Less than a hemisphere; type 2: flattened hemisphere. The majority are fitted with a single escape hole, but some have multiple openings. These types give good air flow, but oscillate more or less, to an extent which depends on the shape and proportion of each parachute.

Fig. 4.—Hemispherical parachutes cut out too much at the top. This excessive cutting away, which greatly diminishes the surface, greatly accelerates the rate of descent, even to a dangerous extent. Also the oscillations are in no wise reduced by enlarging the hole.

Fig. 5.—Mouillard type parachute (1895). Tests made with rigid hemispherical parachutes turned upwards. Very good air flow and good sustentation were obtained. The experiment can be easily made with an umbrella turned inside out. Very little oscillation. The air reaction is shown by E.

Fig. 6.—Throttling (suction) effect (at E), which occurs with all ordinary types of non-rigid parachutes at the beginning of the fall. This may become very dangerous in a strong wind (or at a high speed), and may prevent the parachute opening at all.

Fig. 7.—Steering a parachute by shortening the suspensions on one side.

Fig. 8.—Inverted cone type parachute. Badly carried out by Cocking in 1834. An excellent shape, recognised by Sir George Cayley, and shown to be correct by Renaud, but difficult to make in practice. The descent of the inverted cone parachute is perfect, and is without oscillations.

Fig. 9.—Annular parachute, single or multiple (System A. Dauphin). Rigid or semi-rigid type.

On either theoretical or experimental grounds this is the best shape yet known, but, like the previous type, it is difficult to make.

A parachute of this shape, however dropped, automatically reverts to its normal position. It has no pendulum motion.

Further, this system, known as the "Reaction type," only needs half the surface necessary for the ordinary types, which is remarkable. This fact will be referred to again.

Amongst the types of parachute of French invention one must mention that due to M. Jean Stroescu, which is interesting on account of its turned-up edge. This inventor has obtained very striking results by making his parachutes to the profile shown diagrammatically in Fig. 10.

In this it will be seen that the air currents are more dispersed, and that a larger region of low pressure (D) is set up by the turned-up edges than is the case with the usual form (Fig. 11).

It is interesting to note that this principle of the turned-up edge is mentioned in an essay of Mouillard's upon dirigible parachutes dated 1895.

It should be remembered that Mouillard made very careful experiments with parachutes, and that he rejected in principle the Garnerin spherical or inverted bowl type of parachute, and recognised that the inverted umbrella, or "bowl right-way up," as theoretically better. But to make a practical flexible parachute of this form is a quite different affair.

The same is the case with the inverted cone type recommended by Sir George Cayley, and tried with such unfortunate results by the English painter, Cocking. It has not been possible to carry out this system yet without a rigid skeleton, which has caused it to be rejected for aeroplane work.

Nevertheless the principle is good. It is the same with the annular type of parachute devised by Dauphin.

Since Garnerin the shape of the parachute has remained practically unchanged, and it was only towards 1910 that attempts have been made to devise parachutes for aeroplanes which are automatically thrown clear of the machine.

It is correct to say that all modern aeroplane parachutes have been designed on this line. It is the author's opinion that this is not sufficient.

It is only necessary to read Mouillard on this subject. His criticisms are imperative, and to anyone who has studied in its entirety the parachute question it is impossible to accept as final the present spherical type, on account of the violent pendulum oscillations which occur during descent.

It has been extremely difficult to find suitable methods of carrying parachutes upon the various types of Allied machines in service.

In horizontal flight the matter is relatively simple, but when, as in the case in accidents, the machine may take up any position whatever, the problem becomes very difficult to solve. It has, however, been accomplished now.

The pre-war and early war trials with parachutes placed below the fuselage only met the one particular case, and could not be considered conclusive. A parachute should be always ready to operate, no matter what the conditions. The best methods ("L'Aérophile," March, 1919) in actual use are either to carry the parachute upon the aviator's back, or to place it in a special case which is carried in the fuselage immediately behind each aviator's seat.

A flat parachute (Fig. 3) produces a very decided sideways movement, a kind of glide.

A parachute too deeply curved gives rise to great pendulum oscillations.

A parachute with a large number of vent holes beside the central hole has a reduced shock when opening, but must have a large surface to prevent excessive speed of fall.

Most parachutes have been made either of silk or of cotton. Silk is incontestably the better material on account of its lightness and its strength. Silk allows of folding into a very small space, and is little damaged by being folded.

Parachutes should never be folded when wet.

Parachutes which have been used and repaired should never be used.

Parachutes which have been used and repaired and stowed very carefully. This needs in many cases a considerable time.

It is obvious that the case which contains the parachute should be fireproof. The parachute itself should be so treated. The Germans did not neglect this precaution, doubtless thinking that their parachutes might be attacked, although naturally it was the inverse which occurred.

INADEQUATE SENTENCES.

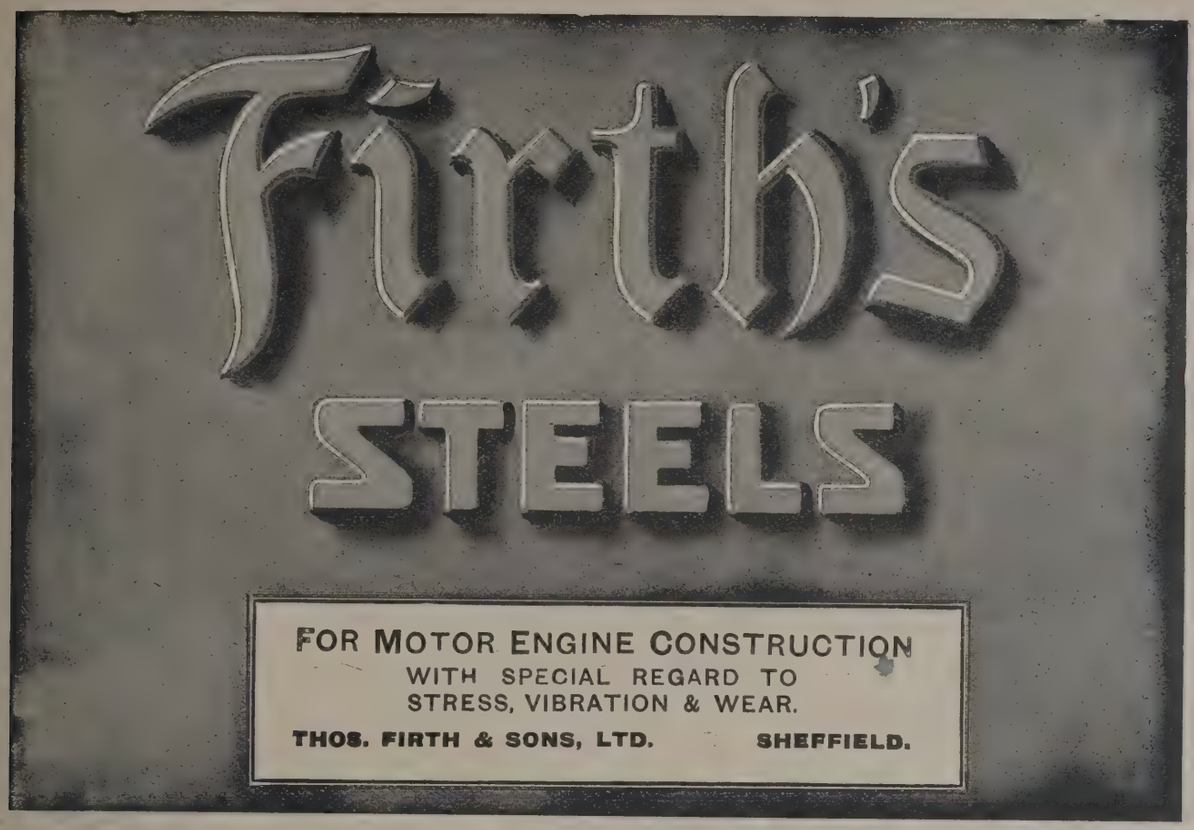
On Thursday, July 17th, at the Sheffield Police Court, W. S. Laycock, Ltd.; James Sedcole, manager of the engine department; Fred Miller, commercial manager; William Hunter, works manager; Edward Clarke, foreman fitter; and William Margerison, stores clerk, were charged under the Defence of the Realm Regulations with misleading an official of the Department of Aircraft Construction as to the quality of certain parts of an aeroplane engine by substituting for parts which had been inspected and approved by the Aeronautical Inspectorate Department certain other parts not so inspected and approved.

It was alleged that workmen were called upon to work during the night and in the absence of the inspectors to substitute defective cylinders for tested and approved cylinders upon engines manufactured by the firm and approved for delivery by the A.I.D. inspectors, and evidence was given by certain of the firm's workmen to that effect.

The defendants were convicted and fined: the firm £200 and 100 guineas costs; James Sedcole, £50; Fred Miller, £10; Wm. Hunter, £20; Edward Clarke, £2; and Wm. Margerison, £30.

A FACTORY FIRE.

Owing to the devotion of the staff, of which the majority were girls, nearly all the "spares" were safely removed from the building of Aero Coverings, Ltd., of Kilburn, on July 14th, when they had rather a bad fire. Two days after the occurrence work was resumed with full output.



GWYNNES
LIMITED.

CONTRACTORS TO H.M. GOVERNMENT

MANUFACTURERS AND SOLE LICENSEES IN THE BRITISH EMPIRE

"CLERGET" PATENT AERO ENGINES

ENGINEERS, LONDON.

"GWYNNE LONDON."

EMBUSQUE'S GRAB.

The following letter has been received :—

Sir,—We hear nowadays a considerable outcry from trade union circles demanding that certain customs and privileges enjoyed by trade unionists which had to go to the wall during the war shall now be re-introduced. Of the rights and wrongs of this question I do not wish to debate to-day, but it does seem to me—and, I should imagine, to the great majority of your readers—that, as well as trade unionists, other folk may also claim the return of their rights and privileges.

Few fair-minded men will deny that designing and inventive people during the war were subject to many hardships, particularly, for example, the more or less forcible seizing of their designs by the State, to be sub-contracted with all types of firms—good, bad, or indifferent—at the sweet will of the Government Department concerned. They were always assured that it was for the national cause and the national good, and therefore acquiesced.

Surely the necessity for this procedure is now long past. Under urgent war conditions this custom may have been necessary, and in many instances unquestionably did good, but under peace conditions I cannot see how any thinking man can see anything in it but bad. A designing firm may incur very heavy expenses in producing some new type of aeroplane, engine, or fitting, yet if this system is to go on his designs may be grabbed by the residue left in the Bolo muck-heap. He has then to enter into cut-throat competition for the honour of building at the cheapest possible rate his own choicest production against—in many instances—war firms of mushroom growth, whose only right to existence was the urgent needs of the war and the demands for enormous production and the continual surplus of orders.

Many of these firms are willing to take on work at any price to keep their organisation together, "always with the hope of something turning up," and are, of course, entirely saved the heavy expenses of a designing office, drawing staff, the frequent occasions on which the attempts to produce a design are abortive (but which have frequently resulted on further trials in a highly satisfactory production), not, of course, loaded with the heavy cost of experimental machines which often have to be scrapped in arriving at the result, or the maintenance of, or payments to, an experimental pilot.

I will inflict my opinions on your unhappy readers only by one final example, which is perhaps the most important of all. In many cases in the past where Governments have been buying in the cheapest market, some firm—whose design was its outstanding merit—continued to supply the trade (whatever it might be—engineering, shipbuilding, etc.) with their production, and sure enough, in a year or two, the supreme excellence of their production was so apparent to the Government that their production was finally purchased from this firm to the satisfaction of all parties concerned.

Under this new game of "Embusqué's Grab," as played on the "Bolo Rubbish Heap," the designs of this excellent firm would have been seized, executed by some firm which we will call "Messrs. Blackleg, Ltd.," to the worst possible limits which could be squeezed through the A.I.D., some underlying principle of the design quite ignored, and the design would have been a failure. Not only would the Government have acquired a cheap and shoddy article—which, always remember, matters very little to the gentleman whose greatest danger is that he might do a flat spin on his revolving office chair—but this very design acquires such a bad name that the unhappy firm cannot even do a reasonable trade with its own well-built article amongst its trade friends. For the sake of the spirit of fair play which one still believes is uppermost in all English hearts—whether they are trade or not—the time appears to be quite ripe for a really determined stand to be taken against this insidious form of "Boloism" at its worst.

Like other trade unionists, I do not sign this as I fear victimisation.

[Note.—The practice of which complaint is made in this letter is the subject of a leading article by "Strasbourg" in this issue. – Ed.]

RADIATORS.

At the invitation of the Motor Radiator-Manufacturing Co. a small party of the technical Press and the motor trade visited the works of the above firm.

As mentioned by one of the members of the party, "a radiator was a thing that nobody took any notice of until it began to leak," and then the words of the English language were inadequate to express one's feelings for both the radiator and its maker.

Having seen how a radiator should be made in an all-too-short inspection of the works, one feels convinced that the only radiators that do leak do not emanate from the factory in Grete, Birmingham. Mr. Serck, the enterprising proprietor of the company, started making radiators back in 1907 in Bermondsey, and from that time the business has expanded to its present state, where in a factory covering an area of something over four acres it is estimated that when in full swing 50,000 radiators can be produced per annum, as well as supplying from their own tube mills sufficient tubing for all the aeroplane and car radiators manufactured in the United Kingdom.

During the latter part of the war the factory was taken over as a national one and its entire efforts were devoted to the needs of the Aircraft Industry, with the exception of a contract for a certain number of Tank radiators.

In the hurried tour of the factory one saw the presses and drawing mills making the tubes from blanks, the testing of the tubes for leaks by a water test, the cutting off into short lengths, annealing, and the shaping of the ends.

The finished radiator tubes are then assembled in frames ready for the soldering process, both sides of the radiator block being submerged to a depth of about 3-16ths of an inch in an acid bath and then in the solder.

The water spaces are then connected up and mounted ready for the final tests.

In the first test the whole radiator is submerged in water and blown up with air to detect leaks. In the second it is filled with water to a pressure of 7 lbs. In the third, known as the flow test, the water is forced through the radiator in order to detect any obstructions, etc.

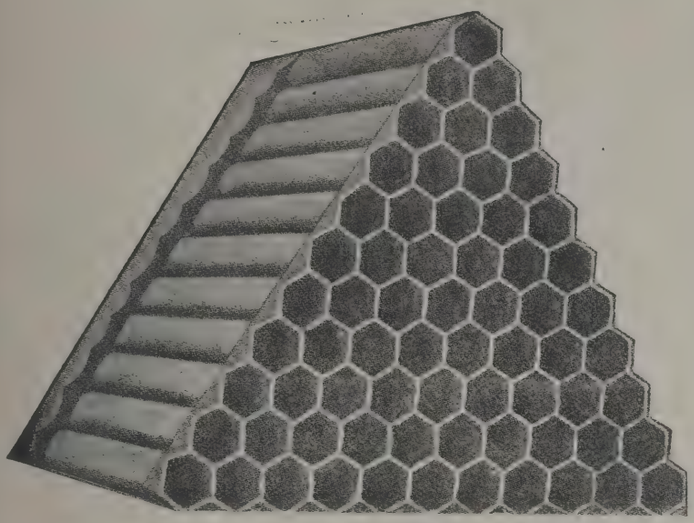
It is again filled with water to a pressure of 7 lbs. and is then ready for packing and dispatch.

Now that the factory has been released by the Government, Mr. Serck has again assumed control, and one feels confident, having seen the thoroughness and keenness he displays in turning out the best article only, that he is going to improve on his old reputation if that be possible, more particularly in quantity production.



A GERMAN CURIOSITY.—A Twin-engined Schütte-Lanz Biplane of early 1915. It is apparently built almost entirely of metal. The engine and airscrew mounting is of particular interest.

YOU MUST HAVE AN EFFICIENT AND RELIABLE RADIATOR.



JOHN MARSTON LIMITED,

OF WOLVERHAMPTON,

Have for more than a century been engaged in the manufacture of Sheet Metal Ware.

AIRSHIP R34

which has just

CROSSED the ATLANTIC TWICE

was fitted with

RADIATORS

made by this firm.



ARMSTRONG, WHITWORTH

NEWCASTLE-UPON-TYNE.

TELEPHONE:- 500 GOSFORTH.
TELEGRAMS:- ARMSTRONG AVIATION,
NEWCASTLE-ON-TYNE.

PATENTS INDEX

The subjoined list of recent inventions has been specially compiled by The Aeroplane from the Current Official Patents Records :—

Patents Applications.

Baker, W. J. Providing forced induction for engines of aircraft, motor-cars, etc. No. 13113. May 24th.
Boothby, F. I. M. Fuel tanks for aircraft, etc. No. 13137. May 24th.
Busteed, H. R. Flotation gear for aircraft. No. 12666. May 20th.
Cordener, J. Aeroplanes, hydroplanes, boats, floats, etc. No. 12605. May 19th.
Feary, N. A. T. N. Constructional material for seaplanes. No. 13124. May 24th.
Fryman, H. Signalling apparatus for road vehicles and aeroplanes. No. 12513. May 19th.
Jones, E. A. Level-indicators for aerial machines, etc. No. 12828. May 21st.
Joseph, R. Toy aeroplanes. No. 13103. May 24th.
Kemp, J. R. Clinometer for aircraft. No. 12837. May 21st.
Kent, L. H. Screens for aircraft. No. 13039. May 23rd.
Leeming, J. F. Device for stopping aeroplanes. No. 12617. May 20th.
Lord, H. Means for directing aircraft during fog at night. No. 12996. May 23rd.
Lynch, G. Helicopters used in aircraft. No. 12687. May 20th.
Mackworth, J. D. Stabilisers and/or brakes for aircraft. No. 12677. May 20th.
Martens, H. Hangar or housing for airships. No. 12592. May 19th.
Parker, E. W. Toy aeroplanes. No. 12912. May 22nd.
Peterson, W. Safety suits for aviators. No. 12723 May 20th.
Potter, E. B. Aircraft. No. 12748. May 21st.
Tebaldi, A. Aeroplanes. No. 12597. May 19th
Thornton, R. Aeroplanes. No. 13109. May 24th.
Wake, A. J. Flying machines. No. 12609. May 20th.
Weis, J. A. Aeroplanes. No. 12791. May 21st.
Wells, T. R. Aerial navigation instrument. No. 13078. May 24th.
Bage, A. A. Elevator and rudder control on large aeroplanes. No. 12066. May 14th.
Bearcroft, R. L. C. Universal angle or inclination gauge for use on aircraft. No. 12052. May 14th.
Blair, C. Petrol or oil motor for motor-cars, motor-cycles, aeroplanes, etc. No. 11945. May 13th.
Butler, R. T. R. P. Ascertaining position on land or water or in the air. No. 12075. May 14th.
Cave, T. R. Cave-Browne. Airships. No. 12476. May 17th.
Cave, T. R. Cave-Browne. Airships. No. 12478. May 17th.
Cave, T. R. Cave-Browne. Envelopes for airships. No. 12447. May 17th.
Dacey, W. D. Apparatus for balancing and stabilising aircraft. No. 12010. May 13th.
Feary, N. A. T. N. Manufacture of fabric for aircraft. No. 12265. May 15th.
Feary, N. A. T. N. Flexible material for aircraft. No. 12266. May 15th.
Finer, H. J. Landing lights or ground flares for aerodromes, etc. No. 12034. May 13th.
Heiser, C. R. Parachutes. No. 12482. May 17th.
Hinkler, B. Instrument for obtaining calculus for aerial navigation. No. 12117. May 14th.
Hobbs, H. T. Aeroplane petrol tank. No. 12086. May 14th.
Mayers, C. Aerial transport system. No. 12026. May 13th
Medworth, A. Model balloon or airship. No. 12222. May 15th.
Mendel, L. T. Aeroplanes. No. 11821. May 12th.
Rowles, S. G. Clinometers for aircraft, submarines, etc. No. 12130. May 14th.
Thompson, N. A. Aircraft. No. 12485. May 17th.
Walker, S. T. Aircraft. No. 12188. May 15th.
Wright, M. E. A. Toy aeroplanes. No. 11867. May 12th.
Boulton and Paul. Metal spars for wings of aircraft. No. 14307. June 5th.
Brown, J. E. Chinnery. Apparatus for propulsion of tapering bodies through air and water. No. 14131. June 4th.
Christie, H. F. Aircraft. No. 13957. June 2nd.
Davis, R. H. Head-coverings for aviators. No. 14314. June 5.
Finer, H. J. Means for directing fire of ground batteries from aircraft. No. 14351. June 5th.
Hancock, W. H. Metal planes for aircraft. No. 14356. June 5.
Hooper, C. T. Glass-. Hauling down and housing of aircraft. No. 14317. June 5th.
Lender, M. Apparatus for instruction in management of aeroplanes. No. 13963. June 2nd.
Liversedge, A. J. Aerodromes. No. 14181. June 4th.
Mooney, D. J. Metal members for aircraft. No. 14051. June 4.
Neighbour, R. C. Toy aeroplane. No. 14136. June 4th.
Roberts, H. J. Model aeroplanes. No. 14541. June 7th.

Complete Specifications Accepted, prints of which can be obtained on and after June 12th, 1919.

126,342. Dec. 28th, 1916. Moore, E. H. Aeroplanes.
126,347. Dec. 29th, 1916. Dreyfus, C. Manufacture of hydrogen or other gas bags or containers and sheets applicable therefor.
126,350. Jan. 2nd, 1917. Roe, A. V. Mechanism for tilting or warping planes on aerial craft.
126,354. Jan. 6th, 1917. Sage and Co., F., and Tinson, C. W. Aeroplanes.
126,360. Jan. 10th, 1917. Smith, H. Aeroplanes.
126,365. Jan. 11th, 1917. Roe, A. V. Aircraft.
126,386. Jan. 25th, 1917. Vickers, Ltd., and Savage, H. A. Guns carried by aircraft.
126,391. Jan. 29th, 1917. Brown, E. E. Metal spars or girders for aircraft.
126,392. Jan. 29th, 1917. Sopwith Aviation Co., and Kauper, H. A. Means for synchronising the firing of a gun with the rotation of a propeller upon aeroplanes.
126,393. Jan. 29th, 1917. Lang, A. A. D. Hubs or bosses of aeroplane propellers.
126,399. Aug 4th, 1917. Dodson, E. Method of altitude control for carburettors of aircraft and like engines, and apparatus therefor.
126,417. April 4th, 1918. Sykes, H. W. Interrupter gears for aircraft guns.
126,432. May 1st, 1918. Bowden Wire, Ltd., and Sentinella, A. E. Bowden wire and like mechanism.
126,437. May 3rd, 1918. Gray, C. H. Frame-members for aeroplanes.
126,461. May 9th, 1918. Sage and Co., F., and Feary, N. A. T. N. Armouring fabrics.
126,492. May 22nd, 1918. Willson, E. A., and Dewar, J. Aeroplane hangars and the like.
126,496. May 23rd, 1918. Thomas, G. H., and Kettlewell, H. M. Fairings for use on aircraft.
126,505. June 4th, 1918. Cullen, W. H. Control levers of aeroplanes.
126,510. June 11th, 1918. Enrbiricos, A. A., and Feure, G. de. Aeroplanes.
126,515. June 14th, 1918. Nieuport and General Aircraft Co., Folland, H. P., and Preston, H. E. Attachment of the aerofoils of aeroplanes.
126,514. June 14th, 1918. Nieuport and General Aircraft Co., and Folland, H. P. Bodies or fuselages for aeroplanes and other aircraft.
118,839. June 26th, 1917. Bouteille, J. Internal-combustion engines particularly for use on aircraft.
126,556. Sept. 9th, 1918. Frassinetti, R. Aeroplanes.
126,568. Oct. 8th, 1918. Verner, J. F. Aeroplane controls.
126,575. Dec. 23rd, 1918. Hiscocks, S. W., and Edgar, E. J. Wheels for aircraft.
123,524. Feb. 22nd, 1918. Schultz, E. J. A. Device for reducing or multiplying speed.
126,665. Feb. 1st, 1917. Porte, J. C. Floats for seaplanes.
126,666. Feb. 1st, 1917. Porte, J. C. Flying-boat hulls.
126,669. Feb. 1st, 1917. Aircraft Manufacturing Co., Havilland, G. de, and Chapman, J. S. Liquid fuel tanks.
126,674. Feb. 5th, 1917. Brown, E. E. Girders and the like for aircraft.
126,680. Feb. 9th, 1917. Dodson, P. L. H. and Hugh, P. G. Winches or hauling apparatus for kites, observation or target-balloons, and the like.
126,683. Feb. 9th, 1917. Bolotoff, S. V. de. Hydrocraft planing surfaces.
126,705. Feb. 20th, 1917. Nicholson, A. Fuel tanks.
126,710. Feb. 21st, 1917. Vickers Ltd., and Burgoine, S. F. Aircraft.
126,718. Feb. 24th, 1917. Dunlop Rubber Co., and Keegan, F. J. Wheels for vehicles, particularly aeroplanes.
126,727. March 3rd, 1917. Davis, R. H. Apparatus for use in testing breathing-appliances, and for other purposes.
126,730. March 6th, 1917. Vickers Ltd, and Challenger, G. H. Girders for aeroplanes, and airship and other construction.
126,827 May 28th, 1918. Gibbons, F. J. J. Appliance for safely carrying and dropping objects from aircraft.
126,858. July 10th, 1918. Blackburn Aeroplane and Motor Co., and Booth, H. Controlling-devices for aircraft.
126,860. July 13th, 1918. Morris, A. Aviator's level or inclinometer
126,872. August 15th, 1918. Saunders, S. E. Hollow spars for use in aircraft construction and for other purposes.
126,875. August 17th, 1918. Duncan, B. A. Construction of girder-like parts of aeroplanes and airships.
126,909. Nov. 28th, 1918. Palson, H. Aircraft.
126,911. Dec. 5th, 1918. Lesseps, P. de. Means for actuating the ailerons of aeroplanes.
126,934. March 14th, 1918. Vickers Ltd., and McKechnie, Sir J. Cars for aerial machines.

COMMERCIAL AERONAUTICS & CIVIL AERIAL TRANSPORT

MEN OF LITTLE FAITH.

By "MEDWAY."

"What Horace says is,
'*Eheu, fugaces*
Anni labuntur, postume, postume.'
Oh, for the years that are lost to me, lost to me!
Now, when the folk in the dance point their merry toes,
Sighing, I murmur, '*O mihi, preteritos!*'"

I believe this to be a perfectly good quotation from "The Ingoldsby Legends," but as I am depending on my unpelmanised memory it may be a little loose in details. Anyhow, it has the proper classical aroma, and the moral is above criticism.

I have put it at the head of this page mainly out of deference to the example of C. G. G., who, in a recent leader on "The Writing on the Wall," referred poetically to the casual behaviour of Daniel when called upon to act as a court interpreter. Daniel has been honoured by the attentions of more than one poet; for instance, of the gentleman who wrote:

"Daniel in the lion's den,
The lion as tame as a spaniel;
Daniel didn't care a damn for the lion,
Or the lion a damn for Daniel."

By which I mean to imply that I am not concerned with any question as to whether my opinion coincides with that of C. G. G., though he may take his choice between the parts of Daniel and the lion. I recommend to him the former, who was, I am credibly informed, a major prophet. On the other hand, I would back the lion in a disagreement without gloves.

Method in His Madness.

First and foremost, I venture the view that the British aircraft manufacturer is not such a red-corpuscular vital-serumy fool as he looks. There is method in his madness. If he will not lay his shirt on the commercial feasibility of an aerial service between Lapland and Timbuctoo, it is not because he shirks the job of convincing others, but rather because he cannot convince himself.

In some ways we are a modest nation. We underrate ourselves and our products. I have an uncomfortable feeling that, when I recently suggested a full-blown propaganda department in the interests of Commercial Aeronautics, I started at the wrong step. I am inclined to think that the first thing needed is to make the Industry itself feel perfectly certain that it is on a good thing. There is a curious strain of honesty running through even the best business man among us. We are no good at pushing a thing we don't believe in. Once our belief is sure, we go to the other extreme. We know that we are a stupid nation, and we argue thus:

"If *I* can see it, it must be obvious. Any fool can see it. In that case, why bother to tell him."

And we lie down on the backs of our tummies, waiting for orders that never come.

The Second Stage.

This, however, is the second stage, when we are sure that we, and the things we have to offer, are right. As yet I feel certain the Industry is not through the first stage. It cannot believe in its own achievement, and, until it does, it cannot force belief upon others. It recognises that it has created a fine weapon of war. It is not so sure that its sword can be beaten into a ploughshare and its products modified to form a really valuable weapon of peace.

There are a few men in the Industry who *know*. Others, who hesitate to share their instinctive knowledge, are prone to regard them as unbalanced enthusiasts. The pioneers become annoyed by the atmosphere of half-contemptuous tolerance, and are driven to extremes. Then they go too far, claim too much, and end by setting the open-minded man against them. The magnificent aerial performances over the Atlantic have had just the effect that I feared and anticipated. They have caused a swing of the pendulum in the wrong direction, due to a somewhat sudden and general realisation of the amount that we have yet to learn. The more we know, the more we appreciate the gravity of the difficulties that lie ahead, and the less are we disposed to take commercial risks.

This is why I am so much more certain of the great future of commercial aviation than are many of the men whose business it is to build and sell aircraft.

A Good Salesman.

Now the first essential of a good salesman is confidence. He must have it and convey it. He will then have gone a long way towards ensuring the subsequent success of the thing sold. The buyer starts by believing in it implicitly. If he has trouble, he then ascribes the fault to himself rather than to the machine. He studies it carefully to avoid further mistakes in the future.

On the other hand, if he is wheedled into buying something in which he has no faith—because the salesman himself never had any—the first failure will convince him of his own folly and tend to make him cut his losses and give up trying.

It takes a born politician, or some other inspired liar of almost equal calibre, to instil faith that he does not possess. The British business man certainly cannot do so. The first thing, then, is to stiffen our own beliefs and cultivate a consummate confidence in the future. By consistent effort, it is possible to train oneself to believe almost anything. In the case under consideration, no great effort should be needed, because there is really so much to be said for the proposition.

I admire the man who will not glorify his own wares at the expense of others, but no one admires the man who lacks confidence in his own utility. Nothing big was ever pulled through by people who believed that it could not be done.

The case is straightforward enough:—

Commercial aerial services will undoubtedly be a big factor in the future of the world's transport.

We can build machines and engines unexcelled by the products of any other country.

We have magnificent experience at our backs.

We led the world in the development of rail and ocean transport.

We have a scattered Empire crying aloud for improved communications.

We are an engineering and a pioneering nation.

We can start fair in the race for the world's trade in aircraft.

We have a heaven-sent opportunity of showing that when a British industry is not stupidly handicapped it can hold its own with anyone.

The Handicap.

The handicap we have most to fear is one of our own making. We can wait for others to prove that traffic can be built up to render aerial services commercially successful. If we do, we shall then have the doubtful pleasure of watching those who took the risk reaping their reward, and, as Horace, with the assistance of Barham, has pointed out, we shall watch people doing the Monkey Search (or whatever the dance of the period may be) while we lament the "fugaces anni" that "labunted" while we were making up our minds.

The first step towards success is, then, to put our backs into the job. To my mind, the next steps are largely in the nature of intelligent propaganda, prefaced by the lynching of a few obstructive officials.

I must warn my readers that I have not done with this subject. In fact, I have only just begun it, and, whether they like it or not, I intend to elaborate some of my ideas on the subject of propaganda in subsequent articles.

AERODROME LAY-OUT.

By Captain M. G. Kiddy (late R.A.F.), Assistant Secretary, The Society of Architects.

Some of the illustrations for Aeroplane Hangars which one sees in contemporary papers are, from the point of view of impossibility, rather amusing. In one of them the Hangar, a tent-construction of the "Bessonneau" type, is shown in the middle of the aerodrome, with both sides open. One Handley Page is depicted in the act of landing into the hangar from one end of the aerodrome, whilst a second "takes-off" from the other side of the hangar, executing an alarmingly quick turn on the ground as it does so.

This might be feasible if the wind were considerate enough to remain consistently in one direction. Aviators know, and architects desirous of facilitating the quick landing and getting away of machines should learn, that an aeroplane rarely leaves the ground or lands in the same direction for two days running, the direction being governed by the quarter from which the wind is blowing. "Side-slip" and "stunt" landings are no longer possible under the new Air Ministry Regulations for the control of Civil Aviation.

Artistic but Not Practical.

The bird's-eye view of the aerodrome lay-out, whether imaginary or not, which generally accompanies the illustrations is often good from an artistic point of view, but not from that of the aviator. The position of the offices, dwelling quarters, etc., is of comparatively secondary consideration in planning the lay-out of an aerodrome, though it is naturally more convenient to have them, particularly the workshops, in as close proximity to the hangars as possible. But it is the hangars themselves that matter. In typical illustrations they are built in several parallel rows, face to face and end to end, with the edge of each row of hangars against, and at a right-angle to, the edge of the meadow-surface of the aerodrome.

This would mean that all the machines would have to be man-handled to and from their sheds—a state of affairs that would cause an R.A.F. commanding officer to tear his hair! An aeroplane, particularly of the twin- or multi-engined type, takes a great deal of man-handling, any number up to twenty men being required to move the ordinary twin-engined Handley Page; and this is a waste of power, to say the least of it. In addition, the machines in the sheds farthest from the edge of the aerodrome would have to be wheeled along some 200 yards of the tarmac before reaching the freedom of the meadow.

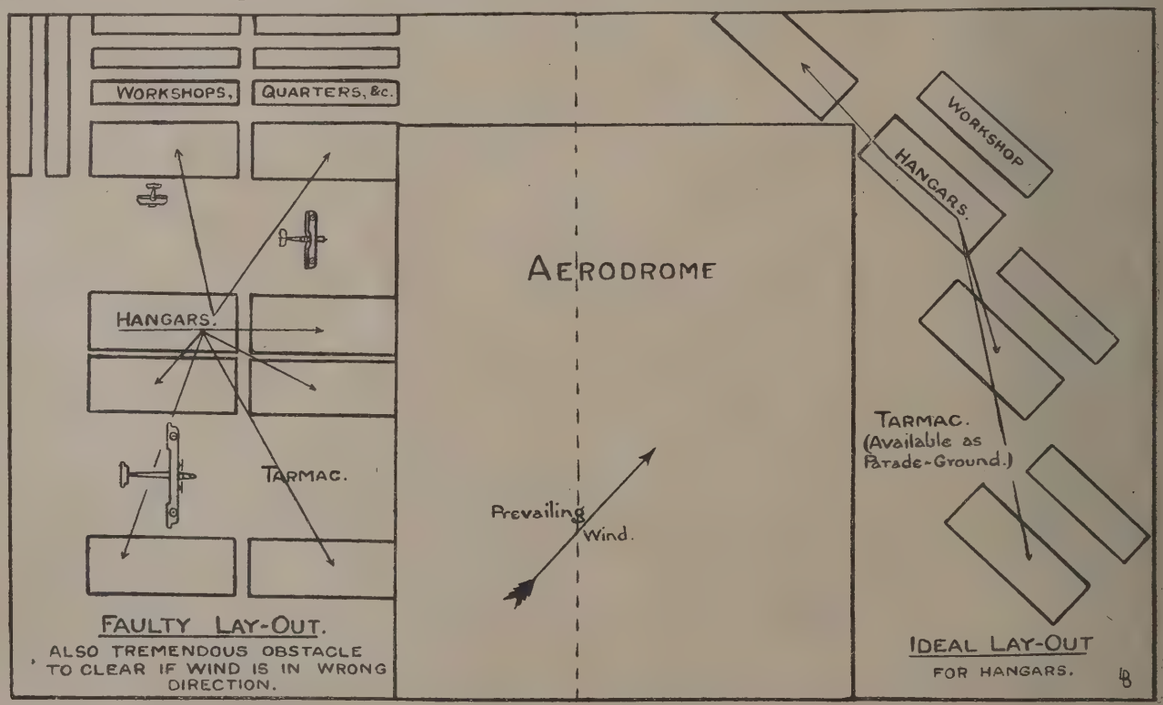
An ideal lay-out, from an aviator's point of view—which is the point that matters—must include hangars every one of which opens directly on to the meadow-surface of the aerodrome, so that machines can leave the sheds under their own power, with a minimum of man-handling, and can then taxi straight away preparatory to "taking-off."

The Things that Matter.

Practical considerations are of first importance to the average aviator, but there is nothing to prevent an artistic lay-out with the hangars in the proper position. Too much importance cannot be attached to the latter consideration, even if, as is the case in the majority of aerodromes, two sides of the meadow are taken up by the sheds. And the lower the hangars, and the flatter the roofs, the better will the pilots be pleased. One has known personally pilots who have been killed by gables on the roofs of hangars, where a flat roof would have saved both pilot and machine.

Another point worth noting is that, where possible, the row, or two rows, of hangars should open into the prevailing wind, so that nine days out of ten the machine can fly straight from its shed into the air, with no obstacles to pass over before it gains height. This has additional recommendations, such as facilitating the "running-up" of engines into the wind, without turning machines round, and similar technical details.

In the opinion of the writer, an ideal aerodrome in every respect is that at Catterick, in Yorkshire.



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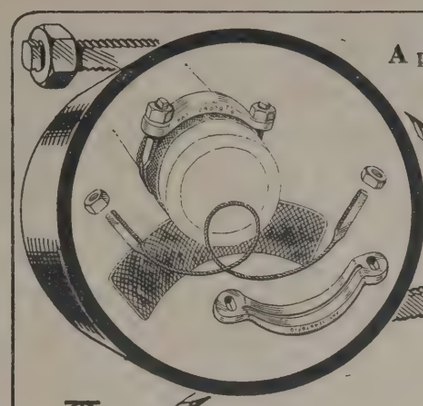
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6 " " " " " 6 " " " "
8 " " " " " 4 " " " "

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Rations and clothing are provided free.

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NEWCASTLE-ON-TYNE ...	10, Sydenham Terrace, North Road.
GLASGOW	9, Somerset Place, Sauchiehall Street.
BIRMINGHAM	Carlton Chambers, Paradise Street.
LEEDS	The Mount, Springfield Mount.
LIVERPOOL	12, Abercomby Square.
NOTTINGHAM	8, George Street.
CARDIFF	12, Newport Road.
EXETER	54, Queen Street.



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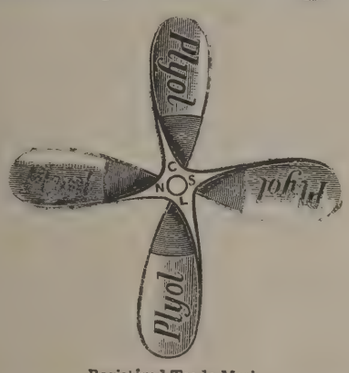
enough but the necessary labour entailed to keep it within the water-circulation system, when cheap and inefficient hose clips are used, is a costly item. A post card to us will put you in possession of details of a clip which will save you much money, time and annoyance.

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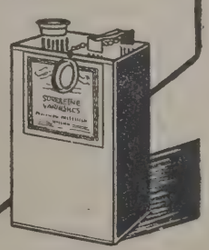
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AIR TOUR AND TRAVEL IN THE NORTH.

The Avro Company's air lines are developing rapidly up north. Starting in May with stations at Blackpool and Southport, the company has now opened landing grounds at Windermere (seaplanes), Morecambe, Fleetwood, Liverpool (Waterloo sands), Rhyl, and Douglas (Isle of Man). Six other air stations are in course of formation, which will make it possible for most people in Lancashire to travel by air to the South or West of England without long journeys to Government aerodromes.

The table below shows the distances by train between well-known points, and the distance *saved* by going by air is shown alongside each :—

	Train	Air	Train	Air	Train	Air	Train	Air	Train	Air	Train	Air	Train	Air	Train	Air	Train	Air	Train	Air
Blackpool ..	—		9	1	89	26	33	13	81	19	48	20	49	8	130	39	35	15	18	3	33	21
Fleetwood ..	9	1	—		92	32	24	10	84	23	51	15	52	8	123	38	28	16	21	4	34	16
Harrogate ..	89	26	92	32	—		70	18	18	4	93	21	61	14	50	8	74	19	71	21	86	21
Lancaster ..	33	13	24	10	70	18	—		65	11	51	5	52	16	99	26	4	1	22	1	36	6
Leeds ..	81	19	84	23	18	4	65	11	—		75	10	43	7	68	13	69	14	63	15	76	15
Liverpool ..	48	20	51	15	93	21	51	5	75	10	—		32	2	143	35	35	9	30	3	20	4
Manchester	49	8	52	8	61	14	52	6	43	7	32	2	—		111	24	56	8	31	3	35	1
Middlesboro'	130	39	123	38	50	8	99	26	68	13	143	35	111	24	—		103	28	120	38	135	38
Morecambe	35	15	28	16	74	19	4	1	69	14	35	9	56	8	103	28	—		29	9	54	24
Preston ..	18	3	21	4	71	21	22	1	63	15	30	3	31	3	120	38	29	9	—		15	1
Southport ..	33	21	34	16	86	21	36	6	76	15	20	4	35	1	135	38	54	24	15	1	—	
	Blackpool		Fleetwood		Harrogate		Lancaster		Leeds		Liverpool		Manchester		Middl'sboro'		Morecambe		Preston		Southport	

This chart is most instructive, as it illustrates that there is a great saving not only in distance, but also in time, to be obtained by air travel as against the railways.

Business in joy flying at Blackpool and Southport has been well maintained, the outstanding features of the week being the visit of Alderman A. Parkinson, J.P., M.P., Mayor of Blackpool, and Mr. Little, Vicar of Blackpool, to Bolton by air, where they addressed meetings and returned to Blackpool by air.

Another interesting event was the flying of an entire wedding party of guests, bride, and bridegroom and best man at Southport. Altogether fifty people were flown after the wedding breakfast, and this in spite of clouds and mist within a hundred feet of the ground.

Another novelty was the flying from Southport in an "Avro" experimental scout of a pilot who appeared from his machine at the dinner party to Sir John Alcock, K.B.E., D.S.C., at Manchester aerodrome, having come over already dressed. He flew back between 10 and 11 p.m. in the same garb.

The "Avro" seaplanes are now installed at Windermere, Capt. Pixton, one of the pioneer pilots of the early days, being in charge there.

THE CENTRAL AIRCRAFT COMPANY AT NORTHOLT.

The one drawback to flying from London to another town or to the Continent is that one has to journey so far out of London before reaching an aerodrome. The Handley Page aerodrome at Cricklewood is probably the nearest and the easiest to get to from town, but even they cannot advertise that buses, trams, and trains stop at the door, although both buses and trams can be found just round the corner.

The Central Aircraft Company, whose works are at Kilburn, tried without success to start an aerodrome at Wembley and at Preston Road, both fairly accessible spots, but neither suitable nor possible for some reason—the latter place on account of a right of way over the ground.

They had to go farther out, and are now established at Northolt and have two hangars on the R.A.F. aerodrome there. Northolt Aerodrome is certainly more accessible than Hounslow Aerodrome, as a good service of trains is run to Ruislip from Baker Street (Met. Rly.), but the station is a good way from the ground. There is also a service from Marylebone and Paddington to Northolt Junction, but it is by no means good, although the station is within a few minutes' walk.

The aerodrome is very large, with an area of 350 acres, but the surface is very bad in parts, as the land was once ploughed, and the furrows make taxying a very bumpy business. However, a large stretch of cinders has been put down and all who can do so take off from and land on it.

The C.A.C. School of Aviation is under the personal supervision of Mr. Herbert Sykes, O.B.E. The school machine is the C.A.C. tractor biplane, an excellent instructional machine, fitted with an 80 h.p. Renault engine, and in appearance similar to the D.H.6. Later machines will be fitted with 100 h.p. Anzani engines. Although this machine was built in April, the Air Ministry have not yet sanctioned it as a passenger-carrying machine, and consequently it cannot be used for that purpose or for instruction. The Civil Aviation Department, like most other Government departments, keep so busy making other people fill up forms that they never have time to do the real work that is required of them. Already Germany has beaten us in getting civil aviation properly started: could we not borrow some of their organisers?

Passengers are being carried at Northolt in two- and three-seater Avros fitted with 110 h.p. Le Rhone engines. The Le Rhone engine is one of the sweetest rotaries in the world, when looked after by good mechanics and flown by good pilots, but some of those at Northolt did not run very well, and they have had rather bad luck with engine trouble, which is possibly due to bad treatment of the engines in the R.A.F. before they were demobbed.

An eight-passenger machine is being assembled at Northolt, and two others are being constructed at the works in Kilburn. This first machine should be ready in about a week. It is of a very solid design and fitted with two 160 h.p. Beardmore engines. The factor of safety is said to be 10.

Very delightful flights may be had over London from Northolt in the Avro machines, for which tickets can be obtained at the Lepaerial Travel Bureau in Piccadilly Circus, and at the aerodrome. As soon as the Government sanction the C.A.C. biplane the school of flying will start. A pupil is guaranteed his certificate for £125 with not less than 10 hours' actual flying, and he can also go through the works at Kilburn. He will be well taught, and leave the school knowing how to fly and knowing as much about the machine as he cares to learn.

AN AERIAL BOOKING AGENCY.

As is natural for a firm interested in travel and transport problems, who are far-seeing enough to appreciate the possible uses of aircraft, the Lep Transport and Depository, Ltd., of Castle Street, Long Acre, W.C.2, who were originally a branch of a well-known firm of shipowners and subsequently became an important and well-known transport agency under the above title, have opened a branch known as the Lepaerial Travel Bureau, in Piccadilly Circus, W.

Here they are acting as agents for Handley Page, Ltd., and have secured a large number of available seats throughout the season, with preference in the bookings of both passengers and cargo.

They are also acting as agents for practically all concerns who are running any form of civil aviation transport.

A very ambitious scheme is on hand for putting into operation as soon as circumstances permit. It embraces not only Great Britain but also the Continent, and as far as goods and merchandise are concerned the firm are prepared to collect goods from the factory door and deliver them by the recognised air routes and thence by either rail, sea, or van to any destination.—L. L. B.

Capt. Sir John Alcock K.B.E.; D.S.C.

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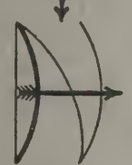
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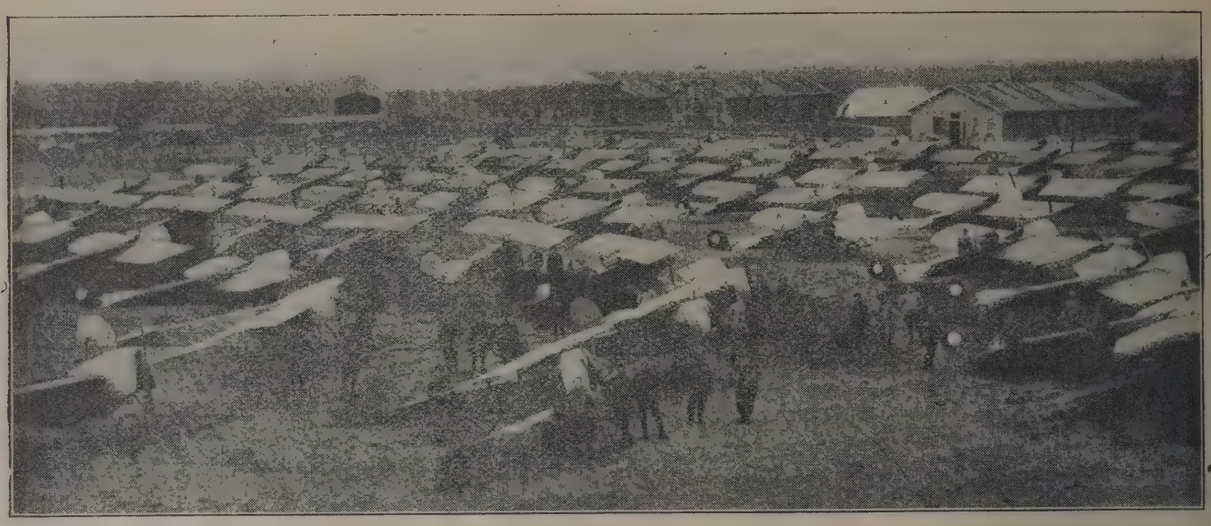
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TRAINING IN ITALY.—The Gabardini School in being at Cameri.

THE GABARDINI EXHIBIT AT MILAN.

Gabardini, of Cameri, whose company is sometimes, but rarely, called the S.P.I.D.A., as most people prefer to honour the pioneer by his own name, has a most interesting collection of small vehicles on view. The well-known and abnormally unbreakable school monoplanes are, however, quite put into the shade by the tiny biplane of 2½ metres span and 9 sq. metres spread which weighs 250 kilos. with 50 radial motor, and does 140 kilometres the hour, and is, as are the two bigger biplanes, of "semi-rigid" (if one may borrow the term) steel construction. A factor of safety of 15 is claimed for the miniature 'bus, which certainly looks as hefty as anything one has seen. To some extent the claim is borne out, too, by the low percentage of fatalities in this, the oldest and, I believe, the busiest, of the war schools. As well as the other biplane machines, which in common with the above have a skid so far forward of the tail as to be nearer the centre of gravity than anywhere else, one is shown the "stuffed" monoplane or "the embalmed one" as it is called in the vernacular, which appears to be on a jointed shaft fixed into a cemented platform, and is reminiscent of certain internally-perturbing country fair machinery productive of artificial mal-de-mer, but is intended merely to initiate beginners into the hang of levers and stability. Landini, the Cameri chief pilot, shows, too, a tiny foot-steered cycle-car, also to accustom pupils to foot-control without wasting the instructor's time. This idea I heard being warmly applauded by old teachers who appeared able to judge of its economy and utility.

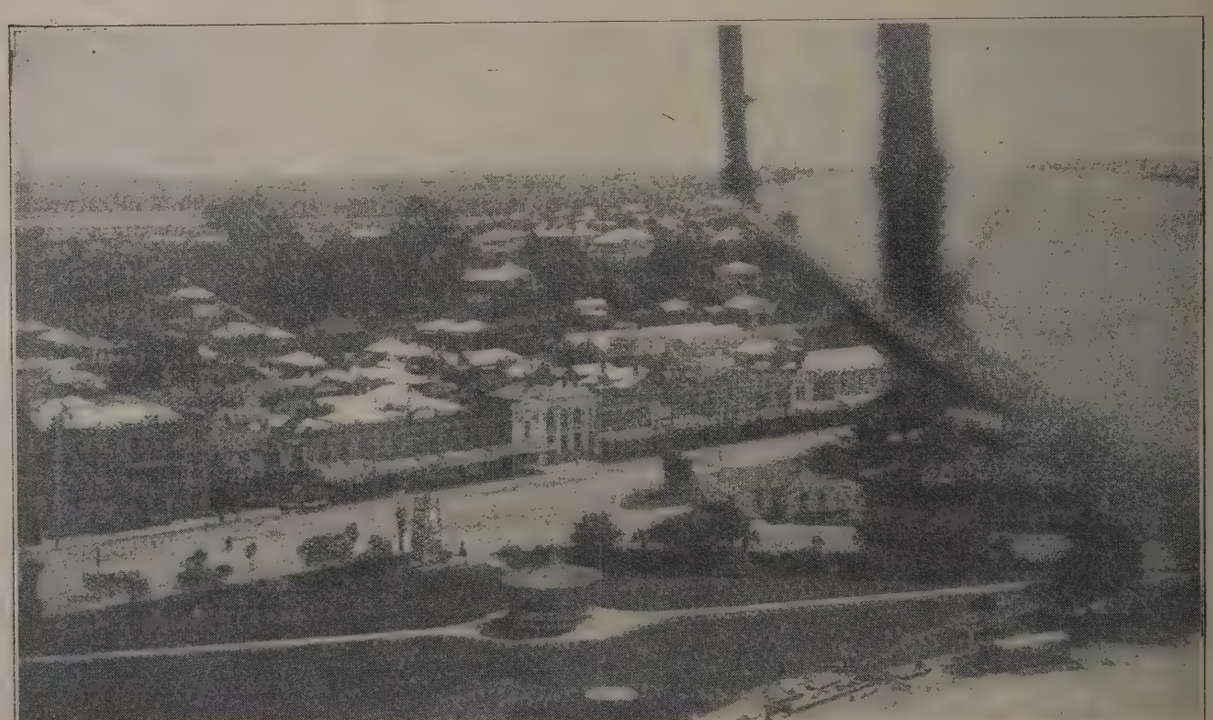
EXTENSION LADDERS.

In building big airships, such as the R.34, special ladders have to be used. Merryweather and Sons, of Greenwich, make a special design of self-supporting extension ladder, reaching to a height of eighty feet or more, which is used to facilitate access to any part of the envelope of the airship. These ladders are supplied to the British Government, and have also been adopted by the United States Government.

A RING SHOCK ABSORBER.

A patent shock absorber ring is now being manufactured by Messrs. Luke Turner & Co., of Leicester, and is already in use upon some of the best-known makes of machines.

The ring is constructed in a manner similar to the ordinary shock absorber cord. Besides the obvious ease of fitting and replacement, it is claimed that they offer a decided saving in weight and cost, and that a ⅞ in. cord will carry a load of 3,000 lbs. at 75 per cent. extension.



FLYING IN NEW ZEALAND.—Auckland, N.Z., photographed from one of Walsh Bros.' flying boats.

CIVIL AERIAL TRANSPORT NOTES.

GREAT BRITAIN.

Passengers are being taken up in Avro aeroplanes by A. V. Roe and Co., Ltd., at the following places:—Hounslow (London), Manston (Margate), Southsea, Weston-super-Mare, The Ladies' Mile, near Patcham (Brighton), Swansea, Blackpool, Southport, Fleetwood, Morecambe, Rhyl, and Waterloo Sands (Liverpool).

Seaplanes are on passenger service at Paignton (Torbay), and at the following towns on the Isle of Wight:—Cowes, Ventnor, Sandown, Shanklin, and Ryde.

FLYING TO THE RACES.

During the races at Goodwood and Brighton, Avro aeroplanes will carry passengers to those places

THE RAILWAY STRIKE AND THE STAGE.

When the railway strike threatened to hold up everyone going north Mr. Sydney Bransgrove, a touring manager going to Edinburgh with a new comedy, tried to arrange for the transport of his whole company from London to Scotland by aeroplane.

He approached one of the big flying companies, but as the terms were £56 per head for a company of twelve, £672 in all, the project was abandoned.

A BUSINESS FLIGHT.

A highly commendable effort has been made by the "Financier" to demonstrate the utility of the aeroplane in commerce.

Mr. H. A. C. Ponsonby, of the "Financier," was representing the paper on the trip which was organised by Capt. Greig (late R.A.F.), of the Aircraft Manufacturing Company.

With Mr. M. D. Manton as pilot, they started from Hendon on July 21st on a D.H.9 machine, and arrived at Eastleigh in 52 minutes.

At Southampton, the Supermarine Company were interviewed. They then flew to East Cowes, where Mr. Ponsonby interviewed the Gosport Aircraft Company, J. Samuel White and Co., Ltd., and S. E. Saunders, Ltd.

On July 22nd they flew to Filton (near Bristol) from Cowes in 59 minutes, and at Bristol viewed the works of the Cosmos Engineering Co. and the British and Colonial Aeroplane Company.

On July 23rd they reached Coventry in the evening and visited the Armstrong-Siddeley Motor Company, the Daimler Company, the Standard Motor Company, and Humber, Ltd.

On July 25th they flew to Birmingham, after interviewing a large number of firms.

On July 26th they flew from Birmingham to Derby to visit the Rolls-Royce Works, and then returned to town, taking 65 minutes on this last journey, arriving at 4.30 p.m.

The total distance covered was 408 miles, and despite generally unfavourable weather and bad visibility throughout the flight after the first day, this flight was made to time.

An average speed of 100 miles an hour was maintained on the various journeys.

Mr. Ponsonby received from all the firms he visited many congratulations on the enterprise of the "Financier."

BIRMINGHAM.

Civilian flying started at Castle Bromwich on Saturday, July 19th, through the initiative of a number of private individuals, who have obtained an "Avro" three-seater. Despite the counter attraction of peace celebrations in Birmingham, quite a dozen people were taken up. Weather permitting there will be flying daily from 2 to 7 p.m.

BLACKPOOL.

Upside-down flying for a first experience in the air is the record of one of the Avro passengers at Blackpool last week. The passenger was a grey-haired man of 50 years who ascended with Capt. Hinchliffe, D.F.C., A.F.C., whose machine was watched critically by the crowd on the aerodrome. The Avro climbed higher and higher, then it made a half-roll, turned on its back, and began a long downward flight upside down The pilot turned the machine as easily as if it were right side up and then made a good landing. The passenger was surrounded by friends anxious to hear his experiences. He told them it was not so alarming as he had expected, but the pilot's account was rather more lurid.

The daily service to Manchester is beginning to pay its way. More and more passengers are availing themselves of the air journey to the coast. The service has run daily for close on three months without even a forced landing to disturb the even tenour of its way, and there is every hope that August will prove a record.

The time-table of this service reads as follows:—

Leave Blackpool daily (Sundays excepted) . ..	– Noon.
Arrive Southport	12.15 p.m.
Arrive Alexandra Park, Manchester	12.45 p.m.
Leave ,, ,, ,, ...	2. 0 p.m.
Arrive Southport	2.30 p.m.
Arrive Blackpool	2.45 p.m.

The fare is £4 4s. single and £9 9s. return.

Blackpool has excelled all records. Over 1,000 passengers have been taken up this week. The weather has been perfect, and the tides have not interfered with flying.

It is to be noted that although the North Country coal miners are quick enough these days to prove how very badly paid they are, yet they can find the necessary money for pleasure flying. Some of the most frequent and regular visitors to the Avro Company's aerodrome at Blackpool are the coal miners, who appear to think nothing of paying quite large sums for a really long flight, and willingly pay the extra money charged for "stunting."

HAMBLE.

After winning the 20-mile handicap at Hendon on Saturday, July 19th, at 77 m.p.h., Capt. Hammersley flew the Baby Avro back to Hamble.

The second twin-bomber fitted with A.B.C. engines was flown over to Martlesham Heath last week to be handed over to the R.A.F. Leaving Hamble just before 4 p.m it reached its destination by 5.30 p.m. The course taken was by Winchester, Basingstoke, London, and Chelmsford.

One of the standard type Avros is being sent to Spain and is painted with the national colours of that country. With red wings and yellow fuselage, it looks quite cheerful.

Mr. A. V. Roe has just returned from a fortnight's holiday at Ventnor. During his absence he kept in touch with the Hamble works by seaplane.

LONDON.

HENDON.—Miss Madge Saunders, the leading lady in "Going Up" at the Gaiety, is learning to fly at Hendon. May she not shut her eyes when she starts to sway.



EDUCATING LANCASHIRE.—An Avro giving demonstrations of landing during the Flying Carnival at Birkdale.

Owing to the better weather on Saturday, July 26th, the attendance at the London Aerodrome, Hendon, was rather more than usual. A 20-mile cross-country handicap took place for the Hendon Trophy and a prize of £20. The race was won by Major Draper on a Bat "Baboon." Major Draper, who received 37 secs. start, finished the course in 15 mins. 41 secs (handicap time). Major R. H. Carr, on an Avro biplane, started 19 secs. before Major Draper and finished 1 sec. behind.

During the afternoon free flights in connection with the late Victory Loan were given by the Airco pilots, Capt. H. J. Saint and Capt. C. Shaw. Persons who had found certain discs dropped from aircraft during the last three days of the Victory Loan campaign were eligible for these flights, the only condition being that they had invested £1,000 in the Loan. The type of machine used was a converted D.H.4.

A twenty-mile cross-country race will be held on Saturday, August 2nd, for the London Aeroplane Trophy, over a course round the aerodrome pylons and a point about tw miles to the north of the aerodrome enclosure.

Special flying displays and passenger flights will be given on the afternoon of Sunday, Aug. 3rd.

On Bank Holiday (Aug. 4th), a speed handicap (for the London Flying Club Trophy), in two heats and a final heat, will be held during the afternoon.

The course is again around the aerodrome pylons, passing a turning point at Bittacy Hill on each circuit.

Passenger flights and special flying displays will be given during the week-end, and parachute descents on Bank Holiday.

After Bank Holiday, the regular weekly air races will be suspended until the Hendon-Brighton-Hendon Air Race, after which definite dates will be fixed for each meeting.

HOUNSLOW.—The following cross-country flights were made from Hounslow by Avropilots during the week ending July 26th:

Three to Brighton, two each to Weston-super-Mare and Swansea, and one each to Southampton and Liverpool.

Over 5,000 passengers have been taken up at Hounslow since May 3rd.

Lieut. Robertson, an Australian officer, under instruction at Hounslow, made a very successful first solo after 4½ hours' dual. On his second solo he looped, rolled, and did Immelman turns, and completed his Royal Aero Club test.

LIVERPOOL.

The Waterloo Aerodrome on the banks of the Mersey was opened last Saturday. As usual a huge crowd had collected, but with the aid of mounted police they were kept in hand. Picture, then, a gigantic yellow circle of sand with a radius of 200 yards, surrounded by a black band of humanity. In the centre of this place three Avros, and you have some idea of the inauguration of flying at Liverpool as seen from the air.

To the south-west New Brighton Tower, in course of demolition, stands gaunt and dark. One sees the wide sweep of the Mersey, choked with shipping unable to proceed owing to the dock strike, and on either bank the twin cities of Liverpool and Birkenhead basking in the sunlight.

Capt. E. Maitland Heriot, D.S.C., Lieut. Shanks, and Major McMinnies, A.F.C., were the pilots, whilst Lieut. Bambridge (who had the distinction of losing the tail of his machine at 15,000 feet in France and descending on the top plane more or less successfully) was in charge of the ground operations

For four hours the machines were in the air. The fair-haired flapper in multi-coloured jersey, the prosperous shopkeeper and his wife, public officials of the town, young men and girls, all essayed the air. Trips to Southport and Blackpool and acrobatic displays were in great demand.

One lady and her daughter after half an hour's argument at the booking-office, where Lieut. Bambridge at last persuaded her that she would not be killed, booked a flight. "Two minutes only, two minutes only, and quite straight and level!" she kept repeating to her pilot. He made a short climb, a gentle turn, and a landing. Afterwards both passengers were disappointed that the flight was so short, and promised to come another time for more.

And so it went on until the crowd melted away, and the pilots and mechanics, tired out, set out in the gathering mists for their homes at Southport.

MARGATE.

Twenty "Daily News" free flight passengers were taken up in Avro's at Margate during the week ending July 26th.

MIDDLESBOROUGH.

The Government have offered the Middlesbrough Corporation the first refusal of the Redcar Aerodrome. The Corporation has decided that they have no use for it.

MORECAMBE.

General flying in the North has been as successful as ever. Morecambe is in full swing with Lieut. Macr e, M.C., of A. V. Roe and Co., in charge.

SHEFFIELD.

A flying exhibition was held at Coal Aston aerodrome on the outskirts of Sheffield, from July 23rd-26th, under the auspices of the Sheffield Development Committee. The aviation department of Vickers Ltd. gave two-guinea flights in four two-seater Avros, and demonstrated the commercial utility of a Vickers-Vimy aeroplane with a saloon body to carry ten passengers.

On July 26th the first delivery of aerial mail took place between Sheffield and Doncaster. A Vickers Vimy aeroplane was used, and the machine covered the distance in 9½ minutes.

SOUTHPORT.

A flying party of cripples, who arrived on crutches and in bath chairs, was a feature of Wednesday's flying at Southport. It took five of the Avro's mechanics to lift one of the poor fellows into the machine.

A free flight was offered at Southport and Birkdale to the schoolboy who wrote the best essay on flying. It was won by William Stevenson, aged 10, of the Sefton Street Council School. His technical details were more or less correct, even if somewhat on the rosy side.

One woman passenger had 15 stunt flights during the week.

At Southport the Avro pilots received a visit from an inventor who apparently had a cure for every aeroplane ill at present known. His chief invention was a stabilising device for machines. It consisted of a series of balloons in the fuselage and a number of small propellers outside which could be driven either by wind or power.

When asked if he had an invention for preventing people from throwing themselves out of machines, he replied that he could provide for that, too. Having realised the advantage of his inventions, the pilot directed him to the proprietors of a rival aerodrome!

WINDERMERE.

A. V. Roe and Co., Ltd., are going to take over the aircraft shed at Cockshot Point as early as possible. At a meeting of the Windermere Urban District Council on July 18th the committee recommended the council to give the company every support.

CANADA.

The regulations controlling flying, being under the War Measures Act, lapsed with the declaration of peace.

An Air Board has been created in Canada under an Act passed during the present session. The Hon. A. L. Sifton is chairman, the members including representatives of the militia and naval service departments, the Deputy Postmaster-General and the chief inspector of the department of Customs and Inland Revenue.

Regulations forbidding trick exhibitions or low flying over town areas have been announced already, and a full code of flying regulations is under consideration.

THE ARGENTINE.

The first party of a French Aerial Mission to the Argentine has left France. The object of this Mission is to open up a French aeronautical industry in the Argentine by giving exhibitions with French machines in order to prove their possibilties

AUSTRIA.

The following is sent by the Scandinavian correspondent of THE AEROPLANE:—

Austrian information to be revealed at the end of the war includes a report of a helicopter, for which the Hungarian journal, "A Motor," claims success or almost complete succeeding.

Experiments were started by Lieut.-Col. (the Captain) Stefan Petróczys, as he found kite-balloons needing too much crew attendance, and being too easy prey of enemy aircraft. In his project from the first year of the war an electric motor was to be the power plant and the current to be supplied by cable from the ground.

The machine was built by the Austrian Aeroplane Works, Ltd. ("Oeffag"), in Vienna Newcity, the electric motor by the Austro-Daimler Company, the general director, Porsch, of which was responsible for a model of hitherto unattained lightness—in the words of the journal—300 b.h.p. being developed by a weight of 250 kilos. at 6,000 r.p.m., which number of revs. was reduced to 1,000 of the propeller shaft, yet had to be further diminished owing to shaft over-heating, the advantageous performance disappearing then again compared with the petrol engine.

As, further, the propeller results at the aircraft works were unexpectedly poor, prospects looked bad, when two Hungarians, the commander of the test department and the manager of the screw department of the flight arsenal, engineers Kármán and Asbóth, got charge of the experiments.

The Hungarian General Engine Works built a model that could stay in the air, powered by a compressed air motor, yet it did not come up to expectations.

Ae second test model of Professor Kármán was made by the Budapest firm, Liptág and Co., being provided with only two propellers against four of the first one, and rising with a petrol motor to an altitude of 50 metres. When the revs. of the motor once dropped the model side-slipped.

Asbóth, too, continued his experiments, having three more models built at the Hungarian Aircraft Works, yet fire broke out, and other conditions prevail now, the report concludes.

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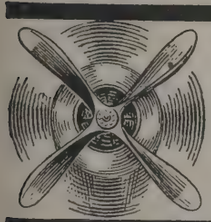
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TERMS MODERATE.

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The line-of-battleship lieutenant, Baron von Banfield, the foremost pilot of the former Austrian-Hungarian Navy, in command of the naval air station at Trieste at the time of the breakdown of the Austrian forces, was arrested while his share in the bombardments of Venedig was gone into. After 36 days he was released and, at his request, allowed by the Italians to go to German Austria, where he is now learning bookkeeping. He has announced his future plans of going abroad for flying.

BELGIUM.

According to the "Nieuwe Rotterdamsche Courant" of July 17th, the Belgian Government has appointed a commission to study commercial aviation in the Congo. The first trial will consist of a regular service between Kinshasa and Stanleyville, on which the aeroplane will carry mail and passengers. The journey is expected to take two days. The service will start in January, 1920, with 12 hydroplanes, each fitted with a 300-h.p. engine having a speed of about 70 m.p.h., and a carrying capacity about 18 cwt.

The Commission is presided over by Colonel Baron de Crombrugge, who is the officer in command of the Belgian Air Force.

The following is from the Paris correspondent of THE AEROPLANE :—

H.M. the King of the Belgians opened the Aeronautical Exposition at Brussels on July 19th, and presented the colours to the Belgian Aviation Corps.

A Handley Page, several other British, and some French machines arrived, and performed evolutions for the benefit of the crowd. Many German aeroplanes were exhibited, as well as numbers of machines of all types used by the Belgian army.

FRANCE.

The following is from the Paris correspondent of THE AEROPLANE :—

The holiday season in France this year is starting on about August 1st, and on that date a good deal of flying is due to start, including the Toulouse-Casablanca aerial post—a service which has been planned by M. Latecoère during the last eighteen months. in view of the high insurance rates for aviation, M. Latecoère proposed sinking a fund with the leading French aviation firms for the purpose of insuring their own machines.

Farmans have sent a machine to Cabourg for the season to fulfil an old-standing engagement with the Town Council for passenger and exhibition flying. As there is no aerodrome in the vicinity, flights will be made from the golf course.

Flying should have commenced at Deauville, but there is some dispute over the land that had been chosen for the aerodrome.

The Société des Transports Aéronautiques du Sud-Ouest have obtained permission to fly at Biarritz. One Farman machine has been sent there, and three more, including a Goliath, are going next week.

The Compagnie Aérienne Française, who take photographs for the Press and for all sorts of commercial concerns, have executed some big orders satisfactorily. This work seems to have been neglected in England, but it has a great future in commercial survey work in the Colonies.

The Farman Flying School has turned out the first three pilots to obtain their brevets since the war. The Farman terms are £100, including everything.

Caudrons are reopening their school at Crotoy in the first fortnight of August. Instruction will be given on the Caudron G3.

The Paris newspaper "Excelsior" sent Mme. Favre Tavrier over to London in a Farman aeroplane to report on the Victory procession. £80 was paid for the return trip.

The Farman aerodrome at Toussus le Noble had a record week-end on July 19th giving passenger flights.

This enterprising firm make a regular weekly announcement in the Paris "Daily Mail." That of this week is given below :—

"TO THE BELGIAN VICTORY FETES BY AEROPLANE.

"This week the Goliath will leave for Brussels as usual on Tuesday morning, returning to Paris on Friday morning. Passengers will thus be enabled to witness the splendid fêtes that our Belgian allies are holding in celebration of victory.

"Messrs. Farman beg to announce that, besides the regular flights made by the Goliath, they can place at the disposal of business men or tourists a number of aero-taxis for one or two passengers and aero-limousines for parties of at least four passengers at the rate of 2 francs per kilometre and per person, as well as Goliath aerobuses for parties of at least ten passengers at the rate of 1 franc 25 centimes per kilometre and per person.

"It will be seen from the foregoing that the charge for an aeroplane flight is very nearly equal to and sometimes less than the charge for a journey by automobile."

A munitions store at Le Bourget aerodrome, near Paris, blew up one afternoon last week. Several pilots were killed and wounded, and several sheds with about twenty German machines were destroyed. The store contained Michelin bombs and a large quantity of rockets and cartridges.

So far no French aircraft firms have arranged to exhibit machines at the Amsterdam Exhibition.

The French Aeronautical Club, which was suspended during the war, is now reconstructed, and will promote aerial touring, and instruct and recruit men for military and civil aviation.

French pilots can join a trade union called La Ligue des Pilotes Aviateurs, which is doing good work.

Lieut. Roget, the French aviator, left Soesterberg, near Amsterdam, at 3 p.m. on July 28th, and landed at Evere, near Brussels, at 4 p.m., having covered the 112 miles in one hour.

GERMANY.

The following is sent by the Scandinavian correspondent of THE AEROPLANE :—

German war aviation stuck to few makes of almost one type—viz., the six-cylinder vertical fixed model, the Army favouring the Mercédès with top camshaft, made compulsory by other works, too, than the German Daimler Co., the Navy adopting chiefly the Benz push-rod model. The Loeb and Co. LUC Motor Works were known to manufacture the Austrian Hiero motor under licence, though it cannot be stated whether for German or Austrian needs.

When scouts required power plants beyond the Oberursel capacity along Gnome and le Rhone lines, the Siemens—camshaft and cylinders opposite rotating—and Goebel rotaries came to the fore, while of the new German fixed motors a British technical report was promised on a captured specimen of the Opel, the power plant of the early Hanoveraner aircraft, and another published on the Selve motor, chiefly employed on Rumpler biplanes and Sablating monoplanes of the long-distance patrol type, as well of giants, both being products of automobile works, having turned out experimental engines for the Emperor aero-motor competition.

The last German war-time favourite amongst motors for scout and altitude work was the Bavariaor B.M.W., as initials standing for Bavarian Motor Works, being successors to the Rapp Motor Co., in Munich. This motor was considered less durable in reliability than Mercédès and Benz, but was used for its good carburation qualities in high flying.

A syndicate was formed at Dusseldorf on July 3rd to establish an aerodrome there as a station for the future aerial post service.

Ten owners of contiguous gardens and estates in Gothenburg have sold their properties, on which an aerodrome is to be constructed.

The Zeppelin Company have stated that regular airship services between Germany and the United States will not begin until next spring.

HOLLAND.

On July 24th a Handley Page aeroplane, which was on a voyage from England *via* Brussels for Amsterdam, arrived at Soesterberg Aerodrome.

A. V. Roe and Co., Ltd., are exhibiting a model of the 504K type at the Amsterdam Exhibition.

Five Avro machines will fly from Manchester to Amsterdam, *via* London, Lympne, Dunkirk, and Belgium, to take up passengers during the Exhibition. Some passengers can be carried en route.

ITALY.

The 700 h.p.-engined Fiat aeroplane which arrived at Kenley from Rome on July 16th, having flown at a speed of over 160 m.p.h., is reported to have crashed at Marquise between Boulogne and Calais. It left Kenley on Saturday, July 26th, for Amsterdam. Lieut. Brack-Papa, the pilot, and Lieut. Bonaccini were uninjured.

SCANDINAVIA.

Major Galpin, R.A.F., of N4044, the British naval flying boat, which has just arrived in Norway reports that negotiations are opened between the Norsk Luftfartrederi and a British company for a future service between Norway and Scotland, and it will probably begin this year or early next spring.

* * *

The following is sent by the Scandinavian correspondent of THE AEROPLANE, and has been entered under Scandinavia, as it refers generally to Norway, Sweden and Denmark :—

The Norwegian Parliament has placed £3,300 at the disposal of the Trade Department as a first contribution towards air traffic developments and aeroplane mail service preparations, though there was some opposition on the ground that the money was required for no definite proposition.

* * *

Having last year organised the first Scandinavian aero exhibition at Christiania, the "Northern Aircraft, Ltd.," will inaugurate the first Norwegian flying school, buying Allied equipment —viz., British Avros and French Caudron biplanes.

* * *

The first step towards fostering and regulating air traffic taken by the Swedish Aero Club was a prize offer, open to Scandinavian competitors, for the most suitable type of air-traffic shed, the prize going to a Swedish winner, while, too, the drawings of a Norwegian engineer were bought.

* * *

Availing themselves of the low mark value prevailing owing to Germany's bad export situation compared with the import

amounts, the Swedes bought first three Friedrichshafen seaplanes and four Benz spare engines for them for the Navy. When the twin-engined A.E.G. biplane made its non-stop demonstration flight to Eksjö and on to Malmslätt, the aviation centre of Sweden, five A.E.Gs. were ordered, three of which were one Sunday to be delivered by air from the Berlin works.

The aeroplanes encountered bad weather. One dived into the Baltic Sea off Warnemünde, its crew of three men, including an army officer pilot, being killed. The two other aircraft were forced to land, one owing to engine trouble, the other from lack of petrol.

As later a fatal accident with one A.E.G. biplane was only avoided at Malmslätt by the skill of the pilot, Lieut. Segebaden, and as Lieut. Eckerström, of the Naval air service, with his engineer passenger, was killed on a Friedrichshafen seaplane, good luck cannot be said to have followed German aircraft.

The Swedish Lieut. Herrström has returned from England with aircraft bought there, some Avros going to be demonstrated by British pilots at Stockholm.

* * *

The end of hostilities has almost affected neutral aircraft activities more hard than doings in the belligerent countries. The Swedish Thulin works in Landskrona were undoubtedly the largest aero enterprise in any of the neutral countries left, not excepting the Hispano-Suiza company in Barcelona, business having been mainly built up upon deliveries of chiefly rotary motors (mainly of le Rhone type) and a number of scout monoplanes to Holland, some motors and aeroplanes of Morane monoplane and Thulin tractor biplane types having further been supplied to Sweden, Norway, Denmark, and Finland, permit having just been obtained for exporting the first motors to Japan, when the war stopped at a most inconvenient time for the Thulin concern, as the capital was going to be increased and the Dutch contracts for rotaries had been completed, while the first series of 160 h.p. water-cooled motors (Maybach fashion) and German type tractor biplanes had only just been supplied to the Swedish Flying Corp. The shares dropped from 250 to 60, the manufacture was stopped, only 100 workmen out of 2,000 being kept, and Dr. Thulin was dismissed as managing director on complaint of not having prepared after-war trade.

The Thulin Aeroplane Works run their own aerodynamical laboratory and the largest Scandinavian flying school.

Being himself a skilful pilot—his last notable flight being from Christiania to Landskrona on his own monoplane after the first aero show in the Norwegian capital last year—Dr. Thulin was appointed to the committee sent by the Swedish Government to England, France, and Italy to study war aviation developments and the stand of air traffic preparations, that were for the latter part found less than expected, and on his return practised fancy flying, when he was slung out of his aeroplane and got beheaded by falling on a ship.

The Thulin works have now turned their attention to the manufacture of motor-cycles and agriculture tools.

* * *

Major C. H. R. Johnstone, late R.A.F., and Capt. K Saunders, late R.N.A.S., are now in Sweden working for the P.O. Flygkompain. They have two Avro biplanes and a D.H.6 machine, and are at present employed in passenger flying, but will at a future date start a school. Their only competitors were two Germans on Phœnix machines (240 h.p. Mercédès engines), who did practically no stunting at all. Major Johnstone and Capt. Saunders says that the Swedish Air Force consists of a few Blériot, Morane Parasol, and Albatros machines, all of pre-war types.

SPAIN.

According to a "Daily Express" report, regular air services will be started shortly between Malaga and Melilla (Morocco), and between Barcelona, Alicante, Rabat (Morocco), and Toulouse.

A representative of a French aviation firm arrived at Seville on July 21st, to organise a Paris-Bordeaux-Madrid-Seville-Algiers flight.

SWITZERLAND.

The Swiss Federal Council has approved a Bill for the temporary regulation of aerial traffic. It is provided in this Bill that foreign aeroplane owners and pilots will only be admitted in special circumstances by a permit from the Military Department.

Insurances covering third-party risks up to 15,000 francs (£600) must be taken out for each aeroplane. Pilots will not be allowed to fly over large towns at a height under 1,000 metres and over other towns at less than 500 metres. No stunting will be allowed.

SYRIA.

A number of British Officers with a Handley Page aeroplane have left Cairo for the Damascus-Bagdad aerial route. The distance is approximately 500 miles, and is partly over the Syrian Desert.

U.S.A.

Mr. F. G. Dillon, the president of the United Aircraft Engineering Corporation of New York, is at present in London in connection with the development of commercial aviation.

Mr. Dillon has said that the Americans are most optimistic over the future of commercial aviation, and are now in the position where they expected to be in 1920. Plans have been laid and are maturing for a commercial air service between Chicago and New York (900 miles), which will save a whole day's journey on the railway. A New York to San Francisco service is also being considered.

At present in the United States there is rather a lack of control, as a Government board issues licences for pilots and machines with very little formality, but laws are being drafted to cover these questions.

The Treasury gives no support to the aircraft firms, but this is not necessary, as there is no lack of financial backing.

The Government will be asked, and doubtless consent, to establish meteorological stations at intervals over the country.

On July 21st an airship, with which it was intended to start a passenger service, was engaged in test flights from its hangar at the White City Amusement Park at Chicago.

The airship was on its third trip over the city in the late afternoon at a height of 500 ft. when it burst into flames and broke in two.

Three men out of the five who were in it left the gondola with parachutes, and two of them landed safely in the crowded streets. The third was caught by the flaming wreckage and with it crashed through the glass roof of the Illinois Trust and Savings Bank, where 200 employees, mostly girl clerks, were at work. The building caught fire. The petrol tanks exploded inside. Eight clerks were burned to death and 27 severely injured

The airship was 162 ft. in length, had two 80 h.p. engines, and a gas capacity of 100,000 cubic feet, and was sister to the A.4, which is in service with the American Army.

On July 25th, 20 pilots employed for the transportation of mails by air notified the Postmaster-General that they would cease work unless two of their number recently discharged were reinstated.

The two pilots were discharged because they demanded improved machines in place of the older types. The strikers declare that the present aeroplanes are unsafe, and that they are not allowed safety appliances. In one week there were 15 accidents and two deaths in the service.

The pilots protest against the rate of pay, which is the same for them as for the groundmen, both receiving £400-£700 a year, according to length of service.

All the Government aeroplanes carrying mail flew on July 25th as usual, the Government saying that reserve pilots were used. The strikers claim that they were hired strike-breakers.

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AIRCRAFT FINANCE

THE DEVELOPMENT OF PLEASURE TRIPS.

The idea of popularising flips by providing advance booking facilities "through the usual agents" is sound. Such a method seems to carry conviction that flying is a serious commercial proposition, and should do a lot to dissipate the notion that it is a hobby intended especially for those who like to take a plenitude of risk, and, in the language of a living statesman, to "damn the consequences."

Insurance Facilities.

Conceivably the popularisation might be expedited if the insurance facilities were prominently explained. These facilities are adequate, and after glancing at the schedule one is convinced of the simplicity of the procedure. It is a matter that should be taken up seriously by those who are developing pleasure trips and passenger business generally.

Simplified Methods.

The scheme of the Aviation Insurance Association may be quoted as an example. The risks covered are:—

Aerodrome pleasure flights as specified in the policy per half-hour or part of half-hour.

Seaplane coastal flights as specified in the policy per 50 miles or part of 50 miles.

Cross-country flights as specified in the policy per 50 miles or part of 50 miles from the starting-place.

Cross-country flights as specified in the policy per 100 miles or part of 100 miles from the starting-place.

Cross-country flights as specified in the policy per 200 miles or part of 200 miles from the starting-place.

Special flights X to X as specified in the policy.

Premiums Quoted.

There will be quoted premiums for each of the above risks under, say, two different schedules of benefits. Each risk being defined per a separate proposal form, a rate will be made for each risk, and the scale of rates so arrived at will be incorporated in a covering policy.

The Combination of Policy and Ticket.

When booking his or her ticket, the passenger will be asked if he desires to effect insurance for death only, or benefits, or death and benefits, and under which scheme. The requirements being defined, and the tariff of rates supplied being consulted, it should not take the average clerk more than a second or two to ascertain the rate.

Procedure.

The terms being accepted, a form will be filled up and completed by the passenger signing his name and at the foot of the facsimile impression thereof. The passenger secures his copy. The form could be used as part of the ticket, even if insurance were not effected.

Three records of the transaction being made by the use of carbon sheets, one copy might be posted the same day to the insurance office concerned, and the premium stated thereon would be debited to the holder of the policy and collected in due course.

Benefits That Should Accrue.

The simplicity of such a scheme should commend itself to everyone. The settlement of the preliminaries between the transport company and the underwriters would be easy and quick. The type of risk being clearly defined, and, of course, an understanding being arrived at prohibiting any deviation from the ordinary business to be done, the underwriter would soon calculate a minimum rate.

It would be impossible to quote a flat rate covering all risks embraced under such a scheme. At least it would be unreasonable to expect such a low premium, because the underwriter would have to assume it would be an even chance that the most dangerous risks would be more or less paramount and raise the rate accordingly.

Without a doubt the proposal seems attractive, and should be beneficial to the growth of the pleasure business. Insurance gives a sense of security.

CURRENT TOPICS.

Unsettled Conditions.

Little consolation is afforded by reflecting that the labour troubles were inevitable soon after Peace was fixed up. They unsettle everything, and unsettlement is the worst possible thing for business, whether it is financial business or industrial. Hence, the Financial World is not in a happy state with transactions cautiously entered into and restricted wherever possible.

The Floating Debt.

Already a considerable quantity of floating debt has been eliminated as a result of the big loan operation. The amount approximates £206,350,000. But £724,117,000 is still outstanding in the form of Ways and Means advances granted to the Treasury, and, in addition, £670,000,000 in the form of Treasury Bills. There will be a further reduction, but a hefty lump will remain, and one would hope that some inspired financial genius would come along and wipe out the whole of it. The Nation would be healthier. But it is hopeless to expect anything of the sort.

The Whitehead Prospective Purchaser.

There is no business in Whitehead Aircraft descriptions, but there are would-be buyers quite prepared to take considerable quantities of the ordinary shares at about 4s. Possibly this may not be unconnected with those interests which are to make an offer to acquire the undertaking on terms to be decided after the examination of the position. Rumour says that certain people originally associated with a popular Store business are the prospective purchasers.

By the bye, a meeting of unsecured creditors, whose claims aggregated £30,000, passed a resolution to the effect that their best interests would be served by voluntary instead of compulsory liquidation of the company.

Motor and Aircraft Supplies Company Liquidation.

At a meeting of the creditors, presided over by Mr. O. Sunderland, a statement of affairs showed liabilities £61,404, while the assets were estimated to realise £34,072. From the latter had to be deducted £931 13s. 6d. for preference claims, leaving net assets of £33,140. The company was registered in 1916, as the Aircraft Supplies Co., Ltd., but the name was changed to the present one in March of the present year. The capital of the company was not sufficient to carry on the undertaking, and it was financed by the Beecham Trust, Ltd., and the Bank. The former had advanced £16,266 19s. 2d., for which they were creditors, and there was an overdraft at the London, Westminster and Parrs Bank, of £27,380. So far as the company was concerned those were unsecured claims. The Beecham Trust held no security, but the overdraft at the bank had been guaranteed by Mr. James White. Following the Armistice there was a great slump in the Aircraft business, and a corresponding falling off in the value of the large stock held by the company.

The Chairman said he understood that there were some very heavy contingent liabilities in connection with broken contracts. He understood that the claims in that direction might result in the liabilities being doubled.

MORTGAGES, CHARGES AND SATISFACTIONS.

Aero Stations, Ltd.—Mortgage on New Salts Farm, Lancing, to secure £4,268. Registered June 10th, 1919. Holder, Mrs. A. C. J. Easter, Old Salts Farm, Lancing.

AIRCRAFT IN PARLIAMENT

The following oral answer was given on July 21st:—

AIR CONVENTION.

Major-Gen. SEELY, the Under Secretary of State for Air, replying to Capt. WEDGWOOD BENN, said: The Supreme Council of the Peace Conference have agreed to the immediate publication of the Air Convention.

* * *

The following written answers were given on July 21st:—

ROYAL AIR FORCE—TECHNICAL PAY.

Major-Gen. SEELY, replying to Lieut.-Col Sir F. HALL, said: The Technical pay which has been awarded in the past to officers graded Category "A" Technical, has been according to rank, viz.: 2nd Lieut. 2s., Lieut. 3s., Capt. 4s., Major 6s. 6d. per day

This pay dates back to April 1st, 1918, or to the later date on which the officer was so graded, and is also given to officers demobilised before the decision was arrived at. The technical pay does not affect the gratuity.

AIR MINISTRY (CORRESPONDENCE).

Major-Gen. SEELY, replying to Mr. MACQUISTEN, said: Mr. Norman Thompson's urgent letter, addressed to the Air Ministry, of July 20th, 1918, was acknowledged two days later on behalf of Lord Weir, and Mr. Thompson was informed that it had been forwarded to the Director-General of Aircraft Production, Ministry of Munitions, whom it concerned.

NORMAN THOMPSON FLIGHT COMPANY.

Mr. MACQUISTEN asked the Parliamentary Secretary to the Ministry of Munitions whether a member of the Contract Claims Department of the Ministry of Munitions, acting for the Lubbock Committee of the Treasury, made a recommendation to the Aircraft Finance Department of the Ministry of Munitions to purchase Messrs. Cox and Company's debenture in the Norman Thompson Flight Company and re-vest the control of the company in Mr. Norman Thompson and his co-directors; why the Government gave orders to the receiver after neglecting to do so to the Norman Thompson Company; and whether it is an established custom or rule of the Treasury not to give orders to a receiver.

Mr. JAMES HOPE: The answer to the first part of the question is in the negative. As to the second part, it was only after the appointment of a receiver that a decision was reached as to the design of the flying boat in question. The Treasury do not issue any orders in a case of this sort. During the War, however, the Ministry of Munitions sometimes gave orders to a receiver in cases where there was a reasonable prospect of obtaining supplies which were urgently needed.

* * *

The following oral answers were given on July 22nd:—

FLYING-BOAT SERVICE.

Lieut.-Comdr. KENWORTHY asked the Under Secretary of State to the Air Ministry whether it is intended to establish a regular service by flying-boat between the North-East Coast of England and Northern Europe; and, if so, under what conditions?

The UNDER SECRETARY of STATE for AIR (Major-Gen. Seely): It is not intended to run a Government service between the East Coast of England and Northern Europe. Those flights which have been and are being undertaken are to demonstrate the possibility of such flights and to gain experience.

Lieut.-Comdr. KENWORTHY: Will encouragement be given to private enterprise to establish some such service?

Major-Gen. SEELY: Oh, yes, Sir. Every encouragement that can properly be given will be given. There is no doubt a great future for flying boats, especially to these countries.

Capt. BENN: Are any negotiations going on with the Post Office towards setting up an aerial mail?

Major-Gen. SEELY: Perhaps it would be better to put a question to the Postmaster-General on that point. In regard to flying-boats no actual proposals are now before me, but any such proposals will receive careful consideration.

Lieut.-Comdr. KENWORTHY: Have any negotiations taken place with Northern neutral countries, with a view to joint action in establishing such services or assisting them by private enterprise in the matter?

Major-Gen. SEELY: That is rather a large question. Perhaps the hon. and gallant gentleman would put down a question on that specific point.

* * *

The following written answers were given on July 22nd:—

WINCHESTER REPATRIATION CAMP (LEAVE).

Major-General SEELY, replying to Mr. Lunn, said: The Royal Air Force Repatriation Camp at Flowerdown, Winchester, was formed in May last. Leave is given at frequent intervals.

AERODROME, FLOOKBOROUGH.

Mr. TYSON WILSON asked the Secretary of State for War whether he is aware that the construction of a large aerodrome was commenced at Flookborough during the War; that railway sidings were laid down and workmen's huts built, but that the same was discontinued owing to the then shortage of steel for constructional purposes; and whether he will consider the advisability of reconsidering this matter with a view to affording Messrs. Vickers, of Barrow, an opportunity of continuing to cater for this trade?

Major-Gen. SEELY: The question is for the Admiralty, and perhaps the hon. Member will address that Department accordingly

* * *

The following written answers were given on July 23rd:—

AEROPLANES CONSTRUCTION (CYPRESS).

Mr. REMER asked the Under Secretary of State to the Air Ministry whether he can now make any further statement as to the serious losses caused in his Department by the sanction of the use of cypress on aeroplanes; whether he has been able to establish the blame for this loss, and whether he is now in a position to make a statement as to his decision to strengthen his advisory committee with practical expert opinion in order to avoid such blunders in future.

Major-Gen. SEELY: With regard to the first two parts of the question, I would refer my hon. friend to the answers given to him on May 1st, 21st and 26th, and June 26th. In accordance with a suggestion made by my hon. friend the Conjoint Board of Scientific Societies were invited to consider the co-option of representatives of the National Federation of Sawmill Proprietors. The absence of the chairman of that body in America has involved delay, but he has now returned, and I will inform my hon. friend shortly what decision has been come to

AMSTERDAM EXHIBITION.

Capt. W. BENN asked the Under Secretary of State to the Air Ministry what firms have received from the Air Ministry permission to exhibit machines and engines made under Government contract at the Amsterdam Exhibition.

Major-Gen. SEELY: The following firms have received Air Ministry permission to exhibit machines at the Amsterdam Exhibition:

Gosport Aircraft Company, F.5 Flying-boat.

Messrs. Handley Page, V.1500.

The Aircraft Manufacturing Company, D.H.10a

DISABLED OFFICERS (PENSIONS).

Major-Gen. SEELY, replying to Mr. W. NICHOLSON, said that Lieut. P. A. Baker, R.A.F., who is in hospital as a result of a crash in France in Sept., 1917, and who has been marked for a further six months' treatment, has been informed that he is to be gazetted out of the Air Force. His pay as a Lieut. in the R.A.F. is 14s. per day with free maintenance, but his disability pension cannot be stated until the Ministry of Pensions have examined the case. The normal rate of pension in such a case, if the officer is fully disabled is £175 a year, plus a bonus of 20 per cent., from which a deduction of 4s. 6d. per day is made if the officer is maintained in hospital. This officer has received the utmost advantage and consideration that the Regulations allow. Eighteen months is the fixed period for an officer to receive full pay before his case is taken over by Pensions Board. In this case the period has been exceeded by six months.

* * *

In the course of the debates on the Naval Estimates on July 24th, the following allusions to aircraft were made:—

Mr. LONG, replying to Capt. Wedgwood Benn, said the final arrangements between the Admiralty and the Air Ministry about the construction of airships and the transfer of that department to the Air Ministry had not been completed.

Mr. LAMBERT: Is the Navy to have its own air service, or is it to be placed under the Air Ministry? I think the Air Ministry, if it is under the War Office, will have considerable difficulty in persuading the Admiralty that the air service of the Navy should be under the War Office.

Mr. LONG: It is not settled yet.

Rear-Admiral ADAIR: I observe on the Paper to-day a Motion to the effect that in the opinion of this House the Army, Navy, and Air Force should be brought under the supreme direction of one Cabinet Minister, and that there should be one war staff college.

Lt.-Comdr. KENWORTHY: The question of airships concerns the Admiralty, and I should like to ask the First Lord to give pause before he proceeds to relate the programme of airship building. These airships cost £350,000 each, and there are great sheds which will be of doubtful value in the future. The reason is that aeroplanes and seaplanes are advancing in efficiency so rapidly that an airship will have about as much chance with the aeroplane as a sailing ship has to-day with a cruiser.

The analogy is this—that the sailing ship was useful for a certain time, and then it became obsolete, and this is the same as the airship, which, I believe, will be dead in spite of a non-inflammable gas or any other improvements. Therefore I do beg the right hon. gentleman not to spend too much money on airship building programmes. The money should be spent rather on aeroplanes. There is little enough money, and it should be laid out to the best advantage.

I do not think of the airships from the military point of view. People keen on airships are naturally keen on their weapons, but unfortunately the Admiralty is responsible for airships, and the Air Minister for aeroplanes, and therefore the airship schools have an unfair pull in the councils of the war.

Captain BENN: At the present time there is a programme of airships. There are six big airships being built at a total cost of over £2,000,000. These are being built by the Admiralty, and under the control of the Board of Admiralty. Are they being manned by the Air Force personnel, or by the Admiralty personnel? Perhaps the right hon. gentleman will tell me?

Dr. MACNAMARA: I should say off-hand by the Admiralty personnel; but I speak subject to correction.

Captain BENN: When I ventured to ask the First Lord of the Admiralty to make a statement on the subject he brushed the whole matter aside and refused to deal with it; so that the Committee will not lay it to my charge if I had not got all the information that I ought to have for this purpose.

Everyone with experience in air matters is unanimous that everything that goes in the air should be under one control.

One of the great mistakes made by the first Coalition Government was that they did not unify the Air Service in 1915, or we should have had the Germans beaten in the air much sooner than we did. Why is it absolutely essential that you should not have two Departments of the Government both constructing air parts? The reason is perfectly obvious. The Department over which the right hon. gentleman presides, in the olden days, used to go into the market and compete for the same engine with the Department presided over by the Secretary of State for War. I know cases—everybody knows them—where the manufacturer had bids from the War Office and the Admiralty for the same machine. Very wisely he made the best bargain he could. But is it not ridiculous that you should have two Departments of the same customer competing for one article? Yet the right hon. gentleman opposite says that everybody is not agreed that they ought not to exist.

Mr. LONG: The hon. and gallant gentleman said everybody was agreed that there should be one control of the Air Service. All I suggested was that everybody was not agreed.

Captain Benn: It is a most extraordinary thing that the Secretary of State for War of this House should assert the principle of an undivided control of air matters, while the right hon. gentleman opposite tells us that it is a highly debateable point.

Mr. LONG: I said nothing of the kind.

Captain BENN: Then what does the right hon. gentleman say? I do not know. The Committee must judge.

Mr. LONG: Hear, hear.

Captain BENN: I lay it down that the unanimous opinion of all those competent to form an opinion is that everything that flies in the air should be under one control. I understood that that was the policy of the Government. If it is not the policy of the Government perhaps the right hon. gentleman will say so; then we shall have a Debate to see what the opinion of the House of Commons is on the matter. As to material, take an airship and an aeroplane. Is it not absurd that you should have two Departments constructing the same thing. The R34 had the same make of engine as is used in an aeroplane, except, of course, the gasbag, which is of a totally different

material, and there is not much in that point. As regards the war equipment of an airship, it is very similar to the equipment of an aeroplane. You have the machine-guns, the bombs, and the releases, a set of photographic apparatus, and the like, and I think it is an uneconomical and thoroughly bad system under which you have the Admiralty and the Air Ministry both constructing the same thing. I understand that that had been abandoned, and that it was one of the four points upon which the second Coalition Government was formed.

There is no difference in many respects between the work done by an airship and an aeroplane. Take some of the things we are most backward in, such as correct bombing and aerial gunnery. Aerial gunnery is in its infancy, and two persons go and fire point-blank at one, and that is the state into which we have got. The airship affords the most direct means of making experiments and progress in aerial gunnery, and yet the airship is under one control and the aeroplane is under another Department.

Take the question of the Davies gun. That has been experimented with in aeroplanes, but the airship is a better platform for it. Now the right hon. gentleman is going to make those experiments, and the thing is absurd, and this is a very highly reactionary step in the policy of the Government.

Take photography. The difficulty of working photography in an aeroplane is very great because of the speed, the rush of air, and the quick movement of the machine, and the constrained state in which you work. If it does not work it is very difficult to put right, whilst in an airship you have much more room, and you can walk about, and therefore you can make experiments in photography in an airship which you cannot make in an aeroplane. We get one right. hon. gentleman controlling the aeroplane, and another the airship, and consequently the benefit of united experience is wasted.

With regard to the manufacture and use of airships it is absurd that there should be division of control. I have been speaking of these machines as war weapons. I understand that this kind of aircraft is being arranged entirely to carry as their load war munitions, and they are not being fitted to carry commercial loads. If you are spending £2,000,000 upon airships of this kind for war purposes, I think that is a policy which this Committee should never sanction.

Now I turn to a really much more important side of the question, which is the civilian use of this craft. Everybody knows that the airship possesses certain great advantages over the aeroplane.

I hope the right hon. gentlemen opposite (Mr. Long and Dr. Macnamara) will give me their attention, as it is not much to ask. It is only the courtesy of debate in this House to do so, and this is just as urgent as any of the grievances which have been raised in debate to-day.

There is no doubt that there is a big commercial future for the airships. Nevertheless, as a means of testing the atmosphere and making experiments in the way of aerial navigation, there is no doubt that the airship has got a very great future before it. But the airship is under the control of the right hon. gentleman and has nothing to do with the Ministry. The right hon. gentleman would be the first to resent the idea that any part of his Department is under the control of the Air Ministry. We thus see a tendency to divide once again the Air Service, and all the experience which the right hon. gentleman's Department has collected under the guidance of sailors, who are the very people who can contribute most at this time to aerial advancement, is not in any way correlated to the work of the Air Ministry.

Supposing you are making experimental flights for the Egyptian mail, and you have an airship which is going to Taranto and Port Said. If the Air Ministry are testing a big machine with multiple engines over the some route, are they to have separate crews doing the same thing? It is absurd. It is perfectly obvious that to secure the necessary experience and the necessary certainty for these aerial routes you must have everything that flies under one control. I recognise the very great service that the Admiralty have rendered to the cause of aviation. At the beginning of the War, when the present Secretary of State for War (Mr. Churchill) was at the Admiralty, great advances were made in the way of aviation in the Royal Naval Air Service, but that was succeeded by a period of blight, when, instead of encouraging aviation, the Admiralty did the very reverse. I know what I am speaking of, because I served in the Royal Naval Air Service for some part of the War, and I know that the thing was controlled in some cases by people who had no sympathy and no knowledge.

Lieut.-Col. MOORE-BRABAZON: It is not very often that I agree with my hon. and gallant friend (Capt. W. Benn)—we differed the other day on the question of the protection of such things as chicory and saccharine—but we do agree to-night on the protection of the dear old gas-bag. As the Member for Chatham, I am a believer in the Blue Water School, but I am also a believer in the Blue Sky School, if one may pay such a delicate compliment. To-night I want, not to attack the Admiralty, but, I suppose, the Navy. The Admiralty in the matter of aviation appear to me to have done very well, but the whole tradition of the Regular Services has been always to be behind the spirit of advancement and always to have it forced upon them. It was upon the initiative of the Aero Club that the pilots in the Navy were taught to fly. There is no doubt, however, that aviation relatively to naval matters did come into its own towards the end of the War, but that was forced upon the Navy by the civilian element in this country.

I want to say a word with regard to airships in general. The only possibility of any future for the airship from the military point of view is the substitution of one of the inert gases for the present highly inflammable gas, but that is a very difficult and expensive matter, and it will be long before we shall see one of those invulnerable airships flying in the air. It is a very curious thing that the Admiralty, through the most amazing obstinacy, has gone on, right through this War, building an airship which clearly was of no use during the War, but now turns out to have a certain use from the commercial point of view. We must remember now that aviation is to be found to be of use to this Empire, and I am serving on a Committee which is to see in what way we can help to link up our various Dominions by air service.

I wish to ask the right hon. gentleman two questions. The first is, whether he has any news as to the allocation to Great Britain of the big Zeppelins made in Germany that have been surrendered to the Allies. Some of these are as good as the latest big airships, and we ought to know as soon as possible what share of them will come to this country. My second question is as to the policy to be taken by the Government with regard to airships in future.

Dr. MACNAMARA, replying on the Debate, said (among other things):—

The responsibility of the Admiralty for aviation is confined to the construction and maintenance, including repairs, of such rigid and non-rigid airships and airship stations as the Naval Staff desire for war services. The Director of Air Division looks after the requirements of the Navy, and maintains the necessary relations with the Grand Fleet, the Senior Naval Officers of Bases, the Air Council, and the Admiralty Departments concerned.

We are going on with the construction of six rigid airships, at a total estimated cost of about £2,200,000, and further with the shed for the R34, which cost approximately herself £350,000, the cost of the housing shed, together with extensions and wind screens, being about £166,000. The R34, I should say, goes on R rates.

WEATHER FORECASTING.

The following article by the "Times" meteorological correspondent appeared in that paper on July 28th:—

The necessity for a co-ordination of the various official and Service organisations engaged on weather problems, in relation to flying, makes it opportune to recapitulate the conditions which have led to the present anomalous conditions under which weather information is collected and disseminated.

At the outbreak of war, the Meteorological Office of Great Britain was the only governmental organisation devoted to meeting civil and service requirements in matters and problems connected with the weather.

This establishment, under the directorate of Sir Napier (then Dr.) Shaw, F.R.S., one of the ablest meteorologists of our times, was, and still is, openly admitted, even by Continental departments, that have every reason for rivalry, to be among the best organisations of its kind in the world. With the dispatch of an expeditionary force to France and Belgium in 1914, however, the inauguration of a subsidiary military service became essential, and this was formed and proceeded overseas early in 1915.

Later in the same year it became a section of the Royal Engineers under the command of Captain (now Colonel) Gold, D.S.O., F.R.S.—until then Superintendent of the Statistical Division of the Meteorological Office, and previously Schuster Reader in Meteorology at Cambridge. The commissioned ranks of the unit were drawn almost entirely from the professional staff of the Meteorological Office.

Throughout the war this offshoot of the central department proved itself of great value to the Expeditionary Forces in France, Salonika, and Italy. In 1915 also certain junior members of the Meteorological Office staff obtained commissions for work in connection with the airship section of the R.N.A.S., and used their opportunities to such good purpose that they formed in course of time the nucleus of the extensive organisation which, after the fusion of the R.F.C. and the R.N.A.S., became known as the Royal Air Force Meteorological Service.

At this juncture a few officers continued with the Admiralty, and constitute to this day a small Naval Meteorological Service. A large majority, however, in common with other R.N.A.S. officers, were transferred to the R.A.F. Much valuable work has been accomplished by each of these several organisations, but it is not quite accurate to state that an absolutely vital branch of modern meteorology—the exploration of the upper air—was "more or less neglected" before the formation of the R.A.F. Meteorological Service.

For many years before the outbreak of war this branch of meteorological study had received the undivided attention of Mr. W. H. Dines, F.R.S., Director of Experiments on the upper air for the Meteorological Office, formerly at Pyrton Hill, latterly at Benson (Oxon). He is responsible for many of the methods and instruments through which upper air data are rendered available. The results obtained by the establishments at South Farnborough and Upavon and by Capt. C. J. P. Cave's co-operation with the Meteorological Office at Ditcham Park, Petersfield, are still the classical studies of the upper air in this country.

The procedure employed by the Air Ministry Service was devised and the instruments used were supplied by the Meteorological Office, and it is only fair that the pioneers in this matter should not be deprived of the credit which is their due. The rapid increase of aviation and of high-angle gunnery associated with the early stages of the war found a sudden and unexpected practical use for the large accumulation of upper-air data already in the possession of the Meteorological Office. New methods were also devised and perfected during the war by the scientific staff attached to Naval Ordnance.

Forecasting for different parts of the world has to deal with a great variety of aspects of meteorology, but for the British Isles and the middle latitudes of the Atlantic forecasting on the lines laid down by the Meteorological Council in 1871 is not a difficult matter, and there are instances in which juniors of the Meteorological Office staff have undertaken the duty in other establishments.

Forecasting is not yet by any means infallible, even for those who have long years of experience, and its improvement on scientific lines requires the most advanced meteorological training.

THE EAST LONDON COLLEGE COURSE.

The East London College (University of London), at which important aeronautical work has been conducted during the war, is arranging for two courses of instruction in aeronautics beginning in September next.

The first course is of one year's duration, and is suitable for those who have some knowledge of engineering and science subjects. The second is a three years' course in engineering and aeronautics for the B.Sc. (Engineering Degree of the University of London), and will be conducted by Mr. N. A. V. Piercy, B.Sc., a recognised teacher of aeronautics of the University.

Experimental wind tunnel work will form an important part of the course. Particulars of these courses may be had on application to Mr. E. J. Wignall, registrar of the college.

AERONAUTICS and The LAW

THE SOVEREIGNTY OF THE AIR.

By THE LINCOLN IMP.

"The contracting States recognise that every State has complete and exclusive sovereignty in the air space above its territory." This tolerably momentous declaration forms Article I of the new Convention relating to International Air Navigation—to give the treaty its full and tedious title.

When any new and large domain comes for the first time under the control of man he casts about him for some suitable analogy to follow, and great importance may attach to the analogy which he selects.

Thus motoring was hampered in its infancy by the analogy of the steam-roller, while the study of electricity was helped by the analogy of water. Ways on rails have been both helped and hindered in their development by coach and road analogies.

As with physical domains so with intellectual. As new worlds were discovered in the past the practical question soon arose, under whose control were they to be put? To this problem the analogy of the old world gave no answer. In the old world title to territory was traced through history, and in theory title was never new. The new worlds at first were distributed by Papal Bull—west of such and such a line to Ferdinand and Isabella, east of it to Portugal—on the analogy of sovereign grants of land to subjects. Later the Roman Law of *occupatio* was called in aid to give the new-found worlds to their discoverers and to the settlers in them; *quod nullius est id ratione naturali occupanti conceditur*—"land that is no man's naturally is given to whoever comes and occupies it."

To Whom Shall It Belong?

The untamed air is now made subject to man's domination. Whose shall it be? What is the analogy which we should follow?

If we turn again to Roman Law we get an answer. The Emperor Justinian in his 'Institutes (published A.D. 533) wrote: "Some things are the common property of everybody, some are public property, some belong to municipalities, some belong to nobody, but most belong to individuals. The following are the common property of all:—The air, running water, and the sea, and (because of the sea) the seashore." Here we have a physical analogy—the sea—and an intellectual one—the common property of all. The high seas are not the subject of sovereignty or property. They are public highways open without distinction to the craft of all nations. In the Roman Empire this was so, and it is still so now, but it has not always been the accepted rule. "History is full of claims to sovereignty or dominion over the open sea, . . . the claims of Spain . . . and of Portugal . . . were the most outrageous of any in respect both of their geographical extent and of their refusal even of innocent passage. They were repudiated and practically set at nought by the Elizabethan English and by the Dutch, and called forth the '*Mare Liberum*' of Grotius, to which Selden replied by the '*Mare Clausum*' in support of the much narrower but still extravagant pretensions of England" (Westlake).

But in contrast with the boundless unowned sea we have the much-owned, boundary-ridden land with its innumerable partitionings, its many States, its great and petty sovereigns, and its endless owners.

The analogies available conflict with one another and a choice has to be made between them. Is the widespread air more like the sea expanse and therefore free, without a sovereign and not partitioned? Or, being set above the seething national States, is it divided by their boundaries, owned by their owners, and under the jurisdiction of their sovereigns? Regarded as a means of transit, is the air to be open and free and trackless as is the sea, or is it to be mapped out in routes and subjected to way-leaves, rights of way, and suchlike?

Coelum Clausum.

The adopted solution of this conundrum is something of a compromise. In principle the land analogy is followed, and the high skies are to be closed to all non-national traffic. *Coelum clausum* is to be the principle.

The skies of the future are to be painted with the colours of the flags which flutter beneath them. The fused glory of the evening sky, the canopy of heaven over the nations, is ordained to be hidden by a patchwork quilt having its underside circled and crossed with red, white, blue; spangled with stars and stripes; spotted with suns and crescent moons and still more stars; and bespattered here and there with blood-red rays and yellow, black, and green, and all the colours of the paint-box. Each small State will have a mansion in the skies to be its castle and eke its manger (if it chooses) to keep its dog in. The nations' hope of heaven is to exclude all others from it. That is the principle adopted.

Coelum Liberum.

The principle is largely qualified and almost rendered nugatory by a bargain between the States which are parties to the contract.

"Each contracting State undertakes in time of peace to accord freedom of innocent passage above its territory . . . to the aircraft of the other contracting States" (Art. 2).

Ifs and Buts.

But "the freedom of innocent passage" is hedged round with so many safeguards, so many qualifications and provisoes, and so many ifs and buts that it is hard to give the phrase a meaning. The right of passage only exists if the conditions of the Convention are observed and subject to regulations imposed by the subjacent State; areas may be prohibited to foreign aircraft for military reasons or for reasons of public safety; air thoroughfares (international airways) require the consent of the subjacent States; aircraft which pass from one State into another may be compelled to land in the latter; subjacent States may fix air routes for aircraft flying over them; aircraft signalled to land must do so. Finally, the right of innocent passage only exists in time of peace. "In case of war the provisions of the present Convention do not affect the freedom of action of the Contracting States either as belligerents or as neutrals" (Art. 39).

The Annexes.

Lest you grow wearied with matters of high and grave diplomacy the Imp will turn now to the lighter literature of the annexes. "The provisions of the present Convention are completed by the Annexes A—H, which

have the same effect and come into force at the same time as the Convention itself" (Art. 40).

The annexes, the Imp regrets to state, appear to be almost entirely an English production. "Regret" is the word the Imp uses because these annexes consist largely of pestilent rubbish. They include most that is bad in the English Air Regulations, though the zone blunder which the Imp pointed out has been rectified.

Annex E.

This contains the "Minimum Qualifications Necessary for Obtaining Certificates as Pilots and Navigators."

They include "A flight . . . during which the pilot shall remain for at least an hour . . . above the point of departure! Also, "A flight *without* landing around two posts (or buoys)." The former is not considered a test of skill; the latter is, though the Imp would consider a flight more skilful which was "*with* landing around two posts (or buoys)"!

They also include "A practical knowledge of international air legislation." A pilot must know the whole Convention and its annexes; he must satisfy the medical requirements—at the terminology of which, with its dioptres of hypermetropia, etc., the world has already laughed; and, worst of all, he must understand Annex G, compiled by the meteorologists.

Annex G. The Height of Profundity.

BBBDD FwwTT ALBMR wwVHS βbbF_1F_2
RRMMX (or RRmmX) ρTTHH

What! Meaningless to you, you say? And you claim to be a pilot! You'll have to change your avocation and be apprenticed to a pirate! Those symbols are but the alphabet of meteorology, without a knowledge of which it is impossible lawfully to fly. Besides these elements, you must learn aerostatics, orientation, azimuth, star globes, astronomy, astrology, astrolaby, chronology, chronometry, hour angularity, wet airology, drift, dead reckoning, live wangling, boxing the compass, swinging the lead, adjusting the truth and deviating from it and without precipitation, and so forth.

The Depth of Depravity.

A pilot who scarcely could jazzenough
Failed rightly to calculate azimuth;
His reck'ning was dead,
But his drift, it is said,
Was *di*-optres hypo or hypersuff.!

They told him he hadn't a heart,
Lungs, kidneys, or system of nerves,
Which—his hypermetropia apart—
Would yield him a good crop of curves.

They tested his knowledge of law,
Of the stars in their courses; and codes
They found out a serious flaw—
He had mixed up the ρ's with the Roads!

He didn't know β from Beer,
Couldn't hover or land around posts;
Though utterly void of all fear,
Faced examiners blanched as by ghosts.

It was true he had downed many Huns,
It was true he could fly like a beetle,
But—you can't bribe a bailiff with buns,
Or an Expert by showing you've mettle.

In all seriousness, the Imp considers the examination provisions imposed by our mandarins as either ludicrous or wicked. Ludicrous if intended to display the depth of the Expert's profundity; wicked if seriously intended to operate as—a red flag of the air.

If put to the test, the Imp would retort with Chaucer's reply to the eagle who offered to teach him the stars:

"Wilt thou lere of sterres aught?"
"Nay certeinly,' quod I, 'right naught,
And why? For I am now to old,
Elles I wolde thee have told."

THE AIRMAN'S AIRING.

(Being the Description of an aviator and his habits taken from a feuilleton).

It was a beautiful day for an air-trip, so Rudolph was up before sunset, pouring oil into the petrol tank of his trusty mechanical bird. He found a wire dangling loose between the planes, and deftly twisted it about one of the posts that help to hold an aeroplane together. His mechanics had not yet come in; but your true airman knows his machine, and is not dependent on paid servants.

He was alone!

In a moment he would be aloner still!

He sprang into his machine and touched a button.

The engine began to spin, and he felt a sudden thrill.

He was away!—a minute more and he was but a speck in the blue.

The engine raced, and the wheels spun round as he fled along the aerial highway.

Then, without warning, all was changed. The engine felt a sudden thrill, and Rudolph began to spin.

He felt the pressure on his safety belt, and knew that he must be flying upside down. His nerve was unshaken, however, and with great *sang froid* he righted the machine and continued his flight.

Rudolph was one of those rare and beautiful specimens of manhood—a civilian flier. He had steadily resisted the temptation to which so many young men yield in these days, to become a Service man.

"War," he would state nobly—throwing back his magnificent head and straightening his mighty shoulders—"is a dirty trade. It is always muddy in the trenches; and even in the air one is never sure but that one may accidentally fall into the mud."

So the noble fellow preserved his individuality, and remained unattached to any of the forces, of land, sea, or air.

On the day of which we write, he had scarcely been flying 10 minutes before he was overtaken by a high wind and driven into a bank of clouds. He completely lost his bearings—his machine was caught by the contending winds (pronounce wYnds) of heaven and blown hither and thither like a feather. Before many hours he had lost consciousness.

A cool breeze fanning his beautiful auburn hair restored him, and he regained his senses. At first he could not imagine where he was, but a careful examination revealed the startling fact that he was seated on top of a Zeppelin. It was clear to him that his machine must have turned upside down, and the breaking of the life-belt had caused him to fall—luckily while just over the airship.

But what was he to do? Thoughts of escape flashed through his mind, but none of them seemed feasible.

Just as he was giving up all hope a familiar sound caught his ear. His aeroplane—his faithful companion—had kept as close to his master as the somewhat unusual circumstances would permit.

Rudolph whistled, and the delighted aeroplane climbed up to him and taxi-d along the top of the Zeppelin till it came to rest by his side.

Rudolph felt his steed anxiously, but it was sound in wheel and wing, so he quickly mounted to his seat. The aeroplane seemed to understand what a duty it had to perform that day, and sprang forward with a sharp bark.

Steadily they flew till the spire of the town hall of Jubloppington came in sight—and their dangers were over past.

Once home, Rudolph donned his most civilian spotted tie and went to tea with his betrothed—this being Thursday.

"Dearest!" she cried, on catching sight of him—"I thought you were lost; you have been away four hours."—Mezzo Cammin.

AIRCRAFT FACTORY FOR SALE.

The American aircraft factory at Shaw, near Oldham, is for sale by private treaty. The factory covers six acres of land, and its buildings are mainly of brick construction with concrete floors and timber roofs covered with ruberoid.

NAVAL & MILITARY AERONAUTICS

GREAT BRITAIN.

FROM THE COURT CIRCULAR.

BUCKINGHAM PALACE, July 24th.

The King, who was accompanied by the Prince Albert, held an Investiture for the Royal Air Force in the Quadrangle of the Palace at 11 o'clock this morning.

The following Officers were severally introduced into the presence of His Majesty, when The King invested them with the Insignia of the Orders into which they have been admitted :—

THE DISTINGUISHED SERVICE ORDER AND THE DISTINGUISHED FLYING CROSS.—Major Lawrence Pattison, and Capt. Harry Goode.

THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE (Military Division).—Officer.—Lieut.-Col. Lionel Rees, V.C. (also received the Air Force Cross).

His Majesty then conferred decorations as follows :—

BAR TO THE DISTINGUISHED SERVICE CROSS AND THE DISTINGUISHED FLYING CROSS.—Capt. Cecil Darley.

THE DISTINGUISHED SERVICE CROSS AND THE DISTINGUISHED FLYING CROSS.—Major Anthony Arnold

THE DISTINGUISHED SERVICE CROSS AND THE AIR FORCE CROSS.—Capt Frank Fowler.

THE DISTINGUISHED SERVICE CROSS.—Lieut. Robert Peel.

BAR TO THE MILITARY CROSS AND THE DISTINGUISHED FLYING CROSS.—Capt. John Norton.

THE MILITARY CROSS AND BAR AND THE DISTINGUISHED FLYING CROSS.—Capt. James Slater.

THE MILITARY CROSS AND THE DISTINGUISHED FLYING CROSS.—Capt. Basil Catchpole, Capt. Frank Dutton, Capt Dennis Latimer, Capt. Cyril Lowe, Capt. James Mitchell, Capt Charles Robbins, and Lieut. Clifford McEwen.

THE MILITARY CROSS AND THE AIR FORCE CROSS.—Lieut.-Col. Reginald Mills, Major Cyril Patteson, Capt Eustace Grenfell, Lieut. John Boret, Lieut. Allan Boyle, and Lieut Charles Laing.

THE DISTINGUISHED FLYING CROSS.—Lieut.-Col. William Primrose, Lieut.-Col. Francis Roxby.

Capt. Christopher Brand, Major Kenneth Dowding, Major Evan Gilchrist, Major Wilfrid McClaughy, Major Francis Moller.

Capt. Robertson Affleck, Capt. Samuel Anderson, Capt. Thomas Angus.

Capt. George Bailey, Lieut. James Batting, Capt. Rene Bayley, Capt. William Benn, Capt Eric Betts, Capt. Robert Birkbeck, Capt Clifford Bowman, Capt. Edward Burling.

Capt. John Candy, Capt. Walter Carlaw, Lieut. Allan Churchman, Capt. Charles Cleaver, Capt. Eric Coles, Capt. Lawrence Coombes, Lieut. Herbert Coombs, Lieut. Philip Cummings.

Capt. Sydney Dalrymple, Capt Rupert Darnton, Lieut. Frederick Deane, Capt. Roger Delhaye, Capt. Euan Dickson, Capt. John Dickson, Lieut. Roy Dodds, Capt. John Doyle.

Lieut. Dudley Evans.

Capt. Ray Fagan, Capt. Karl Falkenberg, Capt. Ernest Fletcher, Lieut. James Foreman, Capt. Richard Gammon, Capt. Denys Gilley, Capt. Clive Glynn, Capt. Herbert Golding, Lieut Robert Gordon, Capt. Frank Gorringe, Capt. Arthur Groom.

Capt. James Hardman, Capt. George Harrison, Capt. Reginald Hellier, Capt. John Hopkins.

Capt. Harold Ireland.

Capt. William Jackson, Capt. Thomas Jefferies, Capt. Olans Johnsen, Capt. Norman Jones, Lieut. Reginald Jones

Capt. Francis Kempster, Capt Leslie King

Lieut. Charles Lavers, Capt. Walter Lawson, Capt. Harry Lett, Capt. Gwilym Lewis, Capt. Hugh Lloyd.

Major Donald MacLaren, Lieut. Finlay MacOuistan, Capt Frank McClurg, Capt. Thomas Middleton, Capt. Bertie Millson.

Lieut. Allen Nock

Capt. Harold Pearson, Capt James Pearson, Capt. John Pinder, Lieut. Walter Preston, Lieut. Harry Puckle.

Capt. Frank Ransley, Capt. William Redgate, Capt. Robert Reeve, Capt. George Reid, Capt. George Riley, Capt Leonard Rochford, Lieut. Herbert Rough.

Capt. Gordon Fox-Rule, Capt. Reginald Rusby.

Capt. William Samson, Capt. Alfred Sanderson, Capt. George Scaramanga, Capt. Thomas Sharpe, Capt. Percival Slater, Capt. John Austin-Sparks, Capt. James Sprott.

Lieut. Douglas Alliban, Capt. Charles Anderson, Lieut. Gerald Anderson, Lieut. Gordon Alps.

(To be continued.)

BUCKINGHAM PALACE, July 25th.

The following had the honour of being received by His Majesty :—Major-Gen. Sir Hugh Trenchard (Chief of the Air Staff), Brig.-Gen. C. L. Lambe (Director of Equipment, Royal Air Force) and Colonel A. M. Longmore, Royal Air Force.

BUCKINGHAM PALACE, July 26th.

His Majesty held an Investiture in the Quadrangle of the Palace at 11 o'clock.

The following were severally introduced into the presence of His Majesty, when The King invested them with the Insignia of the respective Divisions of the Orders into which they have been admitted :—

THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE.—Commander.—Military Division.—Lieut.-Col. Bryan Bartley, R.A.F.

THE DISTINGUISHED SERVICE ORDER.—Major Selden Long, R.A.F.

His Majesty then conferred decorations as follows :—

BAR TO THE DISTINGUISHED SERVICE CROSS.—Major Charles Bartlett, R.A.F.

THE MILITARY CROSS.—Major Stanley Clarke, Dorsetshire Regt., attd R.A.F.; Capt. Overton Preston, R.A.F.; Lieut. Basil Smyth-Pigott, R.A.F.; Lieut. Leslie Williams, R.A.F.

NAVAL.

ADMIRALTY APPOINTMENT.

JULY 24th.—Wt. Shipwts.—R. S. Cole, to "Pegasus," July 23rd.

It is reported that at Pulham Airship Station the Air Ministry is testing whether airships can safely be moored by the nose to a mast from which they swing freely instead of being housed in sheds. These mooring experiments are said to be proving satisfactory. R.24, one of our older rigid airships, has been at the mooring mast for about three weeks. The steadiness with which she has ridden out winds up to 40 miles an hour has impressed spectators.

* * *

The British Naval flying-boat F.5-N.00, Major W. G. Sitwell, D.S.C., R.A.F., in command, which left England on July 19th for Scandinavia, arrived at Helsingfors from Reval at 6 p.m. on July 21st.

* * *

On July 21st a British Naval flying-boat, Major Galpin, R.A.F., in command, arrived at Christiansand from Dundee, and proceeded to Christiania the same day. This boat was one of the two flying-boats which recently started on an official tour of Scandinavia.

Of the two F5 boats which left Felixstowe for Christiansand only one (N 4044) has been successful. N4041 during its flight from its base to Dundee was forced to descend in Orford Bay, and owing to a thick fog only arrived at Dundee Seaplane Base on the 13th, two days after her sister ship.

Both left Dundee on the 20th for the trip across to Christiansand, but N4041 was forced to return to the Tay. From there she has made several attempts to continue her flight to Norway, but has now been recalled to her base at Felixstowe. N4041 left Dundee on the morning of July 25th for Felixstowe.

The Air Ministry have apparently recalled N4041 owing to the inclement weather conditions.

* * *

A body has been washed ashore by the sea at Salthouse, Norfolk, and it is thought to be that of a Flight Sergeant of N.S.11. The Naval Airship Station at Pulham, Norfolk, has been advised.

MILITARY.

FROM THE "LONDON GAZETTE."

WAR OFFICE, July 17th.

REGULAR FORCES.—Oversea Forces.—Canada.—New Brunswick R.—Temp. Lt. (actg. Maj.) P. C. Sherren, M.C., ceases to be secd for duty with the R.A.F., May 2nd. 1st Cent. Ontario R.—Temp. Capt. G. M. Brawley ceases to be sec. for duty with the R.A.F., May 14th. Western Ontario R.—Temp. Lt. J. V. McKenzie ceases to be sec. for duty with the R.A.F., May 31st. Alberta R.—Lt. J. P. Cuninghame ceases to be sec. for duty with the R.A.F., July 2nd.

TERRITORIAL FORCE.—Hampshire Aircraft Parks.—Sec. Lt. A. L. Bird resigns his commn. and retains the rank of Sec. Lt., April 6th, 1918.

WAR OFFICE, July 22nd.

REGULAR FORCES.—INFANTRY.—5th Bn. Lancs. Fus.—Lt. S. H. Hodges is seconded with R.A.F., July 24th, 1918.

MEMORANDUM.—Sec. Lt. C. Probets, attd. R.A.F., retires, receiving a gratuity, July 23rd.

WAR OFFICE, July 24th.

REGULAR FORCES.—MEMORANDUM.—Col. H. O'Donnell, from Comdt., R.A.F. Sch., to be Comdt of a Rest Camp, vice Hon. Brig.-Gen. F. D. Lumley, C.B., O.B.E., ret. pay, May 6th.

INFANTRY.—Rif. Brig.—F. W. F. Turner (temp. Sec. Lt., R.A.F.), to be temp. Sec. Lt., Sept. 14th, 1918.

REGULAR FORCES.—OVERSEAS FORCES.—CANADA.—Nova Scotia R.—Temp. Maj. V. Hodson ceases to be secd. for duty with the R.A.F., April 2nd.

QUEBEC R.—Temp. Capt. W. I. Bailey is secd. for duty with the C.A.F. as a Flying Officer (Adjt.), Feb. 8th. The following cease to be secd for duty with the R.A.F. :—Temp. Lt. G. A. Barry, April 19th; Temp. Capt. M. L. Doyle, D.F.C., Temp. Lt. E. J. Mills, July 6th; Temp. Lt. (actg. Capt.) P. O. B. L. Baucher dit Morency, July 7th; Temp. Lt. G. M. Guillon, July 7th.

EASTERN ONTARIO R.—Temp. Lt. L. R. McKenna ceases to be secd. for duty with the R.A.F., July 3rd (substituted for "Gazette" notification May 23rd, page 6440, incorrectly specifying date as April 25th). Temp. Lts. cease to be secd. for duty with the R.A.F. :—A. E. de M. Jarvis, D.F.C., A. C. Lobley, July 7th. Temp. Lts. are secd. for duty with the C.A.F. as Lts. (Flying) :—A. E. de M. Jarvis, D.F.C., A. C. Lobley, July 8th.

1ST CENTRAL ONTARIO R.—Temp. Lts. cease to be secd. for duty with the R.A.F. :—F. V. Heakes, July 3rd; K. B. Conn, D.F.C., July 7th; Temp. Capt. J. O. Leach, M.C., D.F.C., ceases to be secd. for duty with the C.A.F., July 8th; Temp. Lt. F. V. Heakes is secd. for duty with the C.A.F. as Lt. (Flying), July 4th; Temp. Lt. A. G. Lough is secd. for duty with the Technical and Supply Branch, C.A.F., as Lt. (Technical), May 17th to July 7th

2ND CENT. ONTARIO R.—Temp. Lt. J. C. McKeever ceases to be secd for duty with the R.A.F., July 7th; Temp. Lt. J. C. McKeever is secd. for duty with the C.A.F. as Lt. (Flying), July 8th

WEST ONTARIO R.—Temp. Lt. L. Rimmer, M.M., ceases to be secd. for duty with the R.A.F., July 4th.

MANITOBA R.—Temp. Lts. cease to be secd. for duty with the R.A.F. :—J. Whitford, July 7th; S. M. Oibson, July 8th; Temp. Lt. J. Whitford is secd. for duty with the C.A.F. as Lt. (Flying), July 8th.

SASKATCHEWAN R.—The following cease to be secd. for duty with the R.A.F. :—Temp. Lt. (actg. Capt.) C. McEwen, M.C., D.F.C., Temp. Lt. W. L. Rutledge, M.M., July 7th; Temp. Capt. R. Duncan, M.C., July 8th; Temp. Lts. are secd. for duty with the C.A.F. as Lt. (Flying) :—(actg. Capt.) C. McEwen, M.C., D.F.C., W. L. Rutledge, M.M., July 8th.

ALBERTA R.—Temp. Lts. cease to be secd. for duty with the R.A.F. :—J. S. Russell-Rigby, July 3rd; H. G. Clements, July 6th.

CAN. MACH. GUN CORPS.—Temp. Lts. cease to be secd. for duty with the R.A.F. :—(actg. Capt.) J. L. M. White, D.F.C., J. E. Palmer, D.C.M., July 7th; Temp. Lt. J. E. Palmer D.C.M., is secd. for duty with the C.A.F. as Lt. (Flying), July 8th.

CAN. CYCLIST CORPS.—Temp. Lt. H. L. Holland, M.C., ceases to be secd. for duty with the R.A.F., July 7th; Temp. Lt. H. L. Holland, M.C., is secd. for duty with the C.A.F. as Lt. (Flying), July 8th.

CAN. A.S.C.—Temp. Capt. D. Carruthers ceases to be secd. for duty with the R.A.F., July 7th; Temp. Capt. D. Carruthers is secd. for duty with the C.A.F. as Lt. (Flying), July 8th.

WAR OFFICE, July 25th.

REGULAR FORCES.—MEMORANDUM.—Lt. G. M. Lees, M.C., D.F.C., R.A., to be temp. Capt. while empld. as an Asst. Political Officer, March 14th

WAR OFFICE, July 26th.

REGULAR FORCES ESTABLISHMENTS.—R.F.C.—Mil. Wing, Flying Officer.—The appointment of temp. Scc. Lt. R. E. Stewart, Gen. List, is antedated to Aug. 23rd, 1917.

MEMORANDUM.—Sec. Lt. H. Shoosmith, R.A.F., to be temp. Sec. Lt., Gen. List, June 27th.

AIR FORCE.

FROM THE "LONDON GAZETTE."

AIR MINISTRY, July 15th.

CONFERRED BY THE KING OF THE BELGIANS.

CROIX DE COMMANDEUR DE L'ORDRE DE LEOPOLD.

Maj.-Gen. Sir W. S. Brancker, K.C.B., A.F.C. (R.A.), Ret List.
Maj.-Gen. Sir F. H. Sykes, K.C.B., C.M.G. (15th Hrs.).

CROIX D'OFFICIER DE L'ORDRE DE LEOPOLD, AVEC CROIX DE GUERRE.

Lt.-Col. H. A. V. Ryneveld, D.S.O., M.C.

CROIX DE CHEVALIER DE L'ORDRE DE LEOPOLD, ET CROIX DE GUERRE AVEC PALME.

Capt. (actg Maj.) C. G. Beatson (Midd'x R.).
Capt. (actg. Maj.) J. A. Cochrane, M.C. (5th R. Sc. F.); Maj. (actg. Lt.-Col.) J. A. Cunningham, D.S.O., D.F.C. (R.A.), Ret. List
Lt.-Col. H. M. Meyler, D.S.O., M.C. (Bord. R.).

CROIX DE CHEVALIER DE L'ORDRE DE LA COURONNE, ET CROIX DE GUERRE AVEC PALME.

Lt.-Col. A. S. Barratt, C.M.G., M.C. (R.A.)
Maj. G. Henderson (C.I. Horse).
Maj. R. E. Saul, D.F.C. (4th Squadron).
Lt. F. Whitehead (late 5th Squadron) (Lanc. Yeo.).

CROIX DE GUERRE (BELGIAN).

Lt. A. H. A. Alban, D.F.C. (53rd Squadron) (R.F.A.); Lt. H. A. Allback (36th Balloon Sec.); Lt. (actg. Capt.) C. P. Allen (204th Squadron); Lt. E. O. Amm, D.F.C. (29th Squadron); Maj. A. R. Arnold, D.S.C., D.F.C. (79th Squadron); Capt. R. N. G. Atkinson, M.C., D.F.C. (206th Squadron); Lt. C. T. Aulph (16th Squadron).

Capt. G. W. Biles, D.F.C. (202nd Squadron); Capt. (actg. Maj.) G. H. Bowman, D.S.O., M.C., D.F.C. (3rd R. War.) (41st Squadron); Lt. N. K. Brooks (32nd Balloon Sec.) (R.F.A., S.R.); Sec. Lt. H. D. Buchanan (108th Squadron); Sec. Lt. C. H. Bullen (10th Squadron); Capt. L. A. K. Butt (2nd Bde.) (S. Staffs. R.).

Capt. (actg. Maj.) K. L. Caldwell, M.C., D.F.C. (74th Squadron); Sec. Lt. R. O. Campbell (65th Squadron); Maj G. V. Carey (2nd Wing) (Rif. Bde.); Sec. Lt. (Hon. Capt.) W. A. Carrothers, D.F.C. (206th Squadron (Can. Inf.); Sec. Lt. (actg. Capt.) H. G. Clappison (204th Squadron); Sec. Lt. C. A. Crichton (70th Squadron)

Capt. S. L. Dashwood, M.B.E. (2nd Bde.); Lt. C. Davies (23rd Balloon Sec.); Sec. Lt. D. W. Davies (217th Squadron); Sec. Lt. E. C. Davies, D.F.C. (29th Squadron); Maj. C. H. Dixon, M.C., D.F.C. (29th Squadron) (York. L.I.).

Lt. L. L. Falck (36th Balloon Sec.); Sec. Lt. S. E. Foreman (7th Squadron).

Sec. Lt. A. J. Garside, D.F.C. (206th Squadron), Lt. (actg. Capt.) J. S. Giffard (5th Balloon Co.); Lt. (actg. Capt. F. W. Gillett, D.F.C. (74th Squadron); Capt. A. W. F. Glenny, M.C., D.F.C. (R.A.S.C.); Maj. G. W. M Green, D.S.O., M.C. (70th Squadron), Sec. Lt. F. S. Gordon, D.F.C. (74th Squadron); Capt. H. W. Guy (11th Wing).

Capt. D. S. W. Hambley (11th Aircraft Park); Lt. (actg. Capt.) T. S. Harrison, D.F.C. (29th Squadron); Sec. Lt. (Hon. Lt.) J. B. Heppel (206th Squadron); Sec. Lt. (actg. Capt.) O. A. P. Heron, D.F.C. (70th Squadron); Lt. J. Hetherington (214th Squadron); Lt. G. S. Hodson, A.F.C. (213th Squadron); Lt. (actg. Capt.) M. L. Horn (2nd Bde.).

Lt. C. H. Jenkinson (9th Balloon Sec.); Lt. G. R. Judge (217th Squadron); Lt. E. B. Keele (39th Balloon Sec.).

Lt. (actg. Capt.) A. C. Kiddie, D.F.C. (74th Squadron).

Lt. (actg. Capt.) C. H. R. Tagesse, D.F.C. (29th Squadron).

Lt. (actg. Capt.) W. J. Mackenzie, D.F.C. (213th Squadron); Capt. (actg. Maj.) C. T. MacLaren, O.B.E. (206th Squadron); Sec. Lt. H. McLean, D.F.C (206th Squadron); Lt. M. P. MacLeod, D.F.C. (41st Squadron).

Maj. C. G. Martyn (2nd Aircraft Park) (1st Mon. R.); Lt. G. Mawer (204th Squadron); Lt. A. R. Morrison (15th Balloon Sec.); Maj. K. D. P. Murray, M.C. (10th Squadron).

Lt. M. Nichol (214th Squadron); Lt. J. J. W. Nicholson, D.F.C. (202nd Squadron); Lt. F. St. J. North (23rd Squadron) (Balloon Sec.); Maj. E. W. Norton, D.S.C. (204th Squadron).

Sec. Lt. (Hon. Lt.) C. M. W. Park (2nd Res. Lorry Park); Maj. S. J. Payne (5th Aircraft Park); Lt. C. W. Payton (210th Squadron); Lt (actg. Capt.) F. Pratt (38th Squadron).

Lt. (actg. Capt.) C. G. Ross, D.F.C. (29th Squadron); Capt. (actg. Maj.) F. T. Ryan, M.C. (2nd Wing) (R.G.A.); Sec. Lt. M. G. Ryan (10th Squadron).

Lt. W. W. Saunders (7th Squadron); Lt. R. H. Schroeder (late 4th Squadron) (Can. Inf.); Lt. R. A. Skelton (27th Balloon Sec.) (R.G.A., S.R.); Capt (actg. Maj.) I. B. Solomon, M.C. (82nd Squadron); Capt. D. S. Stevenson, M.B., M.B.E. (217th Squadron); Maj. (actg. Lt.-Col) B. E. Sutton, D.S.O., O.B.E., M.C. (7th Squadron) (West and Cumbld. Yeo.).

Lt. E. G. L. Ward (4th Squadron); Sec. Lt. H. R. Watterson (38th Balloon Sec.); Lt. (actg. Capt.) I. Welby, M.C., D.F.C. (7th Squadron); Lt. G. A. Welsh (210th Squadron); Lt. E. H. Wilford (2nd Balloon Sec.); Capt. E. A. E. Wood (2nd Bde.); Sec. Lt. H. C. Wood, D.F.C. (48th Squadron).

Lt. F. Coolley, D.F.C. (79th Squadron).

214412 Serjt.-Mech. G. Betteridge, D.F.M. (206th Squadron), 52748 Cpl.-Mech. F. H. C. Bishop (38th Bal. Sec.); 13489 A.M./1D. A. Bissett (4th Squadron); 223740 Serjt.-Mech. J. Chapman, D.F.M. (206th Squadron); 23702 A.M./1 W. M. Cutts (7th Bal. Co.); 24059 A.M./1 W. Dick (17th Bal. Co.); 34165 Serjt-Clk. J. Elliott (11th Wing); 4447 Serjt.-Mech. N. Lynn (4th Squadron); 93272 Serjt.-Mech. G. I Packman, D.F.M. (206th Squadron); 6260 Serjt.-Mech. J. E. Walsh (4th Squadron).

CROIX DE CHEVALIER DE L'ORDRE DE LEOPOLD II, AVEC CROIX DE GUERRE.

100083 Serjt.-Mech. N. Hunt (48th Squadron); 175 Serjt.-Maj. C. E. Martin (74th Squadron); 4201 Ch. Mech. B. W. Wilson (5th Squadron).

DECORATION MILITAIRE AVEC CROIX DE GUERRE.

8886 Ch. Mtr. Mech. J. F. Biggs (65th Squadron); 8715 1st C. Pte. C. H. Bird (2nd Bde.); 24154 Cpl. H. A. Horne (39th Ball. Sec.); 18875 1st C. Pte. E. Nancekievill (2nd Bde.); 15342 Cpl.-Mech. G. Smith (25th Ball. Sec.); 110761 Serjt.-Mech. R. L. G. White (48th Squadron); 134872 Cpl. H. Wildman (2nd Wing).

(To be continued.)

AIR MINISTRY, July 18th.

R.A.F.—The following temp. appt. is made at the Air Ministry :—Staff Officer, 3rd Class (P.).—Lt. (actg. Capt.) D. F. Fox, Feb. 19th, and to retain the actg. rank of Capt. till April 30.

The following temp. appts. are made :—Group Comdr. (graded as Col. Staff).—Lt.-Col. C. E. H. Rathbone, D.S.O., April 25th, vice Lt.-Col. H. A. Williamson, C.M.G.

Staff Officer, 2nd Class (Air).—Capt. G. S. Trewin, A.F.C., July 6th.

Staff Officer, 3rd Class (P.).—Sec. Lt. (actg. Lt.) J. M. McEntegart, Dec. 20th, and to be actg. Capt. till April 30th (substituted for the notification in the "Gazette," Jan. 21st).

The notification in the "Gazette" of June 20th, concerning Lt. C. H. Godfrey, is cancelled.

FLYING BRANCH.—Capt. C. E. H. C. Macpherson ceases to be graded for purposes of pay and allowances of Maj. (A.), May 31st.

Capt. H. C. Irwin to be graded for purposes of pay and allowances as Capt. while empld. as Capt. (A. and S.), May 1st.

Lts. to be granted for pay and allowances as Capts. while empld. as Capts.—(K.B.) :—W. C. Knight, C. K. Osborn, May 1st.

J. A. Sykes (Lt., Gordon Highrs.) is granted a temp. commn. as Sec. Lt. (A.), June 28th, 1918, and to be Hon. Lt.

A. Jenart (Sec. Lt., York and Lancs. R.) is granted a temp. commn. as Sec. Lt. (O.), Oct. 25th, 1918.

Lt. D. S. Buchanan (Lt., I.A.R.O.) relinquishes his commn. on revision to I.A.R.O., July 18th.

The following relinquish their commns. on ceasing to be empld. :—Lt.-Col. R. Bell-Irving (Maj.) (Temp. Lt.-Col.), Brit. Col. R.), April 9th; Lt. V. O. Lonsdale (Lt., R.H. and R.F.A.), June 30th; Lt. F. V. Heakes (Lt., Cent. Ont. R.), July 3rd; Lt. L. Rimmer (Lt., W. Ont. R.), July 4th; Lt. W. C. Brewer (Lt., W. Ont. R.), July 6th; Capt. D. Carruthers (Capt., Can. A.S.C.), Lt. H. G. Clements (Lt., Alberta R.), Lt. K. B. Conn, D.F.C. (Lt., Cent. Ont. R.); Lt. G. M. Guillon (Lt. Quebec R.), Lt. H. L. Holland (Lt., Can. Cyclist Corps), Lt. C. McEwen, M.C., D.F.C. (Lt. (actg. Capt.) Sask. R.), Lt. J. C. McKeever (Lt., Cent. Ont. R.), Lt. P. B. O. L. B. Morency (Lt., Quebec R.), Lt. J. L. M. Wuite, D.F.C. (Lt. (actg. Capt.), Can. M.G.C.), Sec. Lt. (Hon. Lt.) J. Whitford (Lt., Manitoba R.), July 7th; Lt. R. L. Coote (Lt., W. Ont. R.), Lt. S. M. Gibson (Lt. Manitoba R.), July 8th; Sec. Lt. (Hon. Capt.) F. G. Godsell (Lt. Gloster R., T.F.), Lt. S. B. Plummer (Lt., E. Ont. R.), Lt. G. L. Shepherd (Lt., W. Ont. R.), July 9th.

Transferred to unempld. list :—Lt. G. P. P. Wash, Jan. 31st; Sec. Lt. E. M. Harris, Sec. Lt. W. A. Scarlett, Feb. 11th; Sec. Lt. Alex Sorley, Feb. 16th; Sec. Lt. J. M. Scott, Feb. 18th; Lt. (Hon. Capt.) R. C. G. Somervell, Feb. 20th; Sec. Lt. E. A. Whitelock, March 1st; Sec. Lt. R. G. Lamotte, March 6th; Lt. H. V. Lewis, Lt. W. S. Walton, March 7th; Sec. Lt. F. Schorn, March 8th; Sec. Lt. G. C. McCullum, March 15th; Sec. Lt. R. Barrett (Lincolnshire R., T.F.), March 19th; Lt. G. Russell (R.F.A., T.F.), April 1st; Lt. G. J. Smith, Capt. (actg. Maj.) S. O. Smith, April 2nd; Sec. Lt. J. Scott, April 4th; Lt. (Hon. Capt.) G. S. St. Noble, April 5th; Lt. (actg. Capt.) R. A. Preston, April 6th; Sec. Lt. J. Simpson, April 8th; Lt. H. M. Schlotel, Sec. Lt. (Hon. Lt.) M. C. Sexton, Lt. E. W. Swann, April 9th; Lt. (actg. Capt.) D. Latimer, M.C., D.F.C., Sec. Lt. L. C. Lewis, Sec. Lt. G. C. Schofield, Lt. E. P. Speakman, April 10th; Sec. Lt. F. H. Lane, Sec. Lt. D. Miller, Lt. E. A. Sullock, Lt. (actg. Capt.) C. Sutherland, D.F.C., April 11th; Lt. K. V. C. Lewis, Lt. L. E. Shaw-Lawrence, M.C., Lt. D. Sear, April 13th; Sec. Lt. A. C. Langtry, Lt. F. K. Laver, Sec. Lt. B. G. Lees, Lt. J. S. Lennox, Lt. B. O. M. Linford, Sec. Lt. J. F. Mason, Lt. W. Steele, D.F.C., Lt. W. W Symmons, April 15th; Lt. T. W. Sclater, Sec. Lt. G. Senior, Lt. W. Spencer, April 16th; Lt. A. D. M. Lewis, Lt. G. W. Stallard, Sec. Lt. T. Swinburne, April 17th; Sec. Lt. S. Lane, Sec. Lt. E. W. Smith, Sec. Lt. F. J. Smith, Sec. Lt. A. Sutton, April 18th; Sec. Lt. H. D. Chandler, Sec. Lt. G. P. Styles, April 19th; Sec. Lt. F. O. Bovill, Sec. Lt. O. T. Jannasch, Sec. Lt. G. Parsons, Sec. Lt. A. V. Speight, April 20th; Lt. L. P. Sedgwick, Sec. Lt. G. W. N. Simpson, Sec. Lt. A. Swindale, April 21st; Lt. N. D. Lambert, Sec. Lt. C. F. Lamont, Lt. A. V. Quinnell, April 22nd, Lt. (actg. Capt.) H. S. Marten-Smith, Sec. Lt. E. A. Seal, Sec. Lt. E. Sykes, April 24th; Lt. W. G. Stewart, April 25th; Sec. Lt. W. Leake, Sec. Lt. E. V. G. Stock, April 26th; Lt. F. C. Shirtcliffe, April 29th; Sec. Lt. H. A. Scobell, Lt. L. M. Shadwell, Sec. Lt. W. Sharples, Sec. Lt. R. R. Simmons, April 30th; Sec. Lt. Finlay Shaw, May 1st; Sec. Lt. H. J. E. Smith, Sec. Lt. H. Smith, Lt. E. C. Stringer, Sec. Lt. A. J. Stubbings, Sec. Lt. F. N. Sutherland, Capt. J. H. Tyler, May 2nd; Capt. R. H. Sharp, D.F.C., May 4th; Sec. Lt. A. B. Lamont, May 5th; Lt. T. T. Shipman, Sec. Lt. E. H. S. Tye, May 6th; Lt. J. C. F. Simpson, May 7th; Sec. Lt. W. F. Langford, Lt. P. Leigh, Sec. Lt. C. Sneesby, May 8th; Sec. Lt. V. W. Lindars, Sec. Lt. W. Smith, May 9th; Sec. Lt. J. Lightoller, Sec. Lt. A. W. Martin, May 10th; Sec. Lt. S. H. H. Swanton, May 11th; Sec. Lt. L. W. Seaby, Sec. Lt. (Hon. Lt.) R. P. Simmers, Lt. H. L. W. Stevens, May 12th; Sec. Lt. S. F. B. Lea, Sec. Lt. C. R. Smallwood, May 13th; Capt. A. E. Sole, May 15th; Lt. J. W. Schofield, May 16th; Sec. Lt. F. R. G. Spikins, May 18th; Sec. Lt. G. S. C. Lang, Sec. Lt. G. E. Lewtas, Lt. C. H. Lick, May 20th; Sec. Lt. H. Woffenden, May 21st; Sec. Lt. A. A. C. N. Smith, May 22nd; Lt. A. Lewis, May 23rd; Sec. Lt. A. R. Lamb, May 24th; Capt. C. J. Smith, May 25th; Sec. Lt. W. H. B. Lamb, Sec. Lt. C. R. Southey, May 26th; Lt. W. L. Boness, Lt. B. FitzW. Levett, Sec. Lt. T. F. Strangé, May 27th; Sec. Lt. F. J. Bodenham, Sec. Lt. F. Lake, Sec. Lt. N. Sillars, Lt. J. H. Smith, Lt. E. R. L. Sproule, May 28th; Sec. Lt. E. H. Simmons,, Sec. Lt. C. D. Stephenson, Sec. Lt. F. R. Yelland, May 29th; Lt. H. J. Bowen, Lt. H. E. Browne, May 30th; Lt. J. D. Bowman, Lt. H. Brooks, Lt. L. H. Brown, Lt. E. Bryant, Capt. E. G. Landon, A.F.C., Sec. Lt. (Hon. Lt.) G. M. Lawson, M.C., Sec. Lt. L. F. E. Smith, May 31st; Lt. E. W. Shaw, Sec. Lt. L. J. Swann, June 1st; Sec. Lt. G. Brown, Lt. T. H. M Brown, Capt. G. G. Simpson, June 2nd; Capt. E. A. Bolton, Lt. T. B. Bruce, Sec. Lt. F. Masson, Lt. H. Scandrett, Lt. T. H. E. L. Smale, Lt. H. A. Sparks, Lt. L. Speller, Lt. E. Steel, June 3rd; M.C. Sec. Lt. G. A. Brown, Sec. Lt. W. C. Loutitt, Lt. G. J. E. Smith, Sec. Lt. (Hon. Lt.) H. Symons, Sec. Lt. V. Vickers, June 4th; Sec. Lt. H. P. Bowring, Lt. H. P. D. Lane, Capt. J. M. McAlery, Lt. A. L. Ouance, Lt. F. Spalding, Lt. C. S. Style, June 5th; Capt. E. S. Moolton-Barrett, Lt. A. S. Selby, Sec. Lt. H. G. Souchon, Lt. F. S. Symondson, M.C., June 6th; Lt. G. Lea, Sec. Lt. H. Phillips, D.F.C., Sec. Lt. W. A. Smailes, June 7th; Lt. L. Latham, June 8th; Lt.

K .G. Brabner, Sec. Lt. I. B. MacBean (King Edward's Horse), June 10th; Sec. Lt. (Hon. Capt.) G. E. Lange, Lt. A. D. Light, June 11th; Sec. Lt. F. H. Newton, Capt. C. A. Stephenson, June 12th; Lt. D. Lindsay, Sec. Lt. N. H. Marshall, Sec. Lt. R. C. Stiven, Sec. Lt. G. S. Taylor, Lt. J. G. Vicqueray, June 13th; Lt. W. H. Leighton, Sec Lt. H. M. Leith, Sec. Lt. A. H. C. McGivern, Lt. D. H. Prosser, June 14th; Lt. E. Langston, Lt. D. D. O'Flaherty, June 15th; Sec. Lt. N. T. Brookes, Sec. Lt. E. McConnell, Sec. Lt. J. E. Marigold, June 16th; Lt. R. K. Rose, June 17th; Sec. Lt. J. Scholteneyer, June 18th; Lt. W. F. Woods (London R., T.F.), June 19th; Sec. Lt. G. J. Cross, Sec. Lt. M. Thornton, June 20th; Sec. Lt. D. Leech, June 21st; Capt. G. S. Murray, June 22nd; Lt. J. C. Forsyth, M.C. (Black Watch), June 24th; Lt. F. W. Morter, June 25th; Sec. Lt. I. L. R. Large, Lt. G. Tucker, June 26th; Sec. Lt. N. E. Chapman, June 27th; Lt. A. W. Slater (R.A.S.C.), June 28th; Lt F. V. Sheard, Lt. G. A. Wightman, June 29th; Lt. H. J. Lindo, Lt. R. F. Millard, Sec. Lt. G. I. Thompson, D.F.C., June 30th; Capt. C. D. Fellowes, M.C., A.F.C. (Staffs. Yeo.), Sec. Lt. J. F. McNamara, Sec. Lt. W. J. Tansey, July 1st; Lt. C. E. O. Cowell, Lt. W. E. McLean, M.C., Lt. J. C. Matthews, July 2nd; Capt. G. C. Corry-Smith, Lt. C. W. Leggatt, Capt. R. W. Reeve, D.F.C. (Herefordshire R., T.F.), Sec. Lt. R. W. Silk, Lt. V. H. Simmers, Sec. Lt. S. W. Smith, July 3rd; Lt. (Hon. Capt.) F. R. Ashmead, Lt. M. Balston (R.F.A.), Sec. Lt. E. R. Beesley, Lt. G. J. L. Campbell (London R., T.F.), Sec. Lt. (Hon. Lt.) H. S. Gargett, Sec. Lt. W. C. Parry, July 4th; Sec. Lt. R. Hooley, July 5th; Lt. I. E. McIntyre, A.F.C., Sec. Lt. (Hon. Lt.) H. C. G. Newton, Sec. Lt. N. M. Smith, July 6th; Sec. Lt. R. H. Byrom, July 7th; Sec. Lt. W. M. Crofton, Sec. Lt. A. B. Mair, July 8th; Sec. Lt. G. W. L. Anderson, Lt. T. R. Bloomfield, Lt. J. J. St. L. Martin, Sec. Lt. H. B. Singleton, July 9th; Sec. Lt. A. L. R. Aspelling, Sec. Lt. H. P. Ayres, Sec. Lt. J. E. Baker, Lt. H. K. Baron, Sec. Lt. J. Clayton, Lt. A. E. Leggo, Lt. A. L. Porter, July 10th; Lt. J. W. Adams, Sec. Lt. E. C. Archer, Sec. Lt W. C. B. Ashfield, Sec. Lt P. W. Atkins, Lt. V Beeton, Sec. Lt. W. V. Berry, Sec. Lt. R. H. Berryman, Lt. C. G. Carter, Sec. Lt. F. T. Chouler, Sec. Lt. R. J. Clench, Sec. Lt C. A. Court, Sec. Lt. A. L. Facinie, Sec. Lt. E. D. Fenn, Sec. Lt. J. D. Gallwey, Maj. R. J. Hudson, M.C. (substituted for notification in "Gazette," March 4th), Sec. Lt. C. P. McCuaig, Sec. Lt. H. E. G. Phillips, Sec. Lt. G. D. Stewart, Lt. A. E. Thornhill, Lt. L. L. F. Towne, July 11th; Sec. Lt P. B. Agur, Sec. Lt. C. H. Ahrens, Sec. Lt. L. L. Allen Sec. Lt. E. J. Atherton, Lt. F. H. Baguley, Sec. Lt. H. S. Baines, Sec. Lt. H. R. Baker, Sec. Lt. R. W. Ball, Sec. Lt. W. Ballentyne, Sec. Lt. J. E. Bancroft, Sec. Lt. W. G. Banting, Sec. Lt. Ralph Barrett, Lt. M. G. Baskerville, Capt A. Bell-Irving, M.C., Sec. Lt. D. H. T. Blake, Sec. Lt. W. W. V. Blaricom, Sec. Lt. G. Bolstad, Lt. J. W. Boulter, Sec. Lt. H. Broadberry, Sec. Lt. L. F. Callaway, Lt. W. H. Cameron, Sec. Lt. J. A. Carswell, Sec. Lt. V. L. Child, Sec. Lt. I. W. Clarke, Sec. Lt. K. de W. Cleveland, Sec. Lt. W. McG. Cochrane, Sec. Lt. F. E. Convery, Lt. H. D. Copland, Sec. Lt. I. B. Corey, Sec. Lt. H. P. Crabb, Sec. Lt. H. E. Crane, Lt A. R. Cross, D.F.C., Lt. A. L. Cuffe, Sec. Lt. F. J. Currier, Sec. Lt. A. B. de Wolfe, Sec. Lt. G. R. T. Donaldson, Sec. Lt. D. K. Donelly, Sec. Lt. G. E. Driscoll, Lt. H. E. Dunseith, Sec. Lt. L. D. Farmer, Sec. Lt. W. T. Ferguson, Sec Lt. W. W. Ferguson, Sec. Lt. G. McM. Findlay, Sec. Lt. J. H. Findlay, Sec. Lt. W. T. R. Flemington, Sec. Lt. C. C. Fox, Sec. Lt. G. Fraser, Sec. Lt. C. R. Fulford, Sec. Lt. T. H. Garlick, Capt. J. L. Gordon, D.F.C., Sec. Lt. G. H. Grieve, Lt. P. F. Gyles, Sec. Lt. H. C. Hagaman, Sec. Lt. M. L. Hall, Sec. Lt. P. Harris, Sec. Lt. J. G. Harvie, Lt. E. N. Hately, Sec. Lt. V. H. Hervey, Sec. Lt. B. J. Hill, Sec. Lt. W. McK. Howell, Lt. E. R. Huston, Capt. W. R. Kenny, Lt. L. Kinet, Sec. Lt. P. A. King, Sec. Lt. R. W. Laidlaw, Lt. C. I. Lancefield, Sec. Lt A. Lawrence, Sec. Lt. G. E. Lillico, Sec. Lt. H. S. Littlejohn, Sec. Lt. F. R. Livingston, Sec Lt. L. K. Lloyd, Lt W. C. Lynch, Sec. Lt. J. G. McCarthy, Lt. D. S. C. Macaskie, Lt. W. F. McCarthy, Lt. A. F. MacDonald, Sec. Lt. U. T. MacDonald, Sec. Lt. T. J. W. McFadden, Sec. Lt. F. D. McGuire, Sec. Lt. J. A. Mackay, Sec. Lt. R. G. McLaren, Sec. Lt. R. St. C. McLaughlin, Sec. Lt. J. E. McLellan, Sec. Lt. C. R McLeod, Sec. Lt. A. M. McMorran, Sec. Lt. S. R. McNown, Lt. H. Macpherson, Sec. Lt. N. A. W. MacQueen, Sec. Lt. F. S. E. McRae, Sec. Lt. D. F. McTavish, Lt. E. G. R. Maillet, Sec. Lt. R. Maranda, Sec. Lt. W. Marginson, Sec. Lt. C. A. Maxwell, Sec. Lt N. S. May, Sec. Lt. A. Meville, Sec. Lt. J. L. Miller, Sec. Lt. R. C. Mitten, Sec. Lt. R. Morrison, Sec. Lt. G. E. Mullin, Sec. Lt. W. G. G. Murdock, Sec. Lt. G. A. Nicholls, Sec. Lt. E. F. Nicholson, Lt. R. E. Norman, Sec Lt. A. J. O'Neill, Sec. Lt. J. A. O'Neill, Sec. Lt. V. O'Neill, Sec. Lt. C. B. Parsons, Sec. Lt. L. H. Parsons, Sec. Lt. W. J. Penningroth, Sec. Lt. W. R. Penny, Sec. Lt. C. A. Pienaar, Lt. E. G. Plum, Lt. F. H. Prime, Sec. Lt. L. W. Prime, Sec. Lt. G. C. Rayden, Lt. H. A. Urquhart, Lt. K. B. Watson, D.F.C. (substituted for notification in "Gazette," July 11th), Lt. A. N Westergaard, July 12th; Lt. C. B. Mellor, Lt. G. J. Wilde, July 13th; Sec. Lt. H. Cheetham, Sec. Lt. H. D. Christie, Lt. R. S. Phelan, Sec. Lt. H. D Riddell, July 14th; Capt. H. J. Larkin, D.F.C., July 15th; Sec. Lt. G. H. Keat, Lt. A. R. Strang, July 16th; Sec. Lt. G. A. Elliott, Sec. Lt. W Middleton, Sec. Lt. R. R. Morton, Sec. Lt. R. E. Napier, Sec. Lt. M. H. Otway, July 17th; Sec. Lt. A. B. D. Campbell, Sec. Lt. J. A. Martin, Sec. Lt. J. G. M. Mathewson, July 18th.

Capt. B. S. Wemp, D. F. C., relinquishes his commn. on account of ill-health contracted on active service, and is granted rank of Maj., June 13th.

The following Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank :—S. C. Shepherdson (contracted on active service), June 19th; R. G. Pratt, June 27th (substituted for notification in "Gazette," April 8th; J. W. Baillie, F. R. C. Cobbold (caused by wounds), R. A. Crabtree (contracted on active service, July 4th); F. C. A. Thorpe (caused by wounds), C. G. Wood (contracted on active service), July 7th; Lt. W. G. R. Bailes (caused by wounds), July 11th.

Lt. H. L. Yates resigns his commn., June 18th (substituted for notification in "Gazette," May 13th).

Lt. G. G. L. Blake, D.F.C., D.C.M., to take rank and precedence as if his appointment as Lt. bore date, March 17th.

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank :—C. E. Robinson (caused by wounds), July 4th; G. V. Straker, July 10th (substituted for notification in "Gazette," June 6th)

Sec. Lt. C. Oldfield is removed the Service for absence without leave, Jan. 26th.

The notification in "Gazette," March 28th, concerning Sec. Lt. J. M. Scott is cancelled.

The notification in "Gazette," May 30th, concerning Lt. I. D. Brown is cancelled.

The notification in "Gazette," June 3rd, concerning Lt. W. E. Watt is cancelled (the notification in "Gazette," April 4th to stand).

The notification in "Gazette," June 17th, concerning Lt C. C. G. Girvan is cancelled.

The notification in "Gazette," June 24th, concerning Sec. Lts. T. Mundy and E. A. Murray is cancelled.

ADMINISTRATIVE BRANCH.—Lt.-Col. G. Hilton, D.C.M., to be Lt.-Col., from (S.O.), July 6th.

Lt. A. B. Monk to be actg Capt. while empld. as Capt., from Nov. 30th, 1918, to April 30th (substituted for notification in "Gazette," May 23rd)

Lts .to be graded for purposes of pay and allowances of Capts. while empld. as Capts. :—S. Currington, M.B.E., R. Elphich, (Hon. Capt.) L. V. Popkiss, May 1st.

Lts. (A.) to be Lts. :—J. H. Taylor, May 6th; H. A. Zinn, July 8th

Lt. G. A. F. Hudson to be Lt., from (S.), July 25th (substituted for notification in "Gazette," July 15th).

Sec. Lts. to be Lts. :—G. D. Ashby, Oct. 20th, 1918; (actg. Capt. G. T. Armitage, Dec. 17th, 1918.

The following are granted temp. commns. as Sec. Lts. :—C. Jackson, Nov. 21st, 1918; C. J. Elliott, July 14th.

The following relinquish their commns. on ceasing to be empld. :—Lt. S. P. Briggs (Lt., Northants R.), June 16th; Sec. Lt. (Hon. Capt.) D. M. Berry (Capt., R. Fus.), June 25th.

Transferred to unempld. list :—Lt. (actg. Capt.) G. Southern, Jan. 23rd; Lt. A. A. Bowes, Feb. 17th; Sec. Lt. R. A Smith, Feb 28th; Sec. Lt. J. W. Smith, Sec Lt. H. C Smith, March 12th; Sec. Lt W. W. H. Lee, April 11th; Sec. Lt. J. Lewis, Sec. Lt. G. H. Stanley, April 12th; Sec Lt. H. Smith, D.F.C., April 13th; Sec Lt. T. Smith, April 18th; Sec. Lt. H. T. Cock, Sec. Lt. S. H. Meitjes, April 20th; Sec. Lt. R. H. Norris (North'd Fus.), Capt. C. D. Smart, M.C., April 22nd; Capt. (actg. Maj.) W. V. Sherwell, April 30th; Sec. Lt. W. M. Limb, May 3rd; Sec. Lt. C. W. Sutcliffe, Sec. Lt. D. Sparrow, May 15th; Lt. C. B. Stead, May 20th; Lt. F. Sumpter, May 22nd; Sec. Lt. V. D. Smith, May 23rd; Lt. J. U. G Lamond, May 27th; Capt. J. G. Levy, May 29th; Capt. J. W. Sydenham, June 1st; Lt. A. McKenzie, June 2nd; Sec. Lt. L. Skeldon, Sec. Lt. W. D. Tye, June 3rd; Sec. Lt. W. J. Bradshaw, Sec. Lt. H. S. M. Popplewell, June 5th; Capt. E. L. Oliver, M.C., Lt. J. D. D. Renfrew, June 11th; Sec. Lt. A. G. Finlayson, June 13th; Capt. E. G. Simpson, June 14th; Lt. A. T. Laing, June 15th; Lt. J. B. Lawton, June 26th; Sec. Lt A R McDonald, June 28th; Sec. Lt. S. Sinclair, July 1st; Sec. Lt. S. L. Bennett, Lt. R. Fitton, M.C., July 2nd; Sec. Lt. H. J. Coles, Lt T. J. Legate, July 3rd; Sec. Lt. W. Molineaux, July 9th; Sec. Lt. E. C. McCall, Sec. Lt. L. Marquard, Lt. F. W. Nelson, July 10th; Sec. Lt. A. W. Mackay, Sec Lt. J. B. Martin, July 12th.

Lt. (actg. Capt.) C. E. Morgan relinquishes his commn. on account of ill-health, and is granted the rank of Capt., May 25th, 1918 (substituted for notification in "Gazette," May 24th, 1918).

Lt. E. Croghan relinquishes his commn. in order to resume his medical studies, July 1st.

Lt. G. C. Levick (K.R.R.C.) relinquishes his commn. on account of ill-health contracted on active service, July 14th.

Sec. Lt. J. C. Child relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Dec. 23rd, 1918 (substituted for notification in "Gazette," Nov. 12th, 1918).

The notifications in "Gazette," May 13th and July 4th, concerning Lt. H. W. Piper are cancelled.

The notification in "Gazette," April 25th, concerning Sec. Lt. D. Miller is cancelled.

The notification in "Gazette," May 6th, concerning Maj. J. M. Boyd, M.B.E., is cancelled.

TECHNICAL BRANCH.—Lt. H. W. Prockter to be graded for purposes of pay and allowances of Capt., whilst empld. as Capt., Grade (A.), May 1st.

Lt. J. R. Coulthard to be graded for purposes of pay and allowances of Capt., whilst empld. as Capt., Grade (B.), May 1st.

Sec. Lt. (actg. Capt.) E. P. Dampier to be Sec. Lt., Grade (G.), from (Ad.), and to retain the actg. rank of Capt., whilst empld. as Capt., Oct. 1st, 1918.

Lts. to be actg. Capts. without pay and allowances of that rank whilst empld. as Capts., Grade (B.) :—W. F. Mytton (substituted for notification in "Gazette," March 21st; J. M. B. E. St. Amory (substituted for notification in "Gazette," March 21st), Dec. 1st, 1918.

Lts. to be Lts., Grade (A.) :—E. R. V. Collett, from (O.), Nov. 1st, 1918; J. S. Stevenson, from (Ad.), Dec. 15th, 1918

C. N. Smith (Lt., R. Welsh Fus.) is granted a temp. commn. as Sec Lt., Grade (B), May 22nd, 1918, and to be Hon. Lt.

Transferred to unempld list :—Sec. Lt. (Hon. Lt.) C. D. B. Stiles, Feb 21st; Sec. Lt. F. C. Lawrence, Capt. F. C Starnes, April 9th; Lt. P. R Smith, Sec. Lt. W. F. Simpson, April 15th; Sec. Lt. G. W. Heugh, April 20th; Capt. N. Littlejohn, April 22nd; Sec. Lt. (actg. Lt.) W. Stanton, April 26th; Capt. M. T. Spence, April 29th; Capt. W. A. Scoble, M.B.E., May 3rd; Capt. G. W. Lester, May 9th; Maj. G. Dixon-Spain, M.C., Lt L. H. Strudwick, Sec. Lt F. H. Shaw, May 15th; Sec. Lt. E. J. Bristow, Capt. H. J. C. Smith, M..BE., May 30th; Sec. Lt (Hon. Lt.) G. R. Spencer, June 1st; Capt. W. Vonge, June 4th; Sec. Lt. H. E. Stiles, June 6th; Sec. Lt. P. F. Westerman, June 7th; Lt. W. H. R. Skudder, June 9th; Capt. A. G. Trussell, D.S.M., June 11th; Sec. Lt. W. T. Grubb, Sec. Lt. H. Scott, June 12th; Maj. A. R. Lavard, June 13th; Lt. L. Mantell, June 17th; Lt. L. F. Roslyn, June 24th; Lt B. F. Sandy, June 25th; Capt. E. B. De Merrall, June 27th; Lt. F. Alexander, June 29th; Sec. Lt. N. C. Clements, June 30th, Lt. F. H. Bartlett, Capt. J. S. Street, July 1st; Sec. Lt. P. G. Beesley, Lt. C. E. Maryon, July 2nd; Sec. Lt. J H. Hunter, July 6th; Lt. P. S. Woodroffe, July 10th; Capt. D. A. Haig, Sec. Lt. V. S. Lord, Sec. Lt. W. S. Pavey, Sec. Lt. K. B. Sylvester, July 12th.

Sec. Lt. J. Penrose relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, June 24th.

The initials of Lt. N. V. Harle are as now described, and not "H. V." as stated in "Gazette," May 2nd.

The date of appointment of Sec. Lt. T. Mundy and Sec. Lt. F. A. Murray is March 8th, and not May 8th as stated in "Gazette," May 23rd

The notification in "Gazette," May 16th concerning Lt. E. R. V. Collett is cancelled.

The notification in "Gazette," Dec. 3rd, 1918, concerning C. Jackson is cancelled.

MEDICAL BRANCH.—Maj. F. H. Stephens (Staff Surgeon, R.N.) relinquishes his commn. on reverting to R.N. Medical Services, Feb. 11th (substituted for notification in "Gazette," March 21st).

Transferred to unempld. list :—Lt. E. S. Sharpe, May 7th; Capt. N. F Stallard, May 13th; Lt. R. W. Stephenson, May 27th; Lt. N. C. Cooper, June 23rd.

The notification in "Gazette," Feb. 14th, concerning Capt. A. E. McCulloch is cancelled

CHAPLAINS BRANCH.—Rev. R. Hall is granted the relative rank of Col while empld. as Principal Chaplain (Wesleyan), May 1st (substituted for notification in "Gazette," May 20th, granting the relative rank of Lt.-Col.).

MEMORANDA.—The following Overseas Cadets are granted temp commns. as Sec. Lts. with effect from Feb. 15th, and relinquish such commns. with permission to retain the rank, from the day following termination of the standardised voyage in the case of those claiming immediate repatriation, and from the day following demobilisation in England in all other cases :—529503 A. C. Anderson, 92337 W. S. Andrews, 534226 B. R. Armitage, 911079 R. R. Atkins, 510396 C. P. Atkinson, 71348 J. H. Atkinson, 49087 H. M. Bignell, 65096 F. W. Potsford, 187387 J. W. Bainbridge, 654006 W. R. Barkley, 426117 J. Bateman, 1015605 A. H. Battersby, 528531 J. C. Beaton, 451784 H. Beecham, 841090 H. Bell, 603157 I. G. Bell, 175094 N. G. Binkley, 528741 W. A. Blackwell, 528634 E. G. Blair, 866646 M. L. Brothers, 106109 W. J. Brown, 234104 L. W. Burton, 535544 C. J. Bussell, 841154 A. E Baile, 431087 L. S. Barnes, 838010 H. Barrett, 2252 L. R. J. Bauset, 326879 H. L. Bell, 461180 L. R. Bishop,

460246 H. A. Black, 916141 H. B. Branscombe, 829708 M. H. Butt, 512282 H. J. Cable, 317039 H. D. Cameron, 63231 J. R. Christie, 18683 J. Clarke, 424117 A. Collen, 129679 H. E. B. Cook, 1261415 G. W. Craig, 471156 F. F. Crooks, 100050 W. C. Carruthers, 2025154 C. Carver, 457307 W. Cash, 534068 L. A. Chamberlain, 512470 H. J. Churchill, 880828 B. L. Clarke, 81175 E. W. Cooke, 231279 C. Cormick, 2115344 H. H. Cornish, 853337 E. Creswick, 530526 J. C. M. Cross, 400097 H. J. Cumming, 534209 G. R. Currie, 418829 C. M. De Courcy, 907153 C. A. Darke, 528692 E. J Davis, 410284 C. H. Dove, 213793 A. S. Dunnett, 645005 H J. Dyer, 2329882 H. Edwards, 787634 L. Edwards, 527560 J. B. Effrick, 422668 A. Fris, 84005 W. Fairbrother, 406884 J. Falconer, 111172 H. B. Ferris, 907410 W. E. Findlay, 461125 D. Finestone, 525160 W. E. Fleming, 618185 C. K. Flewelling, 341862 R. L. Fluhrer, 2125005 A. Forbes, 311950 H. S. Ford, 928232 W. Fricker, 75273 D. Graham, 311909 F. Game, 542292 H. G. Garman, 709377 A. V. Geldart, 769377 A. B. Gibson, 2006480 J. Gifford, 21840 H. R. Gilbert, 21839 R. Gilbert, 104262 C. E. Gillis, 339155 D. G. Goddard, 864 G. S. Gollan, 552278 F. O. Graham, 9910 N. I. Green, 1261686 T. V. Green, 135713 W. J. Greves, 133204 B. Guinea, 216231c A. F. Hagell, 253029 E. Haggiss, 534683 R. de C. Harding, 151727 B. G Harris, 510603 F. A. Harris, 656414 P. W. Harrison, 157082 G. F. Hatch, 234705 J. L. Haw 104312 W. A. Hazelton, 724719 L. A. Hepburn, 86005 B. Herman, 525013 J. R. Higginbotham, 9086 H. R. Honeycombe, 135730 W. H. Hulme, 475896 R. T. Irwin, 187608 J. B. Isles, 2203985 J. Jack, 910010 G. H. Jackson, 534667 A. G. Jacks, 534659 V. A. James, 2193307 E. H. Jamieson, 869 C. Jenkins, 1967 J. A. Jennings, 755084 E. B. Johnson, 174309 A. E. Jones, 437747 A. G. E. Kaufmann, 89276 S. J. Kehoe, 2008005 R. E. Kennedy, 1057387 H. Kerland, 745678 N. C. Kilpatrick, 145818 H. W. Kirk, 718372 W. Kristjanson, 502847 L. E. Kyle, 469946 H. H. Lamrock, 403115 A. J. Laneuville, 441164 J. L. Laphen, 82002 J. C. Leadox, 113356 J. F. Lester, 2025272 W. E. Lever, 213424 J. H. Logan, 911813 A. J. D. Love, 535758 H. J. Love, 2115134 R. S. Love, 55086 J. Law, 1036 J R. Manlove, 414120 R. V. Martin, 733062 T. W. Maynard, 91005 M. Minhinnick, 507574 J. H. Moase, 3395 A. W. Money, 529612 C. Montgomery, 532250 R. G. Moore, 443052 F. Morel, 541880 P. C. A. Morin, 874960 F. L. Morton, 921055 C. McA. Munro, 511533 A. Murphy, 742855 J. H Murray, 509857 W. A. McClenaghan, 267573 R. G. McCullough, 1258005 J. H. McDonald, 531739 T. A. McDonald, 1030063 W. F. McDonald, 636066 H. J. MacDonell, 874420 H. McDougall, 445181 C. W. McRae, 624871 H. C. Miller, 53255 H. Mooney, 345943 C. McFarlane, 542020 M. B. McFarlane, 454668 J. McGee, 6243 M. C. McGowan, 348816 H. H. McIntyre, 688061 R. S. McKay, 2125326 C. McKyes, 639203 H. M. McLean, 524249 R. L. McQuarrie, 124665 C. W. McRitchie, 1003026 C. T. Nelder, 883211 A. D. Newton, 324938 C. C. Orth, 675339 E. C. Osborne, 445835 W. F. Osborne, 542137 R. A. Paget, 117462 J. Park, 892598 C. E. Parker, 9708 G. H. Parliament, 522697 W. Pearson, 426823 A. Peek, 2003538 A. D. Peister, 531772 H. B. Perrin, 766471 C. J. Phelps, 1003063 C. S. Philip, 530653 W. H. Picken, 55062 H. B. Pickering, 166145 G. C. Pinfold, 1024053 T. W. Pinnell, 487325 E. J. Pinnington, 53151 F. Pollard, 270653 N. S. Polson, 639138 W. C. Pridham, 539586 C. E. Proctor, 189766 F. G. Purdon, 113651 M. E. Purcell, 706811 F. H. Parker, 527637 N. R. Raine, 6377 G. A. Rawlins, 598 E. A Reid, 469231 H. D. Reid, 204583 T. H. Reid, 1073288 F. H. Richardson, 460150 W. Ridout, 74025 R. M. Robertson, 420226 W S. Robertson, 300915 W. K. Rutherford, 918664 R. G. Rutledge, 542439 D. R. Randolph, 2527337 J. R. Rennie, 435097 W. Sunderson, 302932 R. A. Scott, 190085 R. A. Scarles, 2341405 F. E. Secord, 639379 C. A. S. Smith, 733870 C. P. Smith, 908000 J. F. Smith, 2265672 P. Snarr, 186710 R. Spears, 86202 K. Stanford, 769625 J. J. Stewart, 92764 W. C. Stewart, 252327 R. Stock, 339545 A. Swenson, 2133 A. L. Swinden, 19916 H. Simpson, 21425 T. Spoors, 406628 D. Stotners, 475471 M. G. Saunders, 1261670 J. H Schofield, 346321 R. S. Scott, 540056 W. W. Snyder, 642249 T. H. Stewart, 285245 F. Tollervey, 529375 C. A. Taylor, 187729 G. W. Tee, 534680 B. H. Thomas, 234990 H C. Thompson, 540404 W. F. Tickle, 633563 G. M. Tinkess, 640131 W T Todd, 574625 E. C. Trevor, 769022 H. E. Tuck, 774009 R. J. Vanstone, 757224 T. F Wardell, 2025253 H. A Wark, 730359 K. E. Warren, 12662 J. W. Washburn, 681150 H. B. Watkins, 6868 F T Webster, 526765 A. E. Wells, 527670 W. Wheeler, 66042 W. A. White, 1003080 A G. White, 2265320 E. A. Wilkins, 524715 D. P. Williams, 874062 W. V. Willoughby, 797603 A. J. Wilson, 401643 J. E Wilson, 475240 J. T. Wilson, 502940 W. Witthum, 706381 W. Woodman, 541025 S. Wilson, 318923 E F. Winskill, 666842 H. A. Wilson, 422609 A. Wheeler, 415340 A. Youlden, 171402 C. R. Yates, 910144 M. H. Young.

The following Cadets are granted Hon. Commns. as Sec Lts. :—171058 E. J. Scammell, Jan. 11th; 225244 A. W. Hulbert, Feb. 20th; 351 E. A. Bacon, Feb. 26th; 239276 H. Clare, March 26th; 506156 H. P. McDonald, April 2nd; 320576 R. Milburn, April 11th; 270540 E. S. Careless, April 13th; 15536 H. E. B. Pheasant, April 28th; 43534 O. K. Utting, April 29th; DM2/178756 C. H. Clarke, May 1st; 310290 T. J. Shilvock, May 2nd; 156302 A. F. Merchant, May 4th; 60421 J. W. A. Dennis, May 5th; J. W. Arnold, May 6th; 8656 A. E. Martin, June 14th.

Col. (actg. Brig.-Gen.) K. Wigram, C.B., D.S.O. (Bt. Col (T./Brig. Gen.), Indian Army), relinquishes his commn. on ceasing to be empld., April 10th.

The following temp. Hon. Lts. relinquish their commns. on ceasing to be empld. :—W. Naylor, T. T. Sawday, June 16th; H. B. Peirce, July 17th.

AIR MINISTRY, July 22nd.

R.A.F.—The following temp. appointmt. is made at the Air Ministry : Deputy Director (Qrmr. Servs.).—Col. F. C. Halahan, C.M.G., D.S.O., M.V.O., July 1st, vice Lt.-Col. (actg. Col.) A. Fletcher, C.M.G., C.B.E., M.C.

The following temp. appointments are made :—Comdr.—Maj.-Gen. J. F. A. Higgins, C.B., D.S.O., A.F.C., July 22nd, and to be graded for purposes of pay and allowances as Maj.-Gen. whilst so empld.

Brig.-Gen. (Staff).—Lt.-Col. A. L. Godman, C.M.G., D.S.O., to be graded for purposes of pay and allowances as Brig.-Gen., Staff, May 1st, whilst empld. as Chief Staff Officer of an Area.

Group Comdrs. (Graded as Cols., Staff).—Lt-Col. (actg. Col.) R. H. Clark-Hall, D.S.O., July 16th; Lt.-Col. T. C. R. Higgins, C.M.G., July 1st.

Staff Officer, 1st Class (P.).—Maj. H. A. Michell, O.B.E., May 23rd.

Staff Officer, 2nd Class (T.).—Maj. N. F. D. Buckeridge, May 31st, vice Lt. F. Jewell.

Staff Officer, 3rd Class (P.).—Capt. L. E. Middleton, July 20th; Sec. Lt. G. D. Ashby, April 23rd; and to be actg. Capt. till April 30th (T.)—Lt. J. W. Sawyer, May 23rd; Sec. Lt. W. Bye, Feb. 2nd, and to be actg. Capt. till April 30th; Sec. Lt. H. Norrington, March 10th, and to be actg. Capt. till April 30th.

Air Attaché (Madrid).—Maj. (actg. Lt.-Col.) W. D. S. Sanday, D.S.O., M.C., May 2nd, and to retain the actg. rank of Lt.-Col. whilst so empld.

FLYING BRANCH.—Maj. R. S. Robinson to be actg. Lt.-Col. whilst empld. as Lt.-Col. (A. and S.), from April 1st, 1918, to April 30th (substituted for the notification in "Gazette," Aug 6th, 1918).

Capt. H. G. White to be actg. Maj. whilst empld. as Maj. (A), May 1st.

Capt. S. T. L. Greer, A.F.C., to be graded for purposes of pay and allowances as Maj. while empld. as Maj. (A.), May 11th.

Capt. H. G. Travers, D.S.C., to be graded for purposes of pay and allowances as Maj. while empld. as Maj. (A. and S.), May 1st.

Capt. W. G. Pigott relinquishes the grading for purposes of pay and allowances as Maj. (K.B.), May 5th

Lts. to be actg. Capts. while empld. as Capts. (A) :—J. Boyd, D.F.C., from Oct. 14th, 1918, to Nov. 21st, 1918; M. J. Langley, May 31st.

Lt. C. N. H. Bilney to be actg. Capt. while empld. as Capt. (A. and S.), May 31st.

Lt. O. R. Gayford, D.F.C., to be actg. Capt. while empld. as Capt. (O.), May 31st.

Capts. to be graded for purposes of pay and allowances of Capts. while empld. as Capts. (A'ship) :—R E. V. Jelliffe, July 2nd, 1918, to Jan. 31st; A. J. H. MacColl, May 22nd, 1918, to Jan. 31st.

Lts. to be graded for purposes of pay and allowances as Capts. while empld. as Capts. (A.) :—N. C. Buckton, F. H. Davies, C. J. S. Dearlove, G. E. Gibbs, M.C., W. J. F. Harvey, D.F.C., G. L. Hobbs, M.C., C. L. King, M.C., D.F.C., H. F. Nicholls, D.F.C., A. D. K. Perkins, May 1st.

Lts. to be graded for purposes of pay and allowances as Capts while empld. as Capts. (A. and S.) :—G. H. Boyce, E. J. L. Hope, May 1st.

Sec. Lt. H. C. T. Gompertz to be Lt., Dec. 23rd, 1918.

Sec Lts. to be actg. Lts. while empld. as Lts. :—W. W. Langdon (A.), J. H. McCaghey (S.), G. W. McDougall (A.), H. G. Pratt (O.), D. E. Spalton (O.), May 31st.

T. C. Beeken (Sec. Lt., W. Riding R.) is granted a temp. commn. as Sec. Lt. (S.), Oct. 19th, 1918.

P.F.O. A. K Smithells (late R.N.A.S.) is granted a temp. commn. as Sec. Lt. (A.), July 2nd, 1918.

The following relinquish their commns. on ceasing to be empld. :—Sec. Lt. (Hon. Capt.) A. W. B. Becher (Capt., K.O.Y.L.I.), March 20th; Lt. H. Holroyd (Lt., Sask. R.), May 20th; Capt. (Hon. Maj.) E. G. Joy (Maj., Cent. Ont. R.), May 31st; Lt. (Hon. Capt.) H. S. Quigley, M.C., D.C.M. (Capt., Can. Engrs.), July 3rd; Lt. A. F. G. Clarke (Sec. Lt., R.A.S.C.), July 4th; Lt. M. L. Doyle, D.F.C. (Capt., Quebec R.), Lt. E. J. Mills (Lt., Quebec R.), July 6th; Lt. A. E. de M. Jarvis, D.F.C. (Lt., E. Ont. R.); Sec. Lt. (Hon. Lt.) J. E. Palmer, D.C.M. (Lt., Can. M.G.C.); Lt. W. L. Rutledge, M.M. (Lt., Sask. R.), July 7th; Capt. R. Duncan, M.C. (Capt., Sask. R.), July 8th; Lt E. O. Houghton (Lt., C. Ont. R.), July 10th; Maj. R. W. Bruce (Capt. (temp. Maj.), Sask. R.), July 14th; Lt. E. Mills (Sec. Lt., R.H. and R.F.A.), July 23rd.

Transferred to unempld. list :—Sec. Lt. B. E. Wolstencroft, Jan. 23rd; Lt. J. C. Ruse, Jan. 29th; Lt J. L. Hill, Jan. 31st; Lt. E. V. D. Mathews, Feb. 1st; Lt. A. G. N. Jones, Feb. 9th; Capt. (Hon. Maj.) C. O. F. Modin, D.S.C., Feb. 11th; Sec. Lt. J. S. Harrison, Feb. 12th; Lt. W. E. Jackson, Feb. 24th; Lt. V. K. Hilton, Feb. 25th; Sec. Lt. J. G. Rodwell, Feb. 26th; Sec. Lt. J. Woods, Feb. 27th; Sec. Lt. C. H. Roy, March 5th; Sec. Lt. F. W. Ross, March 8th; Sec. Lt. A. Watson, March 9th; Lt. J. B. Hine, March 13th; Lt. (Hon. Maj.) (actg. Capt.) L. G. S. Reynolds, March 27th; Lt. H. E. Read, March 29th; Lt. (actg. Capt.) M. H. Rattray, March 30th; Sec. Lt. A. Lowe, Lt. T. J. R. Wilson, March 31st; Lt. W. E. Coventry, April 1st; Sec. Lt P. F. Hilborn, April 2nd; Sec. Lt. (Hon. Lt.) W. O'B. Rigden, April 3rd; Lt. H. J. W. Roberts, April 4th; Lt. H. V. Jellicoe, April 5th; Sec. Lt. A. S. G. Rodway, Sec. Lt. J. L. Spencer, April 9th; Sec. Lt. C. E. Woodger, April 10th; Sec. Lt. R. M. Mulrihill, Sec. Lt. R. V. Richardson, Lt. (actg. Capt.) W. G. Stevenson, D.F.C., Sec. Lt. H. C. Wood, Lt. L. E. Wood, April 13th; Sec. Lt. J. Ker, Lt. R. M. Roberts, April 15th; Lt. R. M. Hughes, Sec. Lt. G. H. L. Robertson, Lt. J. H. G. Womersley, M.C., April 16th; Lt. G. Rodgers, Lt. J. D. Scott, April 17th; Sec. Lt. B. F. J. Johnson, Lt. (actg. Capt.) F. C. Ransley, Lt. C. P. Wingfield (R.I. Fus.), April 18th; Sec. Lt. H. T. Jackman, Sec. Lt. P. Keeley, Sec. Lt. J. Kerr, Sec. Lt. D. A. McIntyre, Sec. Lt A. Raymond, Sec. Lt. A. Roberts, Sec. Lt. J. Robinson, Sec. Lt. A. B. Roche, Sec. Lt. A. R. Ross, April 19th; Sec. Lt. P. J. Mayton, April 20th; Capt. C. N. Russell, April 21st; Lt. C. T. Robinson, Lt. E. F. Rogers, Sec. Lt. W. St. C. Slater, Sec. Lt. E. S. W. Smith, April 24th; Sec. Lt. P. S. Hartley, April 28th; Sec. Lt. G. Russell, April 29th; Sec. Lt. J. J. Rowe, April 30th; Capt. W. O. Raikes, O.B.E., May 1st; Sec. Lt. F. Reay, Lt. H. M. D. Walker, May 2nd; Sec. Lt. J. C. Raine, Sec. Lt. W. Wilkinson, May 5th; Sec. Lt. E. Roberts, May 6th; Sec. Lt. B. C. Longmire, Lt. A. C. Reed, May 8th; Lt. L. H. Reeve, May 10th; Lt. D. M. Johns, May 11th; Lt. J. L. Roberts, Lt. A. T. Rose, May 12th; Lt. F. M. Carter, D.F.C., Sec. Lt. L. Hart, May 13th; Capt. A. E. H. Roberts, May 16th; Sec. Lt. J. A. C. Randall, Sec Lt. W. S. Roberts, Sec. Lt. H. A. Rolls, May 18th; Sec. Lt. A. T. Reid, Sec. Lt. C. V. Ronchi, May 19th; Sec. Lt. P. H. Devenish, May 20th (substituted for notification in "Gazette," May 23rd); Sec. Lt. R. O. Standing, May 21st (substituted for notification in "Gazette," May 20th); Maj. R. T. Leather, Sec. Lt. C. A. Winch (Rif. Bde.), May 23rd; Sec. Lt. J. E. Raistrick, May 24th; Sec. Lt. E. A. Roberts, Capt. W. Roche-Kelly, May 27th; Lt. A. H. C. Randall, Lt. A. P. Rapson, Capt. E. B. A. Rayner, Lt. H. P Roberts, Lt. H. A. Rodger, Sec. Lt. J. J. Rutter, May 29th; Lt. A. W. Rush, May 30th; Sec. Lt. L. H. Ransom, May 31st; Lt. F. H. Moore, Sec. Lt. W. Rowley-Redwood, Sec. Lt. H. C. Richards, Lt. E. J. Riley, June 1st; Sec. Lt. F. W. Mundy (Bucks. Yeo.), June 2nd; Sec. Lt. G. Paul, Sec. Lt. L. O. B. Russell, June 3rd; Lt. V. O. Hillyard, Lt. E. Reddaway, Lt. H. A. Rigby, June 4th; Sec. Lt. G. C. Jenkins, Sec. Lt. B. T. Rampling, June 5th; Lt. J. S. Hodges, Lt. J. N. K. Shepherd (Northants R.), June 7th; Sec. Lt. A. C. Ranshaw, Lt. H. B. Richardson, June 10th; Sec. Lt. S. C. S. Manning, Lt. H. S. Preston, June 11th; Sec. Lt. H. I. Marsh, Sec. Lt. (Hon. Lt.) A. B Radford, June 12th; Lt. B. N. Wright, June 13th; Sec. Lt. C. P. Miller, Sec. Lt. F. J. J. Paquet, Sec. Lt. N. Phillips, Sec. Lt. H. W. Phillipson, Sec. Lt. H. J. Pike, June 14th; Sec. Lt. E. Hulley, Sec. Lt. W. Leslie, Lt. K. M. Pennington, A.F.C., June 16th; Sec. Lt. E. J. A. Prosser, June 18th; Lt. F. S. Russell, D.S.C., Sec. Lt. F. W. R. Thomas, June 19th; Sec. Lt. H. D. Rainier, Lt. J. McK. Reilly, Lt. A. E. L. Skinner, M.C., June 20th; Sec. Lt. G. C. Robbins, June 21st; Maj. the Hon. G. de St. C. Rollo, Sec. Lt. F. D. Wemyss (R.G.A.), June 22nd; Capt. R. G. St. John, June 24th; Sec. Lt. T. M. Robertson, June 26th; Lt. V. Rendle, June 27th; Lt. A. C. McArthur, Sec. Lt. L. McIver, Maj. C. S. Ross, June 28th; Sec. Lt. L. W. Robins, June 29th; Lt. C. M McClean, June 30th; Sec. Lt. B. Lucy, Lt. G. P. McIntyre, Sec. Lt. W. A. Russell, July 1st; Sec. Lt. (Hon. Lt.) J. L. Hamilton, Lt. J. L. Henry, Capt. H. D. Hyde, July 2nd; Lt. H. E. C. Collins (Coldstream Gds.), Sec. Lt. T. W. Minihane, July 3rd; Lt. H. W. Owen, July 4th; Sec. Lt. H. Firstbrook, Lt. C. Gilham, Lt. (Hon. Capt.) B. B. C. E. Jameson, Lt. C. S. T. Lavers, D.F.C., Sec. Lt. H. N. Nicholls, Lt. V. Rodgers, Sec. Lt. S. H. West, July 5th; Sec. Lt. P. Crumner, Lt. G. W. Owen (R. War. R.), Sec. Lt. E. R. Walker, July 6th; Sec. Lt. R. E. Higginson, Lt. G. B Robeson, Capt. F. C. F. Walwyn, July 7th; Lt. L. W. Baker, D.F.C., Lt. A. A. Cullen, Sec. Lt. H. D. Dade, Lt. G. Davis, Sec. Lt. A. Kendall, Sec. Lt. F. Naylor, July 8th; Lt. R. I. Drake, Sec. Lt. H. G. Harper, Sec. Lt. H. McClunan, Lt. F. S. Passmore, Lt. R. S. Twigg, July 9th; Lt. W. G. Carmichael; Maj. J. L. Chalmers, M.C., Sec. Lt. E. I. English, Sec. Lt. W. G. Fleming, Sec. Lt. W. Harmston, Lt. H. J. C. Hartley, Capt. W. H. Hubbard, Sec. Lt. J. C. Mahaney, Lt. R. D. Molesworth, Sec. Lt. W. G. Moore, Lt. C. Murray, Sec. Lt. W. Pollock, July 10th; Sec. Lt. G. Gould, Lt. A. Koch, Sec. Lt. W. H. McCann, Sec. Lt. G. S. Reid, July 11th; Sec. Lt. W. F. Allen, Lt. G. W. Armstrong, Lt. L. A. Arnold, Lt. F. A. Black, Sec. Lt. R. H. Boyden, Sec. Lt. D. C. Burke, Lt. J. Davidson, Lt. J. D. Davis, Sec. Lt. R. F. J. Dixon, Lt. G. D. Eckardt, Sec. Lt. D. H. Edmiston, Sec. Lt. I. E. Erb, Sec. Lt. R. Fawcett, Sec. Lt. E. S. Ferguson, Sec. Lt. D. A. Fraser, Sec. Lt. F. Garnett, Sec. Lt. J. I. Gillmann, Lt. D. W. Gordon, Sec. Lt. (Hon. Lt.) G. D. Harle, Lt. R. H. Holman, Sec. Lt. F. J. Howarth, Sec. Lt A. E. Jones, Lt. J. F. M. Kerr, Capt. A. R. Knight, Lt. H. A. Kullberg, D.F.C., Sec. Lt. W. S. Lockhart, Sec. Lt. J. P. McClelland, Sec. Lt. E. McGeer, Lt. J. Magill, Sec. Lt. R C McHenry, Sec. Lt. K. V. McKitterick, Lt. F.

M. McLennan, D.F.C., Sec Lt. J. A. V. McRobert, Lt. J. Maitland, Sec. Lt. S. Markussen, Sec. Lt. C C. Marshall, Sec. Lt J. L. Marshall, Sec. Lt. R. C. Murray, D.C.M., M.M., Sec. Lt. K. G. Nairn, Lt. E. S. Noble, Sec. Lt. A. A. Oldham, Sec. Lt. R B. Palmer, Sec. Lt. R. H. Palmer, Sec. Lt. H. H. Parker, Sec. Lt. W. T. Parker, Lt. J. D. Patterson, Sec. Lt. T. A. Patterson, Sec. Lt. R. A. Pearce, Sec. Lt. H. E. Peer, Sec. Lt. F. C. Pepino, Lt. W. H. St. J. Perram, Sec. Lt. F. W. Presant, Lt. W. J. Prier, Sec. Lt. J. H. Pringle, Lt. J. J. Quinn, M.C., Sec. Lt. G. L. Stroud, Sec. Lt. E. T. Sutherland, Lt H. J. Watts, Sec. Lt. H. L. Wilcox, Lt. W. E. T. Williams, Sec. Lt. F. W. Wright, July 12th; Sec. Lt. E. W Harris, July 13th; Sec. Lt. R. L. Frace, Sec. Lt. D C. Girardot, Sec. Lt. F. L. McGuire, Lt. H. M. O'Loughlin, Sec. Lt. J. B. B. Paterson, July 14th; Lt. W. T. Fraser, July 15th; Lt. F. Latham, July 16th; Lt. E. S. Harricks, Lt. G. S. McKee, July 17th; Capt. J. B. Home-Hay, M.C., D.F.C., Sec. Lt. J. F. Jones, Sec. Lt. P. Lewis, Sec. Lt. W. W. McGill, Sec. Lt. S. McLeod, Lt. R. G. Martin, Lt. C. A. Mitchell, July 18th; Sec. Lt. R. E. W. Gwyther, July 19th; Capt. C. A. Beck, Lt. R. H. Topliss, July 21st; Sec. Lt. P. A. Herbert, July 22nd.

Maj. G. R. Elliott (Capt., 3rd Dn. Gds.) resigns his commn. and is permitted to retain his rank, July 22nd.

Capt. A. W. Williams, D.F.C., relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, July 9th.

Capt. G. Chadwick (Manch. R.) relinquishes his commn. on account of ill-health contracted on active service, July 14th.

The following Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank :—E. I. Sutcliffe (caused by wounds), May 20th; J. H. F. Baker, July 11th; C. F. Eckel, July 20th (substituted for notification in "Gazette," March 4th).

Lt. L. C. Galloway relinquishes his commn, being physically unsuited for the duties of pilot and observer, and is permitted to retain his rank, June 6th (substituted for the notification in "Gazette," Nov. 12th, 1918).

Lt. C. P. Tiptaff (Conn. Rang., T.F.) relinquishes his commn. on account of ill-health, July 20th.

Sec. Lt. W. C. Saville relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, June 5th (substituted for notification in "Gazette," Jan. 17th).

Sec. Lt. W. Coutts to take rank and precedence as if his appointment as Sec. Lt. bore date Dec. 2nd, 1918.

Sec. Lt. H. J. Bateman to take rank and precedence as if his appointment as Sec. Lt. bore date Jan. 1st.

The notification in "Gazette," Feb. 14th, concerning Flt. Cdt. T. C. Becken is cancelled.

The notification in "Gazette," Feb. 21st, concerning Capt. J. P. Inglefield is cancelled.

The notification in "Gazette," March 21st, concerning Lt. J. Valentine is cancelled.

The notification in "Gazette," April 1st, concerning Capt. C. O. F. Modin, D.S.C., is cancelled.

The notification in "Gazette," June 27th, concerning Capt. W. R. Read, M.C., A.F.C., is cancelled. The notification in "Gazette," May 27th, to stand.

The notification in "Gazette," June 27th, concerning Sec. Lt. T. C. Becken is cancelled.

The notification in "Gazette" July 4th, concerning Sec. Lt. (Hon. Lt.) P. H. West is cancelled.

ADMINISTRATIVE BRANCH.—Maj. L. A. Burrowes to be actg Lt.-Col. whilst empld. as Lt.-Col., May 1st.

Capt .H. A. Fordham to be Capt., from (S.O.), March 11th.

Sec. Lts. to be actg. Capts. whilst empld. as Capts. :—H. Gambier, May 1st; (Hon. Lt.) W. H. Hoile, from (T.), May 31st.

Lts to be graded for purposes of pay and allowances of Capts. whilst empld. as Capts. :—E. R. W. Close, May 1st; W. E. Berwick, July 5th.

Lts. to be Lts. :—A. L. Kidd, from (O.), May 3rd; W. M. Long from unempld. list, July 1st; L. A. Eggar, from (S.O.), July 5th.

Sec. Lts. to be graded for purposes of pay and allowances of Capts. whilst empld. as Capts. :—(Hon. Capt.) A. K. O. Cochrane, (Hon. Lt.) E. Meynell, D.C.M., May 1st.

Sec. Lts. to be graded for purposes of pay and allowances of Lts. whilst empld. as Lts. :—(Hon. Lt.) A. Colling, A. Lindsay, R. Parker, R. H. Sturgeon, May 1st.

Sec. Lts. (O.) to be Sec. Lts. :—R E Shears, April 17th; I. B. Boyce, June 11th.

The following Sec. Lts. (late Gen. List, R.F.C. on prob.) are confirmed in rank as Sec. Lts. :—H. C. Bird (substituted for notification in "Gazette," May 2nd), H. V. Hall, April 1st, 1918.

The following relinquish their commns. on ceasing to be empld. :—Sec. Lt. P. C. Cooper (Sec. Lt., Northants R.), April 20th; Lt. (Hon. Capt.) T. E. Gentles (Capt., Lab. Corps), June 21st; Capt. L. J. Torrie (Capt., Ind. Army), June 25th; Capt L. G G Groves (Lt., R.N.), July 8th.

Transferred to unempld. list :—Lt. A. L. Rhys-Evans, March 1st; Lt. (actg. Capt.) A. J. Rickie, March 5th; Lt. E. M. Prichard, March 26th; Lt. F. B. Rees, March 27th; Lt. R. C. Jones, Capt. (actg. Maj.) A. G. Wright, April 9th; Lt. L. T. Lewis, Sec. Lt. E B. Roughley, April 11th; Sec. Lt. S. D. E. Johnson, April 12th; Sec. Lt. P. F. Jefford, April 13th; Sec. Lt. A. N. Jones, April 15th; Lt. A. J. Johnston, April 16th; Lt. (actg. Capt.) F. J. Wood, April 18th; Lt. C. Wiseley, April 19th; Sec. Lt. E. H. Hamilton, Sec. Lt. A. C. Jessop, April 20th; Lt. W. J. Rawson, Sec. Lt. G. I. Simpson, April 22nd; Sec. Lt. E. A. Scanes, April 30th (substituted for notification in "Gazette," May 13th); Sec. Lt. G. P. Prescott, May 15th; Lt. C. B. Charlewood, May 20th (substituted for notification in "Gazette," May 27th); Lt. H. F. Storey, May 27th; Lt. W. M. Long, Lt. H. N. E. Row, May 28th; Sec. Lt. C. F. Rathbone, May 29th; Sec. Lt. T. C. Reddin, June 7th; Capt. H. C. Rippon, June 10th; Sec. Lt. R. C. Rosser, June 11th; Lt. N. S. Wolfendale, June 12th; Lt. J. Paisley, June 13th; Sec. Lt. G. P. Robinson, June 20th; Sec. Lt. F. S. Read, June 30th; Lt. O. Lawrence, Lt E. C. Richards, July 2nd; Lt. S. Roche, July 3rd; Sec. Lt. W. H. Newman, July 5th; Lt. E. L. Botham, July 6th; Capt. J. W. Mullen, July 8th; Lt. (Hon. Capt.) G. W. S. Dundas, Lt. J. E. Dixon, M.C., Capt. H. B. de Montmorency, Lt. W. L. Stead, July 10th; Sec. Lt. W. L. Clucas, Sec. Lt. H. C. Dille, Lt. C. J. Gillan, Sec. Lt P. H. Montgomery, Sec. Lt. J. C. MacDonald, Sec. Lt. G. J. Murphy, Sec. Lt. H. Mackay, Sec. Lt. S. W. C. Palmer, Sec. Lt. R. B. Smith, July 12th; Sec. Lt. R. K McLean, M.B.E., Sec. Lt. F. D. Pratt, Sec. Lt. J. W. Potts, July 18th.

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank :—W. R. Nichols, Jan. 15th (substituted for notification in "Gazette," Oct. 11th, 1918); W. J. Parke, contracted on active service, July 4th.

Sec. Lt. C. W. Probets resigns his commn. and is permitted to retain his rank, July 23rd.

The surname of Capt. H. Vyvyan-Robinson is as now described, and not H. V. Robinson as stated in "Gazette," May 30th.

The notification in "Gazette," June 24th, concerning Sec. Lt. (actg. Lt.) S. S. Vanderhook is cancelled.

The notification in "Gazette," Jan. 24th, concerning Sec Lt. J. R. Coulthard is cancelled.

The notification in "Gazette," March 7th, concerning Sec Lt. J. P. Wardle is cancelled.

The notification in "Gazette," April 25th, concerning Lt. E. D. Warburton is cancelled.

The notification in "Gazette," May 9th, concerning Lt. G. M. Smith is cancelled.

The notification in "Gazette," June 3rd, concerning Lt. H. C. R. Milward is cancelled.

The notification in "Gazette," July 15th, concerning Capt. R. S. Lindsell, O.B.E., is cancelled.

The notification in "Gazette," Oct. 18th, 1918, concerning J. W. S. Appleton is cancelled.

TECHNICAL BRANCH.—Lt.-Col. (actg. Col.) A. Fletcher, C.M.G., C.B.E., M.C., to be Lt.-Col., Grade (B), from Dep.-Dir., and to relinquish the actg. rank of Col., July 1st.

Sec. Lt. (Hon. Lt.) O. C. Lees to be actg. Lt.-Col., Grade (A), whilst specially empld., May 30th.

Capt. F. Holloway, O.B.E., to be graded for purposes of pay and allowances of Maj. whilst empld as Maj., Grade (A), May 22nd

Lt. J. A. Atkinson to be actg. Capt whilst empld. as Capt., Grade (A), from June 1st, 1918, to April 30th.

To be graded for purposes of pay and allowances of Capts. whilst empld. as Capts., Grade (A) :—Lt. J. Y. de la C. Elliott, Lt. H. F. Groves, Lt. W. A. Hancock, May 1st; Sec. Lt. E. T. W. Nockold (to May 30th).

Sec. Lt. J. R. Coulthard to be actg. Capt. whilst empld. as Capt., Grade (B), from Dec. 21st, 1918, to April 30th.

To be graded for purposes of pay and allowances of Capts. whilst empld. as Capts., Grade (B) :—Lt. J. J. Thompson, Lt. J. A. V. Welsh, Sec. Lt. W. C. Titheradge, May 1st.

Lt. (Hon. Capt.) R. Godfrey to be Lt., from (Ad.), April 22nd, 1918 (substituted for notification in "Gazette," Dec. 17th, 1918).

Sec. Lts. to be actg. Lts. while empld. as Lts., Grade (A) :—L. Freeborn, G. H. Winckworth, May 31st.

Sec. Lt. (Hon. Lt.) J. L. Miles to be graded for purposes of pay and allowances as Lt. while empld. as Lt., Grade (A), May 1st

Sec. Lt. C. E. Kitchenside to be graded for purposes of pay and allowances as Lt. while empld. as Lt., Grade (B), May 1st.

Sec. Lt. (Hon. Capt.) G. C Clark to be Sec. Lt. (Hon. Capt.). Grade (A), from Grade (B), Feb. 6th (substituted for notification in "Gazette" April 1st.).

Sec. Lt. J. K. Thomson to be Sec. Lt., Grade (A), from Grade (B), March 14th.

Sec. Lt. M. P. Stoneham to be Sec. Lt., Grade (A), from (Ad.), from Dec. 9th, 1918, to Feb. 1st.

Sec. Lts. to be Sec. Lts., Grade (B) :—F. G. A. Terrill, from (Ad.), Jan. 20th; A. Jukes, from (S.O.), May 1st.

J. W. S. Appleton is granted a temp. commn. as Sec. Lt., Grade (A), Oct. 16th, 1918.

Maj. W. R. Wills relinquishes his commn. on reversion to I.A.R.O., July 16th.

The following relinquish their commns. on ceasing to be empld. :—Lt. G. W. E. Baker (Lt., R. Berks. R.), June 22nd; Sec. Lt. (Hon. Lt.) C. C. Newton-Wade (Capt., K.O.Y.L.I.), July 8th; Lt. C. H. Shelton (Lt., R.H. and R.F.A.), July 21st.

Transferred to unempld. list :—Lt. (actg. Capt.) F. A. Roberts, Jan. 2nd; Lt. F. J. Kydd, Feb. 2nd (substituted for notification in "Gazette," March 28th); Capt. T. A. B. Rolfe, Feb. 28th; Lt. J. P. Rowell, March 7th; Lt. W. A. Robson, March 30th; Lt. (actg. Capt.) G. E. Phillips, April 1st; Sec. Lt (Hon. Lt.) L. H. Robinson, April 7th; Sec. Lt. R. J. D. Killick, Lt. G C. Rawlins, April 8th; Lt. C. W. Habrow, April 12th; Sec. Lt. W. K. Rainbow, April 15th; Lt. S. Williamson, April 18th; Sec. Lt. W. E. Langton, April 19th; Sec Lt. A. B. McCarthy, April 20th; Capt. L. H. Pritchard, April 22nd; Lt. J. H. Jennings, Sec. Lt. (Hon. Lt.) P. Rosie, April 25th; Capt. W. P. Wood, April 28th; Lt.-Col. S. Janson, Sec. Lt. (actg. Lt.) S. E. White, April 30th; Sec. Lt. (Hon. Lt.) V. C. Legge, Capt. A. E. Reed, May 3rd; Sec. Lt. A. F. Rae, May 17th; Sec. Lt. H. Haworth, May 21st; Lt. A. O. Roberts, May 22nd; Lt. L. I. T. Hewer, May 23rd; Lt. C. H. Panker, May 26th; Lt. (Hon. Capt.) J. H. Rutherford, May 27th; Sec. Lt. H. M. Russell, June 4th; Lt. (Hon. Capt.) F. J. Welch, June 7th; Lt. P. R. Hutchinson, June 10th; Capt. F. Reynolds, June 13th; Sec. Lt. E. C. Ponking, June 14th; Lt. R. W. B. Roughan, Capt. A. J. Roberts, Sec. Lt. (Hon. Lt.) P. H. West (E. Surr. R., T.F.), June 17th; Sec. Lt. S. King-Smith, June 18th; Sec. Lt. F. S. Rishworth, June 23rd; Sec. Lt. C. L. Booth, June 25th; Lt. G. L. Sly, Sec. Lt. (Hon. Maj.) G. F. Whitmore, June 26th; Lt. F. Hickman, June 30th; Maj. C H. A. Hirtzel, Lt. G. W. Holtom, Maj. S. J. Radford, Capt. B. V. Roche, July 1st; Sec. Lt. R. O. Griffith; Lt.-Col. H. Lee, Maj P. B. J. Murrell, July 8th; Lt E. G. McIntyre, July 9th; Sec. Lt. G. A. Edwards, Sec. Lt. (Hon. Lt.) A. M. Mulliner, July 12th.

Lt. T. A. Burns relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, July 21st.

Sec. Lt. (Hon. Capt.) U. Brown (Welsh R., T.F.) relinquishes his commn. on account of ill-health contracted on active service, July 20th.

Sec. Lt. H. P. Bolt is antedated in his appointment as Sec. Lt., Grade (A), Feb. 21st.

The surname of Capt. G. E. Lygo is as now described, and not "Liggs," as stated in "Gazette," April 1st.

The notification in "Gazette," March 25th, concerning Lt.-Col. (actg. Col.) S. E. Smith is cancelled.

The notification in "Gazette," March 11th, concerning Sec Lt. J. R. Coulthard is cancelled.

The notification in "Gazette," May 16th, concerning Lt. J. A. Atkinson is cancelled.

The notification in "Gazette," May 16th, concerning Capt. L. R. Prichard is cancelled.

The notification in "Gazette," May 30th, concerning Lt. J. A. Atkinson is cancelled.

The notification in "Gazette," June 24th, concerning Lt. G. Glen is cancelled.

MEDICAL BRANCH.—E. W Craig, M.C. (T./Capt., actg. Maj., R.A.M.C.), is granted a temp. commn. as Capt., Oct. 1st, 1918, and to be actg. Maj., with seny. from May 10th, 1918 (substituted for notification in "Gazette," Jan. 1st).

Transferred to unempld. list :—Capt. A. L. H. Rackham, April 3rd; Capt. F. Roberson, May 3rd; Capt. A. E. P. Parker, July 13th; Capt. J. Lawson, July 16th.

The notification in "Gazette," April 4th, concerning Capt. T. E. Mulvany is cancelled.

DENTAL BRANCH.—G. F. Charles is granted a commn. as Capt., July 1st (substituted for notification in "Gazette," July 4th).

The following temp. appointment, Women's Royal Air Force, is made at the Air Ministry :—

To be Asst. Comdt., 2nd Class.—Admstr. M. A. Thompson, M.M., March 21st.

The undermentioned temp appointments, Women's Royal Air Force, are made :—

To be Deputy Asst. Comdts., with rank of Admstrs., while so empld., if not already holding that rank.—Dep. Admstr. (actg. Admstr.) D. M. Fenn, Dep. Admstr. (actg. Admstr.) D. C. Muir, Jan. 22nd; Admstr. Mrs. H. Simeon, March 1st; Dep. Admstr. Mrs. G. Dickinson, April 16th;

Dep Admstr. (actg Admstr) E. O'Sullivan, April 29th; Dep. Admstr. Mrs. M. Cookson, June 17th; Admstr. Mrs C. T. Bayley, June 28th; Admtsr. M. S. Frood, June 30th; Asst. Admstr (actg Admstr.) Mrs. F. F. Pelly relinquishes the actg rank of Admstr. and the appointment of Dep. Asst. Comdt. on ceasing to be specially empld., June 20th.

ADMINISTRATIVE BRANCH.—The following Dep. Controller to be Admstr., with seny. from April 1st, 1918:—Miss M. S. Frood (Q.M.A.A.C.), June 30th.

The following to be Asst. Admstrs.—Miss E. B. Stewart, May 26th; Mrs. M. W. Buller, Miss I. Huleatt, June 17th

Asst. Admstr. E. E. Sharp is antedated in her appointment as Asst. Admstr., Aug. 8th, 1918.

The following to be Dep. Admstrs. while so empld.:—Asst. Admstrs. B. G. Anson, M. A. J. Howard, April 1st; D. M. Copland, M. E. Hamilton, April 17th; E. C Edwards, Mrs. E. B. Mullen, April 29th; G. E. Butler, May 1st; Mrs. E. C. B. Herbert Hall, M. A. Houghton, Mrs. A. F. Parsons, May 5th; F. P. Buckley, May 9th; A. L. Cooper, May 16th; M. H. Silcock, May 31st; G. A. Vernon, June 5th; M. W. Hamilton, June 13th; V. Carr-Owen, June 14th; M. C. Cadman, I. M. K. Clarke, June 16th; C. H. Peake, June 17th; A. M. Williams, June 18th; M. S. Fawcett, M. E. Higginbottom, June 19th; Mrs. F. F. Pelly, June 20th; M. V. Jones, June 23rd; J. I. G. Aitken, June 24th; Mrs. J. Christmas, June 25th.

The following to be Admstrs. whilst so empld.:—Dep. Admstrs. K. Daubeney, April 21st; F. H. Spinney, May 29th; Mrs. M. Gerard, June 12th; F. A. Laskie, June 30th.

The date of appointment of E. L. Smith as Dep. Admstr whilst so empld. is Feb. 4th, and not as stated in "Gazette," May 20th.

The following Off. resign their appointments on account of ill-health: Administrators.—Mrs. V. C. Goodison, May 3rd; N. C. Pasmore, May 15th.

Dep. Administrator.—A. S. Cowie, June 15th.

Asst. Administrators.—A. K. Jones, May 16th; J. E Williams, May 21st; H. L. Parker, June 10th.

The following Off. relinquish their appointments at their own request: Administrators.—A. M. Stewart, May 27th; E. M. Glidewell, June 16th.

Dep. Admstrs.—R. O. Dixon, April 19th; Mrs. D. Holmes-Scott, May 2nd; Mrs. B. M. Meadows, May 5th; E. M. Smith, May 16th; M. S. Huckett, May 22nd; A. J. Brodie, May 27th; Mrs. J. M. Cornwell, Mrs. H. G. Race, May 31st; Mrs. E. M. Hollis, June 5th; J. O Ramsbottom, June 17th; M. A. J. Howard, June 28th

Asst. Admstrs.—H. L. McClory, April 1st; J. Phillips, April 24th; G. M. Grahame, April 30th; Mrs. W. M. Forgan, M. K. Headlam, D Eardly-Wilmot, May 2nd; S. K. Anderson, D. L. Field, E. F. Matthews, May 20th; R. L. Blott, May 21st; D. N. Gerrie, M. K. Goodman, May 31st: T. G. Piper, June 2nd; G. M. Ennis, June 10th; R. Lawton, June 16th; Mrs. M. M. Allan, June 18th; P. F E. Moody, June 23rd; Mrs. H. Tom, June 25th; Mrs. E. L. Fooks, June 27th

The date of relinquishment of appointment of H. M. Seton-Karr as Asst. Admstr. is Jan. 26th, and not as stated in "Gazette," Feb. 28th.

The date of relinquishment of appointment of E. L. Knowles as Asst. Admstr. is April 15th, and not as stated in "Gazette," May 20th.

The date of relinquishment of appointment of E. R. Powell as Asst. Admstr. is May 2nd, and not as stated in "Gazette," May 20th.

MEMORANDA.—Lt. F. T. Court to be Hon. Capt., Dec. 29th, 1918. The following Overseas Cadets are granted temp. commns. as Sec. Lts., with effect from Feb. 15th, and relinquish such commns., with permission to retain the rank, from the day following termination of the standardised voyage in the case of those claiming immediate repatriation, and from the day following demobilisation in England in all other cases:—13/1002 O. A. Anderson, 171169 J H. J. Butler, 7418 F V. Buchan, 184495 V. P. M. Berry, 61213 R. T. Beynon, 172 D. H. Baldwin, 741 W. J. Beedle, 78457 A. O. Bilson, 3612 H. J. Butler, 662 G. F. Bensimon, 182765 C. Barton, 349166 W. H. E. Boswell, 186508 H. P. Baker, 179137 D. Barnes, 137898 W. B. Crawford, 137211 A. W. Crisp, 182586 M. W. Curtis, 107524 J. B. Duke, 182207 E. F. Earl, 179146 D. T Goodson, 2753 A E. Glover, 7/1668 B. F. Hayman, 183894 G. A. Vernon-Harcourt, 171140 O. M. M. Kay, 9684 B. W. Kirkby, 179489 J T. Knight, 43786 H. D. Lylian, 137940 I. D. Matcham, 176564 C. H. Mowat, 414553 C. R. Morrison, 202141 P. E. Norris, 77936 C. G. Oliver, 176593 P. R. R. Pope, 106104 F. V. Preller, 176804 L. Pryce, 464551 F. W. M. Rowe, 11/1495 F. W. Southgate, 154842 R. A. Sewell, 179174 W. L. Shield, 963336 G. C. Smith, 7/2224 A. W. Treseden, 751331 J. A. Trotter, 179176 C. J. Tanner, 183867 J. F Van Rensberg, 5770 N. W. Wade, 176397 H. F. S. Willis

The following Cadets are granted hon. commns. as Sec. Lts.:—316536 J. R. Wood, Feb. 5th; 11420 E. A. H. Chegwidden, Feb. 9th; 184387 J. H. White, Feb. 11th; 70532 J. F. M. Carruthers, Feb. 22nd; 77310 D. G. Allen, April 17th; 178099 V. S. de Lan, May 15th.

Capt. (actg. Maj.) R. S. Lindsell, O.B.E., relinquishes his commn. on ceasing to be empld., June 1st.

The following temp. Hon. Lts. relinquish their commns. on ceasing to be empld.:—J. S. Low, March 16th; T. H. Thresh, June 16th; F. H. Wheeler, July 16th.

Transferred to unempld. list:—Lt.-Col (actg. Col.) S. E. Smith (Glouc. R., T.F.), from (S.O.), March 18th; Lt. R. B. Longridge, from (S.O.), April 12th; Lt. C. J. Reynolds, from (S.O.), June 20th.

Sec. Lt. H. G. Keene to take rank and prec. as if his appointment as Sec. Lt. bore date Jan. 1st.

The notifications in "Gazette," May 27th, concerning D Morrison and C. D. Law are cancelled

AIR MINISTRY, July 25th.

R.A.F.—The following temp. appointment is made:—Staff Officer, 3rd Class.—Sec. Lt G. T. Armitage, May 23rd, and relinquishes actg. rank of Capt.

The surname of Lt.-Col. C. E. H. Rathborne is as now described, and not "Rathbone," as stated in "Gazette," July 18th.

FLYING BRANCH.—Capt. D. G. Donald to be actg. Maj. whilst empld. as Maj. (A.), May 1st.

Lt. J. A. Rutherford to be Lt. (A.), from (T.), Nov. 27th, 1918

The following relinquish their commns. on ceasing to be empld.:—Lt. (Hon. Capt.) W. L. Haight (Capt., W. Ont. R.), April 24th; Sec. Lt. (Hon. Lt.) F. J. Mawdsley (Lt., C. Ont. R.), May 13th; Capt. (Hon. Maj.) J. A. Dennistoun (Maj., Manitoba R.), June 9th (substituted for notification in "Gazette," June 24th); Sec. Lt. (Hon. Lt.) A. T. le F. Johnson (Lt., Lord Strathcona's Horse), July 17th.

Transferred to unempld. list:—Lt. H. R. Tyler, Jan. 26th (substituted for notification in "Gazette," March 25th); Lt. R. E. White, Feb. 25th; Sec. Lt. (Hon. Lt.) T. W. A. Ratcliffe, March 18th; Sec. Lt. (Hon. Lt.) G. F. A. Lewin, M.C., April 15th; Sec. Lt. E. R. Ludlow, April 18th; Lt. E. E. Biccard, Sec. Lt. C. Borcherds, Sec. Lt. R Russell, April 20th; Lt. G. R. Ranier, April 21st; Sec. Lt. W. J. N. Chalklin, April 24th; Sec. Lt. H. W. T Lewis, April 25th; Sec. Lt. T. K. Ludgate, April 27th; Capt. G. E. Wright, May 2nd; Lt T. H. Lewis, May 9th; Sec. Lt. L. J. Llewellyn, May 15th; Lt. H. F. Letten, May 17th; Lt. W. Ledlie, Sec. Lt. F. F. Leet (substituted for notification in "Gazette," May 23rd), May 19th; Lt. W. F. Leach, Sec. Lt. R. E. Leary, Sec. Lt. D. St. C. Leitch, Sec. Lt. N. Scott, Sec. Lt. S. B. Wright, May 20th; Capt. G. H. Jackson, Sec. Lt. R. G. Lobau, May 23rd; Lt. C. B Van-Leenhoff, May 25th; Sec. Lt. A. Wren, May 28th; Sec. Lt. A. J. Wilson, May 31st; Sec. Lt. E. G. Oliver, June 2nd; Lt. E. G. T. O'Kill (London R.), June 4th; Lt. F. H. Woolliames, June 5th; Sec. Lt. A. B. Lumb, Sec. Lt. J. C. Preston, June 7th; Capt. H. T. O. Windsor, M.C., June 11th; Sec. Lt. R. Morton, Lt. E. Shapard, D.F.C., June 13th; Sec Lt. J. A. le Grange, June 16th; Lt. T. A. Lloyd, June 20th; Sec. Lt. A. B. Smith, June 28th; Lt. J. C. F. Williams, June 29th; Sec. Lt. N. C. R. Roberts, Lt. C. A. Sperry, June 30th; Lt. R. D. de L. Miller, July 2nd; Sec. Lt. J. Anderson, July 5th; Sec. Lt. W. Williams, July 7th; Sec. Lt. A. S. Woodthorpe, July 8th; Capt. A. B. Watkins, July 9th: Sec Lt. J. Berry, Sec. Lt. P. G. Deedes, Lt. L. Randles, Sec. Lt. J. G. F. Van-Rooyer, July 10th; Sec. Lt. W. E. Ross, July 11th; Sec. Lt. A. McG. Anderson, Sec. Lt. W. R. Baskerville, Sec. Lt. J. A. Bell, Sec. Lt. W. C Birt, Sec. Lt. H. Board, Lt. H. J. L. Botterell, Lt. B. M. Bowyer-Smith, Sec. Lt. W. E. Campbell, Lt. A. H. Chisholm, Sec. Lt. F. D. Clarke, Sec. Lt. L. W. Deserres, Sec. Lt. G. E. Douglas, Sec. Lt. T. A. Duval, Sec. Lt F. G. Ellis, Sec. Lt. F. W. Ervine, Sec. Lt. S. P. Fall, Lt. T. D. Fitzgerald, Sec. Lt. E. G. Fullerton, Sec. Lt. V. Graham, Sec. Lt. A. G. Gribble, Sec. Lt. J. Laxdal, Sec. Lt. J. G. G. Layton, Lt. H. W. Le Blond, Sec Lt. L. W. Lloyd, Sec. Lt. A. D. Lockhart, Sec. Lt. C. W. Loucks, Lt. S. H Love, Sec. Lt. R. D. Lovesey, Sec. Lt. O. B. S. Maria, Sec Lt. H. E. Nash, Lt. R. Ritchie, Lt. J. A. Ruggles, Lt. E. C. Shurley, Sec. Lt. L. B. Sifton, Sec. Lt. J. L. Stevenson, Sec. Lt. E. L. Vetter, Sec Lt. W. A Waite, Sec. Lt. R. M. Walkey, Lt. R. S. E. Walshe, Sec. Lt. W. P. Wemple, Sec. Lt. D. O. Wigle, Sec. Lt. J. W. Wilson, Capt. H. A. Wood, Sec. Lt. S. E. Wood, Sec. Lt. W. R. Young, July 12th; Sec. Lt. G. S. Deane, Lt. C. H. Drew, A.F.C., Sec. Lt. A. Nisbett, Capt. B. H. Turner, Sec Lt. G. F. Ward, July 13th; Sec. Lt. R. O. Cutler, July 14th; Sec. Lt J. M. Letson, July 15th; Sec Lt H. C Grout, Sec. Lt. H. C. Lloyd, July 16th; Sec. Lt. H C. Curtis, July 17th; Lt. A. E. Lundie, July 18th; Lt. (Hon. Capt.) H. S. Openshaw, July 24th; Sec. Lt. J. B. McMeekan, July 25th.

Lt. J. E. Hunt relinquishes his commn. on account of ill-health, and is permitted to retain his rank, July 20th.

Lt. H. S. Round to take rank and precedence as if his appointment as Lt. bore date April 1st.

Sec. Lt. (Hon. Lt.) J. C. Ambler (Lancs. Fus., T.F.) relinquishes his commn. on account of ill-health, July 10th.

The rank of Lt. W. Wilkinson is as now described, and not "Sec. Lt." as stated in "Gazette," July 22nd.

The surname of Lt. E. C. Cockburn is as now described and not "Cockwin," as stated in "Gazette," March 25th.

The notification in "Gazette," March 21st, concerning Sec Lt. C. A. Newham is cancelled The notification in "Gazette," April 29th, to stand.

The notification in "Gazette," April 1st, concerning Sec Lt. A. J. Newnham is cancelled.

The notification in "Gazette," April 4th, concerning Lt. J. Milton is cancelled. The notification in "Gazette," June 3rd, concerning Lt. L. M. McAab is cancelled. The notification in "Gazette," July 8th, to stand.

The notification in "Gazette," July 15th, concerning Lt. H. S. Symonds, is cancelled.

ADMINISTRATIVE BRANCH.—Lt. G. D. Daly to be Lt., from (A.), June 30th (substituted for notification in "Gazette, July 1st).

The following are granted temp. commns. as Sec. Lts.:—C. H. Gauntlett, C. H. Haward, P. G. Whittle, July 21st

The following relinquish their commns. on ceasing to be empld.:—Sec. Lt. (actg. Lt.) A. V. Hastings (Lt., R. Dublin Fus.), Feb. 10th): Lt. H. Hemingway (Lt., Midd'x R.), Feb. 17th; Lt. (Hon. Capt.) J. E. A. O'Dwyer (Capt., Notts and Derby R.), July 25th.

Transferred to unempld. list:—Sec. Lt. A. J Newnham, Feb 5th: Lt. J. Milton, March 21st; Sec. Lt. T. F. P. Llewellyn, April 17th; Sec. Lt. (actg. Maj.) P. Waldron, April 30th (substituted for notification in "Gazette," July 8th); Sec. Lt. C. Wormleighton, May 2nd; Sec. Lt. C. J. Woods, May 8th; Lt. W. E Wright, May 26th; Lt. D. G. Lewis, May 29th; Lt. G. Walker, June 1st; Lt. (Hon. Capt.) E. Newman, June 13th; Capt. C. F. Newington, June 14th; Sec Lt. A. G Bazley, Capt. C. P. Cowper, July 5th; Sec. Lt. D. H. Woodhouse, July 8th; Sec Lt. F. C. Logan, Lt. C. E. Walton, July 10th); Sec. Lt. D. H. Green, July 12th; Sec. Lt. P. J. Mackintosh, July 16th; Capt. H Wild, July 24th

The rank of Lt. T. S. Millar is as now described, and not as stated in "Gazette," April 1st.

The notification in "Gazette," May 13th, concerning Sec. Lt. G. H. Lilley, is cancelled.

TECHNICAL BRANCH.—Sec. Lt. (Hon. Lt.) T. Thomson to be actg. Capt. whilst empld. as Capt., Grade (B.), from Dec 2nd, 1918, to April 30th.

Sec. Lt. (Hon. Lt.) T. Thomson to be graded for purposes of pay and allowances of Capt. whilst empld. as Capt., Grade (B.), from May 1st, to June 30th.

The following relinquish their commns. on ceasing to be empld.:—Maj. C. A. Shove, O.B.E. (R.N.), July 1st; Lt Col A. D. Carden, D.S.O. (Maj., R.E.), July 11th.

Transferred to unempld list:—Sec. Lt J. C. Adams, April 1st; Sec. Lt. A. J. Maguire, April 16th; Lt. R. E. Wakelin, May 3rd; Sec. Lt. Wm. Wood, May 30th; Sec. Lt (Hon. Lt.) F. C. Winby, June 3rd; Capt. J. M. Furnival, Sec. Lt. (Hon. Lt.) E. M Wood, June 30th; Lt. W. G. Andrews, Sec. Lt. K. G. Courage, July 4th; Sec. Lt. E. C. Bolton, Lt. W. D. Buchanan, July 5th; Sec. Lt. N. B. Capes, July 12th; Capt. A. P. Mackilligan, July 23rd.

MEDICAL BRANCH.—Capt. R. L. Roe to be actg. Maj. whilst empld. as Maj., July 4th.

T. C. Backhouse (Capt., A.A.M.C.) is granted a temp. commn. as Capt., July 1st.

Transferred to unempld. list:—Maj. H. Pritchard, June 1st; Lt. P. E. Williams, June 13th; Capt. J. L. Waddell, July 9th.

MEMORANDA.—The follg. Cadets are granted Hon. Commns. as Sec. Lts.: 183877 F. R Bungay, 184751 J. Cavill, 182586 N. W. Curtis, 184005 T. N. Clarke, 182107 R. S. Elworthy, 182588 O. L. Edic, 184516 R Harrison, 183859 F. H. Harford, 183886 T. W. Mills, 180499 C. L. Melbye, 182236 N. H. Miller, Feb. 12th; 177683 W. H Bushe, Feb. 13th; 178515 J. K. Aspinall, S/4/250009 R. Blackstock, 76544 A. Barrow, 128117 J. Brown, 178038 S. V. Cawse, 18652 G. E. Downing, 184419 G Geddes, 181989 J. G. Gradidge, 181927 H. Hewitt, 178786 F. Jenkinson, 181930 H. Kelly, 33374 A. H. Lawrence, 137796. C. C. Sugden, 291972 T. S. Stephenson, 177837 A. Stephen, 180312 A. Widdowson, Feb. 17th; 203101 R. H. Barbreeke, 110374 M. H. Jones, Feb. 19th; 178661 E D. Adamson, 180552 S. C. Grey, 178604 J. S. Kennedy, 177577 J. L. Lawson, 27274 W. C. Mason, 178033 C. F. Wild, E. W. Wale, Feb. 20th; 163791 J. S. Graham, Feb. 22nd; 234210 W Atkinson, 128998 E. W. Burbidge, 37683 A. P. Beechey, 383376 F. G. Christmas, 3024 A. W. Jeffs, 178824 F. C. Kappey, 300306 A. S. Powell, W. H. Treadwell, 178974 W. F. Wright, Feb. 24th; 177040 W T. Adkins, 178662 C. F. Allman, 177392 A. Amy, 28704 T. H. Babington, 97311 V. B. Lee, 187072 H. Clark, 305652 L. Dear, 149120 J M. Fowden, 178073 A. J. Futlet, 176661 M McL. Forbes, 216004 S. W. Gray, 137492 A. Haig, 115201 R. B. Ivey, 128039 J. H. McKinnon, 52520 J. H. Mantell, 117728 R. E. Mee, 69127 A. M. Nias, 178326 H. Palmer, 6458 F. W. Roberts, 412309 A. J. Strawhorn, 178640 J. R. Stuart, Feb. 25th; 322818 L. W. H. Annal, 121458 C. W. Cuddeford, 59717 A. Littlefield, 110731 A. D. McLeish, 128796 J. J. Whitehead, 5/97106 T. W. Maughan, 177090 R. R. Mills, 137664 H. P. Payne, 28027 G. H. Wood, Feb. 26th; 178663 L. W. Brownlow, 140430 R. L. Bacon, 87667 W. H. McMenigall, 176260 H. A. Phillips, Feb. 27th: 33125 T. I. Alcock, 128808 F. A. Barnes, 32289 C. Daseien, 328761 H. H.

Braund, J. F. Clifton, 54206 A. Day, 137168 D A. Goulsen, 241728 C. T. Medley, 050042 R. J. Pettifer, R. G. Millar, 214058 A. W. Walters, 64405 E. L. Wyate, Feb. 28th; F. J. Sullivan, A. F Whittle, March 2nd; 177148 W. McK. Auld, 179533 G. C. Blowfield, 540627 A. Hore, 183127 E. Kilroe, R. King, H. Triance, March 3rd; W. M. Box, 100586 A. McC. Bell, 512486 H. H. Bullivant, 97130 H. Blackburn, 177709 I. Carter, 178240 C. G. Cross, 128825 F. Cochrane, H. R. Clarkson, 175275 K. Grice-Lloyd, 241246 A. McGhie, 176982 L. Hargreaves, 179045 H. Hawkins, 211186 W. Kirby, 106103 E. H. Norvall, 178463 H. Kees, 206026 R. G. A. Rae, 406728 L. C. Simmonds, March 4th; 175490 W. J. Black, 249552 T. A. Clarke, 59663 J. Cowing, 355838 H. Johnstone, March 5th; 137141 S. F. Blanch, 4616 W. H. Cheverton, G. W. Dunn, 183095 D. G Fraser, 182838 H. S. Johnson, 76619 G. Moore-Bowman, G. W. Ness, 183380 J. W. Rota, 15226 E. Raby, 154946 H. A. Ruffman, 2706 A. W. Skeggs, 313360 C. H. Turland, 127516 B. Warnes, March 6th; 189558 J. Grant, March 7th; 178759 H. Baldry, 244122 L. F. Davies, 137538 H. J. Lathe, 9997 C. McConnachie, W. J. Randle, 1/28281 C. H. Robb, 177227 R. Smith, March 10th; 135952 H. E. Blades, 30296 C. H. Gardner, 135707 G. H. Miller, 511566 H. T. Shrubbs, March 11th; P/3074 E. D. Ayre, 55785 E. H. Brown, 17033 A Barnett, 178712 J. Dolben, H. Hill, 45928 C. A. A. Jones, 178052 H. W. Littleales, 179213 E. T. Prior, 127761 R. Wright, March 12th; 95336 J. Begie, 2111 R. R. Brown, M/54571 L. Brown, 137328 E. Demsey, 25597 J. C. E. Drewitt, 110098 J. Elfick, 137383 S. Hayward, 178449 I. Javal, E. R. Mouncher, 321997 H. Wray, March 31st, 264511 T. L. Bonen, 94061 A. E. Curtois, P.F.O. W. E. W. Holder, H. Lord, 154650 C. W. Smith, 42096 G. Watkins, 76294 G. Whitaker, March 14th; 182126 P. J. H Atkinson, 181239 T. P. Caister, 182152 M. P. Croxford, A. Humphreys, 182294 C. D. Merriman, March 15th; 179711 G. J. Burkill, E. J. Pullen, March 17th; W. E. Dyer, March 18th; 128652 S. Kingston, 177173 R. L. Levers, 13823 W. H. McCarry, 137423 W. J. Mills, 182217 H. H. Oldfield, M Rubeck, 117738 C. M. L'Epine Smith, March 19th; 128396 R. G. Littlewood, March 20th; 534778 T. R. Bennett, 4149 G. H. Edney, 11044 S. G Henderson, 190110 F. W. W. Harrold, 107497 T. Hedgson, 37498 W. A. Malpass, 16455 H. N. Miller, 137430 R. V. McArdle, 175826 L. V. Pearson, 2/051918 J. McB. Steele, 249647 C. H. Scutter, 17758 H. Taylor, 32625 E S. Walmsley, 175015 C. F. Wasliand, 105188 E. W. Wright, 128548 E. P. B. Wilson, March 21st; 526511 C. A. O'Dennell, March 22nd; 52061 J. Regis, March 23rd; 180406 R. C. Arnold, 177765 J. B. P. Burrows, 117916 R. W. Chiles, 177401 S. H. Clark, 46599 E. Charleon, 178099 C R. Cosser, 2264 C. E. Connor, 175505 J. Corstorphine, 179481 R. M. Easton, 178683 W. L. Fletcher, 3981 F. Fogles, 178254 R. L. Guest, 8201 E. L. Hadler, 178530 A. C Harris, 13036 G. W. Harding, 237672 E. H Henton, 110047 L. G. Jeffrey, 180494 H. C. Kirby, 156400 H. E. J. Kingston, C. Lowe, 117311 N. Lees, 50559 R. Marriott, 156561 C. L Millar, 176383 W. D Sutton, 110410 R. J. Veryard, March 24th; 178682 D. S. Edgar, 178657 D C. Pollock, T4/238637 W. T Stantiall, 128733 J. S. Veal, 115076 W. J. Wright, March 25th; 60049 E. B. Gudgeon, 278733 I. McD. Miller, 248656 R. W. Townson, 20/5854 E. J. Whitbourne, 13/58386 S. A. Woodrow, March 26th; 10/156406 F. W. Unstead, March 27th; 137148 A. L. Brice, 5824 E. B Bayley, 218928 L. W. Barber, 114595 E. J. Hutson, 137388 H G. W. Hill, 496228 A. R. Pearce, 137466 H. L. Trafford, March 28th; 232543 S. B. C. Crick, P/305564 F. W. Hewlett, 182093 F. S. Purchase, 184794 O D. B. L. Perrin, March 29th; A. G. Arthur, 128811 D. D. Bolliver, 137194 F. S. Edwards, 213492 A. E. Ingledew, 137448 W. W. Inskin, March 31st; 223201 W. N. Burton, 36614 J. P. Clarke, April 1st; P. V. Bastin, 178251 H. H. Freeth, 504965 H. W. Hailstone, W. E. Lawton, 176724 S. B. Muller, April 2nd; 117488 R. W. Waterhouse, April 3rd; 171629 P. B. Burgwin, 24423 H. Dearden, April 7th; M2/051787 J. Bruce, 479908 H. R. Buddery, 180812 W. E. Clark, 52920 J. H. Chadwick, 69323 L. F Clarke, 511569 E. W. H. Challice, 106635 H. A. Davey, 11408 J. Everett, 128370 H. O. Faircloth, 185587 F. McBain, 79005 H. G. Marriott, 240122 A. Smith, S4/086007 J. G. Smart, 3/3529 J. E. Teare, 117339 W. V. Woodward, April 8th; 176440 C. J. Stevens, April 9th; 132522 S. W. Shaw, April 15th; 158104 H. Harris, 180720 A. Oxley, 936 R. Stimpson, W. W. Tolman, April 17th; 9339 C. A. Hillary, 181059 A. S. Pursell, 181866 W. J. Plaistowe, 181769 E. L Rose, 183225 A. V. Tickering, April 23rd; 10060r T. H. Houghton, April 24th; 162151 E. G. A. Cory, April 26th; 25982 A. G. Kelty, April 28th; 181325 A. M. Thompson, May 1st; 182127 H. W. Atkinson, 183852 G. C Botts, 181866 G. W. Breakspeare, 182148 T. T. Bielski, 184497 J. J. Boulle, 106809 W. Metson, May 6th; 316339 F. R. McCrea, 513993 F. C. Simpson, May 10th; 339166 W. H. Boswell, 540470 E. Boucher, 5647 J. N. Cartier, 339447 G. B. Finlay, 1999 W. G. Greaves, 430190 W. W. Pettigrew, May 19th; 175763 W. S. Mills, May 24th.

Temp. Hon. Capt. J. C. Pape relinquishes his commn. on ceasing to be empld., May 1st.

Transferred to unempld list:—Lt.-Col. (actg. Brig.-Gen.) J. A. Houison-Craufurd, C.M.G., C.B.E., June 1st; and is granted the hon rank of Brig.-Gen.; Lt. E. S. Pearse, July 24th.

The notification in "Gazette," July 11th, concerning Lt Col. J. A. Houison-Craufurd, C.M.G., C.B.E., is cancelled.

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The Air Ministry are sending a mission to Germany to see that the provisions of the Air Clauses are duly executed. The mission will be under the command of Brig.-Gen. E A. D. Masterman. Colonel Smyth-Piggott, R.A.F., is the second in command, and among the other officers are Major Babington, R.A.F., Major Fleming, R.A.F., and Major Teed, R.A.F. The mission is said to number nearly a hundred officers.

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The Air Ministry announced on July 28th that the Secretary of State for Air has approved a reorganisation of the Department of the Secretary to the Air Ministry, one of the principal objects of which is to provide more fully for the co-ordination of the work of the Department.

Under this reorganisation Mr. C. R. Brigstock and Mr. J. A. Webster, D.S.O., who had been transferred from the Board of Trade, have been appointed Assistant Secretaries.

* * *

Major-General Sir Frederick H. Sykes, Controller-General of Civil Aviation, was presented by General Duval, on behalf of President Poincaré, with the Cross of the Legion of Honour while attending a meeting of the International Aeronautical Commission in Paris recently.

* * *

A Handley Page Service machine, with a crew of two British officers and two mechanics landed at the Californie Aerodrome, near Nice, on July 23rd, when en route for Egypt. The machine had come from Istres, midway between Arles and Marseilles.

* * *

The Portuguese Government steamer "Sines" landed three British Aviators at La Coulette, the port of Tunis, on July 24th. Their machine had come down at sea some sixty miles from Malta owing to engine failure.

* * *

The Caproni aeroplane F.304 proceeding from London via Marseilles to Egypt fell into the sea off the coast of Italy, near Cape Mesco, owing to engine trouble, on the evening of July 26th.

The crew consisted of two English officers and two serjeants. The pilot, Lieut. Collinge, was fastened in the machine, and though he was eventually released by the efforts of his companions, who swam ashore, he expired soon after reaching the land.

* * *

General Corvisart, the French Military Attaché, Commandant Sablé, the French Attaché, and his Aide-de-camp; and Lieut. Alfred F Sinisoff, of the Esthonian Army, a member of the Military Mission, visited No. 1 Aircraft Constructional Wing on July 26th. They were accompanied by Major-Gen. Philip Game, Director of Training and Organisation in the R.A.F.; Colonel T. Gerrard; Major Moore, C.O. No. 1 Constructional Wing; and Sir Willoughby Dickinson.

The headquarters of No. 1 Constructional Wing are in the Camden Road, Camden Town, N.W., and mention has already been made of this training wing, which is affiliated to the 19th Bn (T.F.) County of London Regt.

The guests were conducted over the building in order that they might see how instruction is given.

Sir Willoughby Dickinson said that quite apart from the military needs in connection with aviation, which would always be heavy, there would be a great necessity for men to qualify in the art of flying for commercial and other purposes. Although the aircraft school which had just been established was only in the nature of an experiment, they were certainly justified in believing that it would be attended with big results. There must be thousands of boys longing to get up into the clouds, but before they could achieve that ambition they must learn aeroplane construction and master the science of aircraft.

Major-Gen. Game said he could see a friendly rivalry between the School and the Air Ministry in obtaining boys. The Air Ministry wanted as many boys as they could get between 15 and 16, and were willing to train them for three years. It would, therefore, be an enormous help if the School could assist the Air Ministry in this direction by instructing boys in aircraft.

Major Moore said they were also going to take up the teaching of wireless telegraphy at the School.

* * *

The South-Western area of the Royal Air Force held a successful sports meeting at the Victoria Park, Salisbury, on July 23rd, attracting large crowds of spectators. Some excellent racing was witnessed, giving promise of satisfactory displays in the forthcoming championships meeting which is to be held at Stamford Bridge.

Lieut. Paul (Gosport) and Sec. Lieut. Marsh (Blandford) tied in the high jump at 5 ft. 2½ ins.; and an excellent race for the mile resulted in a win for Acting-Corporal Nicks in 4 min. 50 secs.

Lieut. Price won the 100 yards in 10 1-5 sec., and the 100 yards open was secured by Serjt.-Major Bolt (1st Balloon Training School) in 10 3-5 sec. Lieut. Shaw (Gosport) proved an easy winner in the half-mile race in 2 mins. 10 secs. The one mile open was a splendid race, and was won by Lieut. Barr with comparative ease in 4 mins. 57 1-5 sec.

The long jump was secured by Capt. Scott (Boscombe Down) with 19 ft. 6 ins. Serjt.-Major Bolt won another good race in the 220 yards, which he won in 25 secs. Acting-Corporal Rider (Southern Aircraft Repair Depot, Farnborough) ran strongly in the three mile race, and won easily in 16 mins. 34 3-5 secs.

Lieut. Fraser won the hurdles, and Serjeant-Major Bennett (Lee-on-Solent) secured the 440 yards, after keen contest, in 55 2-5 secs.

The Southern Aircraft Repair Depot team from Farnborough, who recently competed at Olympia, and were defeated in the semi-final of the tug-of-war by Gordon Highlanders, exhibited good form, and, pulling strongly, beat Gosport in the final by two pulls to nil. A superb display of jumping was given by Mr. Singer, of Corsley.

The Warminster silver challenge cup, presented by friends in Salisbury to the Station winning most points, was secured by the Southern Aircraft Repair Depot, Farnborough; and the handsome cup presented by Brigadier-General Longcroft to the best individual competitor was awarded to Serjt.-Major Bolt.

The Earl of Athlone started the Windsor Marathon Race on July 26th in connection with the Royal Air Force sports at Ascot. The Marathon was won by Aircraftsman Ford, who crossed the tape at Ascot 41 min. after the start. Princess Alice, Countess of Athlone, distributed the prizes.

FRANCE.

The following is from a Paris correspondent:—

Rear-Admiral Violette has gone to Saint Raphael to study the question of formation of aviation uunits, and in particular that of the escadre (an escadre is about 200 machines). According to the result of his investigation, this unit of formation may be retained or suppressed.

On the 19th inst. Captain Marchal left St. Raphael to fly to

Bizerta, in Tunis, where he landed at 10.40 a.m. He flew a Nieuport Tellier machine with a 350 h.p. "Sunbeam," and carried Victor Giordan, his mechanic, as passenger. He intended to return the next day, but at the moment of writing no further news is to hand.

It is now understood that the French authorities have recognised the Adjudant Casser as an ace. Adjudant Casser has brought down a minimum of ten enemy machines. The authorities have only just discovered the graves of two aviators brought down by Casser in the spring of 1918. No definite information could be obtained before.

In a rather inglorious manner Lieut. Lemaitre has arrived at Dakar on board a tug, "La Calombe," having with him his passenger, Agt. Guignard, and his machine.

It will be remembered that Lieut. Lemaitre was forced to descend near Port Etienne, and crashed. Spares reached him here, but the necessary machines and tools to effect the repairs were not available, hence the reason for the sea journey to Dakar, where it is hoped the necessary mechanical equipment will be found.

GERMANY.

The following has been received from the Danish correspondent of THE AEROPLANE :—

The Bavarian officer-pilot, Lieut. Diemer, has carried out a number of altitude flights on a D.F.W. biplane scout, reaching first, with full load and a Benz motor, 23,250 ft. by a speed of 160 km., improving later this performance various times, having the power plant replaced by a B.M.W. motor, attaining the last time on June 17th a height of 9,620 metres (29,000 ft.) in 2 hours 4 mins.

On July 25th, 1918, this same officer flew, as technical officer of the Bavarian Flying School V., with a light two-seater biplane of the Halberstadt LCII model, equipped with a Bavaria IIIa 185 h.p. motor, and loaded with 80 kilos., from Augsburg to Doeberitz by Berlin in 4 hours 2 mins., on a petrol consumption of 84 litres. This is claimed to compare favourably with motor vehicles for service economy, as it is claimed that a 14/30 h.p. touring car (14 b.h.p., 30 i.h.p.) would need 12 to 14 hours and at least 120 litres for the same distance.

SCANDINAVIA.

The following has been received from the Danish correspondent of THE AEROPLANE :—

The Swedish Army has obtained a credit of 90,000 kronen for increasing the Swedish Air Services by buying foreign machines.

Both a Danish Army and Naval party have gone to Germany to inspect the cheap offers for aircraft with a view to acquiring aeroplanes for each service to the amount of £5,500 in German mark value, granted the Traffic Office by Parliament for air service trials. While the Army officers have so far acquired nothing, the Naval commission bought, beside a number of Benz engines, four Friedrichshafen biplanes, with which regular daily flights have been carried out during the last month both with and without mail, on the route between Copenhagen and Stege, to be extended to Nakskov, with only one mishap so far, one seaplane overturning while being brought after landing in a storm.

At the suggestion of the naval air station Captain-Lieut. v. Reppert has paid a flying visit to demonstrate the Brandenburg scout monoplane.

U.S.A.

During June a comparison of the casualties of the U.S. Air Service was issued at Washington, and the following table gives rates during the various periods mentioned :—

	Number	Hours Flown per Fatality
Training Fatalities—		
April 3rd to June 12th, 1919	8	2380
Other Fatalities—		
April 3rd to June 12th, 1919	14	462
All Fatalities—		
June 1st to November 11th, 1918	156	3149
November 11th to January 2nd, 1919	42	1877
January 2nd to April 3rd, 1919	21	1327
April 3rd to June 13th, 1919	22	1160

The U.S. War Department issued an announcement on June 30th regarding the number of aeroplanes in the U.S. Army Air Service. The following table from an American source shows the exact number of machines available for all purposes :—

Type	Designed for	Number in commission	In storage with motors taken out
D.H.4	Observation day bombing	1191	842
Spad	Pursuit	27	—
Le Pere.....	Service	18	—
Handley Page...	Bomber	4	20
S.E.5.....	Advanced training	46	57
J.N.6-H.....	Advanced training	653	156
S.4-C.....	Advanced training	400	—
	Total	2339	1075

RUSSIA.

OFFICIAL COMMUNIQUES (BOLSHEVIK).

JULY 23rd.—In the direction of the Northern Dvina an enemy aeroplane dropped 20 bombs on our positions.

JULY 25th.—In the region of the Northern Dvina an enemy aeroplane dropped 17 bombs without causing any damage.

UNDATED (WESTERN FRONT).—In the Gulf of Finland two of our aeroplanes successfully bombarded an enemy flotilla.

PERSONAL NOTICES.

NAVAL.

DEATHS.

WARNEFORD.—Captain W. K. Warneford, A.F.C., R.A.F., who was lost on July 15th, in H.M.A. N.S.11, was born in July, 1895, and was the only child of Mr. W. H. Warneford, of Huyton, Liverpool, manager of the London and North-Western Railway Works at Earlestown, and formerly at Crewe. He joined the Kite Balloon Section, R.N.A.S., in October, 1914, and, after service in France, was transferred to the Airship Service, R.N.

His service has been highly commended, and recently a letter was received from the Air Ministry congratulating the crew on their high state of efficiency and attention to duty. Captain Warneford was a cousin of the late Lieut. Warneford, V.C., R.N.A.S.

WRIGHT.—Lieut. James Turstin Wright, R.N., of Belsize Grove, London, commanding Barrow airship station, was killed when motor-cycling on Olney Island, on July 17th. He ran into a number of sheep which had strayed on to the roadway, and was thrown to the ground. Lieut. Wright was twenty-one years of age, and was to have left the service on the following Wednesday.

Lieut. James Turstin Wright, R.N., was the son of the late James Wright, of Derby, and Mrs. James Wright, of 2, Grove Court, London.

MILITARY.

MARRIAGE.

ASHMORE—PARSONS.—The marriage took place on July 17th, at Holy Trinity Church, Prince Consort Road, S.W., of Major-General Edward B. Ashmore, C.B., C.M.G., M.V.O., R.A., Commanding the London Air Defence Area, and Miss Betty Parsons, daughter of the Rev. F. W. Parsons, vicar of Tandridge, Oxted, Surrey, who performed the ceremony, assisted by the Rev. H. B. Coward (vicar of Holy Trinity) and Prebendary Joyce.

Mr. Alan Parsons gave away his sister, whose wedding gown was of gold tissue, with a train of gold brocade lined with tissue. In her hair was a pair of golden wings, mounted on a fillet of gold, which held the veil in place. This was the gift of Mrs. Alan Parsons. The bridal bouquet was of white lilies. The two little boy train-bearers were Master Ian David Parsons and Master Julian Cory-Wright, in flame-coloured chiffon shirts and loose breeches of gold tissue. They were followed by six bridesmaids, Miss Kathleen Govett, Miss Bet Joyce, Miss Aline Parsons, Miss Hope Robertson, Miss H. M. Smith, and Miss R. Gordon, whose dresses were in the Venetian style, of golden blue-shot tissue, worn with gold Dutch caps ornamented with clusters of tiny oranges and blue net veils. Their presents from the bridegroom were necklaces of lapis lazuli, and they carried delphiniums. A tiny child belonging to Mrs. Alan Parsons, in a classical costume with a gay little green toga, strewed rose-petals in the path as the couple left the church. The best man was Colonel Cyril Hankey, C.B.E., M.V.O.

Among the guests were :—The Spanish Ambassador and Mme. Merry del Val, the Countess of Limerick, Lady Randolph Churchill, Mr. and Mrs. Alan Parsons, the Hon. Gwladys Bailey, Sir Hugh Trenchard, Sir W. S. Brancker, Sir B. and Lady de Lisle, Sir A. and Lady Montgomery, Lady Tree, Lady Diana Duff-Cooper, Lord Bellew, Mr. Ivor Novello, Sir R. and Lady Longman, Mr. Gerald du Maurier, Miss Violet Loraine, Mr. and Mrs. Ernest Thesiger, Mr. and Mrs. Cory-Wright, Mrs. Charles Ashmore, Mrs. and Miss Ashmore, Mr. Eddie Marsh, General and Mrs. Romer, Mr. and Mrs. Govett, Sir William Treloar, General Geoffrey White, General Thomas Cubitt, Lady Bridge, Lady Butler, General and Mrs. Warner, Sir Cecil and Lady Harcourt-Smith, Miss Olga Lynn, Mrs. Delise Salmond, Mr. and Mrs. William Murdoch, Mr. and Mrs. Murray Davey, Mr. Boris Lensky, Mme. Suggia, Mr. Victor Beizel, Mr. Ley Smith, and the Staff and many officers of the London Air Defences.

There was a reception afterwards at 47, Prince's Gardens, the residence of Mr. F. Leonard Govett, the bride's uncle.

JACKSON—SLADE.—On July 23rd, in Dover Castle Chapel, Major James Lee Jackson, M.C., The Connaught Rangers and R.A.F., elder son of the Rev. Canon Jackson and Mrs. Jackson, The Rectory, Belmullet, co. Mayo, was married by special licence to Rosamond Tudor, second daughter of Edward Slade, Esq., and Mrs. Slade, The Tudor, Boston, U.S.A., and The Lake House, Quebec, by the father of the bridegroom, assisted by the Rev. A. S. Cuthbert Harrison, Chaplain, R.A.F.

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ON TEMPORARY COMMISSIONS.

At last the first list of Permanent Commissions in the Royal Air Force has appeared in the "London Gazette." One says "at last" not in any spirit of reproach to those in authority, for one knows that the Personnel Department of the R.A.F. has done its best to hasten matters, but merely because now at last the period of suspense is over for some lucky individuals.

Those who are in the Permanent Commissions List know the best, but unfortunately those who have only been gazetted to Temporary Commissions do not yet know the worst. Nor can they know it for some years to come, for so long as they hold Temporary Commissions so long have they a chance of winning Permanent Commissions. For which reason it is to the holders of Temporary Commissions, and to those to whom Temporary Commissions have been offered, that this article is primarily addressed. Elsewhere in this paper will be found the conditions of service of Permanent and Temporary Officers, and of the Special Reserve.

The Stock Objection.

On all sides and from all sorts of people, when one is discussing Temporary Commissions one meets with one stock objection which runs, with minor variations, thuswise:—

"Supposing a fellow left school at the age of 18 or so, he is now about 23, and if he takes a Temporary Commission for four years he will find himself out of a job at 27 years of age without any knowledge of anything except flying. It is quite bad enough for him to start in now at 23 to learn a profession or to get a job. But what chance has he at 27? What a fool a man would be to take a Temporary Commission!"

Now, on the face of it that looks like an unanswerable argument. But is it? Not a bit of it.

The Answer.

Whether a man is a failure or not depends to a small extent on luck, to a greater extent on his own ability, but still more largely on his faith in himself and in his job. If he is made of the right stuff he will be a success. If he is not he will be a failure at anything.

Suppose for example a young pilot is in the Permanent Commission List to-day. Does that ensure his success in the world? Certainly not!

He may be a first-class pilot, and a very decent man all round, but if he has no administrative ability he can never become a Flight Commander, and he must retire at 30 or thereabouts as a lieutenant. And then he will be worse off than if he had had a Temporary Commission and had left the R.A.F. at 27.

Supposing he has some administrative ability and becomes a Flight Commander, but cannot handle men, then he cannot be promoted to command a squadron, and so he has to retire at 35. In which case he is in a still worse position. Again, if he becomes a Squadron Commander, but has not the ability to command a Wing, then he has to retire at 40. And, be it remembered, the competition for the few Wing commands which there will be in the R.A.F. on its reduced peace establishment will be very keen, so that only exceptionally good men can ever hope to become Wing Commanders.

Thus unless a man has very great faith in himself and does actually possess very considerable ability he cannot hope to be a success even with a Permanent Commission.

The Chances for the Temporary Officer.

On the other hand the man who only has a Temporary Commission to-day has in fact plenty of chances of success. In the first place, none of the Cadets from the promised "R.A.F. Sandhurst" can possibly qualify for commissions before 1923. Consequently all the Permanent Commissions which must be given during 1920, '21, and '22 must of necessity be filled from the Temporary List.

Furthermore, the present Permanent List is admittedly only a partial list. The exact number of Permanent Commissions cannot be fixed until (*a*) the League of Nations fixes the limiting size of the flying services of the world, until (*b*) the British Treasury fixes the limiting sum to be spent on the R.A.F. (which will certainly be smaller than the size allowed by the League of Nations), and until (*c*) the Air Ministry decides whether to spend that money on such material for the benefit of a big Volunteer personnel or on less material and a greater Permanent personnel.

Naturally therefore the present Permanent List is only an irreducible nucleus for the Permanent List which will be published after the Permanent Establishment of the R.A.F. is fixed. Therefore it seems that a goodly proportion of those now on the Temporary List will be placed on the Permanent List during the next twelve months or so.

Surely therefore it is worth the while of any man who has faith in himself to remain in the R.A.F. with a Temporary Commission until at least that next List is published. For all he knows he may only have missed being in the present List by a fluke, or because his immediate C.O. did not recommend him strongly enough, or because the C.O. who recommended him strongly is regarded by those still higher on the scale as being a man of doubtful judgment.

If he remains he may in the next year or so fall in with a first-class C.O. who recognises his merits and who may give him a chance of distinguishing himself. Then he will be fairly sure of a Permanent Commission in the next List.

Failing that, if he has the pluck to remain, he may himself so improve as he grows older that from being merely a very good pilot and a youngster of average intelligence at 23, he may be a very brilliant young administrator at 26, and so may be entreated to take a Permanent Commission and promotion. One knows plenty of men who have changed quite suddenly from being merely average to being very good during those critical years between 23 and 25. And *vice versa*.

At the Worst.

And even at the worst what happens? A Temporary officer is thrown out on a cold world in 1923 at the age of somewhere between 27 and 30. Is he half as badly placed as the man who is thrown out of the Army to-day at 40 or 45 to go and look for a job when nobody wants any men because Capital will not trust Labour and Labour will not trust Capital and so all enterprise and industry is at a standstill?

By 1923 either the country will be properly at work again or else the country will be bankrupt. In the first case he will have been well paid and well housed all through the difficult period before us. In the second he will be no worse off than he would be to-day.

Also, very many of the world's most successful men have made their success at a job for which they were not intended. In one's own small way one has had a modicum of success, at any rate one is not grumbling at the unkindness of Fate, yet one never did any editing till one was nearly 35 years of age, and one never wrote for publication until one was over 30. (One can hear one's enemies saying:—"Anyone can tell that by the way The Aeroplane is run.") At 29 one had not the slightest notion of ever making a living out of writing, and at 17 one's sole idea was to go into the Army—a misfortune from which the Army was saved merely by a financial accident. So one has no sympathy with the man who funks having to change his job at 27.

Faith in Aeronautics.

Still less has one any sympathy whatever with a man who has gone into one of the Flying Services because he is really interested in aeronautics and who funks leaving the R.A.F. in 1923. By that time the Aircraft Industry should be well round the corner after the coming slump and the resultant salutary weeding-out of weaklings, and any man who leaves the R.A.F. then will do so full of the latest aeronautical knowledge, with a growing industry waiting eagerly to give him a job.

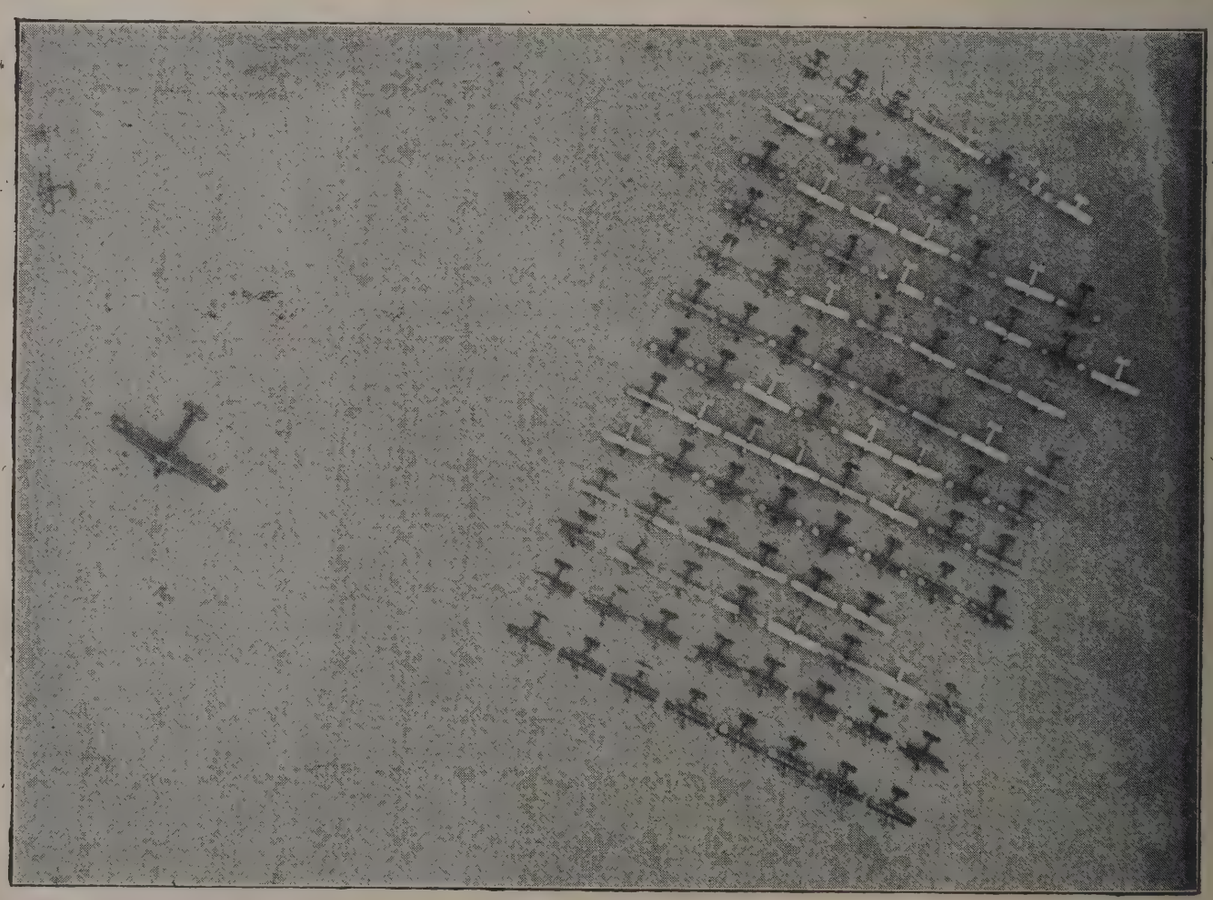
If a man has neither faith in the R.A.F., nor faith in the future of aeronautics, nor faith in himself, the sooner he quits all connection with aircraft the better for himself and for aeronautics.

The man who has faith in aeronautics, but not much in the R.A.F. and only a little in himself, had better hang onto his Temporary Commission if he can get it, and use it as a stepping-stone to a job in the Aircraft Industry after the slump.

But the man who has faith in the R.A.F. and in aeronautics and in himself had better grab at his Temporary Commission, and install himself firmly in the R.A.F. with a fixed resolve that in the course of the next four years he is going to convince those in authority that they made a mistake in not giving him a Permanent Commission at once, but that he is quite willing to forgive them for their initial error so long as they recognise it by giving him rapid promotion.

Such a man is on the right way to become in due course Chief of the Air Staff after the present illustrious holder of that office has accomplished his great task of building a Third Service which is fit to serve the King. May it be many years before General Trenchard leaves his post as the head of the Royal Air Force, but when he does it would be fit and proper that he should be followed by one who has risen to that proud position from being merely an Officer on the Temporary List.

If all those who have had the good fortune to be selected for Temporary Commissions were to make it their aim in life to become some day Chief of the Air Staff, and were to order their conduct accordingly, then in a very few years the Royal Air Force would become worthy of its name.—C. G. G.



AN R.A.F. REVIEW HELD AT HELIOPOLIS, CAIRO, ON DEC. 23rd, 1918.—The Photograph shows Machines from all parts of Egypt, lined up, awaiting inspection by General Allenby.

THE PERMANENT AND TEMPORARY COMMISSIONS IN THE R.A.F. AND SERVICE IN THE R.A.F. RESERVE.

The Air Ministry makes the following announcement :—

It has been decided that officer personnel of the Royal Air Force will be provided for the present :—

1. By awarding a limited number of permanent commissions.
2. By granting 2,500 temporary commissions

PERMANENT COMMISSIONS.

A list of officers who have been awarded permanent commissions appears in the "London Gazette" to-day (August 1st), but there remain to be awarded a further number to officers selected from those now serving in Russia, those attached to the department of Controller-General of Civil Aviation and to the department of Director-General of Supply and Research, and in some special cases which are still under consideration. The question of the award of permanent commissions to officers serving with airships will be dealt with later.

A certain number of permanent commissions will also be awarded in about six months' time to selected applicants from among the officers who are then serving on the temporary commission list.

No officer on the permanent commission list has been awarded a commission in a rank higher than the substantive rank he held except second lieutenants who have been commissioned as lieutenants. The necessary adjustments will be made in promotion "Gazettes" at an early date.

Officers employed as stores officers will in future belong to the Quartermasters Branch of the R.A.F. unless they take up a flying qualification, and permanent commissions are only offered to these officers on this understanding. They will come under the rate of pay of the Quartermaster Branch, but will meantime be permitted to draw the higher rates laid down in the new scheme of officers on the general list until the position of each individual officer has been settled.

The new rates of pay and allowances in the case of officers given permanent commissions will run from August 1st, these officers for the present being paid through the same agents as now.

Officers who have hitherto held temporary commissions only are informed that the war gratuity issuable in their case will be on the scale for permanent officers as their war service will now reckon as pensionable.

Any officer accepting a permanent commission to which he has been gazetted must notify this fact to the Air Ministry (D. of P.) through his O.C. at the earliest possible date, and in any case not later than :—

(a) August 15th, in the case of officers at Home Stations.
(b) August 31st, in the case of officers with the Fleet in Home Waters or with the Forces of Occupation in France and Germany.
(c) Sept. 30th, in all other cases.

TEMPORARY COMMISSIONS.

The scheme of entry for temporary commissions is open :—

(a) To officers still serving who have not been awarded permanent commissions, and
(b) To demobilised officers.

It is not applicable to officers attached or lent from the other regular forces. Their terms of service in the R.A.F. will be dealt with separately.

As a general rule, candidates must not be more than 25 years of age on application, and must have qualified as flying officers. A limited number of officers of other classifications may, however, be selected. In the case of these officers the age limitation will not be enforced.

Employment will be for a period of three years. On the completion of two years of this service officers may be permitted, if desirous, to extend their services to four years in all. After the period of three or four years' service on the active list, officers will pass into the reserve for a further period of four years' service. During the period of service on the active list an officer may be called upon to serve in any part of the world.

Any officer who at any time is found to be physically unfitted for the duties of the R.A.F. may be gazetted to the reserve or out of the service.

Officers not desirous of completing their full period of service on the active list may, at the discretion of the Air Ministry, be permitted to transfer to the reserve at any time.

All candidates will be required to pass a medical examination as to their physical fitness before acceptance.

Any temporary commission granted under these conditions may be terminated at any time under the rules laid down in the Royal Warrant for pay and promotion of the Army.

Whilst on the active list officers entered under the above provisions will, for the purpose of rank and command, be on exactly the same basis as permanent officers of the R.A.F.

Officers will be eligible for promotion during their period of service if qualified in all respects under such conditions as may be laid down for permanent officers

Applications by officers already demobilised should be made on Form 168, which can be obtained on written application to Secretary, Air Ministry (P.O.S.), London, W.C.2.

Applications will be received at any time prior to the termination of the Army of Occupation period, but all applicants will be informed without delay whether their application is accepted.

Officers on joining will be brought on to the rate of pay of their approved rank.

The rates of pay and allowances and conditions of issue will be those normally in force from time to time for permanent officers of the R.A.F.

Service under this scheme will not affect the amount or date of issue of any gratuity which may otherwise be issuable in respect of past service.

As from August 4th, 1919, in the case of officers continuing to serve without a break from the war period, and as from the date of entry in other cases, officers will be eligible for a gratuity of £75 for each year's service and proportionately for broken periods. This gratuity will be payable to them on the completion of their period of services on the the active list—i.e., on passing into the reserve.

An officer placed in the reserve before the full period of his service on the active list is completed, either at his own request or for physical unfitness due to causes beyond his control, may be paid such gratuity as the Air Council may think fit, not exceeding the above scale.

Officers injured whilst on duty will be eligible for non-effective benefits under the same conditions as permanent officers. In any case in which a pension is awarded, however, the officer will not receive in addition the gratuity to which temporary service would have entitled him.

The widows and children or other dependents of officers killed whilst on duty will be eligible for the same pensions and allowances as would be applicable to the widows and children or dependents of permanent officers of the R.A.F.

Officers will be required to provide themselves with the uniform of their rank. No outfit allowance will be payable to officers entered under this scheme unless they are subsequently directed



THE R.A.F. REVIEW.—Another View of the Machines awaiting inspection. This photograph was taken from the roof of a shed.

to adopt a different pattern of uniform from that at present in force.

GENERAL.

Officers of the flying, technical, and administrative branches (including Staff officers) who :—

(a) Are not on the selected list for permanent commissions;
(b) Are not serving in Russia or with the Controller-General of Civil Aviation, and the Director-General of Supply and Research; and
(c) Have not applied for temporary commissions or for re-seconding in the case of officers belonging to the other regular services,

will be regarded as eligible for demobilisation as soon as their services can be spared.

Officers desirous of consideration under (c) should send in their names through G.O.C. of Area, or direct to the Secretary, Air Ministry, if unattached. Applications will be considered as they are received.

Officers of the regular forces may be re-seconded without prejudice to their subsequent return to their parent service.

While a small proportion of officers in the permanent commission list are not flying officers, and while some temporary commissions may also be awarded to officers who are not flying officers, the Air Ministry desires to point out that all officers given commissions who are not flying officers will, with the exception of certain technical officers, be required to qualify as pilots within 12 months from August 1st, 1919, the policy and intention being that in future all commissioned service, except Quartermasters service, within the Air Force will be undertaken by flying officers only. This is the reason why "flying risk" pay has been abolished.

Special regulations will be issued shortly governing the pension rights of officers holding temporary commissions in the R.A.F. who had served as commissioned warrant officers, warrant officers and ratings on regular engagements in the Royal Navy, or as warrant officers, N.C.Os., and men on regular engagements in the Army, including those who had been given commissions in the Army.

R.A.F. RESERVE.

An R.A.F. Reserve will be constituted consisting of three classes :—

(a) For flying officers.
(b) For certain technical officers.
(c) For general service duties.

The following conditions of service in the reserve are applicable only to officers entered under the special regulations for temporary commissioned service. Full Reserve Regulations will be published shortly.

Those in Classes (a) and (b) require to keep up to date in the latest development, and periodical re-qualifying courses are therefore necessary.

Flying officers entered under the foregoing conditions for temporary commissioned service will, on completing their period of service on the active list, be placed in Class A of the reserve for a period of four years. They may be permitted subsequently to re-enrol in this class up to the age of 30 if of the rank of captain or below, 35 if of the rank of major, and 40 if of the rank of lieutenant-colonel.

Officers will hold the substantive rank which they held at the end of their active service period. They will be required to present themselves at the nearest R.A.F. training station not less than two days in each quarter, and to carry out not less than 12 hours' flying per annum on up-to-date war-type machines. They will receive the full pay and allowances of their rank for each day upon which training is carried out, subject to the limitation that no officer will be allowed pay more than six days in any one quarter or 24 days in a whole year. In cases of accidents or injuries during such training, they will be eligible for non-effective benefits under the same conditions as permanent officers.

A retaining fee of £30 will be paid on the completion of each year's service in Class A of the reserve, provided that certificates are produced showing that the necessary flying and attendance has been carried out. This retaining fee will be held to cover all contingent expenses for upkeep, wear, and tear of uniform, etc. The customary travelling expenses will be allowed in addition for each occasion of training.

Any officer who for special reasons is unable to carry out his training in any quarter is to report the reasons in full for the approval of the Air Ministry. Except under exceptional circumstances no officers will be allowed to omit two consecutive quarters' training.

Officers unable for any cause to complete their full period of flying service in reserve Class A may be permitted to transfer to Class B or Class C of the reserve if considered suitable.

The object of Class B of the reserve is to provide technical officers on mobilisation for the following branches :—

(a) Engine and rigging.
(b) W/T and signals.
(c) Photography.
(d) Armament.

The officers of Class B of the reserve will, in the immediate future, be drawn from the following sources :—

(a) By the voluntary enrolment of a limited number of those who have served in one of the above technical branches during the war.
(b) By officers who transfer from Class A of the reserve either on completion of their service in that class or when they have been permitted to retire before completion of such service.
(c) From officers of the permanent list permitted to retire.

Officers who have completed four years' service in Class A of the reserve may, if below the rank of captain, be advanced to that rank on joining Class B. Enrolment in Class B will be for periods of four years, which may be extended up to the age of 40.

Officers in Class B will be required to undergo a technical course lasting for 14 days in each year at the R.A.F. technical school for their particular branch, and will be expected to pass a medium standard re-qualifying examination at the conclusion of the course.

Subject to satisfactory compliance with the provisions outlined in the preceding paragraph officers will receive the full pay and allowances of their rank for the period of annual training, together with an annual retaining fee of £20. This retaining fee is held to cover the incidental expense of upkeep of uniform, etc. They will also be allowed the customary travelling expenses for each occasion of travelling.

In cases of accidents or injuries during training, officers will be eligible for non-effective benefits under the same conditions as permanent officers.

Any officer who for special reasons is unable to carry out his period of annual training is required to report the reasons, for the decision of the Air Ministry.

Class C of the reserve is intended to provide officers on mobilisation for various duties not requiring up-to-date technical knowledge or skill.

Service in Class C of the reserve will be entirely voluntary. There will be no annual qualifying courses and no retaining fee. The age limit will be 50.

THE ROYAL AERO CLUB.

A meeting of the Flying Services Fund Committee was held on Monday, July 28th, 1919, when there were present :—Lieut.-Col T. O'B. Hubbard, M.C., R.A.F. (in the Chair), Mr. Chester Fox, and Mr. Harold E. Perrin (Secretary).

GRANTS AND ALLOWANCES.—The following Grants and Allowances were made :—

(110) A Grant of £10 to an Ex-2nd Class Air Mechanic in the Royal Flying Corps who had been incapacitated on active service.

(127) An allowance of £4 a month for six months to the mother of a Petty Officer in the Royal Naval Air Service who had been killed on active service.

(224) An allowance of £2 a month for six months to the mother of a 2nd Lieutenant in the Royal Air Force who had been killed on active service.

(225) A Grant of £8 and an allowance of £2 a month for six months to the widow of a Sergeant-Major in the Royal Air Force who had died on active service.

(234) An allowance of £1 a month for twelve months to the widow of a Sergeant in the Royal Air Force who had died on active service.

(235) An allowance of £2 a month for six months to the widow of a Leading Aircraftsman in the Royal Air Force who had died on active service.

(236) An allowance of £4 a month for six months to the widow of a 1st Class Air Mechanic in the Royal Air Force who had died on active service.

(237) An allowance of £2 a month for six months to the widow of a Flight-Sergeant in the Royal Air Force who had died on active service.

(238) An allowance of £1 a month for six months to the mother of a Private in the Royal Air Force who had died on active service.

(239) An allowance of £2 a month for six months to the widow of a Corporal in the Royal Air Force who had died on active service

COLONEL R. H. MORE, C.M.G.—A letter was read from Col. R. H. More, C.M.G., dated July 25th, 1919, resigning from the Committee. His resignation was received with much regret and the Secretary was instructed to write and thank him for his services on the Committee.

ROYAL GARDEN PARTY.

The members of the Flying Services Fund Committee were honoured with invitations to Their Majesties' Afternoon Party at Buckingham Palace on Friday, July 25th, 1919.

THE FLYING SERVICES FUND.

(Registered under the War Charities Act, 1916.)

ADMINISTERED BY THE ROYAL AERO CLUB.

For the benefit of Officers, Non-Commissioned Officers and Men of the Royal Air Force who are incapacitated while on duty, and for the widows and dependants of those who are killed or die from injuries or illness contracted while on duty.

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The Right Hon. Lord Kinnaird.

COMMITTEE :
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Mr. Chester Fox.
Lieut.-Col. T. O'B Hubbard, M.C., R.A.F
Lieut.-Col. C. B. Maude, R.A.F

SECRETARY :
H. E. Perrin.

BANKERS :
Messrs. Barclays Bank, Ltd., 4, Pall Mall East, London, S.W.1.

SUBSCRIPTIONS :	£	s.	d
Total subscriptions received to July 22nd, 1919	15,074	18	1
Proceeds of Exhibition of Models by Stanley Bell ...	3	1	0
Total, July 29th, 1919 ...	£15,077	19	1

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The WORLD of AERONAUTICS

NEWS OF THE WEEK FROM ALL QUARTERS

The Royal Aero Club.

Mr. F. Hedges Butler, the founder of the Royal Aero Club of the United Kingdom, has received the following letter from the Hon. Sir Sidney Greville, Comptroller to His Royal Highness the Prince of Wales:—

"York House,
"St. James's Palace, S.W.,
"July 29th, 1919.

"Dear Mr. Hedges Butler,—With further reference to my letter of the 6th ultimo, with reference to the request that the Prince of Wales would become the Vice-Patron of the Royal Aero Club, I have taken an opportunity of submitting this to His Royal Highness, who desires me to inform you that he will have much pleasure in complying with the request.

"Believe me, yours very truly,
"SIDNEY GREVILLE, Comptroller."

F. Hedges Butler, Esq.

The Royal Aero Club of the United Kingdom was founded on Sept. 24th, 1901, by Mr. F. Hedges Butler and his daughter, Miss Vera Butler (now Mrs. Iltid Nicholl), and the late Hon. C. S. Rolls. During a balloon voyage at 5,000 ft. above the Crystal Palace, Mr. F. Hedges Butler suggested the formation of a club for the encouragement of aeronautics; the idea was immediately adopted by the rest of the party, and when a descent was made steps were taken to register the name. These pioneers scarcely dreamt that in so short a time progress in aviation would be so great.

H.M. King Edward VII gave permission to use the prefix "Royal" in 1910, and H.M. King George V is Patron.

A Wireless Telephone Demonstration.

Major-General the Right Hon. J. E. B. Seely, C.B., C.M.G., D.S.O., M.P., Under Secretary for Air, is arranging an exhibition of wireless telephones for Members of Parliament this week.

A wireless telephone receiving and transmitting set will be fixed in one of the Parliamentary Committee rooms, and an airship and one or more aeroplanes similarly fitted will fly over London. Another set will be fixed at the Air Ministry in the Strand. Members will then be invited to "ring up" the airship, aeroplane, or Ministry, as they choose, and converse.

One thinks that M.Ps. have too many chances of wasting time as it is. If some of the members who ask puerile questions in Parliament could be induced to "ring off," civil aviation might make more rapid progress.

Undraped.

A number of the "picture papers," which, as a cynic remarked, appear to be produced for people who cannot read, reproduced last week a photograph of a comedienne who, dressed only in a bathing costume, flew from Swansea beach in an Avro machine. Modest young pilots, who were not trained in the R.A.F., are now dreading that some other actress, jealous of the publicity that has been obtained, will disrobe more thoroughly and insist upon flying in a modern dancing frock.

Lapsus Carlinque.

The "Birmingham Gazette and Express" has published a review of "A Glossary of Aeronautical Terms" recently issued by the Royal Aeronautical Society. According to this newssheet:—

"The airman of to-day, if he takes the new language to heart, will describe a bad landing like this: 'After observing the isohels I struck an anabetic, and in a yawing moment stalled and nearly smashed my carlingue.'

"Which is another way of saying: 'After noting the lines of equal duration of sunshine I struck a breeze coming up the valley, and as the aeroplane moved angularly on its axis it came down with such a bump that I nearly fell through the bottom of the nacelle.'"

One suspects that by airman the newspaper means flying officer, and that "anabetic" is the printer's effort to render into type the word "anabatic." The attempt at sprightly humour makes one think of a tank trying to perform the shimmy shake.

More Imbecility.

At an "aerial circus" held on July 18th at Southsea Field, Americus, U.S.A., it is reported that Lieut. Alfred W. Vance, Officer in Charge of flying, at an altitude of 1600 feet gave an exhibition of climbing all over the wings of an aeroplane in flight, standing on the top wing, hanging from the landing gear, and sitting on the landing gear when the aeroplane landed.

Landing at the Amsterdam Exhibition.

The aerodrome at the Amsterdam Exhibition is very bad. In appearance it is good and flat, but, in reality, it is a bog. Before the first Handley Page machine, an exhibit, could land, it was necessary to walk all over the ground to find the least soft parts. A fair patch having been found, the machine was landed upon it. The machine ran a little too far. The right-hand wheels sank in up to their axles and had to be levered out and baulks of timber were placed under them. Meanwhile, the tail-skid had sunk in until the bottom of the fuselage was flat on the ground. This had to be levered out and baulked up. Then it was necessary to put down a timber road on which the machine was wheeled across the aerodrome to its stand in the exhibition.

British Sportsmanship.

A dinner was given by the American Flying Club at the Commodore Club, New York, on July 2nd, in honour of Lieut.-Commander A. C. Read, A.F.C., and the crew of the N.C.4, and also Commander J. H. Towers and Lieut.-Commander P. N. L. Bellinger and the crews of the flying boats that attempted but failed to complete the trans-Atlantic flight.

In the course of his speech Lieut.-Commander Read said:—

"One of the most important impressions of England was the sportsmanship of the British people. We had just captured the prize they had been hoping for. Perhaps here it might not be out of the way to say that Harry Hawker met me at the train, took the best care of me, and although the papers have more or less gone after him on account of some remark that he made, this remark was very well explained to me, and I believe the explanation to the effect that he was endeavouring to defend the British Admiralty for not sending boats out. Some paper had criticised them quite severely. They said that the American Navy sent out boats all over the ocean, the British Admiralty did nothing. He was a guest at luncheon and he wished to defend the British Admiralty without thinking of the backfire which his words apparently created."

Commander J. H. Towers, after speaking of the general organisation of the flights, said:—

"A great many people have asked me about the selections of the route. I am afraid I must assume responsibility for the selection of the route. The principal question was: 'Why go to England? When you fly to Lisbon, you cross the Atlantic, why not quit?' Well, I don't know really why I laid down the route that way. It just sort of seemed the natural thing to do, to end up the flight in England. And I should like to say to General Charlton this evening that had we known what we were going to get when we got to England, in the way of a reception, we never would have gone there, because he shortened our lives about ten years, he and his compatriots."

Major Connolly said:—"Mr. Chairman, through you, some of the membership desire to express this resolution, which in a way very crudely, extemporaneously, and imperfectly drafted, I think, typifies the breadth and the generosity of American sportsmanship, and American appreciation of great and worthy deeds.

"Resolved, that the American Flying Club at the dinner given by the club to commemorate the successful accomplishment of Lieutenant-Commander Read and the crew of the N.C.4, of the first trans-Atlantic voyage by air, in conjunction therewith extend to the Royal Air Force and the British Air Service organisations generally our congratulations and felicitations on the extraordinary accomplishment of Captain Alcock and Lieutenant Brown, respectively, in their successful and epochal trans-oceanic flight, and also the courageous and sportsmanlike effort of Harry Hawker and Lieutenant-Commander Grieve. We await with hopeful and hospitable anticipation the arrival of the R.34 and its gallant crew."—

Flying and Frailties.

A writer in the "Nottingham Guardian" rhapsodies thus:—

"To those who have not experienced the joy of flight, the sensation becomes difficult of description. The vast panorama of earth stretching away on all sides, the huge mountains of clouds moving slowly and with dignity through the vast spaces of the firmament, the exhilarating rush of air, the strangely joyous feeling of buoyancy and yet security, all combine to make of one a transformed creature, so that frailties are left behind."

The attention of Pussyfoot specialists in morality should be drawn to this.



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The WORLD of AERONAUTICS (continued)

R.A.F. v. Royal Aero Club Golf Match.

Teams of the R.A.F. Club and the Royal Aero Club played a match at Worplesdon on July 29th. The Royal Aero Club won the singles in the morning by six matches to one, and in the foursomes in the afternoon each side won two matches, so that the Royal Aero Club won on the day's play by eight matches to three.

The Royal Aero Club was very strongly represented, but the Royal Air Force turned up one short, and were very fortunate in finding a substitute in one of the best known players in the country. The match between this player and Major W. Graham Chambers proved the event of the morning play. Major Chambers is plus 5 at the Hamilton Club, Auckland, New Zealand, and is practically the best player over there. It was generally expected that he would lose to Captain "A. N. Other," but to everyone's surprise he actually beat him by 1 up. The results were :—

SINGLES.

R.A.F. Club.		Royal Aero Club.	
Lt.-Col. Basil Foster	0	Lt.-Col. Moore-Brabazon, M.P. (1 up)	1
Capt. P. E. Jeffcock	0	Capt. W. G. Aston (1 up)	1
Capt. H. Wallace	0	Mr. Stanley May (4 and 3)	1
Capt. "A. N. Other"	0	Major W. Graham Chambers (1 up)	1
Capt. S. Baxenden	0	Mr. Victor Maude (3 and 1)	1
Capt. J. M. Pearson	0	Mr. Frank Mead (9 and 8)	1
Capt. W. Mitton	0	Lt.-Comdr. P. Barry	0
Lt.-Col. W. C. Bersey (6 and 4)	1	Lt.-Col. W. Jarrott	0
Total points	1	Total points	6

FOURSOMES.

R.A.F. Club.		Royal Aero Club.	
Lt.-Col. Basil Foster and Capt. Jeffcock	0	Col. Moore-Brabazon and Capt. Aston (3 and 1)	1
Lt.-Col. Bersey and Capt. Baxenden (3 and 2)	1	Lt.-Col. Jarrott and Mr. Maude	0
Capt. Wallace and Capt. Milton	0	Mr. May and Lt.-Comdr. Barry (2 up)	1
Capt. Pearson and Capt. "A. N. Other" (5 and 4)	1	Major Chambers and Mr. Mead	0
Total	2	Total	2

Disarmed by a Smile.

U.S.A. Army pilots at France Field, Cristobal, Canal Zone, Panama, are required to do much of their flying over water and along the coast. A flight to the Gulf of San Blas, taking 3½ hours, was made recently by two R.9 hydro-aeroplanes.

It appears from the reports of the expedition that the mainland and numerous islands in and around the Gulf of San Blas, which is about 100 miles south-west of France Field, are inhabited by Indians who are suspicious and unfriendly and decline to trade with strangers. In view of this the machines would not have stopped there had it not been for the fact that one of the engines became overheated.

None of these people had ever seen or probably ever heard of a flying machine, and great consternation was manifested when they taxied up to the village. It is doubtful which side was the more afraid, for when the begoggled pilots stepped from their machines the entire population of the island was lined up on the beach armed to the teeth.

One of the pilots, who was a new arrival in Panama, however, and unfamiliar with the current yarns about the unfriendliness of the Indians, stepped on the beach, rushed up, and greeted the chief effusively. Fortunately his friendly smile was properly interpreted and the pilots were permitted to go through the village.

If the "begoggled pilot" was dressed in a Sidcot suit and helmet, one is surprised that even his "friendly smile" saved him from being clubbed. One has seen pilots in their full war paint who would have caused any Indian to sharpen his tomahawk.

A Fine Performance.

A magnificent non-stop flight from London to Madrid was made on July 31st. It was accomplished by an Alliance aeroplane fitted with a 450 h.p. Napier "Lion" engine. A start was made from the aerodrome near Acton at 7.15 a.m., and Madrid was reached at 3 p.m. on the same day. This performance—viz., 900 miles in 7¾ hours—must be regarded as extremely creditable.

The machine carried a letter from Princess Beatrice to her daughter, the Queen of Spain, and a gold cup which the company hope the Queen will accept as a memento of the first non-stop flight from her native land to her selected home. Copies of the "Daily Express" were also carried.

The pilot was Capt. Curtice, and the observer Mr. Peters, the designer of the machine, which was built for commercial and not for Service use. It was fitted with a similar type of Napier engine to that which won the Aerial Derby in June.

It is claimed that this is the first non-stop flight from London to Madrid, and anyone who has made that wearisome journey by train, even in pre-war days when the service was at its best, will appreciate all that the performance means. Long-distance flights such as this make the general public realise the enormous advantages of the modern machine. All concerned are to be congratulated.

The Alliance Aeroplane Co., which built the machine, is one of the group of aircraft firms of which Sir Samuel Waring, Bart., is the head.

Recruiting Methods.

It is interesting to note the methods adopted in the United States of America for obtaining recruits. These are described in the following official announcement :—

"In order to create enthusiasm and personal interest in the Air Service from all its enlisted men, Lieut. Floyd Wilson, formerly personal Adjutant and Publicity Officer here, now at Langley Field, Va., issued a mimeograph form asking that each enlisted man answer the following questions :—

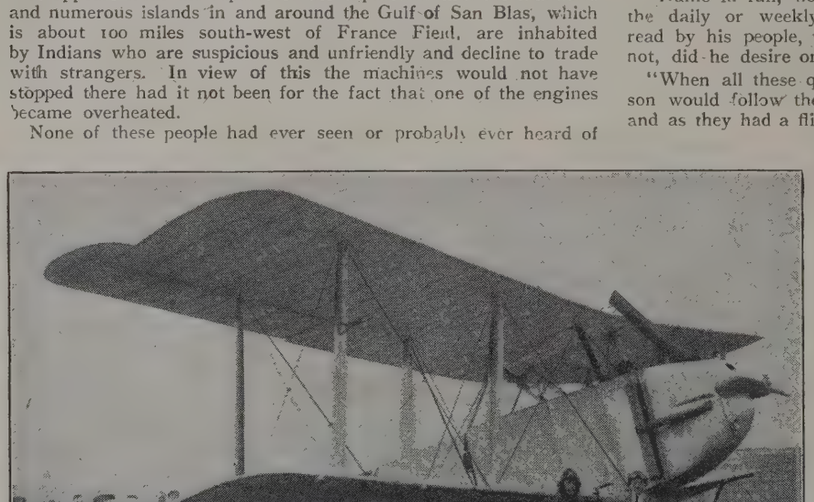
"Name in full, home address (street and town), the name of the daily or weekly newspaper printed at his home town or read by his people, whether or not he has had a flight, and, if not, did he desire one?

"When all these questionnaires had been received, Lieut. Wilson would follow the activity of each enlisted man at the field, and as they had a flight, or attended a rigging class or any other interesting bit of news, this news was mailed to the town paper of the enlisted man, where it was eagerly printed by the newspaper, giving his name and address.

"If a cross-country flight was to be made to a town, instead of selecting any one to act as a passenger, Lieut. Wilson would refer to his roster and select a man that lived in the town to which the ship was going and appointed this man as passenger.

"The information was then telegraphed to the local newspaper in the home town that he was leaving in an aeroplane for home, this information the paper would gladly publish, with the result that many of the boy's friends in his town were anxious to be on the field when the ship landed and honour their hero who had only been in the Air Service 10 days perhaps, and was already flying around the country in a ship.

"This created a feeling of much satisfaction and pride in the enlisted man himself, and also a great amount of interest amongst his friends at home, with the result that Souther Field increased its recruits 32 per cent. in one week."



The Alliance Biplane (450 h.p. Napier "Lion") on which Captain Curtice and Mr. Peters flew from London to Madrid in 7¾ hours on July 31st.

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Telegram:

To ROLLS-ROYCE, DERBY.

Congratulations on performance of the two "Eagle" Rolls-Royce engines, which propelled the Vickers "Vimy" safely across the Atlantic.

ALCOCK & BROWN.

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WARNING—CHANGES TO ROLLS-ROYCE CARS.

Rolls-Royce Ltd. have recently learned that attempts are being made by certain persons to "bring up to date" pre-war Rolls-Royce chassis by substituting for Rolls-Royce springs of ola type, cantilever springs which are not of Rolls-Royce manufacture; also by subs ituting other radiators and bonnets which are not of Rolls-Royce manufacture. Some of these changes have been brought to the attention of the Company, who have found them to be not only unsatisfactory, but possibly dangerous to the users. Owners who are asked to have such changes made to their Rolls-Royce cars, or potential purchasers of Rolls-Royce cars on which such changes have been made or may be suspected, should communicate with Rolls-Royce, Limited, 15, Conduit Street, London, W., and the Company will, for a small fee, inspect the chassis in question and inform the applicant what parts, if any, are not supplied by Rolls-Royce, and what the effect of such parts in their opinion is likely to be.

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The WORLD of AERONAUTICS (continued)

An Unusual Landing.

A serious accident was avoided cleverly by Capt. F. McCall, M.C., D.F.C., at the Calgary Exhibition, U.S.A., recently. He was flying with two boys as passengers over the fair ground when his engine failed and a crash among the crowd seemed inevitable. Describing the incident in the "Calgary Herald," he said:—

"Right ahead of me was the race track, around which the racing motors were going then at full speed. To land there was impossible without a terrible accident. On the other hand, farther ahead was a bunch of wires over the motordrome. I saw that in the short space I had to go it would be impossible to put on the power sufficiently to cause the machine to rise and clear those wires. It was either land or hit them. At the same time I saw no place to land except in the crowd in the midway or on top of a merry-go-round. It was that or nothing, so I cut off the power completely and just let her drop. It all happened in a second.

"We were without headway then, just dropping down, and we landed exactly on top of the merry-go-round. The merry-go-round has a conical top consisting of canvas stretched over iron rods radiating out from the centre. When the machine dropped on top of these, it was held there by the rods. We got down by climbing down through the rods on top of the merry-go-round engine and then to the ground."

A Yarn.

Captain W. G. Aston related the following story in the "Tatler":—

"Once upon a time, and, as they say in the more cultured circles, not so long ago neither, a Bristol Fighter was sent aloft on business connected with the testing of a self-sealing petrol tank. And a very necessary object, too. It was expected to land at an aerodrome not ten thousand miles from the north-west of London, and by and by a gentleman, whom we will call Captain Foxy, of a certain department, began to warm up the telephone wires with tender inquiries as to whether the Rafbird had effected a landing.

"Now it so happened that said pilot had stopped his engine a shade too soon, and could not start it up again, with the result that he alighted at the very farthest end of the ground, remote from his ultimate destination. So ultimately the inquiree announced that he *had* come down but that he had 'lost his prop.' 'Merciful heavens!' cries Captain Foxy, 'is the poor fellow killed?' 'Killed, no!' says the laconic aerodrome official, 'I only said he'd lost his prop.' After a considerable pause for thought Foxy takes immediate action. 'Will you,' he commands, 'go immediately to Handley Page's or Airco and see if you can get another propeller to replace the one he has lost? We had feared some great disaster had occurred.' After which the man at the other end replaced the receiver with difficulty and gave vent to the series of gurgling eructations which he imagines to be laughter. . . .

"The one and only Henery Knox told this yarn at the Royal Aero Club (where, if there is a fault to find, it is that the folk are terribly technically minded), and got the reception it deserved. When up spoke one who, ere now, had been known to be quoted as an authority on matters aerial. 'I don't know,' says he, 'but what, after all, there is a bit of sense in it. When this chap's *prop fell off* it's more than probable it would get a bit damaged and it might be risky to use it again!'"

Our Grammarians.

The "Practical Engineer" says:—"Th. four cross-Atlantic flights and the gallant failure has taught valuable lessons."

They has.

Coming Events.

August.

Amsterdam Aircraft Exhibition.

Saturday, August 16th.—R.N.A.S. Officers' (Hendon) Dinner at the Café Royal.

Thursday, August 21st.—R.A.F. Annual Athletic Meeting at Stamford Bridge.

Sunday, August 24th to Sunday, August 31st.—The "Avenir's" Tour de France Aérien is due to start.

Saturday, August 30th.—Hendon-Brighton-Hendon Air Race at Hendon Aerodrome.

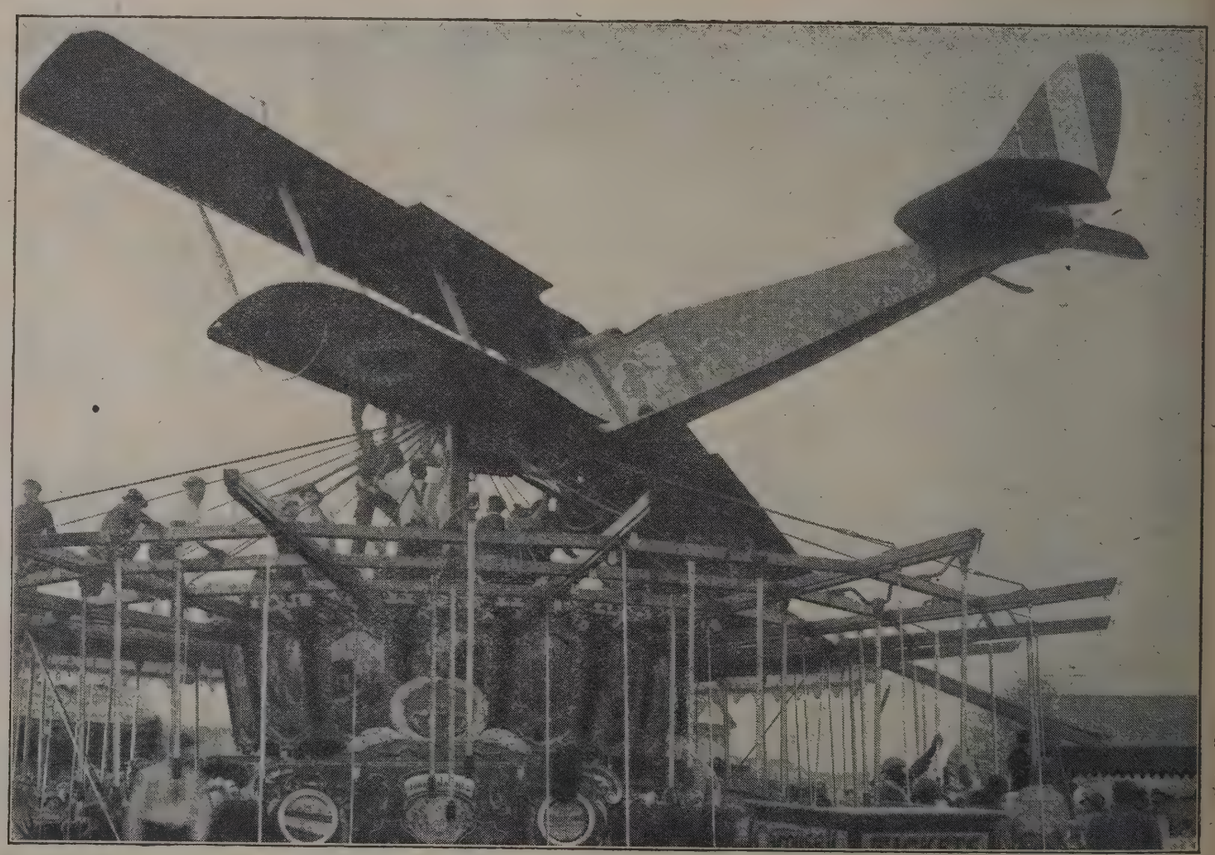
September.

Wednesday, September 10th.—Schneider Cup Competition, Bournemouth.

Saturday, Sept. 20th.—Hendon-Manchester-Hendon Air Race at Hendon Aerodrome.

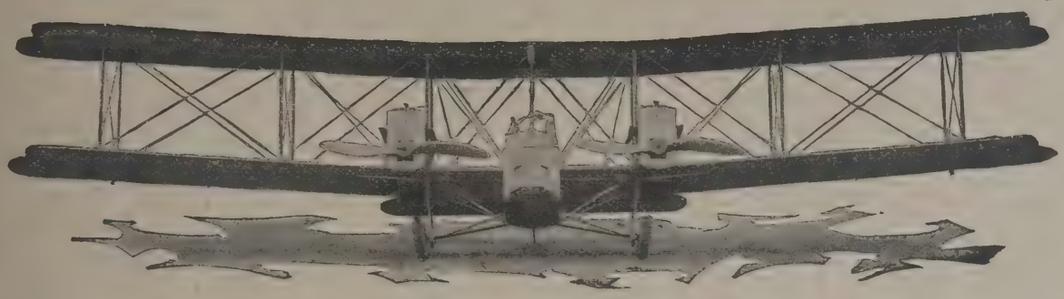
Date to be Announced Later.

Hendon-Paris-Hendon Air Race.



How Capt. F. McCall, M.C., D.F.C., landed on a roundabout at the Calgary Exhibition, U.S.A. This was done intentionally to avoid a crash among the crowd of people.

A UNIQUE EXPERIENCE







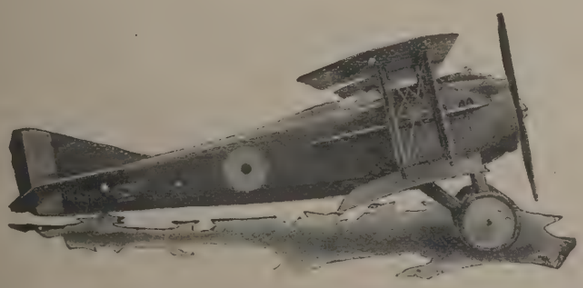
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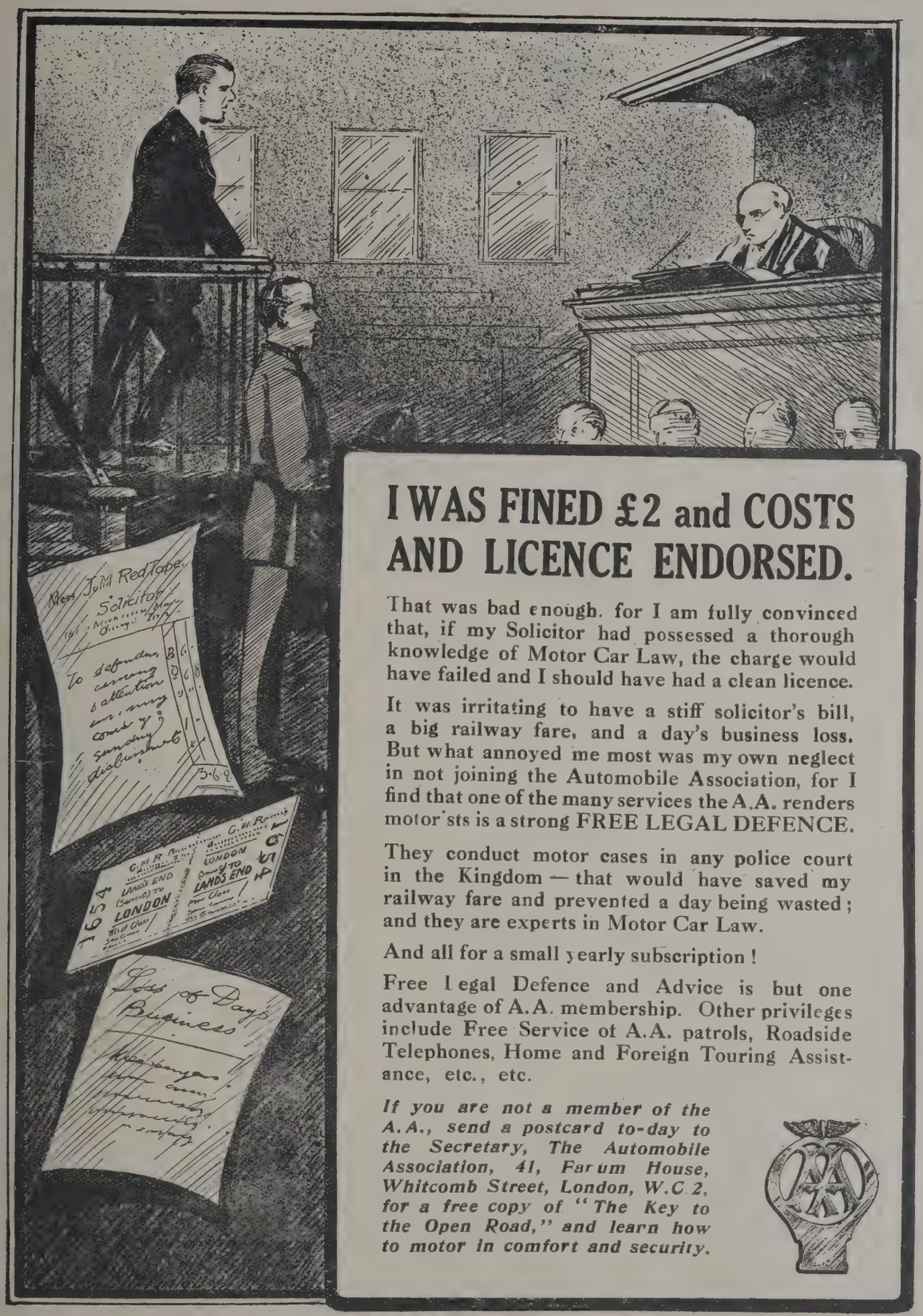
COMPARATIVE RANKS IN THE RECENTLY BELLIGERENT ARMIES.

[So much confusion arises from mistranslations of the ranks in the various recently belligerent Armies that it seems well to set forth clearly in parallel columns the precise names of the ranks which correspond to one another. It is hoped that this information may be of use to readers.—Ed.]

Great Britain.	France.	Italy.	Russia (Imperial).	Germany.	Austria-Hungary.	Turkey.	Bulgaria.
Field Marshal	Marechal de France	——	General Feldmarshal	General Feldmarshall General Oberst	Feld-Marschall	Mushir	——
General	——	Generale	Polni-General	General der Infanterie General der Kavallerie General der Artillerie	General der Kavallerie General der Infanterie General der Artillerie	Birinji Ferik	General
Lieut.-General	General de division	Tenente Generale	General-Leitnant	General-Leutnant	Feldmarschal-leutnant	Ferik	General-leitnant
Major-General Brigadier-General (temp. rank only)	General de brigade	MaggioreGenerale	General-Maior	General-Major	General-major	Liva	General-major
Colonel	Colonel	Colonello	Polkovnik	Oberst	Oberst	Miralai	Polkovnik
Lieut.-Colonel	Lieut.-Colonel	Tenente Colonello	Pod-polkovnik (Regular troops) Voiskovoi Starshina (Cossacks)	Oberst-Leutnant	Oberst Leutnant	Kaimakan	Pod-polkovnik
Major	Commandant	Maggiore	Kapitan Rotmistr (Regular Cavalry) Yesaul (Cossacks)	Major	Major	Bimbashi	Major
Captain	Capitaine	Capitano	Shtabs-Kapitan Shtabs-Rotmistr (Cavalry) Pod Yesaul (Cossacks)	Hauptman Rittmeister (Cavalry and Train)	Hauptman Rittmeister (Cavalry and Train)	Yuzbashi	Kapitan Rotmistr (Cavalry)
Lieutenant	Lieutenant	Tenente	Poruchik Sotnik (Cossacks)	Oberleutnant	Oberleutnant	Mulazim-i-evvel	Poruchik
Second Lieutenant	Sous-Lieutenant	Sub Tenente	Pod-poruchik Kornet (Regular Cavalry) Khorunji (Cossacks) Praporshchik (Ensign of Reserve)	Leutnant	Leutnant	Mulazim-i-sani	Pod-poruchik

It is opportune to publish this table in the present issue of "The Aeroplane," as the new rank titles selected for use in the Royal Air Force are shown on page 559. No other nation has distinct rank titles for the aerial arms in the national forces.

The military ranks in the United States Army are similar to those in use in the British Army.



I WAS FINED £2 and COSTS AND LICENCE ENDORSED.

That was bad enough. for I am fully convinced that, if my Solicitor had possessed a thorough knowledge of Motor Car Law, the charge would have failed and I should have had a clean licence.

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If you are not a member of the A.A., send a postcard to-day to the Secretary, The Automobile Association, 41, Farum House, Whitcomb Street, London, W.C.2, for a free copy of "The Key to the Open Road," and learn how to motor in comfort and security.

THE R.A.F. IN THE BALKANS.

By "Struma."

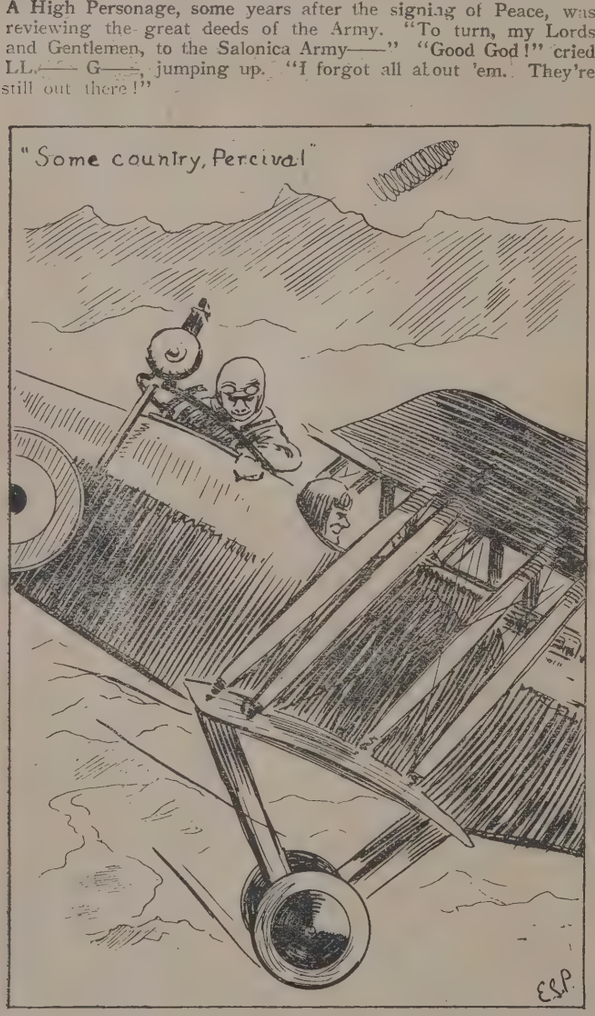
When one returns home to find that there are Britons who are uncertain as to whether the Greeks were Allies of ours or not, and who are slightly foggy as to whether Johnny Bulgar was friend or foe, it is evidently time someone wrote a history of the war in the Balkans in particular, and of the European tribal squabble in general. Such, however, is not my intention. Some time hence, perhaps, when things have got into perspective, and more knowledge available, the historian will arise. "There are a thousand journalists," said Voltaire, "hardly have we two or three modern historians." At present, the public prefers its history in penny numbers at breakfast, and written, if possible, by Field Marshals or novelists.

Topographical Horrors.

All Macedonia may be divided into three parts: Bad, worse, and unspeakable. In the unspeakable portion, the British Army, officially described as the British Salonica Force, found itself exiled for some three and a half years, forgotten by the B.P., the journalists and the politicians. Here, with mountains to right of 'em, mountains to left of 'em, in front and behind 'em, alternately baked and frozen, drowned and parched, racked with malaria and dysentery, eaten up with bugs which fly and bugs which crawl, of astonishing variety of shapes and sizes, four and a half divisions of physically enfeebled Britons held up the wily Bulgar, backed and reinforced by the still more wily Hun. N.B.—By bugs that fly it is not intended to depict the R.A.F. nor its Hun equivalent.

Forgotten by the World.

And some of them are still there to this day. This forgetfulness on the part of the aforementioned three Estates formed the basis of the standard joke of the B.S.F. It ran somewhat thus: A High Personage, some years after the signing of Peace, was reviewing the great deeds of the Army. "To turn, my Lords and Gentlemen, to the Salonica Army——" "Good God!" cried LL—— G——, jumping up. "I forgot all about 'em. They're still out there!"



"Hardly do we guess aright at the things that are upon the earth"



106 in the Shade

The R.A.F. had not only the difficulties that the rest of the Army laboured under—the intense heat of summer, ranging up to 106 degs. in the shade, moist paralysing heat, disastrous to man, beast, and machine, the plague of flies, the mosquitos and consequent malaria—but also the joy of carrying on in a country in which flying conditions were, as an Italian aviator put it, absolutely incredible.

To the North, after one has passed the plains and hills that adjoin Salonica, one comes to a country that is a chaotic mass of mountains, rearing their rocky peaks to a height of over 6,000 ft., intermingled with smaller hills, countless gorges and ravines, stony beds of water-courses, dry in summer, but raging torrents in a few minutes after heavy rain; rivers, marshes, and lakes. Two important valleys cross this chaos towards the sea, those of the Vardar and Struma, the former justly celebrated for its infernal wind.

Aerial Fighting.

For three years the belligerent lines, with a strange air of permanence, were to be seen crawling over hills and valleys from the Adriatic to the Ægean, *via* Monastir, Doiran, the Struma, and Lake Takinos.

Conditions being so different to those in France, air fighting was not so much in evidence, though probably, considering the total number of machines on the Front on both sides, it was proportionately as heavy. I do not know what the total number of enemy machines brought down would amount to; perhaps somewhere near a hundred. The figures from September, 1916, to August, 1917, show that 36 were accounted for, and slightly more for the next 12 months, amongst them being some big twin-engined machines.

I remember one of these big fellows used to come over our lines regularly when the conditions were good, and proceed calmly up and down for quite a considerable time, the while the sky was prodigally spangled with shrapnel. Although at somewhere near 20,000 ft., his movements were perfectly visible in the clear Macedonian air, the sun flashing on his 'planes as he turned. When our machines, laboriously climbing, had reached a couple of thousand feet or so below him, he would quietly make off home, having seen all he wanted.

The Habits of the German.

The Boche aviator, it must be conceded, showed a considerable amount of enterprise, though he must have looked upon the operations as a sort of stalemate, and was occasionally inclined to take things easily. But there is no doubt that with a larger force he could have made things decidedly uncomfortable. His machines were, for one thing, as a rule, more up-to-date than either ours, the French, or the Italian, though the latter had some good specimens.

On several occasions he left a decided mark on us, as in the two raids when the camps round Salonica were heavily bombed by 15 Albatroses each time, Summerhill being severely strafed, and the enemy getting well away on each occasion. He constantly appeared over the town on reconnaissance bent, and on three consecutive nights, just before the offensive last September, bombed the docks and shipping, though without doing much damage. The anti-aircraft gunnery, of both the Fleet and the



TRANSITIONS IN TRANSIT

No. 1. **The Tea Clippers of the 'Sixties.'**

A toast, gentlemen, to the glorious memory of the old East Indiamen — "Cutty Sark," "Black Adder," "Sir Lancelot" and the rest—may their grand old timbers rest in peace. And here's to the splendid sea dogs who manned them, raced them halt round the world to be first into the Port O' London with the new season's tea. The men who were not content with t'gallants and royals, but set skysails and moon-rakers in the teeth of the hurricane.

From Foo Choo to the Port O' London in 100 days,—record time! And nowadays the same journey can be done in 100 hours—by aircraft! The time is not far distant when the produce of the East will be brought home by aeroplane.

The machine illustrated above is the Nieuport Mark VI. Seaplane.

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Army, either by day or night, was of a kind to make one weep, though they certainly had a Zeppelin to their credit.

Allied Bombing Methods.

As a bomber, however, the Boche was distinctly inferior to the Allied aviators, the raids carried out by the British, French and Italian squadrons, and the Serbian and Greek detachments, being very numerous and effective. To take as an example, a short period of 12 days in April, 1917. In that time heavy bombing was effected at Pravista, Porna, the great aerodrome at Drama, dumps and stores at Bogdanci, the big dumps and aerodrome at Hudova, camps and batteries at Cestovo and Gradeshnitza, convoys in the Rupel Pass and in the neighbourhood of Doiran, and four enemy machines brought down in combat. On some of these occasions our machines descended to 400 ft., and very great damage was inflicted. And that, be it noted, is not picked out as a period full of "fixtures," but taken quite at random.

The R.N.A.S. Detachment.

The machines of the R.N.A.S. were quite as active, strafing considerably the enemy lines and establishments in the vicinity of Kavalla and Lake Tahinos.

Photography.

Next in importance to bombing—or even before it—was the work done in photography. Ten thousand photographs were taken which, thanks to the clearness of the atmosphere, were of super excellent quality.

Well do I know them. They were to me one of the minor horrors of the war. They formed a complete photographic map of the enemy lines, continually brought up to date, and were also used in lieu of the ordinary methods of survey for a good deal of the work in maps produced by the R.E., Macedonia being an almost unknown country as far as modern large-scale maps are concerned. Every dump, railway, aerodrome, auto-park, camp and bridge, far in rear of the lines, being recorded. They were passed on in the form of "mosaics," mounted on huge sheets of brown paper, to the General Staff "Intelligence," those Organisers of Victory, to perform their conjuring tricks with. (Attached please find one sketch of an Organiser of Victory, complete as fitted.) So vast did this collection become that it was confidently expected that the unfortunate wight in charge would be found one fine morning extinct under a pile of them. Fortunately for him there came the Armistice.

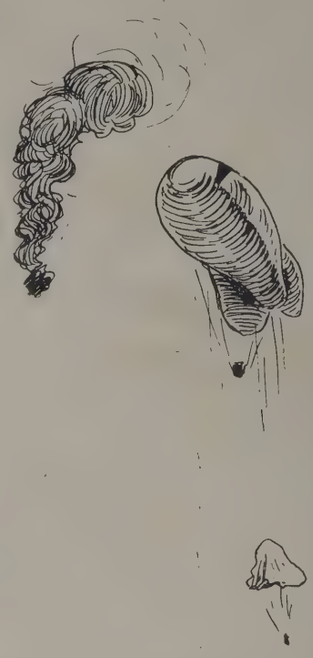


General Staff "Intelligence"

Besides this number of photographs taken by the Photographic Section of the 16th Wing, there were those of the French Service d'Aviation, and a considerable number taken by the Greeks, who, like the Serbs, had a creditable aviation service. A lot of work, too, was done by the R.N.A.S

The French Machines.

The French, like ourselves, did not seem to be blessed with ultra-modernity in their machines, their chief aeroplane seeming to be the A.R. or A.L.D. (type Corps d'Armée), with Renault or Lorraine-Diétrich engines, a fairly large machine distinguished by the backward stagger of the 'planes; not, however, excessively up-to-date. The Italian flying corps was, as usual, very efficient, but, if they had had the opportunities, it is doubtful whether they could have produced in Macedonia a squadron of virtuosi like unto "La Serenissima" of Vienna fame. The S.V.A., by the way, is undoubtedly a fine machine.



Kite Balloons.

Kite balloons are always a source of amusement to the ordinary soldier, and painful as it is to record, the sight of one of his own "sausages" in difficulties was always an awful joy to Tommy.

He failed to see the use of them, and by bitter experience got to regard them as objects expressly designed to draw artillery fire. We had three all to ourselves, that is to say, divided between four and a half divisions, which is perhaps not excessive, but quite lavish as compared with the usual distribution of material to the B.S.F.

Our own particular "Rupert" on the Doiran Front was frequently the target for "Balkan Lizzie." This long range gun, of a calibre of 8.5 or thereabouts, was one of the chief attractions of those parts, and under skilful aeroplane direction would play havoc with the dumps, knock up the railways, take long shots at the aerodromes, which, however, were just beyond her range, and generally put the wind up the units behind the lines. Often was she "located," and often "put out of action" by judicious bombing, only to reappear merry and bright a day or two afterwards. It is doubtful whether she was ever really located, at any rate, until the offensive when I saw fire diagrams, I believe, of this very gun amongst captured Bulgar maps. She remained, until we swept over that part of the country, as something of a mystery, and an exhibit to be shown with pride to newcomers on that Front. "Lizzie" knocked holes in "Rupert" several times at a range of seven miles, and the descent of the "chap in the clothes-basket" was considered by connoisseurs to be quite good for a free performance. One of these balloons was also brought down by a bold and skilful German aviator.

The Final Advance.

In no other theatre of war had the R.A.F. so difficult a task as in Macedonia. The whole Allied Army of the Orient can justly pride itself that it contributed fully as much as any Force to the final overthrow of Germany. And when the Serbs in the great offensive broke through to the west of the Vardar, performing such feats of fighting and marching as modern warfare has rarely known, in company with their French and Greek Allies, then the costly British attacks on the impregnable Doiran positions were justified.

Then, their only line of retreat threatened by the victorious Allies, the Bulgars began their retirement from before the British



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Above Lake Doiran. The Bulgar trenches are in front of the town. In the background, the Beles Range. 5000 to 7000 ft high.

Front, and the great chance of the flying men came. Over a great stretch of road crowded with troops and transport of every description, bullock carts and horse wagons, motor vehicles, infantry, artillery, the bombing machines cruised, and the terrible condition of this road for days afterwards bore evidence to the deadly thoroughness of their work. To the brilliant success of this two weeks' campaign, with its total of 900 guns captured and 100,000 prisoners, the R.A.F contributed as much as any arm, and with the rest of the B.S.F., can justly ask for some better recognition than the studied neglect and even ridicule with which this fine portion of the British Army has been treated.

By the collapse of Bulgaria and its immediate consequences, the surrender of Turkey and the downfall of Austria, the Armies of Macedonia drove the final wedge into the tottering German fabric, and were the first—and, indeed, the only—Force to march victoriously on enemy soil in Europe.

A LONG FLIGHT.

The most extended flight yet planned by the Air Service of the U.S. Army, in the interest of recruiting, charting of routes, and the locating of landing fields, is contemplated by Lieut.-Col. R. S. Hartz, J.M.A., A.S.A., Commanding Officer at Bolling Field, Washington, D.C. The aeroplane used will be a U.S. Martin bomber.

The flight as planned will total 7,805 miles as follows:—Washington, D.C., to Miami, Fla., 1,120 miles; Miami, Fla., to San Antonio, Tex., 1,140 miles; San Antonio, Tex., to San Diego, Cal., 1,120 miles; San Diego, Cal., to Seattle, Wash., 1,170 miles; Seattle, Wash., to Duluth, Minn., 1,375 miles; Duluth, Minn., to Augusta, Maine, 1,345 miles; Augusta, Maine, to Washington, D.C., 535 miles; total 7,805 miles.

AFFILIATED AERO CLUBS.

The Directors of Aero Stations, Ltd., all of whom have been actively engaged in the Aircraft Industry since 1908, have for years past been selecting suitable sites for landing places for aircraft adjoining the principal commercial centres of Great Britain.

It is the policy of Aero Stations, Ltd., to render these places self-supporting, pending the development of commercial aviation, by running each aerodrome as a County Sporting Club.

Such a club was organised before the war at Shoreham between Worthing and Brighton, but during the war the premises were taken over by the War Office. This club, the Sussex County Aero Club, has now been reorganised, and will constitute a model for the clubs to be established on the outskirts of other large towns.

Clubs have been registered as Proprietary Companies at the following places:—Aberdeen, Bristol, Birmingham, Carlisle, Derby, Dundee, Edinburgh, Exeter, Folkestone, Glasgow, Grimsby, Inverness, Ipswich, Leeds, Liverpool, Manchester, Newcastle, Norwich, Plymouth, and the Sussex County at Shoreham.

The Affiliated Aero Clubs of the British Empire, Ltd., are to provide £200,000, and of this sum £10,000 is to be devoted to starting each of the above clubs. Shares in the above company can be bought, and shareholders holding not less than 200 £1 shares have right of membership of all the clubs free of subscription.

G. Arthur Wingfield, Esq., is a Director of the Affiliated Aero Clubs, Ltd., and Chairman of the Sussex Aero Club, Ltd., and Flying Transport, Ltd. He has done much good work for aviation, and was one of the "moving spirits" in the Sussex Club, which was established before the war.

The Sussex County Aero Club's new aerodrome adjoins the old position which is now an R.A.F. aerodrome. The Club House is a substantial farm-house with four cottages and large well-built dairy buildings, and the architects estimated that £20,000 would cover all the necessary alterations, laying out the grounds, golf course, tennis lawns, etc. The grounds cover 150 acres.

Bungalow Town adjoins the flying ground, which is within half an hour's flight of London, and within a very few minutes of Brighton, Hove and Worthing.

The sea and a large expanse of smooth tidal water are available for seaplanes and motor-boats.

It is intended to develop the Club as a Country Club on the lines of Ranelagh, Hurlingham, etc.

An affiliation arrangement has been completed with the London Flying Club at Hendon. The Club will be unofficially reopened on September 6th.

FORECASTS OF FLYING MACHINES.

Some interesting correspondence has appeared in the "Scotsman" recently dealing with forecasts of flying machines. The following letter appeared in the issue of July 28th:—

Sir,—Last year I saw and heard an airship passing over my house. I returned to my book, "Lectures by Dean Ramsay," and, by a strange coincidence, the passage before me was the following—it occurs in the lecture on "Social and Moral Influences of the Iron Road":—

"There is a very remarkable passage on the subject of steam and its agency for mankind in Dr. Erasmus Darwin's 'Botanical Garden,' a poem little known to the present generation. . . . In the year 1793 Dr. Darwin thus wrote of steam and its powers, then only just coming into effect:—

"'Soon shall thy arm, unconquered steam! afar
Drag the slow barge or drive the rapid car.'

"Thus Dr. Darwin distinctly, in 1793, predicted what has come to pass since his day—steam navigation and land locomotives. It was a remarkable prediction and remarkably accomplished. But Dr. Darwin predicts also steam conveying men by air as well as by land and water. In a note he says:—'There is reason to believe it may in time be applied to the rowing of barges and the moving of carriages along the road,' and then, very coolly, adds, 'as the specific levity of air is too great for the support of great burdens by balloons, there seems no probable method of flying conveniently but by the power of steam or some other explosive material which another half-century may invent.' And upon this idea he proceeds in the poem to describe ladies shaking their pocket-handkerchiefs to friends below them out of the flying chariots, and armies on land looking with dismay on the arrival of troops coming to reinforce their enemies' ranks by a steam aerial transport. He looks forward to the time when the unconquered arm of steam

"'Shall on wide-waving wings expanded bear
The flying chariot through fields of air,
Fair crews triumphant leaning from above
Shall wave their fluttering 'kerchiefs as they move,
Or bands alarm the gaping crowd
And armies shrink beneath the shadowy cloud.'"

We may say that we have seen this "remarkable prediction remarkably accomplished."

W. M. S.

To "Aeroplane" Subscribers.

Since the Armistice, the subscription list of the AEROPLANE has steadily increased: an eminently satisfactory development which we are anxious to encourage.

Of the many books published on the war on the Western front, none conveys a more realistic impression of the work of a particular arm than FLYING COLOURS by Captain H. M. S. Saundby, A.F.C., R.A.F., M.C., published at **£2 2s.** net (Edition de luxe) and **15/-** net (Popular Edition).

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Many would like to possess it who do not feel disposed to put down Two Guineas for the larger edition or Fifteen Shillings for the smaller.

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In order to be fair to current yearly subscribers we extend the half-price concession to them also. If a subscriber has paid a quarterly or half-yearly subscription, then to secure the right to participate he should send the balance for the year.

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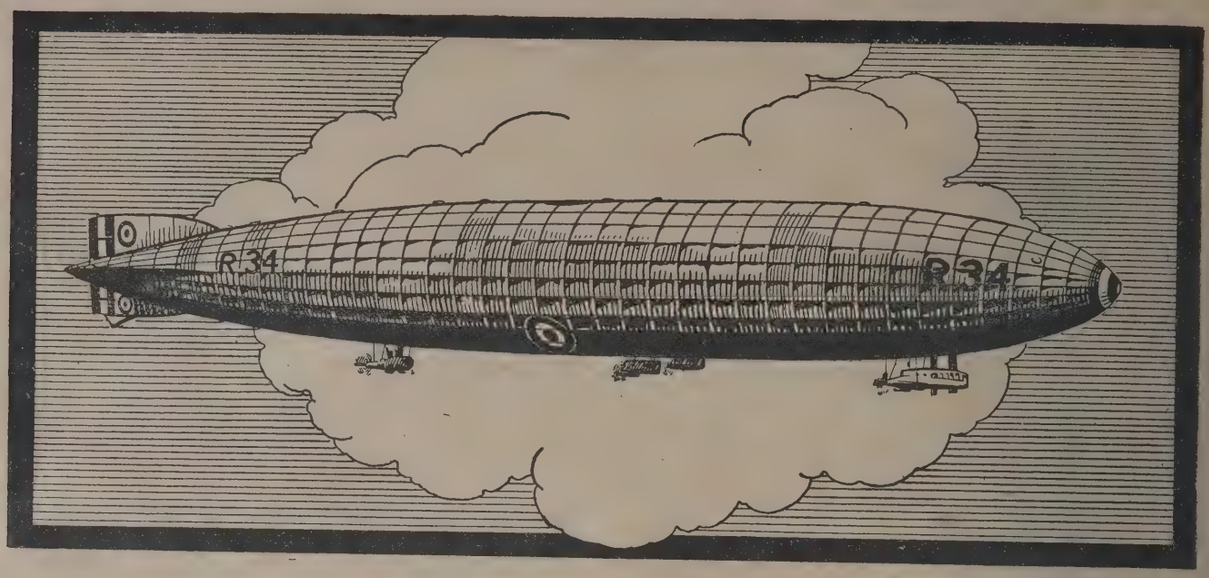
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THE WEEKLY COMMENTARY.

In a leading article "Strasbourg" comments upon the monopoly of technical knowledge which the Technical Department of the Air Ministry appear to intend to create.

He disposes of the plea of military necessity for maintaining secrecy on such a subject in a manner novel and ingenious, though little complimentary to those charged with the direction of military affairs.

The machines produced by the Fairey Aviation Co., Ltd., under the direction of Mr. C. R. Fairey, form the subject of this week's instalment of "Modern British Aeroplanes."

It is noteworthy that Mr. Fairey has produced a large number of seaplanes with quite different characteristics by using a quite limited number of standard components, and that the machines thus turned out have by no means suffered in performance.

An illustrated description of one of the latest German multiple-engined machines, with a short historical account of its development, is given on page 531.

This machine is of a type not yet in use in this country, in that the power plant is concentrated in the central fuselage and drives the airscrews by gears and shafts.

Difficulties with the transmission gear were encountered, but German engineers, unlike their British rivals, were permitted to overcome them.

ON A MONOPOLY OF KNOWLEDGE.

By "STRASBOURG."

There was a time, even within the memory of some of the more venerable of those who are now connected with the Aeroplane Industry, when that Industry, resembling in this respect, and perhaps this alone, the early Christians, had all things, including information, in common.

In those, apparently for ever, departed days even the Advisory Committee on Aeronautics condescended to publish to the world at large the results of their cogitations, and of such experimental work as was carried out by the N.P.L. and even by the Royal Aircraft Factory.

True these reports were published at a price, and that price beyond the means of any but the wealthiest members of the aeronautical fraternity; but as they were usually confined—where they were not entirely erroneous—to a restatement of facts perfectly well known to the experienced, this mattered little.

To-day the aviation community is scattered over the earth; its members no longer each know each by their respective nicknames; and the direct interchange of experiences takes place only to a limited degree.

CONFIDENTIAL INFORMATION.

For five years technical information has been doled out, under oaths of secrecy and under deadly penalties for the infringement of such oaths, by a collection of assorted trouser-polishers, mostly young, mainly learned, and all of them possessed of that worst of devils—*pace* the author of the "Ingoldsby Legends"—the best of intentions.

Had the mischief been confined solely to the distribution of information it had been sufficiently regrettable.

Unfortunately this circle of the elect has successfully prevented not only the circulation of information, but even the acquirement of knowledge by individuals of an experimental turn of mind.

Were one minded to attempt the construction of any brand of aircraft differing in its conception from those ideas which they held in favour, effective means were discovered to prevent such an effort.

Did a sacrilegious Hun produce a biplane which outclassed our own machines, the fact was carefully suppressed till those who had met such a machine, and by some happy chance escaped to tell the tale, had spread the news.

Then a careful official explanation of the reasons why this machine could not conceivably do those things it was known to do, supported by official tests on a battered and probably incorrectly rigged sample of an out-of-date machine of the same make, would be issued as a confidential memorandum not to be divulged to the world at large.

These things were so, and these things, eight months after the cessation of hostilities, still are so.

It is still an offence for a technical journal to publish information contained in any of the confidential technical reports which have been published, under one title or another, by any of those bodies which have been engaged in the cornering of aeronautical technical information during the war.

TECHNICAL OFFENCES.

It is still an offence for two aeroplane designers publicly to discuss the merits or demerits of any method of computation laid down by the official wisdom-mongers. It is still illegal to query, except privately and in the darker places of the earth, the pronouncements of those in office as to what is or is not a suitable material to be used for a given purpose.

It may be that such things were an essential corollary of war. If it be so, it is merely an index of how stupid an affair war is.

It may even be that it is necessary, in the interest of the military branches of aeronautics, that some very close control upon the designers and makers of military aircraft be continued.

If this be so, then is the R.A.F. foredoomed. It may —it probably will—become a rival to the Army for the favour of those of our youthful males who possess more money than brains.

It very probably will develop, in its technical branches, an asylum for such as, incapable of earning a living in the open market, are yet too conscientious merely to play with their alleged work, and who will live continuously subject to the contempt of their more thoroughly incompetent "brothers in arms," even as do the Sappers of the Army.

It is, of course, obvious to any mind which is both intelligent and informed that it is essential for the well-being of the world at large that military forces should be utterly inefficient.

Providential Foresight.

Providence must be credited with a foresight so sufficient that it has moulded the human mind in such wise that, once it be safely and securely entangled in any governmental mechanism, it becomes dull, self-opinionated and ineffective.

An army of 100,000 men of average European intelligence, directed with the efficiency of even an average British manufacturing concern, could in a year produce quite a noticeable and a permanent effect upon the appearance of the earth at large.

Several armies, of a total approaching 20,000,000 men, directed according to the time-honoured rules of war, have recently spent over four years in an attempt to destroy each other's portion of the earth.

They have slightly modified the state of a few hundred square miles, at a cost, both to themselves and to their neighbours, of very considerable hardships and inconvenience, but the verbiage which has resulted from their efforts is likely to survive any other effect.

So while it may be well that our Air Forces should be thus restrained in their progress, that the next war may not be conducted with any greater effectiveness than was the last, that the earth may not be utterly destroyed thereby, it yet remains far from well in so far as the same restraint is imposed upon the commercial development of aircraft.

It might be argued that it were better that the wars of the future be thus shorn of some of their terrors, even at the cost of industrial development.

In fact, equipment makes little difference to the effectiveness of an army or other military force.

Equip a fool army with the finest and most deadly of the weapons of precision, it remains a fool army, and will so remain whilst Governments are what they are, and the traditions of Government service continue to be based upon form and not upon effect.

When mankind has sufficient sense to govern itself for its own profit, and not for the pleasure of its ears and eyes, it will have too much sense to waste its time destroying its own handiwork, and war can confidently be expected to cease, except, perhaps, as a spectacular pageant, fought according to very conventionalised rules and with very prehistoric weapons, and with a fair proportion of the gate-money as the victors' reward.

The use of aircraft would naturally be ruled out by the International War Federation in drawing up the regulations for such affairs, since their use would tend to rob the more serious and sanguinary part of the show of those elements of surprise and uncertainty which should be their most attractive feature.

Thus there is not really any real military danger involved in the rapid development of the technique of aeronautical engineering, and there is not the slightest excuse for the delay in publication, on the part of the Air Ministry, of the immense amount of data upon which they are now sitting.

Concealed Data.

It is generally alleged that this data has been placed at the disposal of all those who have any real use for it. This is by no means the fact. Designers have been refused permission to design, or to carry on experimental work, merely because their proposals did not commend themselves to the officials of the Technical Department, and have been refused even information as to why their proposals were scorned.

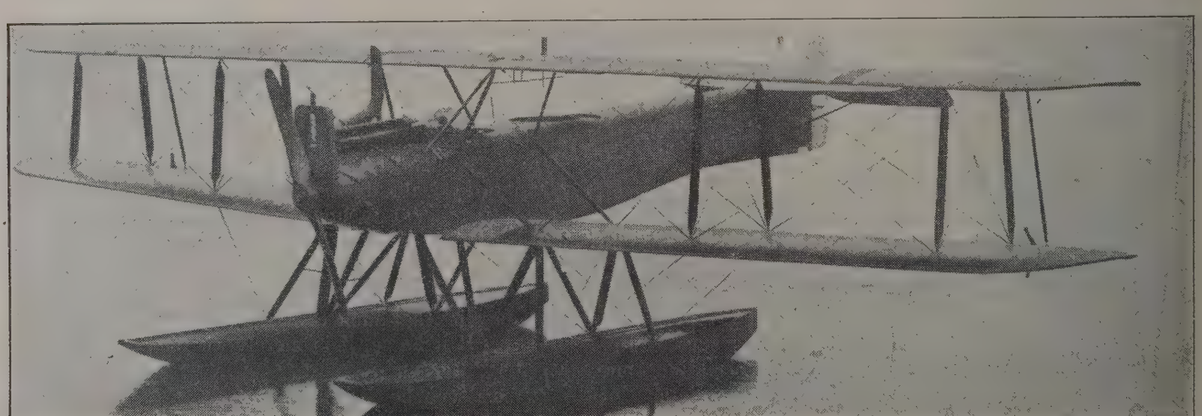
But even this is relatively unimportant. Most of the facts disclosed in confidential technical reports issued by the late Air Board and the present Air Ministry have been wrapped up and disguised in the opinions of the official technical experts, and to a large extent practice has been compelled along the lines of these opinions.

What is needed is the free and open discussion, in the Press and elsewhere, of the real meaning of the data which these reports contain, and of the results obtained by designers from experiments based on this data.

The Government of the United States of America have begun to issue reports of experimental work carried out under the control of the American Advisory Committee on Aeronautics.

These reports are excellently conceived. They are, so far as they have at present been examined, free from special pleading or personal interpretations. They record not merely the results of the experiments, but are extraordinarily frank as to the limits of accuracy of the methods employed in reaching them.

It may therefore be expected that within a very short space all enterprising aeronautical engineers will be able to look, not without relief, to some source of information which is not tainted with Boloism.



A single-engined Friedrichshafen Seaplane, of a type which proved itself extremely useful in the North Sea during 1917. It will be noticed that the tail and rudder are elevated in the Brandenburg manner, and that the floats, as is usual in German sea machines, are of the Howard Wright type.

MODERN BRITISH AEROPLANES.

X.—The Fairey Aviation Co., Ltd.



Three-quarter view from rear of the Fairey N.10 in her original form (Type III). 260 h.p. Sunbeam engine.

Mr. C. R. Fairey's connection with aeroplane development in England goes back to very early times.

He was associated with the Blair Atholl Aeroplane Syndicate, and took an active part in the development of the Dunne machines as practicable aeroplanes. He then joined Short Bros. at Eastchurch, and was intimately connected with the development of the Short Seaplanes, which rendered such good service with the R.N.A.S.

In 1915, Mr. Fairey founded the Fairey Aviation Co., Ltd., of which he is managing director.

Amongst a number of valuable contributions to the applied science of aeronautical engineering due to Mr. Fairey, probably the most valuable is the Fairey Variable Camber gear.

This consists of a flap similar in construction to the ordinary aileron, but extending over the whole span of the wing, and so arranged that it may be moved either up or down relatively to the fixed part of the wing, on both sides at once, quite independently of the ordinary use of the whole flap, or a part thereof, as an aileron.

This has the effect of providing a variable camber and makes it possible to use an aerofoil section with a low maximum lift and a high lift to drag ratio, heavily loaded, and giving a high speed, and of converting this aerofoil whilst in flight into a heavily cambered high-lift section which will give a low landing speed.

THE FAIREY TWIN-ENGINED FIGHTER.

This machine was completed and flown during 1915. It was designed for fighting purposes in the days before the advent of the synchronised gun, and at a time when the single engine tractor type was generally considered useless for offensive purposes.

In spite of its excellent performance and its superiority to any other type then available, it was lost amongst the shifting sands of our aerial policy, and was never reproduced.

SPECIFICATION.

Type of machine	Biplane
Name or type number of machine	F.2
Span (upper plane overall)	77 ft.
Gap (maximum and minimum)	6 ft.
Overall length	40 ft. 6½ in.
Maximum height	13 ft. 5⅝ in.
Chord	5 ft. 6 in.
Total surface of wings	718.4 sq. ft.
Span of tail	17 ft. 6 in.
Total area of tail (including elevators)	103.9 sq. ft.
Area of elevators	39 sq. ft.
Area of rudder (2 rudders)	10 sq. ft. each—20 sq. ft.
Area of fins (10.9 each)	21.8 sq. ft.
Area of ailerons	47.8 sq. ft. each—95.6 sq. ft. total
Maximum cross-section of body	3 ft. by 2 ft. 6 in.
Horizontal area of body	97 sq. ft.
Vertical area of body	75 sq. ft.
Engine type and h.p. (2 engines)	190 h.p. Rolls-Royce
Weight of machine loaded	4680 lbs.
Load per square foot	6.8 lbs.
Weight per h.p.	13 lbs.
Tank capacity in hours	3½ hours
PERFORMANCE—	
Speed low down	81 knots
Climb—	
To 5,000 ft.	6 mins.



The Fairey N.10 in her second form (Type IIIA) with land undercarriage for deck flying.

THE HAMBLE BABY.

This machine was the result of an effort to provide a light fast seaplane fitted with a standard rotary engine, which should combine a low landing speed, a fair top speed, and the capacity to climb to a reasonable height loaded with two 65 lb. bombs.

The first of the type was manufactured by fitting a "Sopwith Baby Seaplane" fuselage and chassis with a new set of wings equipped with the variable camber device, to which reference has already been made, and an enlarged tail, rudder, fin, and tail float.

The result was so successful that a large number of the type was ordered.

SPECIFICATION.

Type of machine	Seaplane
Name and type No.	F.129 Hamble "Baby"
Span overall	27 ft. 9½ in.
Gap	4 ft. 6 in.
Length overall	23 ft. 4 in.
Maximum height	9 ft. 6 in.
Chord	4 ft. 9 in.
Total surface	246 sq. ft.
Span of tail	10 ft. 9 in.
Total area of tail (including elevators)	41 sq. ft.
Area of elevators	17 sq. ft.
Area of fin	4.3 sq. ft.
Area of ailerons	9.1 sq. ft. each—36.4 sq. ft. total
Maximum cross-section of body	3 ft 2 in. by 2ft 7 in.
Horizontal area of body	39.4 sq. ft.
Vertical area of body	34 sq. ft.
Engine type and h.p.	Clerget 110-h.p.
Weight loaded	1,900 lbs.
Load sq. ft.	7.8 lbs.
Weight per h.p.	17.21 lbs.
Tank capacity in hours	3½ hours
PERFORMANCE—	
Speed low down	85 knots
Climb—	
To 5,000 ft.	8 mins.

THE FAIREY "CAMPANIAS," F.16, F.17, AND F.22.

These three machines are all very similar—they are, in fact, modifications of the same design.

The "Campania" design was limited in its overall dimensions to suit the hatchways and stowage accommodation of the seaplane-carrier "Campania." The specification called for a combination of high top speed, low landing, and getting off speeds, together with the greatest possible fuel and bomb capacity.

The original F.16 was designed with a fairly high lift wing section, fitted with the Fairey flap gear, and was equipped with an early Rolls-Royce "Eagle," giving 250-h.p.

On test it was found not to come up to the designer's expectation. The high lift wing with the flaps upturned were not efficient, and the high speed reached was disappointing.

F.17 was accordingly built. This machine differed mainly in having wings of a standard high-speed type, fitted with flaps to secure a low landing speed. The tail was somewhat modified, a larger fin and a smaller rudder were fitted and an Eagle engine of a later series and greater power was installed. The results were excellent.

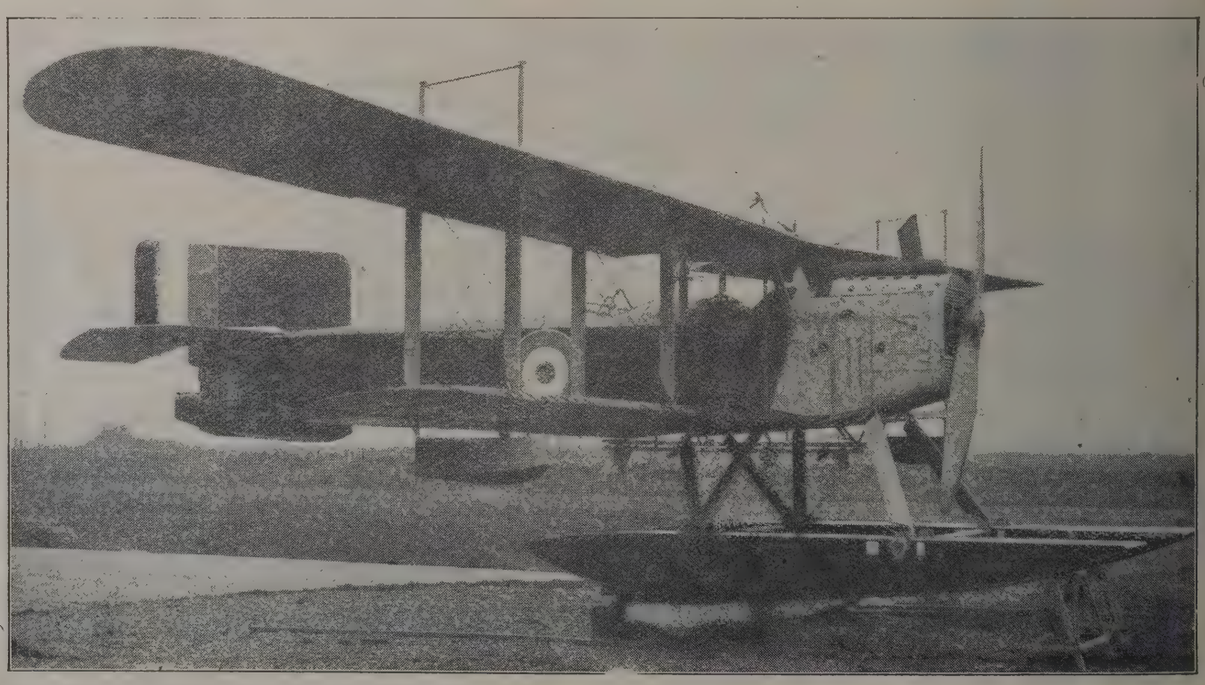
It was then decided that 375 h.p. Rolls-Royces could not be spared for mere seaplanes, and the machine was modified to take the 260-h.p. Sunbeam engine. In this form it was known as the F.22, and was produced in fair numbers.

SPECIFICATION.—F.16.

Type of machine	Seaplane
Name or type No.	F.16 Campania
Span overall	61 ft. 7½ in.
Gap	6 ft. 6 in.
Length overall	43 ft. 3⅝ in.
Maximum height	15 ft. 1 in.
Chord	6 ft. 4 in.
Total surface of wings	639.8 sq. ft.
Span of tail	13 ft.
Area of tail, including elevators	75.1 sq. ft.
Area of elevators	28.1 sq. ft.
Area of rudder	28 sq. ft.
Area of fin	14 sq. ft.
Area of ailerons	23.4 sq. ft. each—46.8 sq. ft total
Maximum cross-section of body	3 ft. 6 in. by 3 ft. 1 in.
Horizontal area of body	90 sq. ft.
Vertical area of body	88 sq. ft.
Engine type and h.p.	250-h.p. Rolls-Royce
Weight fully loaded	5,500 lbs.
Disposable load	1,026 lbs.
Load per square foot	8.6 lbs.
Weight per h.p.	22.2 lbs.
Tank capacity	88 galls.
PERFORMANCE—	
Speed low down	72 knots
Landing speed	42 knots
Climb—	
To 5,000 ft.	14 mins.

SPECIFICATION.—F.17.

Type of machine	Seaplane
Name or type No.	F.17 Campania
Span overall	61 ft. 7½ in.
Gap	6 ft. 6 in.
Length overall	43 ft 3⅝ in.
Maximum height	15 ft. 1 in.
Chord	6 ft. 4 in.
Total wing surface	627.8 sq. ft.
Span of tail	13 ft.
Area of tail (including elevators)	75.1 sq. ft.
Area of elevators	28.1 sq. ft.
Area of rudder	19.6 sq. ft.



The Fairey Type IIIB Seaplane (260 h.p. Sunbeam engine).

Area of fin ..... 16.2 sq. ft.
Area of ailerons ..... 23.4 sq. ft. each—46.8 sq. ft. total
Maximum cross-section of body ..... 3 ft. 6 in. by 3 ft. 1 in.
Horizontal area of body ..... 90 sq. ft.
Vertical area of body ..... 88 sq. ft.
Engine type and h.p. ..... 275-h.p. Rolls-Royce
Weight fully loaded ..... 5,560 lbs.
Disposable load ..... 1,100 lbs.
Load per sq. ft. ..... 8.7 lbs.
Weight per h.p. ..... 19.5 lbs.
Tank capacity ..... 88 galls.

Performance—
Speed low down ..... 78 knots
Landing speed ..... 43 knots
Climb—
To 5,000 ft. ..... 12 min. 30 sec.

SPECIFICATION.—TYPE F.22.

Type of machine ..... Seaplane
Name or type No. ..... F.22 Campania
Span overall ..... 61 ft. 7½ in.
Gap ..... 6 ft. 6 in.
Length overall ..... 43 ft. 0⅝ in.
Maximum height ..... 15 ft. 1 in.
Chord ..... 6 ft. 4 in.
Total surface of wings ..... 627.8 sq. ft.
Span of tail ..... 13.0 ft.
Area of tail (including elevators) ..... 75.1 sq. ft.
Area of elevators ..... 28.1 sq. ft.
Area of rudder ..... 19.6 sq. ft.
Area of fin ..... 16.2 sq. ft.
Area of ailerons ..... 23.4 sq. ft. each—46.8 sq. ft. total
Maximum cross section of body ..... 3 ft. 6 in. by 3 ft. 1 in.
Horizontal area of body ..... 90 sq. ft.
Vertical area of body ..... 88 sq. ft.
Engine ..... 260-h.p. Sunbeam
Weight of machine loaded ..... 5,329 lbs.
Disposable load ..... 1,086 lbs.
Load per sq. ft. ..... 8.14 lbs.
Load per h.p. ..... 20.1 lbs.
Tank capacity ..... 88 galls.

Performance—
Speed low down ..... 74 knots
Landing speed ..... 40 knots
Climb—
To 5,000 ft. ..... 18 min.

THE FAIREY N.9.

This machine was designed for reconnaissance work at sea, and was not intended to carry a large bomb load. In its general lines it resembled the "Campania" type, but had cut-down lower planes and was powered with a 190-h.p. Falcon Rolls-Royce.

Like the "Campanias" it was fitted with variable camber gear.

Only one machine of the type was built, largely on account of the shortage of Rolls-Royce engines, and the solitary example was used for experimental work.

An interesting feature of this machine's history is the fact that it was the first British seaplane to begin a flight by being thrown off the deck of a ship by a catapult gear.

SPECIFICATION.

Type of machine ..... Seaplane
Name or type number of machine F.127
Purposes for which intended ..... Shipwork
Span ..... 50 ft.
Gap (maximum and minimum) ..... 5 ft. 7 in.
Overall length ..... 35 ft. 6 in.
Maximum height ..... 13 ft.
Chord ..... 5 ft. 6 in.
Total surface of wings ..... 420 sq. ft
Span of tail ..... 13 ft.
Total area of tail ..... 34.2 sq. ft.
Area of rudder and fin ..... 9 ft. 8 in.
Area of each aileron and total area ..... 18 sq. ft.
Engine type and h.p. ..... 190 h.p. R.R.
Load per square foot ..... 9.08 lbs.
Weight per h.p. ..... 18.15 lbs.
Tank capacity in hours 5¼
Tank capacity in gallons 70

Performance—
Speed low down ..... 78 knots
Speed at 10,000 ft. ..... 74 knots
Landing speed ..... 38 knots
Climb—
To 5,000 ft. ..... 9 min. 30 sec.
To 10,000 ft. ..... 38 min.
Disposable load apart from fuel 516
Total weight of machine loaded ..... 3,812 lbs.

THE FAIREY TYPE III, IIIA, IIIB, AND IIIC.

The original Type III machine—known as N.10 in the R.N.A.S.—was mainly a modified N.9, with the lower wing extended to a span equal to that of the upper wing, and fitted with the 260-h.p. Sunbeam.

This machine underwent a number of metamorphoses. Fitted with a land chassis in place of floats, it became a "deck flier," or ship plane. This form became known as the Type III, and fitted with flotation air bags and hydrovanes for alighting on water was reproduced in some quantitiy.

After this the same fuselage was fitted with a set of wings of greater span, larger floats, and a heavier chassis, was equipped with bomb gear and became the prototype of the Type IIIB.

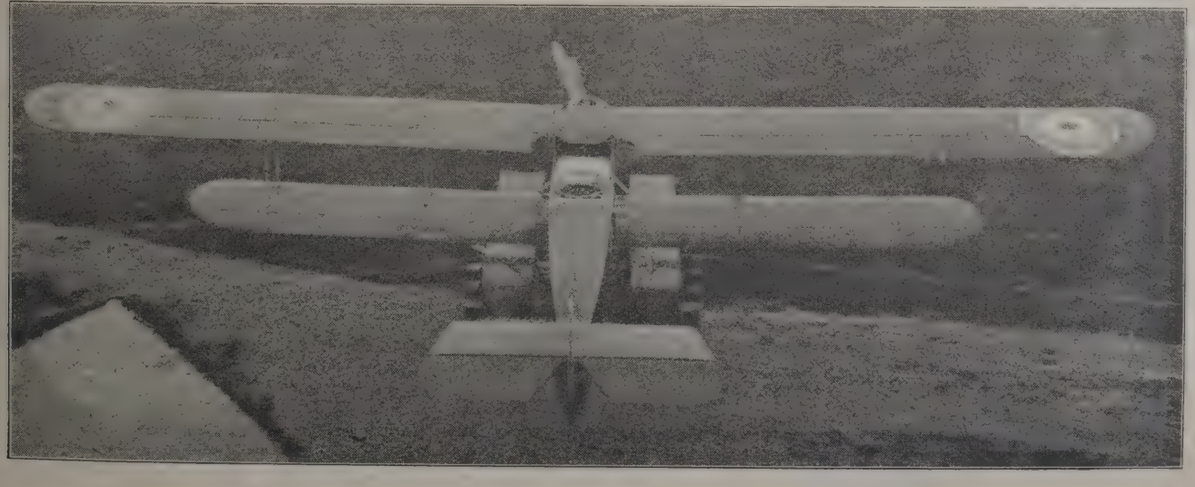
Later still, the "Eagle" Rolls-Royce engine in its 375-h.p. edition became available, and a kind of mixture of the N.10 varieties was produced, known as the Type IIIC.

This consists of the standard fuselage, fitted with the wings of the original Type III, and the chassis and floats of the Type IIIB, with enlarged fuel tanks and a greatly improved performance. The following specifications give the main details of these varieties of the N.10 type.

SPECIFICATION.—TYPE III.

Type of machine ..... Seaplane
Name or type number of machine F.128
Purpose for which intended ..... Sea scout
Span ..... 46 ft. 2 in.
Gap (maximum and minimum) ..... 5 ft. 7 in.
Overall length ..... 36 ft.
Maximum height ..... 13 ft.
Chord ..... 5 ft. 6 in
Total surface of wings ..... 476 sq. ft.
Span of tail ..... 13 ft.
Total area of tail ..... 34.2 sq. ft.
Area of rudder and fin ..... 9.8 sq. ft.
Area of each aileron ..... 16.5 sq. ft.
Engine type and h.p. ..... 260-h.p. Sunbeam
Load per sq. foot ..... 8.74 lbs.
Weight per h.p. ..... 15.69 lbs.
Tank capacity in hours ..... 4½ hours
Tank capacity in gallons ..... 76 galls.

Performance—
Speed low down ..... 90 knots



Rear View of the Fairey Type IIIB Seaplane with 260 h.p. Sunbeam engine.

Speed at 10,000 ft.	82 knots
Landing speed	41 knots
Climb—	
To 5,000 ft.	9.15 min.
To 10,000 ft.	23 min.
Disposable load apart from fuel	584 lbs.
Total weight of machine loaded	4,160 lbs.

SPECIFICATION.—TYPE IIIA.

Type of machine	Tractor biplane
Name or type number of machine	F111 a
Purpose for which intended	General
Span	44 ft.
Gap (maximum and minimum)	5 ft. 7 in.
Overall length	31 ft.
Maximum height	13 ft.
Chord	5 ft. 6 in.
Total surface of wings	476 sq. ft.
Span of tail	13 ft.
Total area of tail	34.2 sq. ft.
Area of rudder and fin	9.8 sq. ft.
Area of each aileron	16.5 sq. ft.
Engine, type and h.p.	260-h.p. Sunbeam
Load per sq. foot	7.76 lbs.
Weight per h.p.	13.93 lbs.
Tank capacity in hours	4½ hours
Tank capacity in gallons	76 galls.
Performance—	
Speed low down	95 knots
Speed at 10,000 ft.	90 knots
Landing speed	40 knots
Climb—	
To 5,000 ft.	7.1 min.
To 10,000 ft.	17.3 min.
Disposable load apart from fuel	584 lbs.
Total weight of machine loaded	3,694 lbs.

SPECIFICATION.—TYPE IIIB.

Type of machine	Seaplane
Name or type number of machine	F111 b
Purpose for which intended	Sea bomber
Span	62 ft. 9 in.
Gap (maximum and minimum)	5 ft. 7 in.
Overall length	26 ft.
Maximum height	13 ft.
Chord	5 ft. 6 in.
Total surface of wings	570 sq. ft.
Span of tail	13 ft.
Total area of tail	34.2 sq. ft.
Area of rudder and fin	12.4 sq. ft.
Area of each aileron	23 sq. ft.
Engine, type and h.p.	260-h.p. Sunbeam
Load per sq. ft.	8.5 lbs.
Weight per h.p.	18.5 lbs.
Tank capacity in hours	4½ hours
Tank capacity in gallons	76 galls.
Performance—	
Speed low down	83 knots
Speed at 10,000 ft.	76 knots
Landing speed	42 knots
Climb—	
To 5,000 ft.	12.3 min.
To 10,000 ft.	36.0 min.
Disposable load apart from fuel	1,041 lbs.
Total weight of machine loaded	4,892 lbs.

SPECIFICATION.—TYPE IIIC.

Type of machine	Seaplane
Name of machine	F111 c.
Purpose for which intended	Reconnaissance
Engine type and h.p.	375-h.p. Rolls-Royce "Eagle"
Load per sq. ft.	10.6 lbs.
Weight per h.p.	14 lbs.
Tank capacity in hours	6 hours
Tank capacity in gallons	120 galls.
Performance—	
Speed low down	97 knots
Speed at 10,000 ft.	90 knots
Landing speed	44 knots
Climb—	
To 5,000 ft.	6.4 min.
To 10,000 ft.	17.30 min.
Disposable load apart from fuel	1,030 lbs.
Total weight of machine loaded	5,050 lbs.

THE N.4 TYPE FLYING-BOAT.

This machine, designed by Mr. Fairey, in collaboration—so far as hull was concerned—with Major Linton Hope—was intended for work with the Fleet at sea.

The main requirements were great air endurance, seaworthiness, a formidable armament, and a high performance

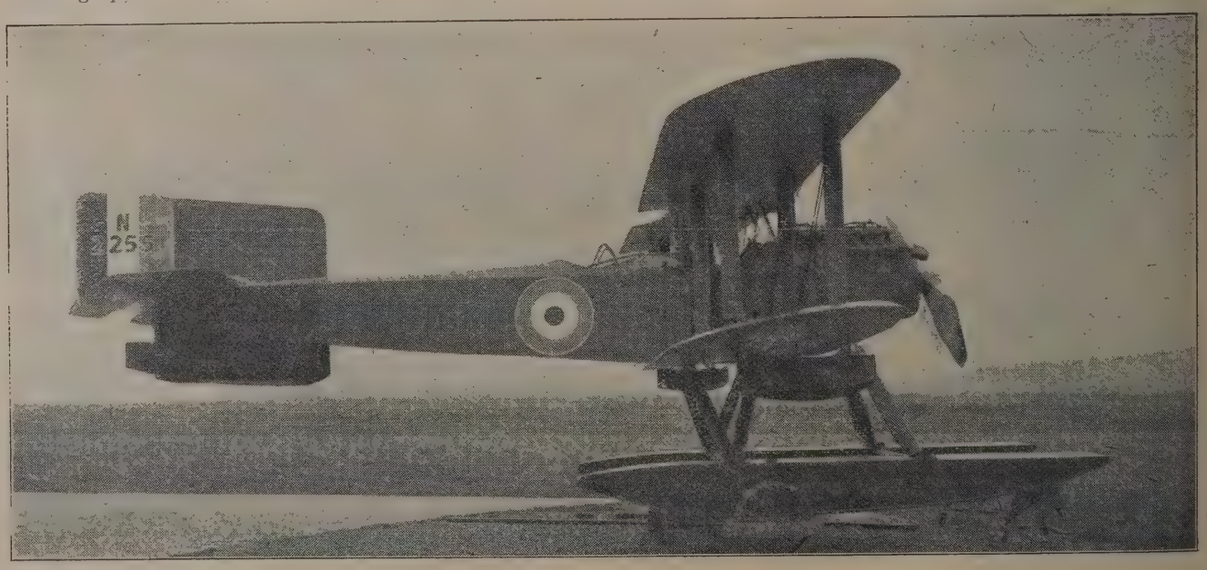
The machine is being built in two varieties known as the "Atalanta" and the "Titania." The first type has fixed section wings, whereas the "Titania" is to be fitted with the Fairey variable camber gear.

This type of machine is too interesting and presents too many novel features for justice to be done to it in this article.

A general specification is attached, but it is hoped that it will shortly be possible to describe it in detail, and further particulars and illustrations will then be given.

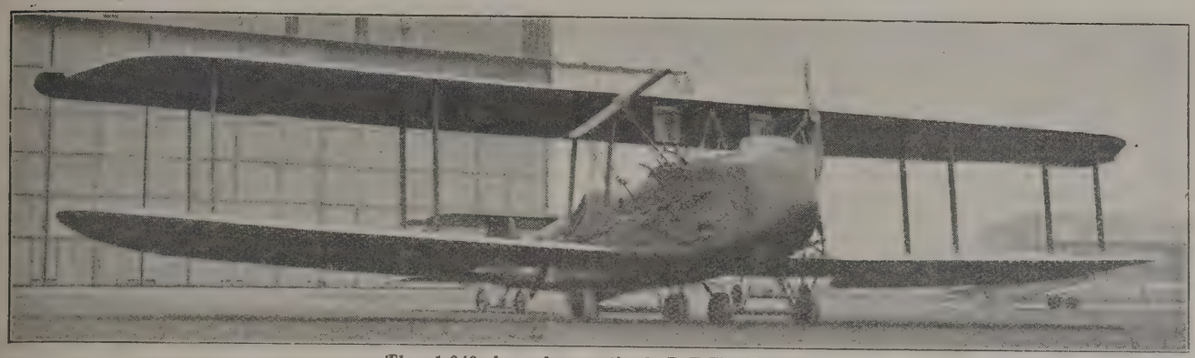
SPECIFICATION.

Type of machine	Flying-boat
Name and type number	N.4 "Atalanta" or "Titania"
Span	139 ft. top, 93 ft. bottom
Gap	14 ft. centre, 12 ft. at tip
Length overall	66 ft.
Maximum height	29 ft. 6 in.
Chord	12 ft. 6 in.
Total surface of wings	2,900 sq. ft.
Span of tail	25 ft.
Area of tail, including elevators	350 sq. ft.
Area of elevators	50 sq. ft.
Area of rudders	50 sq. ft.
Area of fins	50 sq. ft.
Area of ailerons	83 sq. ft.
Engines	4 Rolls-Royce "Condor" 600-h.p.
Total weight loaded	30,500 lbs.
Load per sq. foot	10.5 lbs.
Load per h.p.	12.7 lbs.
Tank capacity	1,000 galls—12 hours



Side View of the Fairey Type IIIC Seaplane (375 h.p. "Eagle" Rolls-Royce engine).

THE D.F.W. FOUR-ENGINED BIPLANE.



The 1,040 h.p. four-engined D.F.W. Biplane.

The D.F.W. machine hereafter described is of a type which, as yet, is exclusively German, so far as practical construction is concerned. It is of the multiple-engined type, with all the engines within the fuselage and with airscrews on the wings, shaft-driven from the engines.

The first D.F.W. of this type was begun in September, 1915.

Four 220-h.p. Mercédès engines were carried within the fuselage, two engines, one above another on each side, with a central gangway between.

Each engine drove through bevel gears and shafts a single airscrew. These airscrews were arranged in the manner shown in the scale drawing—one pair of tractor airscrews mounted high in the interplane gap on each side and one pair of "pusher" airscrews low down and (in front elevation) immediately below the tractors.

Thus the disadvantages of the tandem arrangement of airscrews are avoided.

Preliminary trial flights were made successfully, and the machine was subjected to military acceptance on Oct 19th, 1916, at Döberitz.

Weighing empty 6,800 kgm., with a total lead of 2,600 kgm., and a total loaded weight of 9,400 kg. (9.4 tons), the machine showed a maximum speed of 130 k.m.h. (81 m p.h.), and climbed 1,000 metres in 10 mins., 2,000 metres in 25 mins., and 3,300 metres (10,900 ft.) in 53 mins.—this being the apparent ceiling.

During further trials at Döberitz a number of crankshaft failures occurred, which were attributed to the excessive length of the 8-cylinder 220-h.p. Mercédès engine. Extra strong engine bearers were provided, and the transmission shafts were fitted with universal joints, and the trouble was thus overcome.

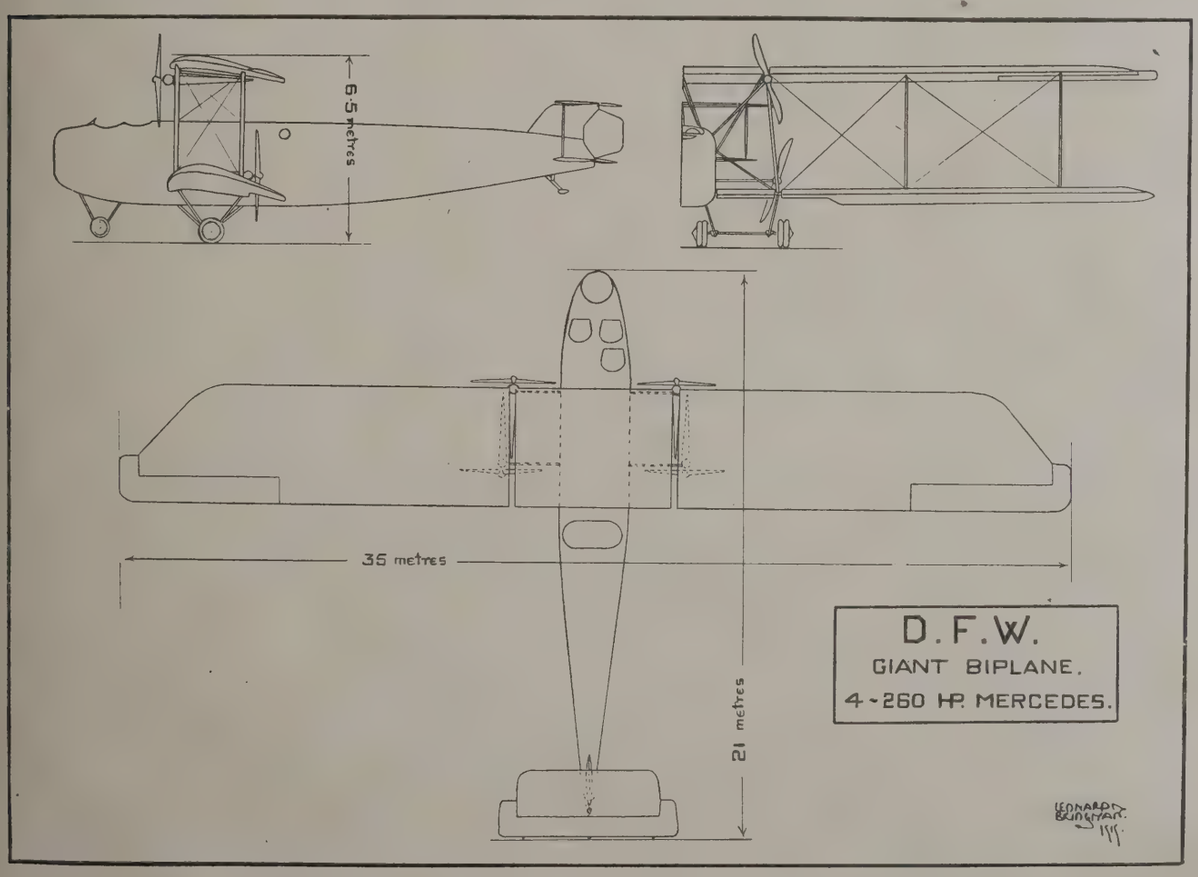
After tests the machine was sent to the Eastern front, where it arrived on April 30th, 1917.

It was found to possess good manœuvring and climbing capacity, and six enlarged editions were ordered.

These were to be equipped with the 260-h.p. six-cylinder Mercédès, and to carry a load of 3,400 kgm. instead of 2,600, as in the original.

The first machine of the enlarged type was begun early in 1918, and preliminary test flights were made in August.

Considerable trouble was experienced with the transmission. The shafts from engine to airscrew shaft were geared up to 3,000 r.p.m. and vibrated excessively. These shafts were, therefore, encased in stiff tubes and, presumably, supported therein on ball races, with satisfactory results.



In April, 1919, the machine was sent to Cologne, and there carried out numerous tests.

The general arrangement of the power plant is similar to that of the original type. The transmission systems embody reduction gears which bring each airscrew down to 900 r.p.m.

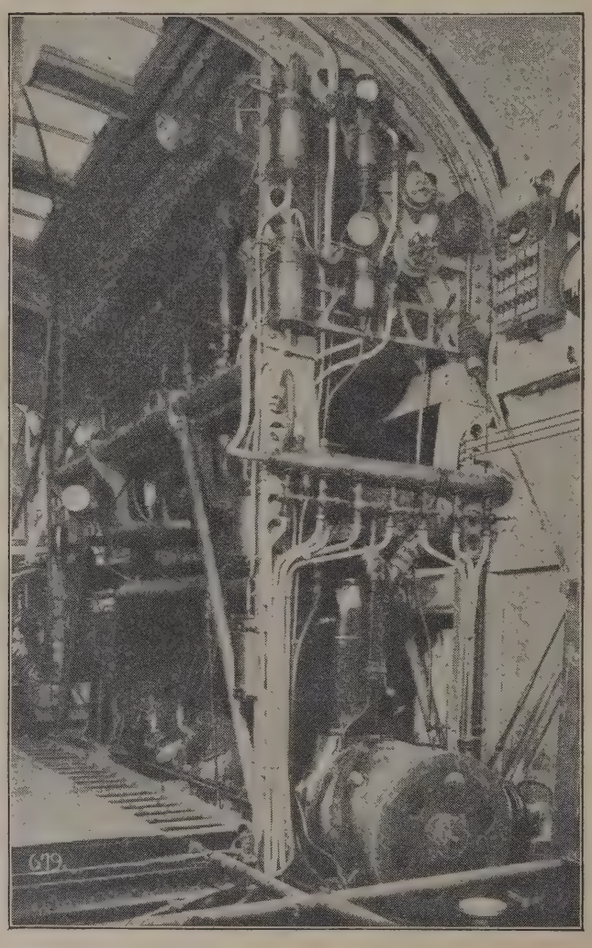
A photograph is reproduced which gives a good idea of the engine installation.

The general arrangement of the whole machine is well shown in the drawings reproduced.

The general dimensions and particulars are given in the appended specification :—

SPECIFICATION.

Span	35 m.
Length overall	21 m.
Height overall	6.5 m.
Total surface	260 sq. m.
Weight empty	8,600 kg.
Weight of fuel and oil	1,440 kg.
Instruments and lighting set	130 kg.
Crew (6)	470 kg.
Disposable load	1,700 kg.
Total loaded weight	12,340 kg.
Weight per h.p.	12 kg.
Weight per sq. metre	47 kg.
Max. speed	132 km. p.h. (84 m.p.h.)



View in the engine-room of the D.F.W. Giant showing the starboard pair of 260 h.p. Mercédès engines, one above the other.

A NEW CATALOGUE.

Fredk. Sage and Co., Ltd., of Gray's Inn Road, W.C., and of Peterborough, have just issued an illustrated brochure entitled "Sage Aircraft."

This gives a description of the work which the firm carried out in the construction of aircraft during the war, together with outline drawings and specifications of a number of machines designed to suit post-war conditions.

The production is excellently got up and splendidly illustrated.

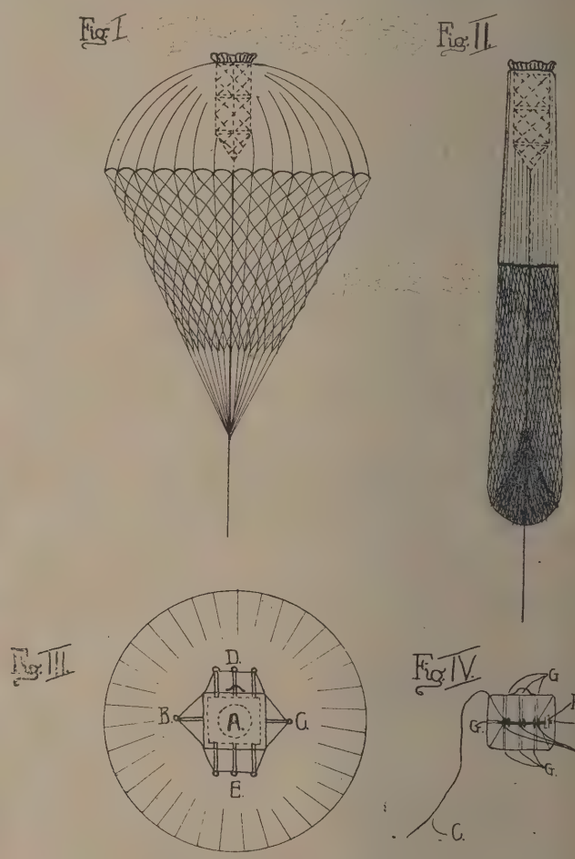
A NEW FORM OF PARACHUTE.

The following letter has been received :—

Sir,—As a Parachute enthusiast I was very interested in the notes on parachutes by Lieut.-Col. H. S. Holt in your issue of April 9th, which is very interesting and instructive.

I may state while on active service in France last June, 1918, on Lewis gun work, I invented a parachute for aeroplanes which I claim to open almost instantaneously when exposed to air pressure.

The parachute has an airshaft consisting of hoops and netting which helps to open it, and the usual lines are netted over or simply replaced by netting, thus preventing any entanglement—this addition of about four pounds is well worth the extra weight to insure instantaneous opening, and to avoiding entanglements.



The parachute can be folded up or rolled up anyhow and is carried in a wrapper which is quite secure, but at the same time easy and quick to open. This wrapper consists of a piece of material stitched on top of the parachute in the shape of a rectangle, leaving a loose piece of flap on all four sides. Fig. 3 gives a top view of the parachute, showing A the wrapper, B, C, D and E the flaps. The two smaller flaps B, C have a ring at the ends, the two larger, D and E, several rings, through which a pin is passed to hold the bulk together when folded up. Elastic bands are stretched from the rings to the stretched-on parts of the wrapper so that the flaps contract as soon as the pin is drawn from the rings, thus exposing the parachute to the air pressure.

Fig. 4 shows F, the rings G, the elastic bands, and H, the pin. The wrapper need not be stitched on the parachute.

I have made several models which I have tried and they work well. I cannot find any fault with the design and all aviators to whom I have shown it—both French and British—agree with me that we ought to have parachutes on aeroplanes in case of fire or some other unforeseen breakage where the aviator has not a ghost of a chance to see the aeroplane safely to earth.

J. F. Matey, R.A.

AEROPLANES FOR SALE.

A sale is announced, by direction of the Disposal Board of the Aircraft Disposal Department, of a limited number of new Handley Page aeroplanes, fitted with Rolls-Royce engines complete, and also two second-hand (practically new) Handley Page machines.

They can be seen at Cranwell Aerodrome, Sleaford, Lincs. Further particulars and permits to view can be obtained from the Controller of the above Department at Kingsway, W.C.2.

PATENTS INDEX

The subjoined list of recent inventions has been specially compiled by THE AEROPLANE from the Current Official Patents Records :—

PATENTS APPLICATIONS.

COMPLETE SPECIFICATIONS ACCEPTED, PRINTS OF WHICH CAN BE OBTAINED ON AND AFTER JUNE 26TH, 1919.

127,289. Nov. 6th, 1916. Weiss, P., and Verdier, J. Process for the production of intense artificial clouds, fogs, or mists.

127,299. April 5th, 1917. Smith, G. P. Bragg-., Desbleds, L. B., and Aeronautical Institute of Great Britain. Girder structures particularly applicable to the construction of aircraft.

127,300. April 10th, 1917. Ellor, J. E., and Fowler, Sir H. Aero-engines.

127,307. April 10th, 1917. Vickers, Ltd., Pierson, R. K., and Duncan, T. S. Tail skid or runners of aeroplanes.

127,311. April 13th, 1917. Dudd, H. B. Means for applying tape and the like to the wings of aeroplanes, and for like purposes.

127,320. April 19th, 1917. Fowler, Sir H., and Salmon, P. Internal combustion engines for aircraft.

127,327. April 20th, 1917. Ricardo, H. R. Driving mechanism for propeller.

127,332. April 23rd, 1917. Antoine, T. Pedal control for aeroplanes, motor-cars, and the like.

127,337. April 25th, 1917. Gledhill, A. H. Apparatus for releasing bodies from aircraft.

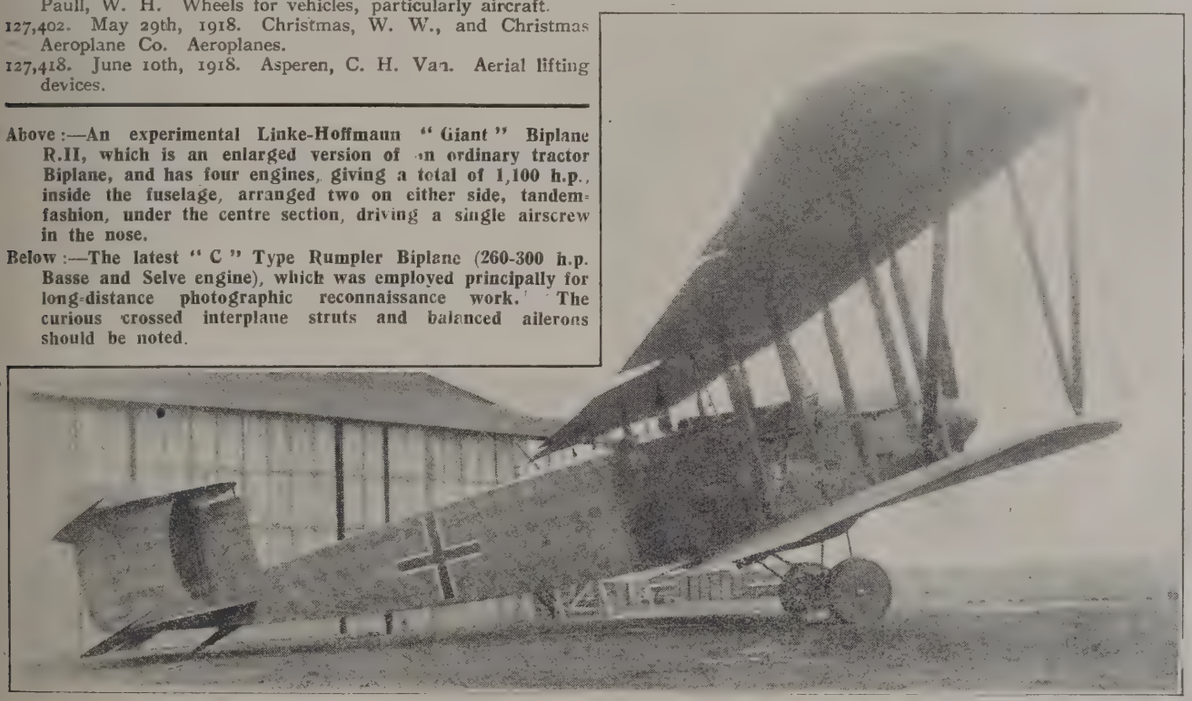
127,373. May 1st, 1918. Dunlop Rubber Co., Macbeth, C., and Paull, W. H. Wheels for vehicles, particularly aircraft.

127,402. May 29th, 1918. Christmas, W. W., and Christmas Aeroplane Co. Aeroplanes.

127,418. June 10th, 1918. Asperen, C. H. Van. Aerial lifting devices.

Above :—An experimental Linke-Hoffmann "Giant" Biplane R.II, which is an enlarged version of an ordinary tractor Biplane, and has four engines, giving a total of 1,100 h.p., inside the fuselage, arranged two on either side, tandem-fashion, under the centre section, driving a single airscrew in the nose.

Below :—The latest "C" Type Rumpler Biplane (260-300 h.p. Basse and Selve engine), which was employed principally for long-distance photographic reconnaissance work. The curious crossed interplane struts and balanced ailerons should be noted.





THE MAINTENANCE OF CAR LIGHTING SETS.

Of the readers of this journal, certainly a fair number, and, probably, the great majority, are to some extent interested in motoring.

To all these the handbook of running instructions for the C.A.V. Dynamo lighting and starting system, which has just been issued by Messrs. C. A. Vandervell and Co., Ltd., Acton, should be of interest.

It contains clear and easily understood instructions for the use, care, maintenance, and adjustment of this particular lighting set, with a particularly full treatment of the care of batteries.

AVIATION INSURANCE.

Anyone wishing to benefit their relations—a strange wish, as relations are always the last people to whom one desires to leave money—could do this with the minimum of trouble by insuring his life for £5,000 by paying 25s. and then proceeding to have a joy (?) flip in a dud aeroplane, and a crash from a good height.

Muir, Beddall and Co., Ltd., of 4, Bucklersbury, E.C.4., have an aviation department which undertakes to insure a man against death for £500 on payment of 5s. for any trip whatsoever in the United Kingdom, no matter how many machines are flown in upon the journey. The limit to this is £5,000 for a corresponding multiple of premium.

Only 2s. 6d. per £500 insurance is required for joy flights, from which it is easy to calculate as above, £5,000 for 25s.; and the only thing required of one is to get well crashed.

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You couldn't see it from below

but it's nevertheless a fact—a fact which every flying man and aircraft manufacturer should note—that the majority of the machines competing in the Aerial Derby, including the three which were placed 1st, 2nd and 3rd, at the end of the race, were fitted with

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COMMERCIAL AERONAUTICS & CIVIL AERIAL TRANSPORT

ON MINDING ONE'S OWN BUSINESS.

By "MEDWAY."

Last week, when trying to begin a discussion on the development of commercial aerial services—particularly overseas—I arrived at the preliminary conclusion that the British Aircraft Industry, taken as a whole, does not itself show enough confidence in this admirable proposition. Possibly this lack of confidence is more apparent than real, and it occurs to me that it may be due, in part at least, to the fact that manufacturers are being constantly pressed to go beyond their natural jobs and to become promoters of aerial haulage-contracting and passenger-conveying companies.

Let us try to consider where the legitimate business of the manufacturer begins and ends, before starting to abuse him for not interfering in what are, in reality, other people's affairs.

First, he must manufacture. Secondly, he must sell his product. Thirdly, he must endeavour to ensure that the product, when sold, gives good service and produces satisfactory financial results. Unless he attends to this third consideration, his business can only be a very temporary one.

I shall not attempt to advise him on his first job. The British Industry certainly knows how to manufacture. The next question is whether it knows equally well how to sell. Its experience in that direction is very much more limited. Many firms possess none at all, because negotiation of Government contracts does not amount to the same thing as selling, in the ordinary sense of the term.

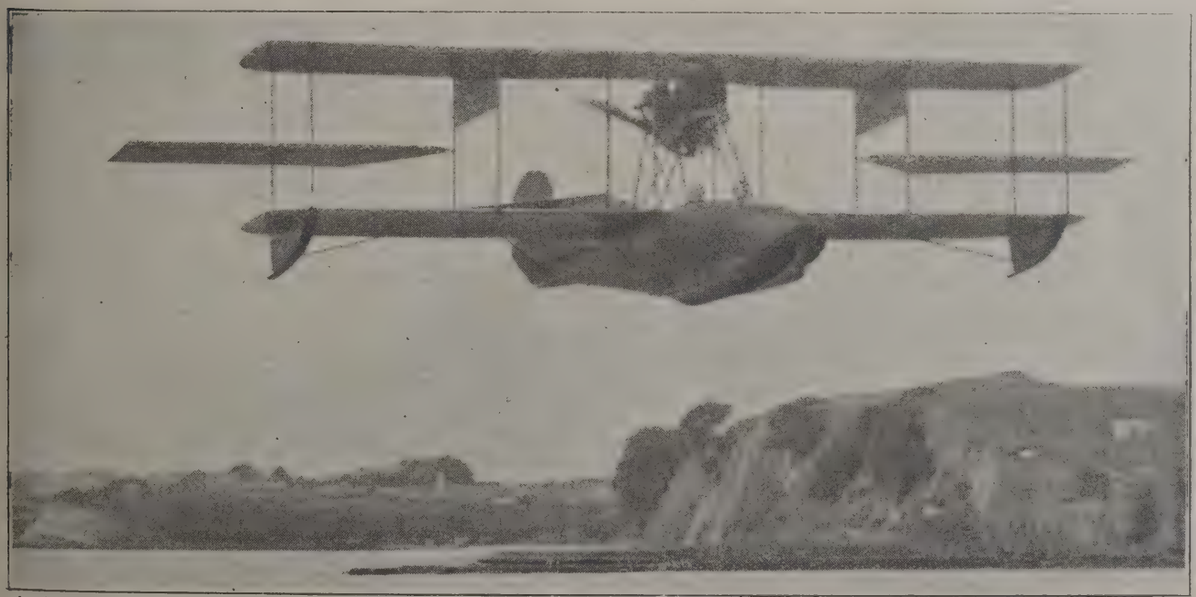
The Art of Salesmanship.

You cannot sell an aeroplane as you would a packet of pins. It is a new proposition, fairly expensive and distinctly speculative. Therefore, sales depend on effective propaganda and demonstration. The latter, I think, must in general precede the former, because commercial propaganda must be based on sound figures, and these can best be compiled as the result of properly organised demonstration.

Demonstrations may be either individual or collective. If the manufacturer is determined to play a lone hand, probably his best plan is to establish a number of small but properly equipped services in various promising parts of the world. It is likely enough that such services will show an initial loss. Later they may pay, and be sold as going concerns to operating companies which would have a natural leaning towards building up their increased fleets by the purchase of further machines of the same make, so simplifying the maintenance and spare-parts problems. Loss in the first instance must, however, be faced, and must be written off as advertisement expenditure.

In connection with these demonstration services, very carefully audited accounts must be kept, each service being treated as a separate company, to which the main concern sells at a commercial price. In this way there would be created valuable data as to actual costs of operation under various conditions.

Also, a good publicity staff must be provided in connection with each demonstration service. The costs of this will be charged partly to the service and partly to the parent concern. The publicity department will have two jobs to do. One is the ordinary advertising necessary to secure patronage for any haulage or carrying business. This must be debited to the service. The other is the provision and transmission of matter and photographs to the parent body. These would form the basis of very valuable free publicity, being obviously acceptable to the Press in almost any part of the world.



A FIELD FOR COMMERCIAL AERONAUTICS.—One of the Walsh Brothers' Flying-boats (of an early Curtiss type) flying along the coast of New Zealand, near Auckland.

What fine illustrated articles could, for instance, be based on such stuff referring, let us say, to a flying-boat service on a big river in China or South America!

Into the Enemy's Camp.

The manufacturer may object that what I am advising is contrary to the title at the head of this note. It is no business of his to run operating concerns, but rather to sell them. This last is freely admitted. Personally, I think it is bad policy of any manufacturer to go into competition with the potential buyers of his goods. It serves to drive them into the enemy's camp. That is why I mentioned that, when established, the services would be disposed of as going concerns. Given satisfactory proved figures of cost and takings, there would be no great difficulty about this, and from that point the manufacturer would step gracefully into the background and merely continue to sell stuff to the purchaser of the services. He would endeavour to get to this stage as soon as a natural demand for his products had been stimulated.

At the risk of vain repetition I repeat that what he is doing at first is no more than necessary demonstration, coupled with equally necessary collection of data for purposes of propaganda.

The present position is one that has to be faced and passed by every industry, the products of which must justify themselves by economic performance after sale. The commercial motor industry has gone through it and emerged successfully. The aircraft industry can do the same. It needs, however, to apply somewhat heroic measures, because circumstances have given it an output out of all proportion to the developed demand.

Up to the present I have referred only to individual demonstrations. I propose to deal with collective demonstrations and the proper use of propagandist material in subsequent articles.

INFANTICIDAL OFFICIALS.

By IL PENSEROSO.

It is a biological fact that, as regards the formation of the skull and brain, there is less difference between the higher classes of ape and man than there is between the higher and lower types of ape. This appears to offer a possible explanation for the conduct of those beings in the Department of Civil Aviation who are at present engaged in carefully ruining the prospects of commercial aeronautics in this country. They appear absurdly like men in the architectural design of the head; but the entire absence of reasoning power would seem to indicate that they belong to a lower species. And yet, on the other hand, there are two considerations which point directly against this conclusion.

The Instinct of Self-Preservation.

The first is that if the axiom "to err is human" be accepted as a scientific law, then the officials of the Civil Aviation Department can clearly claim to be, not merely human, but super-human. The second consideration deals with that characteristic which is found far more highly developed in man than in any animal, insect, reptile or fish. That quality is self-preservation.

When we examine communities of ants, bees and certain animals, we find that although their internal economy and individual habits are in many ways superior, though different in kind, to those of mankind, in man the instinct towards self-preservation is stronger because it is conscious.

In primitive types of man the instinct is individualistic; it is only in much later stages that it is realised that the good of the tribe or community is synonymous with the good and self-preservation of the individual. In the officials referred to the preservation-instinct is very strongly marked, and conscious.

In placing a mass of red tape, inane regulations and unnecessary obstacles in the way of commercial aviation, they are evidently acting on the assumption that if there were no regulations there would be no need for officials, and they themselves would be swept into the ranks of the unemployed or the Salvation Army. We can see, therefore, that this self-preservation instinct is clearly of the primitive type, for it does not see that the prosperity of British commercial aviation means the growth of the Civil Aviation Department.

After duly considering these arguments for and against the man theory, the question as to the species to which these officials belong is problematical. The best way to get a ruling on the matter would be to follow the example (reported by Professor Westermarck) on an Australian savage tribe which could not decide whether women were human beings or not. A kind of general election was held among the men, and the representatives solemnly debated the question. After much cerebration and excitement, it was put to the vote and settled by a narrow majority that women were human beings.

Aerial Legislation.

But, after all, it is perhaps not the foolish officials themselves that matter so much as the policy behind them. Before we see how that policy has arisen, let us note how it works in every-day business. It is essentially a system of bureaucratic administration, which is, of course, quite a different thing from bureaucratic legislation, though an equally poisonous growth. Nearly all modern laws are extremely loosely-phrased documents: someone truly remarked that there was never a statute you could not drive a coach and four through. It is the interpretation of the law that really matters. And therein lies the power and danger of bureaucratic administration.

Take the question, for example, of aerodromes. The law lays down that all aerodromes for passenger-carrying must be licensed; but it does not state the conditions under which licenses will be granted. There at once you have the aperture for the coach and four to drive through.

The administration decides under what circumstances they shall be licensed; and with a sensual delight in its own power the Department of Civil Aviation refuses to licence an aerodrome under 200 yards square. That is to say, it virtually decrees that every aerodrome shall be large enough to land every aeroplane, from a fast scout landing at 80 or 90 m.p.h. to a shorthorn pancaking down backwards at minus 3 miles per epoch.

The idea of not licensing aerodromes for certain types of aircraft is about as sensible as it would be for the Admiralty to prohibit cutters from putting in at Broadstairs jetty on the ground that a liner would feel uncomfortable there.

This absurd restriction knocks joy-ride tours on the head completely, owing to the impossibility of finding such comparatively large tracts of flat open ground accessible to large towns. Incidentally, these tours would be easily the best way of fostering aviation in this country amongst the general public, besides being the most paying proposition of their kind at present.

If there are a thousand potential joy-riders in a town, the only way to make a profit out of them is by taking them all up within a definite space of time—say, a week (with six machines). The only way to get them within the week is by restricting their opportunity for a flight to a week. The time factor is enormously important in commerce as well as in war. This is the principle on which the whole of the theatrical business in the provinces is run.

The Department cannot or will not see it. It is infinitely superior to joy-riding or exhibition riding. It cannot see that cross-country passenger and regular transport services will develop from joy-riding; that only after having been reassured of the safety of flying through the personal experience of a joy-ride will John Citizen be induced to travel by air.

Engineers' Licences.

Consider, again, the question of ground engineers' licences. The Directions issued with the Air Navigation Regulations say (IV—5) a candidate may apply for a licence to overhaul and inspect *all* flying machines, or for a licence limited to the inspection of any named type. A candidate can certainly apply for a general licence—for that matter anyone can apply for anything anywhere—but he will find that the silly people don't know their own silly rules.

An applicant known to the writer was informed by the examiners that they had never heard of licences for all types. So that if a man has had five years' experience on Avros, Pups, Camels, 1½ Strutters, Handley Pages, and Farmans, he will not be licensed to inspect a D.H.10; whereas if he has had a couple of years on D.H.4's, 6's, and 9's, he would probably get a licence to inspect "D.H. machines," and would therefore inspect D.H.10's. Which, as Euclid remarked, is absurd.

But, then, the whole examination is a farce. A.I.D. officers of whom nothing is known ask ambiguous questions concerning matters of which they appear to know nothing. Chief and assistant engineers and works managers of firms which have been making aeroplanes and engines for years have been turned down in an arbitrary and autocratic manner as "not being competent"; R.A.F. officers who have been inspecting aircraft for years in squadrons or repair sections or parks have been turned down for "not being competent." They may quite possibly be incompetent; but so may the examiners. And the examinations ought to be

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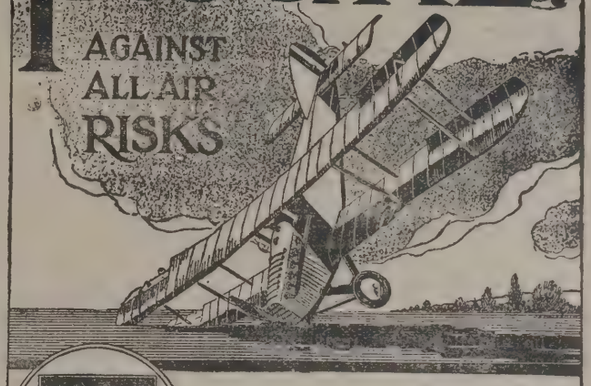
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During the War, the output of **FIRTH'S STAINLESS STEEL** was absorbed in the manufacture of articles of national necessity, and its ability to withstand the action of sea water and of high temperatures respectively, combined with its mechanical properties as a high-grade steel, rendered it invaluable to the Royal Navy and to the Royal Air Force.

The future possibilities of **FIRTH'S STAINLESS STEEL**, for the purposes of Industry, Domestic Life and Sport, are unbounded. It resists corrosive action, and this property is not superficial only, but is an intrinsic characteristic of the material itself. Wherever a steel is required combining a permanently clean, bright surface with strength, toughness or hardness, **FIRTH'S STAINLESS STEEL** will meet the demand.

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public instead of secret, and the examinee ought not to be at the personal mercy of unknown examiners.

One or two examples have been given of the wooden-headed manner in which the regulations are being carried out. Everyone who has had dealings with the Department of Civil Aviation can supply further instances *ad lib.* But the real question is why this policy of official regulation and restriction exists. For, one must remember, it exists not only in aviation, but in almost every branch of British Industry. To investigate this we must go back a little in British economic history.

Some Commercial History.

Up to 20 years before the end of the eighteenth century, the Mercantile system was in operation in these islands. Under that system successive Governments made well-meaning but entirely futile attempts to foster British commercial prosperity, by means of Navigation Acts, Corn Laws, Corn Law Repeal Acts, prohibitions on the export of bullion, enormous tariffs on imports and bounties on exports. Adam Smith made a violent protest against this system of regulation and restriction in his "Wealth of Nations" in 1776, and his followers constituted the *Laissez Faire* school of thought.

By the beginning of the nineteenth century *Laissez Faire* held absolute sway as the official commercial policy. The Government gave up all attempts at regulation and controlling and wet-nursing industry, and practically all the restrictions on trade were removed with startling rapidity. Henceforth men were to be free to buy and sell how and where they liked. Competition was to be the sole driving and regulating force in commerce, and "leave-alone" would be the policy of the Government.

Following on that change, and helped enormously by the Industrial Revolution and the wide application of power to machinery, we had what has been called the golden age—a period of unprecedented prosperity. Our blast furnaces made England the forge of the world; our ships gave us three-quarters of the world's carrying trade; and the coal and steel and cotton and woollen industries made us in the nineteenth century the first industrial power in the world.

Social Reform.

That commercial prosperity brought with it an enormous number of social evils. It was the prosperity of the few; and the masses of workers were starved and sweated and cheated and injured. As a result, about the middle of last century a movement started towards the prevention of the more flagrant social evils, such as the working of children of eight and nine for 12 hours a day.

This movement necessitated, of course, Government interference with industry once more; though with a different motive this time, for its purpose now was to improve the condition of the workers' lot.

By 1886 this policy of control was firmly established, and gathering force each year, so that by 1914 it had brought us Factory Acts, Education Acts, Truck Acts, Employers' Liability Acts, the Trade Board (Disputes) Act, the Trade Board (Minimum Wage) Act, sanitation regulations in factories, the regulation of work in mines, and the control of industry in a multitude of other ways. The war came, and with it the necessity for Government regulation of output, both in kind and quantity. Dora and the Munitions Acts embedded the idea of the control of industry in every detail deep into the Government Departments.

The great industries can stand it. They were able to grow strong and prosperous untrammelled by official interference. The restrictions on the scandalous abuses of the Manchester cotton kings and the steel masters were socially absolutely necessary.

The Control of Civil Aviation.

But Civil Aviation cannot stand it. It is true that the safety of the public must be ensured; but quite obviously the interest of the Industry in that direction is the strongest possible check on unsafe flying. No one would quarrel with regulations securing crowds from risks from the air; but so far as other dangers are concerned, the monetary interest—to put it no higher—of firms is quite enough to secure, for the present, safety both to pilots and passengers.

It is one thing restricting a strong and lusty man; it is quite another thing restricting an infant that has not yet learnt to walk. If the same methods are used in the latter case as in the former the child will soon be dead.

Commercial aviation is that child. It has only just been born from the womb of time. It cannot walk yet; and it is surrounded by officials of the Civil Aviation Department, who at every step it attempts give it a blow on the head with a Regulation. Either the child will die or the officials must go. Public opinion in the world of aeronautics is all in favour of the child, and is unanimously determined to insist on the obstructionists in the Department being kicked out, if for no other reason than *pour encourager les autres.*

FLYING DEMONSTRATIONS IN SPAIN.

The Air Ministry announced recently that the three British machines which recently flew to Madrid for the purpose of exhibiton flights have now returned. Though somewhat belated, the adventures of these pioneers is worth recording.

"A D.H.4 machine, with a Rolls-Royce 'Eagle' engine, left Madrid at 6 a.m. and arrived after two stops, at Pau and Tours, at 8 p.m. the same night at Biggin Hill, having covered 855 miles in 8¾ flying hours. The pilot of the machine was Capt. H. H. Square, who had with him Lieut. J. P. Anderson as observer. The time occupied in the flight is all the more remarkable since they experienced heavy rain and wind all the way from the other side of the Pyrenees to Tours and thick fog from the Seine to Biggin Hill.

"Capt. Square skimmed the peaks of the Pyrenees, which are over 15,000 feet, with only 150 feet to spare, much to the amazement of some of the villages near the mountain tops. On the outward journey also bad weather was encountered on practically the whole route. The pilot reports that at Hendaye it was necessary to repair a flying wire which had been broken through hitting a bird when flying low. While at Madrid the engine was completely overhauled in the Spanish Air Services workshops at the aerodrome 'by extremely capable mechanics.'

"The Bristol Fighter, pilot Major L. G. S. Payne and observer Major C. G. Coe, left Madrid at 6.30 a.m., and after stops at Vittoria, Pau, and Tours, reached Hawkinge Aerodrome, Folkestone, at 9.30 p.m. The journey was uneventful.

The Result of a Rainstorm.

"The 4-engined Handley Page with Major Darley, Lts. Kilburn and Murray and three serjeant-mechanics appears to have had bad luck on both outward and return journeys. After leaving Pau for Madrid the machine ran into a terrific storm of rain which stripped the fabric from the tip of the starboard propeller. The clouds all the way to Biarritz were from 500 to 5,000 feet up. Meeting another heavy thunderstorm at San Sebastian Major Darley decided to return to Biarritz, and made a successful landing on the beach, which is barely 50 yards broad and has a slope of 45 degrees.

"While at Madrid a demonstration flight was undertaken to Barcelona. The machine carried seven passengers and four crew, together with 800 gallons of petrol, sufficient for the return trip. Amongst the passengers were the Duke of Durcal, Count Albiz, Col. Sanday, the British Attaché at Madrid, and two officers of the Spanish Flying Corps. The distance of 320 miles was covered in 4½ hours. The pilot records that the Handley Page caused great excitement at Barcelona. Both propellers were stripped by a heavy rainstorm on the return to Madrid.

A Mishap.

"On the journey back to England the machine safely negotiated the Pyrenees at 6,000 feet and was a few miles out at sea from Biarritz when a mishap occurred. A tremendous noise in the rear starboard engine suddenly arose. This engine was promptly switched off. It was then discovered that the propeller had gone, taking with it two engine stay-struts and a bracing wire, and also that a large hole had been torn in the top plane. The loosening wires caused the machine to veer to the right all the time. Major Darley planed down and, though the machine was barely under control, landed on the steep beach. Owing to the cross wind and the machine not steering properly, the pilot was unable to keep a straight course and the machine swung round and went about thirty yards into the sea. The incoming tide broke up the machine, but the engines were salved. The crew were very hospitably treated by the local authorities, who not only gave them clothes, but lodged them in the Royal Suite of the Palace Hotel. Major Darley managed to save the correspondence placed in his care by H.M. the King of Spain.

"An official report has been received from the British Air Attaché in Madrid that the visit of the British aircraft created a very favourable impression upon the Spanish people by demonstrating the practical developments of aviation. This is corroborated in congratulatory letters from the head of the Spanish Aviation Service, who, after referring to the 'magnificent quality' of the machines, says that the visit 'contributed powerfully to combine the friendliness between the English and Spanish Aerial Forces.'"

A CAPABLE TESTER.

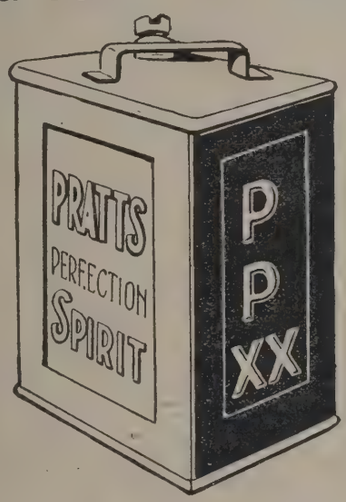
Mr. J. H. Moore, who will be remembered as a particularly skilful pilot before the war, when he flew a machine of his own at Hendon, has now been demobilised from the R.A.F., and is open to take on work as a test pilot.

As an A.I.D. pilot, and later as an R.F.C. officer, Mr. Moore put some hundreds of machines through their tests during the war without ever having an accident other than minor mishaps caused by defects in the machines themselves. His record in this way is extraordinarily good, and therefore any firm open to engage a test pilot would do well to get in touch with him. Letters addressed to Mr. Moore, care of "The Aeroplane," will be forwarded at once.

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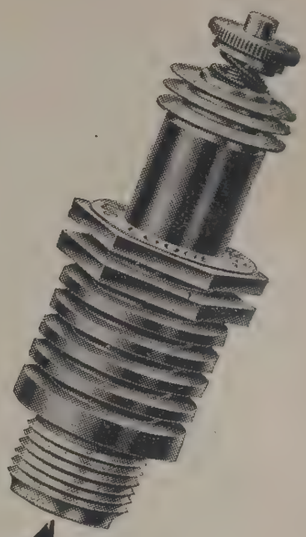


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CIVIL AERIAL TRANSPORT NOTES.

GREAT BRITAIN.

The Aircraft Disposal Department last week sold 300 Avro machines to Mr. S. W. Copley, managing director of Copley's Bank, Queen Victoria Street, E.C.4.

This is the largest individual aeroplane transaction ever made in England, and includes all the new Avro machines in the possession of the Department.

Infringement of Regulations.

The Air Ministry announces that, though the air navigation regulations have been in force since May 1st, and pilots and others have now had ample opportunity of acquainting themselves with the regulations, numerous instances of their infringement are still being reported. The regulations were made with a view to securing the public safety, and in future, proceedings will be taken when they are contravened.

The public are requested to co-operate with the Ministry by forwarding to the Secretary (C.G.C.A.), Air Ministry, London, particulars of alleged offences, including, if possible, the registration number or mark of the machine in question

The most common instances of infringement are:—Dropping leaflets and other advertising matter; taking up and landing passengers as a regular proceeding at places which have not been licensed as aerodromes; low flying, either over towns or to the danger of the public elsewhere; neglecting to obliterate military markings when a machine has ceased to be a military machine; and obscuring registration marks by means of advertisements or otherwise.

Flights to Amsterdam.

The Amsterdam Aircraft Exhibition opened on August 1st. British firms are to be well represented, but their exhibits will not be shown until August 11th.

The Air Ministry announces that pending a definite agreement on the basis of the Air Convention, and in order to enable Dutch and British Aircraft to visit England and the Netherlands, should they so desire during the exhibition, arrangements have been made with the Netherlands and Belgian Governments for the temporary opening of civil communication by air between the Netherlands and Great Britain.

In view of the distance of the sea passage from the east coast of England to Holland, seaplanes only may cross by this route, and aeroplanes will proceed to Holland *via* the Straits of Dover, France and Belgium. Arrangements have been made, by the courtesy of the Belgian authorities, for a refuelling base at Evère, near Brussels. Aeroplanes proceeding to Holland by this route may cross the Belgian frontier at any point which may be suitable.

The following is the text of the agreement with Holland:—

(a) Except in emergency, both seaplanes and aeroplanes entering Holland must land at Amsterdam.

(b) Except in emergency, aircraft entering England must land at :—(i) Seaplanes, Felixstowe; (ii) Aeroplanes, Lympne or Hounslow.

(c) Seaplanes will cross the Dutch coast between Scheveningen and Ymuiden. Aeroplanes entering Holland *via* Belgium may cross the Belgian frontier at any point which may be suitable.

(d) Seaplanes will cross the English coast between Orfordness and the Naze; aeroplanes between Folkestone and Dungeness.

(e) All machines and pilots taking advantage of these facilities must be provided with and carry such documents as may be required by their respective Governments, or by the competent authority.

(f) Passports will be carried by both passengers and crews, but such passports will not require the Dutch visa on leaving the United Kingdom if the period of stay in Holland does not exceed two days.

(g) No goods must be carried, either on the outward or return journey, without Customs formalities being observed.

(h) If aviation material is destined definitely for Holland, Customs dues must be paid.

(i) No photographic apparatus for use during the voyage may be carried.

(j) A manifest of goods carried under G and H, and a full list of passengers under F, will be carried by the pilot in charge of the machine.

The forms referred to in (g), (h), and (j) are as follows:—

Aircraft report and description of cargo, Form 150.

Notice of intended departure with goods, Form 151.

Manifest of general declaration of cargo, Form 152.

Pilot's declaration and clearance (outwards) without goods, Form 153.

Pilots intending to fly to Amsterdam will be afforded all available information in regard to aerodromes and including aerial route directions, etc., and copies of the above forms on application to the Controller-General of Civil Aviation, Room 521, Kingsway, W.C.2.

The Executive Committee of the Amsterdam Exhibition have made special arrangements that visitors from Britain to the exhibition shall be provided with hotel accommodation.

"Daily News" Flights.

The "Daily News" arranged to give 365 free flights during the week-end between August 2nd and 6th, at Cricklewood, Brighton, Bournemouth, Hastings, Ramsgate, Southend, and Weston-super-Mare.

Another Civil Aviator.

Another R.A.F. officer who is now engaged in civil aviation is Capt. A. H. Curtis, late R.A.F. Capt. Curtis joined the Central Aircraft Company some little time ago, and is now piloting their machines at Northolt.

Blackpool.

So strong was the wind at Blackpool last week that it lifted several of the machines five feet from their sandbag moorings on the beach. Naturally, the mechanics standing to their machines had the wind up.

As usual, Blackpool provided the largest number of passengers, amongst whom was Mr. Bracegirdle, a Manchester fish merchant, who took advantage of the Avro daily service between Blackpool and Manchester to send several hundredweight of fresh Fleetwood fish. Probably these were the first fish ever to travel by air. The journey between the two towns is scheduled to take 45 minutes, as the machine stops at Southport on the outward and inward trips, but even with this stop the train journey is well beaten.

The ten thousandth passenger was taken up last week at Blackpool, which is fairly good business considering that the flying there did not start till the middle of May. There has been no accident during the period with the exception of one machine, which landed in the sea owing to the high tension lead dropping off. The Avro motto of safety first which is painted on large notice-boards all round the aerodrome is well maintained. So confident are the public nowadays that they turn up for flights in any weather, rain, blow, or hail, whereas when the show started, they would not look at a machine if there were the semblance of a wind. Several days last week regular passenger flying was carried out in winds of between 30 and 40 m.p.h.

Several five-seater machines, fitted with 160 h.p. B.R.1 engines are now in use, which reminds one of a recent conversation with an alleged flying expert who rather gave himself away by calling the B.R.1 the Beardmore engine, and this despite the fact that he said he had been several years in the R.F.C. in France.

A blind man is to fly at Blackpool and to describe his experiences.

Capt. Pownall, one of the Blackpool pilots, returned from Manchester the other day on the routine flight, and found the tide up to the barriers on the sand. Nothing daunted, he landed in a disused road running down to the beach.

A small circus left Blackpool on Mono Avros last Monday for Amsterdam, where they will fly *via* Lympne and Brussels. Capt. W. G. R. Hinchcliffe, D.F.C., A.F.C., was in command, Lieut. Brown, Lieut. Shanks, Lieuts. Roberts and Inglis being the other pilots. Their places have been filled by Capt. Tully, A.F.C., late Wing Examining Officer in the Midland area, Lieut. Salthouse, and Lieut. Hudson.

The new international aeroplane numbers seem somewhat complicated. One Avro machine for Holland was painted G.E.A.I.H., which some wit stated must mean "German Emperor Arrives in Holland"; someone suggested another place beginning with an H would be more suitable!

Lancaster.

Lieut. Macrae, M.C., was the sole occupant of the Government hangars at Scale Hall, Lancaster, last week. No Service officers or men were there, and this despite the fact that Scale Hall Aerodrome is supposed to be one of the few Government places where civilian flying is catered for.

Leicester.

There is every possibility that an aviation ground will be established by an up-to-date company near the city. The Leicester Aviation Club will thus realise its ambition.

London.

Cricklewood.—Members of the British Guiana Colonisation Deputation made a flight over London on Judy 31st on a Handley Page.

Hendon.—Vast crowds of people refrained from visiting the Hendon Aerodrome on Saturday, Aug. 2nd, and, doubtless, those who did not attend, enjoyed a pleasant afternoon. The Grahame-White char-a-banc did not run to the flying ground, though there might have been a sufficient number of visitors to fill it.

These enthusiasts paid threepence each for the usual programme that had blank spaces in which the purchasers could write the names of the starters in the 20-mile cross-country Air Race for the London Aerodrome Trophy and 20 sovereigns, and second prize of the London Aerodrome Medal and 10 sovereigns.

Six names were put up on the notice-board, viz., Capt. P. R. T. Chamberlayne (Grahame-White Bantam, 80 h.p. Le Rhône), Lieut. G. R. Hicks (Avro, 110 h.p. Le Rhône), Major R. H. Carr, A.F.C., D.C.M. (Avro, 110 h.p. Le Rhône), Capt. D. H.

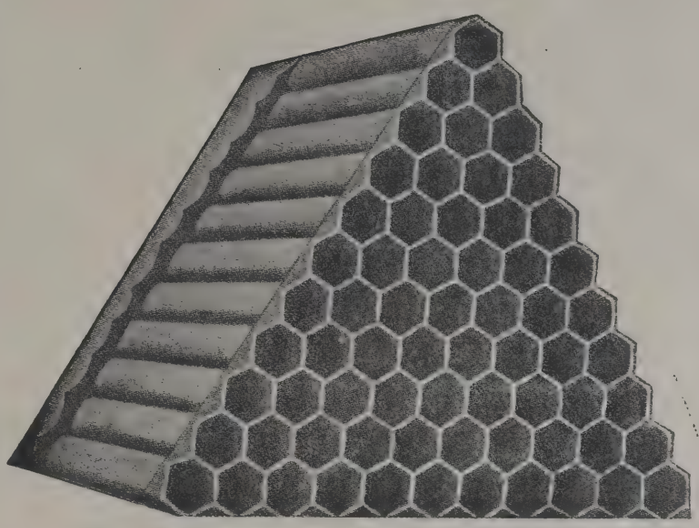
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It was advertised that the race would start at 4 p.m., but there were no signs of aeronautical vitality at the time. After waiting for some time in hot sunshine, a few of the straggling knots of dejected people adjourned to the tea room, where they paid two shillings a head, and continued to wait.

The time was, however, enlivened by a man with a megaphone, who announced that three of the six competitors had scratched. A pathetic spectacle was afforded by two bookmakers who, in the vast desert spaces cried the odds, but apparently without luring any backers.

At a quarter to five a rain-storm broke, and as the few visitors ran to seek shelter the three machines that were not scratched started. Rain continued during the race, which consisted of five laps of Brittacy Hill and aerodrome pylon circuit.

Major Carr (Avro, 110 h.p. Le Rhône), won the event, time 18 mins. 35 secs., and Capt. Robertson, on a machine of the same type, gained the second prize, time 20 minutes 26 secs. Lieut. Hicks, also on an Avro-Le Rhône, did not complete the last circuit.

It was a depressing day.

The "exhibition" on Monday was of much the same tameness as on Saturday. The "pièce de résistance"—a cross-country race to Bittacy Hill and back drew four starters, but Lieut. G. R. Hicks, retiring after the first five laps, owing to engine trouble, left the race to be contested by the remaining two G.-W. machines—the Avro, piloted by Major Carr, A.F.C., D.C.M., and the G.-W. Bantam, piloted by Capt. Chamberlayne, Capt. Vaughan, on the B.A.T. "Baboon," being entirely out of the running, owing to high flying and wide cornering. Major Carr led all the way and finished 10 seconds in front of Capt. Chamberlayne.

There was much activity in the passenger-carrying line by the usual G.-W. Avros, Kangaroos, and also Airco D.H.9s, etc. Mr. Newall repeated his double parachute descent from a Kangaroo, but, owing to misjudgment and wind, landed outside the aerodrome on some trees. Some excellent flying was done by Capt. McElvey (late 45 Squadron R.F.C. and R.A.F.) on a Bristol Bullet (80 h.p. Le Rhône).

Hounslow.—Sir Hari Singh of Kashmir flew to Swanage and back on Sunday, August 3rd, in an Avro. Other cross-country flights were made during the week ending August 5th to Crewe, Southampton, Margate, Worcester, and Swansea. Another machine was taken for the week end and flew to Cowes and Dover. Avros were sent for the Bank Holiday to the North Somerset Agricultural Association Fair at Bristol.

Isle of Man.

A. V. Roe and Co. intend starting a mail service daily between Blackpool and Douglas.

The flying season was opened on July 29th by the septuagenarian Mayor of Douglas, who flew as a passenger, piloted by Lt. Moxon, in an Avro machine, which afterwards took up many passengers at a guinea a head.

Lt. Moxon has been busy all the week on a small stretch of sand on the beach at Douglas, Isle of Man, where he receives many inquiries as to when the cross-Channel service is to start, and this is not to be wondered at when one sees queues half a mile long on the Liverpool landing stage waiting for boats. Indeed, one man arrived at Southport the other day about 9 p.m.—it was blowing a gale and the clouds were down to the ground—and offered £200 to fly to the Isle of Man, because his wife was there and he wanted to surprise her!

On August 4th an Avro seaplane, piloted by Captain Pixton, left England, shortly after 6 a.m. with parcels of the "Daily News" weighing about 3 cwt., and alighted in Douglas Bay, close to the shore, at 8.5 a.m.

In the ordinary course, English newspapers do not reach the island until late in the afternoon, and delivery was expedited by eight hours.

Manchester.

Mr. Bracegirdle, a Manchester fishmonger, had a cargo of fish, weighing 12 stone, taken from Fleetwood to Manchester on Aug. 1st in an aeroplane. The journey took half an hour (51½ miles), and the fish was on sale three-quarters of an hour after the start.

To mark the event, Mr. Bracegirdle presented the Lady Mayoress with two turbots. It is believed that they had not survived the journey.

Margate.

For the week ending August 5th, 107 passengers, including 20 "Daily News" Free Flight passengers were taken up in Avro's.

New Brighton.

A one-legged high diver from New Brighton wishes to dive from an Avro in flight into the Mersey at Liverpool.

Preston.

A fortnight elapsed between the date of inspecting the proposed aerodrome at Preston and the granting of a temporary licence for flying there. This is fairly quick work for the Air Ministry.

Rhyl.

A record week's flying preceding August Bank Holiday is reported from the North. The Avro chain of air stations in Lancashire is now complete, Rhyl, in North Wales, being opened last Monday, when Major McMinnies, A.F.C., Capt. E. Maitland-Heriot, D.S.C., and Lieut. Hudson were flying.

Scotland.

St. Andrews.—Avro machines are flying from Leuchars to St. Andrews to take up passengers on August 6th-9th inclusive. The machines will operate form the stretch of sand to the west of the town.

Sheffield.

The Vickers Vimy commercial machine, which was flown by Capt. Sir John Alcock, K.B.E., D.S.C., during the Sheffield flying week, brought a total load of 13 people from Sheffield to London on July 29th. Nine of them were business men com



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nected with Vickers Ltd. The machine left Coal Aston aerodrome at 3.20 p.m., and arrived at Hounslow at 5.35 p.m. The passengers then motored to the offices of Vickers, Ltd., in Knightsbridge, where they arrived at 5.50 p.m.

SOUTHAMPTON.

Bournemouth had a daily aerial passenger service last week from Southampton, by a Supermarine four-seater, Channel type flying boat fitted with an 160-h.p. Beardmore engine, and having folding wings. Large numbers of visitors at Bournemouth were taken for flights.

On July 30th a woman of 72 and a man of 75 were taken up. Several trips were made from Southampton to Cowes with passengers having important appointments who missed the steamer.

When it is allowed the service will be extended to the north coast of France, calling at Cherbourg, Le Havre, and St. Malo.

Mrs. Leon Errol, a passenger from New York on the "Aquitania" which arrived at Southampton on August 2nd, flew from Hamble to London on that date.

Six weeks ago Mrs. Errol flew from London to catch the "Aquitania," as she had missed the boat-train

SOUTHPORT.

Southport was a good second to Blackpool, quite half the passengers being women. Six of the fair sex said that they wished to learn to fly, so keen have they become after the first few preliminary flights. It is generally found in these cases that the passengers are not satisfied until they have done everything that there is to be done in the air. This statement need not be taken entirely from a flying point of view, as an inquisitive pilot, finding his machine rocking considerably, turned round to see what was the matter and discovered his passengers enjoying for the first time an aerial embrace! Apparently from subsequent observations—taken on the sly—this form of amusement is by no means rare.

The Mayor of Southport, Ald. T. Wood, is becoming a keen passenger flier. He was looped and spun for the first time last week.

SWANSEA.

On July 26th Councillor George Hemmings opened the proceedings and was the first passenger to fly from a public aerodrome in Wales. Enormous crowds watch the flying from the beach. Aeroplanes are practically unknown and the flying is the chief topic of conversation for miles round.

Since two Avro three-seaters started passenger carrying at Brynmill, near Swansea, on July 26th, more than 200 people have been taken up.

AUSTRIA.

On July 31st a large German aeroplane, owned by a German aerial navigation company, flew from Kamentz Podolsk, Russia (Government of Podolia), to the Aspern Aerodrome near Vienna, with 22 passengers. On her arrival at Vienna she was seized by the Allied troops stationed there and handed over to the Italian Authorities.

DENMARK.

The following is from the Danish correspondent of THE AEROPLANE:—

The American Army pilot, Capt. Batts, who had brought a Curtiss flying boat with a modern Curtiss motor to Norway, where he is said to have been engaged by the big Danish cinema firm, the Northern Film Co., for some sensational flights over the mountains, has sold his flying boat to the Danish-American millionaire, Mr. John Larson, who crossed, with the former as pilot, the Skager Rak from Norway to Skagen, Denmark, flying next over his native city Sæby, which he had left as a poor farmer boy, dropping now, as the rich manufacturer of ice-producing plants, a present to his old mother.

He extended his flight from Copenhagen over five countries by continuing to Stockholm, after a night tug owing to the exhaust of petrol, and on to the new Baltic nations, Finland and Estland.

On the return to Denmark, Capt. Batts taught the Danish flying-boat pilots spinning, and with the Naval Air Service officers as observers took motive pictures of the capital and chief provinces in aid of the Sleswig Fund.

The Nielsen and Winther Works have, since their first contract for six Nieuport type scouts to the Danish Army, only produced a two-seater of this type, now handed over to the Danish Lieut. Jarfelt, chief of the Bolivian Air Service, for demonstration out there, a two-seater seaplane and two cheap flying boats to private order of a Danish and a Norwegian pilot, while a twin-engined flying boat, announced for the show to the order of a piano manufacturer for transport of his goods to England, two at a time, has not appeared so far. Nielsen and Winther have through their Hankow branch approached the Chinese Government for an exclusive concession for aeroplane manufacture in that country.

A company has been formed in Iceland to establish regular aeroplane traffic between the various towns and other countries. Capt. Cecil Faber is on the way to Iceland with aeroplanes and mechanics. The main base will be at Reykjavik.

FRANCE.

The following is sent by the Paris correspondent of THE AEROPLANE:—

From Aug. 1st, the Postal Authorities ceased to have any direct interest in the exploiting of aerial posts. This decision was reached owing to difficulties with an unsympathetic Treasury, and because the Chamber approved a motion according credits in the form of subsidies to aviation exploiting concerns. Also those high up in the Postal Services were anxious to retain their posts and were disinclined to commit themselves to any fixed programme. Thus ends the first year's experience and experiment in running aerial posts since it was in July, 1918, that an agreement was arrived at between the Postal Authorities and the Military Aviation Authorities.

Louis Bréguet, under guise of the company, "Messageries Aeriennes," has been running a daily service between Paris and Lille and vice versa. Each day, a pilot takes 100 to 150 kilos. of correspondence to Lille, and returns with a similar amount. Thus is the whole mail of Lille, Roubaix and Turcoing. From May 1st to July 30th the service has been interrupted only three times.

The scheme of prolonging this route to Brussels is being contemplated.

A Frenchman, Jean Ors, won the parachute competition at the Atlantic City Exhibition.

This week has seen the finishing touches to the many preparations made at seaside resorts to cater for the aviation-loving public.

The Compagnie Transaerienne have just put two dirigibles into commission called the Transaerien VI and the Transaerien VII.

The Transaerien VI is an Astra dirigible of 10,000 cubic metre capacity, fitted with two Renault motors of 250 h.p. each and a gondola capable of holding 14 to 16 passengers. It will be piloted by a marine officer loaned for the purpose by the French Naval Authorities.

This dirigible is to make "joy-ride flips" in the neighbourhood of Paris. Whenever the weather is propitious it will be flown to the battlefields and back, starting from and returning to the St. Cyr hangar.

The Transaerien VII is a Zodiac dirigible of 3,000 cubic metres and can carry, besides the pilot and mechanic, five passengers. This airship is to transport travellers from Havre to Deauville, and vice versa. Trips will also be made over the surrounding country, and these flights will appeal to everyone who knows the difficulties in crossing the Seine at this point.

The Société des Transports Aeronautiques du Sud-Ouest, of which Lt. Gindner is the moving spirit, has sent its first machine to Biarritz. Bordeaux was reached without a stop by Dupont, accompanied by Mechanic Alexandre.

Their aerodrome at Biarritz is called "Chambre d'Amour et la Négresse." The arrival has been planned for midday. Ten thousand leaflets will flutter to the ground announcing in true showman style the opening of the flying school, and imploring one to visit the Silver country and the Basque country at a price of 2.25 francs per kilometre by aerial taxi, or 1.25 francs the kilometre on the Goliath aerobus.

The Société T.A.S.O. have conceived the novel idea of fixing strapontins to the seats in the Goliath, thus increasing the accommodation by 6 to 20 persons.

The Compagnie Aerienne Francaise is charging 5 francs the kilometre for passenger flights. This Company has bought its machines at the liquidation of stocks at about £120 apiece.

The Bréguet firm have sent a 450-h.p. Renault-engined machine to the Amsterdam exhibition, fitted with five machine-guns.

The Caudron firm have also sent several machines.

La Maison Renault have just constructed a big twin-engined machine capable of carrying 20 persons.

Blériots are now constructing a new four-engined 1,200-h.p. machine with a 29 metre span and 150 metre supporting surface. It is designed to carry 28 passengers and fly 6 hours' non-stop.

A certain M. Schneeheli is busy experimenting with a new type of silencer on a F.50 at Villacoublay. It has already been passed by the Army.

From July 27th the postal aeroplane Nimes-Nice which used to arrive at the Californian aerodrome about midday will arrive at 9 in the morning.

After flying from Paris to Rennes and back, a voyage of 680 kms., M. Poulet left for Brussels, in order to take part in the Victory Fêtes there. The 370 kilometres was accomplished in 2 hrs. 47 min. After having taken photographs of the procession of the Compagnie Aérienne Française, he returned to Paris. He states that since July 14th the Le Rhône engine of his machine has done 3,000 kilometres. M. Poulet intends to attempt a flight from Paris to Melbourne (2,000 kms.), and hopes to start next month.

—F. T. N.

HOLLAND.

The E.L.T.A. Exhibition consists of the following 17 sections: (1) An historical group; (2) aeroplanes: (3) seaplanes; (4) engines; (5) motor-cars and cycles; (6) aeroplane building, with sepa-

rate parts and tools; (7) photographs, maps, and literature; (8) telegraphy and telephones; (9) orientation and lighting; (10) implements; (11) meteorology; (12) experimental aeroplanes; (13) medical; (14) clothing, equipment, and heating; (15) scientific; (16) military; and (17) naval. The exhibition was officially opened by M. Koenig, Minister for Public Works, after a speech of welcome by General Snyders, the ex-Commander-in-Chief of the Dutch Forces, and Chairman of the Committee of the exhibition.

On Aug. 2nd a Dutch naval seaplane, while trying to alight on the river, struck the roof of the Hillens machine-works, Serjt. Kroege, the mechanic, was killed, and Lieut. Bakker, the pilot, had his leg broken.

An F.5 flying boat fitted with two 350-h.p. Rolls-Royce Eagle engines, built by the Gosport Aircraft Co. for the Air Ministry, was successfully put through her trials on July 28th.

On July 30th the machine proceeded to the Amsterdam Exhibition, where it is being exhibited, with Lieut.-Colonel Ralph Hope Vere, A.E.C., as chief pilot. The others on board were Dr. Bisschop, the Legal Representative of the Dutch Government in England. Mr. M. H. Volk, the General Manager of the Gosport Aircraft Co., two other passengers, and a mechanic.

The flying-boat left Southampton at 2.50 p.m. and dropped a message at Brighton addressed to the Mayor of that town.

Amsterdam was reached in under five hours. It is a journey of about 340 nautical miles. Important Government mail was carried for the first time.

INDIA.

A detailed scheme for an inland aerial postal service in India is being considered by the Government of India, and shortly a mail service will be started between Bombay and Karachi.

A service will probably be instituted early next year. It will link up Delhi, Simla, Bombay, Calcutta, Karachi, Poona, Lahore, and Madras.

A number of private firms have offered to provide services between inland towns, but the Government has definitely decided on a State service.

A feature of the new service will be the speedy delivery of the English mail on its arrival in Bombay.

ITALY.

On Aug. 2nd a Caproni biplane, carrying some 14 persons in all, crashed near Verona. The machine was flying at a height of 5,000 ft., when it caught fire and fell. All the occupants were killed, including Capt. Luici Ridolfi, who was well known as a war aviator, and several newspaper correspondents. The aeroplane was making a trial flight from Milan to Venice, and carried five Italian journalists, the rest of her compliment being people from the Caproni works. Among the journalists were Signor Oreste Cipriani, one of the oldest members of the staff of the "Corriere della Sera," Professor Tancredi Zanghieri, who only recently became one of the leading editors of the "Secolo," Signor Bruni, of the "Sera," and Signor Bisi, of the illustrated publication, "Il Mondo," and all had been appointed to make the trip and to describe the journey to Venice.

NORWAY.

The following is from the Danish correspondent of THE AEROPLANE:—

Last year saw the formation of the first three Norwegian aircraft enterprises—first, the Nordisk Luftkraft A/S, which arranged the first Scandinavian aero exhibition in Christiania, 1918, and an emergency aerial mail by Lieut. Riiser-Larsen on a Thulin-built Morane monoplane, when the railway service was interrupted by embankment slip.

Secondly, the Norwegian Air Shipping Co., to which the public has been asked to subscribe in small shares, and of which Capt. Dehli, of the Navy, is technical director. So far nothing has been done, but the company will make its chief aim the establishment of national aerial lines, owing to the limits placed upon railway lines on account of the mountainous character of the country; and, further, will run a North Sea line to Great Britain, and, together with Swedish and Danish firms, a line to Gothenburg and Copenhagen.

The third enterprise is the Norwegian Aeroplane Works, Ltd., in Orsnes per Tonsberg, formed on June 4th, 1918, with a stock capital of towards £30,000. No aircraft have been turned out yet, but scale drawings are shown of a number of contemplated designs. Repairs of automobiles, motors, and boats are undertaken.

SOUTH AMERICA.

Lieut. Antonio Locatelli, the Italian pilot, left Buenos Aires on July 23rd to fly over the Andes on a machine fitted with a 220 h.p. S.P.A. engine. Owing to unfavourable weather he was obliged to land at Mendoza, which is 156 miles from Valparaiso (Chili).

He left Mendoza at 7.20 a.m. on July 30th, and crossing the Andes at 20,000 ft. arrived at Valparaiso at 9.25 a.m.

He arranged to leave for Santiago in the afternoon of the same day. General Diaz has referred to this pilot as Italy's Ace of Aces.

SWITZERLAND.

The Swiss aviator M. Handemann was killed on August 3rd while flying from Switzerland to Munich.

U.S.A.

A hurricane, accompanied by vivid lightning, wrecked most of the hangars and buildings on the Roosevelt Field, Long Island, on July 28th, where R.34 was moored on her arrival in America.

The storm destroyed three of the largest aeroplanes in America, a Caproni, a Handley Page, and a Martin bomber. The Handley Page weighed 11 tons, and was swept away and crashed at some distance, despite the efforts of 30 men to hold it down. The Martin bomber was going to fly across the United States from the Atlantic coast to the Pacific, starting on August 1st.

It is believed that the hangars were struck by lightning. A large rent was made in one of them, and as they were all of flimsy structure they collapsed very quickly.

J. H. MOORE,
Late Lt. R.A.F.,
9, MOUNT RD., HENDON, N.W.4

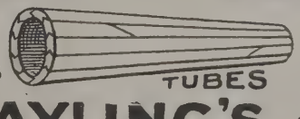
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AIRCRAFT FINANCE

CURRENT TOPICS.

The Whitehead Affair in Abeyance.

Having regard to the amount of capital involved, it is not surprising that the affairs of the Whitehead Aircraft (1917), Ltd., still excite quite a lot of attention. The further hearing of the petition presented by the New Pegamoid Co. for compulsory liquidation resulted in a decision being postponed until the next sittings of the Court. Mr. Gore-Browne, K.C., who appeared for the Whitehead Co., and also Mr. Whitehead, said that there was a chance—an extremely good chance—that a very large sum of money would be put in to pull the business together, a sum sufficient, after paying off all the creditors, to leave a large amount for the development of the business.

Prospective Purchasers.

Nothing was mentioned in the Court that would give a clue to the identity of the people who wish to secure control of the undertaking. In the City, however, certain names are being whispered, and further developments, towards the completion of affairs in the Courts are awaited with interest. Those who are pecuniarily concerned as shareholders should not be impatient.

The Labour Troubles.

The Stock Exchange, and indeed the whole of the financial world, is worried by the uncertainty of labour. The effect is aggravated by deficient working of the digestive organs consequent upon recent excessive borrowing. The result is a fall in prices and a feeling of discomfort.

The Handley Page Shares.

Aircraft and kindred shares are affected like everything else. An exception, however, is provided by Handley Page new participating preference shares, which are being picked up at about 16s. 6d. These were issued at 21s. in April, so that the original subscribers may be disappointed at the behaviour of the market. However, it is argued now that the company is developing its foreign trade and, allowing for the smaller Government business, is doing quite well at home.

Lower Prices Ruling.

The shares of the Aircraft Manufacturing Co. are not active. The first preference are quoted 16s. 6d. and the "B" 16s., and are not a very firm market. Peter Hooker preference are standing about 16s. 9d., and Armstrong, Whitworths at 35s. and Vickers at 35s. 6d. are being picked up by investors. Both seem to be attractive as a long shot by those people who are sufficiently confident in the immediate future. There has been a fall in English Electrics, which have an important and permanent interest in aircraft.

By Air, Limited.

One is impressed with the ingenuity shown in connection with some of the new ventures associated with aerial transport. Unfortunately little is usually heard about them beyond the original registration.

With a capital of £2,000 in £1 shares, of which 1,000 are preference shares, there has just been registered a venture entitled By Air, Limited. The object is to adopt an agreement with W. R. Johnson, T. T. Laker, J. W. Batchelor, and E. W. Saward, trading as the Aerial Transport Co., to establish, etc., services of aerial conveyances and aircraft of all kinds. It is apparently domiciled in Coventry.

A Swiss Project in Detail

More than the ordinary quantity of detail accompanies a report concerning an aerial project for linking up the chief cities and resorts in Switzerland. Hydroplanes are to be used principally, but aeroplanes will not be ignored. It is proposed to start with six stations—Geneva, Lausanne, Lucerne, Lugano, Thun or Interlaken, and Zurich—to which three machines with the requisite spare parts, will be allocated initially.

Capital and Estimated Earnings.

The capital is estimated at 1,500,000 francs (£60,000), the annual expenses at 1,000,000 francs (£40,000), and the receipts 1,200,000 francs (£48,000). The margin of profit, therefore, would be 200,000 francs (approximately £8,000). The calculation is based on 2½ hours' flight per day per machine, for not more than 100 days a year, the life of the machine being taken at two years with 500 hours of flight.

What it Represents.

Presumably the calculation of profit is allowed for after adequate provision for depreciation. If so, the specified amount would be equal to 13.3 per cent. on the capital, and the percentage of net profits to earnings would be 16.8. On paper it sounds all right, but it must be confessed that the information is inconclusive and incomplete. Anyway, it is not without interest, and on British standards the capitalisation seems to be quite moderate.

More Propaganda Needed.

By the way, why is it that one hears more of these foreign projects, some of which are embellished with more imaginative genius than sound sense, than British ventures? It is useful to know what is going on abroad. Possibly more propaganda work is called for in connection with domestic schemes, and propaganda more elaborate than cheap joy-rides designed to advertise any particular newspaper.

New Capital.

The new extensions for which S. Smith and Sons (Motor Accessories) need the additional capital comprise control of the M-L. Magneto Syndicate, and also the K.L.G. sparking plug. Another item of interest is that C. A. Vandervell and Co., whose shares were recently "introduced" to the Stock Exchange, will shortly issue £300,000 6½ per cent. debentures at £98, in order to cope with the growth of the business.

The Fiat and the Humber Cos.

Like everyone else the Fiat Co. is increasing its capital in order to develop business. The amount is to be doubled to 200 million lire. The Humber Co. now presents its accounts for the financial year to August 7th, 1918, the delay being ascribed to difficulties in valuation of stocks and inability to define Excess Profit Duty liability. The gross profit is £97,677 and the net £70,875, the latter comparing with £45,029 for the preceding 11 months. For the period under review dividends on the ordinary shares were resumed after a lapse of many years with a 6 per cent. payment.

NEW COMPANIES.

Great Northern Aerial Syndicate, Ltd. Private company. Registered June 12th. Capital, £10,000 in 5s. shares. To enter into an agreement with W. E. Cooke and to carry on the business of advisers, organisers, promoters, managers, accountants, secretaries, agents, etc., especially in the business of commercial aviation, manufacturers and designers of aircraft, proprietors of schools of aviation, etc. The first directors are:—C. Sutherland 2, Garston Old Road, Liverpool, advertising agent; C. H. Bullen, Lyndhurst, Halkyn Avenue, Liverpool, advertising agent; R. H. Taylor, Hill Place, Fishergate, Preston, gentleman; W. J. Todd, 17, Lawson Road, Seaforth, aero engineer; W. E. Cooke, 1, Vauxhall Road, Liverpool, leather merchant; E. G. Noakes, 30, Comeley Bank Road, Wallasey, advertising agent; L. E. Stephens, 50, Littledale Road, Wallasey, gentleman. Registered office: 25, Lord Street, Liverpool.

Handley Page Transport Co., Ltd. Private company. Registered June 14th. Capital, £200,000 in £1 shares, of which 100,000 are preference, entitled to a cumulative preferential dividend of 7 per cent. and two-fifths of the surplus profits available for dividends. Objects: To establish, maintain, manage and work lines and services of aerial conveyances and aircraft of all kinds and to carry on the business of carriers of mails, passengers, animals and goods by air, or otherwise, to enter into contracts with any person, firm or company, as to joint working, interchange of traffic, running powers or otherwise, to carry on the business of a transport company generally, and to acquire and provide aerodromes, air stations, flying grounds, flying schools, wireless telegraph stations, hangars, garages, sheds and other accommodation or erections in relation to aerial and other conveyances, to arrange competitions and trial tests for aviators, and to repair, hire, let on hire, ply for hire, and deal in all kinds of aircraft, etc. The subscribers (each with one share) are: F. Handley Page, 40, Claremont Road, Cricklewood, N.W.2, aeroplane manufacturer; T. Page, 40, Claremont Road, Cricklewood, N.W.2, aeroplane manufacturer. First directors: F. Handley Page and T. Page. Solicitors: Kimber, Bull and Co., 6, Old Jewry, E.C.

Aircraft Improvements Co., Ltd. Private company. Registered June 27th. Capital, £1,000 in £1 shares (50 founders). Agreement with Eric Neal and to carry on the business as aeronautical, marine and general engineers, manufacturers of and dealers in aircraft, aeroplanes, seaplanes, flying-boats, airships, observation balloons and appliances for aerial navigation, etc. The subscribers (each with one share) are:—E. Neal, 15, Elliott Road, Chiswick, W.4, aeronautical engineer. J. S. Cotman, 10, Coleman Street, E.C., C.A. Directors: E. Neal, J. S. Cotman, F. M. T. Lange and D. Gordan. Registered office: 10, Coleman Street, E.C.

AIRCRAFT IN PARLIAMENT

HOUSE OF LORDS.

As the result of an intense debate on July 30th, it was resolved in the Lords by 69 to 42 that a Select Committee should be appointed to examine the circumstances of the dismissal of Miss Violet Douglas-Pennant from the Women's Royal Air Force. The committee is to have the power to call witnesses, to take evidence upon oath, and to ask for the production of documents. This action has been taken by the Lords in defiance of the Government.

* * *

HOUSE OF COMMONS

The following written answer was given on July 28th :-

FLOOKBOROUGH AERODROME.

Dr. MACNAMARA, the Secretary of State to the Admiralty, replying to Mr. TYSON WILSON, said : The construction of a large aerodrome was started at Flookborough during the war, railway sidings were laid down and workmen's huts built, but it was discontinued owing to the shortage of steel.

The construction of this aerodrome cannot be continued now as it is not required. The building of the housing accommodation was proceeded with, and is now nearly finished.

Messrs. Vickers have been offered the option of taking over such work for the construction of the aerodrome as had been accomplished before the suspension.

* * *

The following written answers were given on July 29th :—

ROYAL AIR FORCE.—SUTTON AERODROME (DISCHARGES).

Mr. GEORGE THORNE asked the Under Secretary of State to the Air Ministry whether single women are being discharged from the Sutton Aerodrome, near Hornchurch, while married women whose husbands are in good positions are retained.

Major-Gen. SEELY : The inquiries in this case are not yet complete. I will communicate the result to the hon. Member at an early date.

GERMAN AIRSHIPS.

Lieut.-Col. MOORE-BRABAZON asked the Under Secretary of State to the Air Ministry how many German rigid airships will be allotted to this country under the terms of Peace; and whether the Air Ministry or the Admiralty will take the same over.

Major-Gen. SEELY : Under the Peace terms all German airships are to be handed over to the Allies, but the exact number to be allotted to this country has not yet been decided. The airships will be taken over in Germany by the Royal Air Force Section of the Inter-Allied Aeronautical Commission of Control, and their allotment as between the Admiralty and the Air Ministry will be determined by the decision made on the general question of responsibility for airships.

* * *

The following oral answers were given on July 31st :—

AIRSHIPS.

Captain WEDGWOOD BENN asked whether the Civil Aviation Department has under its control any airships; and, if not, what steps they take to carry out experiments, in view of the commercial development of this type of aircraft.

Major-Gen. SEELY : The Air Ministry has not at present any airships under its control. Valuable experience was gained by the Ministry from the flights of the R33 and R34, but these vessels have now been returned to the Admiralty

AIR SERVICES (UNIFIED CONTROL).

Lieut.-Col. MALONE and Mr. RAPER asked the Prime Minister, and Mr. JOYNSON-HICKS asked the First Lord of the Admiralty, whether and when the construction of airships was going to be handed over from the Admiralty to the Air Ministry.

Capt. W. BENN asked the Prime Minister whether the control of the airships could be transferred

Capt. W. BENN and Lieut.-Col. MALONE asked the Prime Minister whether the Air Service will have unified control

Mr. BONAR LAW : It has been decided that the lighter-than-air ships shall be transferred to the Air Ministry, and arrangements to carry this into effect are now being made

Mr. RAPER : Will they be transferred immediately or only on completion ?

Mr. BONAR LAW : The principle has been decided upon; the details are being arranged between the two Departments.

Lieut.-Comdr. KENWORTHY : Will they be available for experiments in commercial work, or are they only for naval and military purposes ?

Mr. BONAR LAW : I could not be expected to answer that question. That will be for examination. One of the questions says : "Value for commercial purposes," but I was not aware of that.

Lieut.-Col. MALONE : Will they be transferred for operational purposes ?

Major-Gen. SEELY : I could not answer that off-hand. When these ships are employed for military purposes they will be under the command of appropriate military authorities, whether of the Navy or Army.

Mr. JOYNSON-HICKS : When arrangements are made will a statement be published here ?

Mr. BONAR LAW : We shall certainly make any announcement that we can. Whether it will be necessary to make it when the House is not sitting we will consider.

AIR DIVISION (NAVAL STAFF).

Mr. JOYNSON-HICKS asked the First Lord of the Admiralty whether an Air Department is in existence at the Admiralty; and, if so, for what purpose.

The FIRST LORD of the ADMIRALTY (Mr. Long) : There is no Air Department at the Admiralty. There is an Air Division of the Naval Staff, which advises us in these matters.

Mr. LONG : All aircraft which work in conjunction with the Navy are under the control of the Admiralty for operations.

Lieut.-Col. MALONE asked the First Lord of the Admiralty whether the airships allotted for work with specific fleets are under the direct control of the Admiralty Air Department.

Mr. LONG : No, Sir. Any airships allotted for work with the Fleet are under the direct control of the commander-in-chief.

* * *

The following written answers were given on July 31st :—

AIR STATION, FELIXSTOWE (DISMISSALS).

Lieut.-Col. R. PEEL asked the Under Secretary of State to the Air Ministry whether he is aware that 176 civilian employees at the air station, Felixstowe, received a week's notice to leave on Saturday last without having had any previous intimation that their services were likely to be dispensed with; and whether, in view of the obvous hardship which must occur from displacement at such short notice, he will take steps to make some concession as to time so as to give the employees some reasonable chance of finding fresh employment.

Major-Gen. SEELY : The facts are as stated in the question. I deeply regret the hardship that is caused by the dismissal of civilian employees in this and similar cases, but the rapid reduction of the Royal Air Force to a peace basis renders such action unavoidable. Every effort will be made to give sufficient notice to enable men to find other employment, but such notice must in any case be short owing to the great reduction in working requiring to be done

GOVERNMENT POLICY

Mr. RAPER asked the Prime Minister whether the Government adheres to the declaration of policy, made by the Secretary of State for War on February 12th, that the integrity, the unity, and the independence of the Royal Air Force will be sedulously and carefully maintained.

Mr. BONAR LAW : The answer is in the affirmative.

MEERING v. THE GRAHAME-WHITE AVIATION CO., LTD.

On July 29th, Lords Justices Warrington, Duke and Atkin in the Court of Appeal, after an eight days' hearing, dismissed, on all issues but one, an appeal by the Grahame-White Aviation Co., against a verdict and judgment.

Mr. Meering was employed by the company last year and privately constructed an aeroplane of his own invention. The company charged him with stealing and receiving aeroplane parts and fittings. In the ensuing action Mr. F. C. Meering received £1,700 damages and costs for false imprisonment and malicious prosecution.

The part of the appeal which was allowed was that upon the issue of false imprisonment, and the damages for that issue were reduced from £250 to 1s. Mr. Meering's damages are, therefore, reduced from £1,700 to £1,450 and 1s.

A LIGHT SENTENCE.

At the Mansion House on July 31st, Douglas Newth, 24, lately a Lieutenant in the Royal Air Force, was charged with obtaining goods from City firms by means of worthless cheques. It was stated that the defendant had been doing secretarial work for a woman living in Tavistock Square, and was alleged to have stolen some blank cheques from her cheque-book. These he used in obtaining articles from Benetfink, Ltd., of Cheapside, and other firms. He represented himself in some cases as "Sir Robert Curzon" and in others as "Captain Wilson, Governor of Wormwood Scrubs Prison."

The defendant told the magistrate that he had served in the Army before and during the war and was twice severely wounded. He afterwards obtained a commission in the Royal Air Force and was twice smashed up. He was ill and starving when these matters occurred.

Sir John Baddeley passed sentence of four months' imprisonment in the second division on each of two charges, to run consecutively—eight months in all.

MANSLAUGHTER.

On July 29th the Poole Coroner held the adjourned inquest on the bodies of Mr. and Mrs. S. E. Jones, of Parkstone, who died under mysterious circumstances at Poole. They were picked up one dead and the other badly injured by two R.A.F. men and four civilians in a Government motor tender, on the night of the Peace festivities.

The driver of the car George Richard Woodhouse, and Hugh O'Neill his mate, both privates in the R.A.F., who are in custody on the charge of manslaughter, gave evidence.

Woodhouse said he should have taken the car back to the R.A.F. depot at Sandbanks, but thought they would have a run round and see what was doing as it was Peace Day. When they picked up the bodies of Mr. and Mrs. Jones it was light but raining. One was on each side of the road with more than room for the car between.

A civilian deposed to visiting various public-houses with the two R.A.F. men, but stated that all were sober. They did not see anyone in the road in front of the car.

A verdict of manslaughter against Woodhouse and O'Neill was returned.

NON-RIGID AIRSHIPS FOR SALE.

The Admiralty have for sale a number of non-rigid airships of the following types : Coastal, Coastal Star and S.S.Z. The airships will be sold complete with cars, engines, radiators, propellers, engine fittings, instruments, etc., but without wireless gear.

Forms of tender, giving particulars of the airships and facilities for inspection may be obtained from the Director of Contracts, Branch 10a, Room 81, West Block, Admiralty, S.W.1. The tenders for the airships will be received at the Admiralty up to 12 noon on August 12th.

Portable sheds, 170 ft. by 50 ft. by 56 ft. (to the crown of arch), suitable for S.S.Z. type airships are available for sale. Particulars of these sheds may be obtained from the Civil Engineer-in-Chief, Admiralty.

Silicol plants, which form part of the equipment of stations, are also available, and particulars may be obtained from the Director of Airship Production, 10, Smith Square, S.W.1.

NAVAL & MILITARY AERONAUTICS

GREAT BRITAIN.

FROM THE COURT CIRCULAR.

BUCKINGHAM PALACE, July 24th.

The King, who was accompanied by the Prince Albert, held an Investiture for the Royal Air Force in the Quadrangle of the Palace at 11 o'clock this morning

His Majesty conferred decorations as follows:—

THE DISTINGUISHED FLYING CROSS (contd.)

Lieut. Leo Baker, Lieut. Owen Baldwin, Lieut. Bernard Belcher, Lieut. John Bell, Lieut. Cecil Bridgland, Lieut. Harold Briggs, Lieut. Frederick Britnell, Capt. Frank Broome, Lieut. Colin Brown, Lieut. Lee Roy Brown, Lieut. Eldon Burn

Lieut. Austin Chadwick, Lieut. Sidney Chamberlain, Lieut. Joel Chrispin, Lieut. Percy Clayson, Lieut. Herbert Cockman, Capt. Douglas Colyer, Lieut. Alfred Corker, Lieut. Charles Coulson, Lieut. James Croden, Lieut. Alan Crosthwaite

Lieut. Douglas Davies, Lieut. Norman Dougall, Lieut. John Drake, Lieut. Goran Duncan

Lieut. William Eastaugh, Lieut. Cyril Eilen, Capt. Harold Ellison, Lieut. Charles Frank.

Lieut. William Gray, Lieut Victor Groom, Lieut. Thomas Gordon.

Lieut. Leslie Hamilton, Lieut. Herbert Hampton, Lieut. Ernest Hardcastle, Lieut. Norman Harben, Lieut Geoffrey Hett, Lieut George Hicks, Lieut. Sydney Highwood, Lieut. George Hobson, Lieut. John Holland, Lieut. John Hoogterp, Lieut. Gordon Hyams.

Lieut. Arthur Jarvis, Lieut Lawrence Jessop, Lieut. William Jones.

Lieut. Frank Loly, Lieut. Harry Longbottom.

Lieut. Eric MacDonald, Lieut. John MacLennan, Capt. Charles Maud, Lieut. Matthew McConville, Lieut. John McDonald, Lieut. Robert McLaughlin, Lieut. William Miller.

Lieut. Wilfred Nuttall.

Lieut. James O'Connell, Lieut. Harry Oldham.

Lieut. William Palk, Lieut. Cyril Parry, Lieut. Lawrence Pendred.

Capt. Alexander Rankin, Lieut. Norman Roberts, Lieut. Thomas Rose, Lieut. Horace Russell.

Lieut. Harold Searson, Lieut. Richard Shaw

Lieut. Charles Sims, Lieut. Arthur Stevenson

Lieut. Louis Packenham-Walsh.

Sec. Lieut. Gordon Ballantyne, Sec. Lieut. Alfred Barter, Sec. Lieut. John Blandford, Sec. Lieut. Percy Boulton.

Sec. Lieut. Reginald Creamer.

Sec. Lieut. Edward Dew.

Sec. Lieut. Gower Elias.

Sec. Lieut. James Gascoyne, Sec Lieut Robert Gordon.

Sec. Lieut. Charles Haigh, Sec. Lieut. Thomas Harries, Sec. Lieut. George Hart.

Lieut. Robert Jamison.

Lieut. James McDonald, Sec. Lieut. Conrad Moth.

Sec. Lieut. William Owens.

Sec. Lieut. William Patey, Sec. Lieut Harley Phillips, Sec. Lieut Hartley Pullan

Lieut. Hervey Rhodes, Sec Lieut. Albert Robinson.

Sec. Lieut. Godfrey Sellers, and Sec. Lieut. Edward Simpson

THE AIR FORCE CROSS.—Major-Gen. Sir William Brancker, Col. Arthur Bigsworth, Major Philip Babington, Lieut.-Col. Henry Busteed, Lieut.-Col. John Fletcher, Lieut.-Col. Francis McClean.

Major William Acland.

Major Reginald Carr, Major Robert Chalmers, Major the Hon. Roger Coke, Major John Coleman, Major Geoffrey Cox.

Major Horace Dean.

Capt. Thomas Elmhurst.

Major Charles Freeman.

Major Frank Garratt.

Major Arthur Harris, Major Roderick Hill

Capt. Montague Jennings.

Capt. Harold Kerby.

Capt. Ivo Little.

Capt. Forster Maynard, Major Geoffrey Mitchell.

Capt. John Orton.

Major Humphrey Raikes.

Capt. Douglas Stewart.

Capt. Robert Aitken, Lieut. William Algie.

Capt. Gilbert Barrett, Capt. Seymour Benson, Capt. Godfrey Bremridge, Lieut. Paul Bulman.

Capt. Edgar Carpenter, Lieut. Henry Clarke, Capt. Brian Clayton, Capt. Ralph Cochrane, Major Arthur Cooper, Capt. Roger Corfield.

Capt. Charles Dalison, Lieut. Desmond De Burgh, Capt Archibald Dickie, Lieut. Noel Dixon.

Capt. Joseph Fall, Capt. Albert Fanstone, Capt. Matthew Frew.

Capt. Edward Galley, Capt. Charles Geach, Capt. Percy Gethin, Major Albert Godfrey, Major Samuel Greer

Capt. Stafford Harris, Capt. Henry Horsfield.

Capt. Ignatius Kelly, Capt. Walter Kemp, Capt. James Kerr.

Capt. John Leach, Capt. Prilip Le Gallas.

Capt. Percy Maitland, Capt Duncan McGregor, Capt. George Meager, Capt. Edward Morgan, Capt. Francis Musson

Capt. Malcolm Nares, Capt. William Nicholson, Capt. Jack Noakes.

Capt. Henry Owen.

Lieut. Albert Peace.

Capt. Cecil Rea, Capt. Alan Riley, Capt. Frank Rose.

Capt. Robert Saundby, Capt. Charles Stocks, Capt. Ronald Sugden.

Lieut. Cyril Adamson, Lieut. Alfred Alexander.

Lieut. the Hon. Alan Boyle, Lieut. Robert Burrows.

Lieut. Morris Carver, Lieut. Charles Channing, Lieut. Leslie Chivers, Lieut. Stanley Cowell.

Lieut. Stanley Dreschfeld.

Lieut. Reignald Edwards, Lieut. Hugh Francis.

Lieut. Harold Game, Lieut. Ernest Garner

Capt. Edward Haigh, Lieut. Henry Hamer, Lieut. Robert Hartley.

Capt. Archibald Lutyens.

Lieut. Gilbert Martingell, Lieut. Mervyn Mossop

Lieut. William Oulton, Capt John Oliver

Lieut. Francis Pelly, Lieut. George Powell.

Lieut. William Rope, Lieut. Wilfred Rutledge

Lieut. Leonard Brown.

Sec. Lieut. Edward Hail.

Lieut. Arthur Power, and

Sec. Lieut. Bertram Scovell

BUCKINGHAM PALACE, July 31st.

The King held an Investiture in the Quadrangle of the Palace at 11 o'clock this morning.

The following were severally introduced into the presence of His Majesty, when The King invested them with the Insignia of the respective Divisions of the Orders into which they have been admitted:—

THE DISTINGUISHED SERVICE ORDER.—Lieut.-Col Richard Williams, Aust. F.C. (also received the Insignia of an Officer of the Most Excellent Order of the British Empire, Military Division).

THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE.—Officer.—Military Division.—Mary, Mrs. Edwards, W.R.A.F., Winifred, Mrs. Powell, W.R.A.F., Lieut.-Col. Charles Edmonds, R.A.F., Lieut.-Col. John Hawkins, R.A.F., Major Arthur Struben, R.A.F., Major John Thornely, R.A.F., and Capt. William Budgen, R.A.F.

MEMBERS.—Military Division.—Capt. David Manwell, Aust. F.C., Lieut. Percival McBain, Aust. F.C., Capt. Arthur Allen, late R.A.F., Capt. Henry Smith, R.A.F., and Lieut. John Clift, R.A.F.

His Majesty then conferred decorations as follows.—

THE DISTINGUISHED SERVICE CROSS.—Capt. Guy Smith, R.A.F

THE MILITARY CROSS.—Lieut. William Warden, R.A.F.

Mrs. Horn had the honour of being received by the King, when His Majesty handed to her as "Next-of-Kin" the Albert Medal awarded to her husband, the late Driver Alfred Horn, Royal Army Service Corps, under the following circumstances:—

On June 30th, 1918, a Corporal of the Royal Air Force, who had been lowered by a rope into a crater caused by a bomb which had been dropped by a hostile aeroplane, was overcome by carbon monoxide gas, which had accumulated in large quantities in the crater. Endeavours were made to haul him out, but his head became caught, and Private Johnson volunteered to descend and readjust the rope, which he did successfully, and the Corporal was rescued, but Johnson was himself overcome. Driver Horn at once put on his respirator and lowered himself to the rescue, but was likewise overcome. Sergeant Brooks then volunteered to attempt to rescue both men, but was also overcome by the gas; fortunately, he was hauled out. At this stage Brigadier-General Burt refused to permit anyone else to descend, but did so himself, and succeeded in dragging one of the unconscious men some way towards the rope; he, however, became unconscious, and had to be pulled out. There can be no doubt that all knew the risk they were running, and willingly incurred it in the hope of saving life.

BUCKINGHAM PALACE, August 2nd.

The King held an Investiture in the Quadrangle of the Palace at 11 o'clock this morning.

The following were severally introduced into the presence of The King, when His Majesty invested them with the Insignia of the respective Divisions of the Orders into which they have been admitted:—

THE MOST HONOURABLE ORDER OF THE BATH.—Companion.—Military Division.—Brigadier-General Francis Festing, R.A.F.

THE MOST DISTINGUISHED ORDER OF SAINT MICHAEL AND SAINT GEORGE.—Companions.—Colonel Frederick Halahan, R.A.F.; Colonel Charles Samson, R.A.F. (also received the Air Force Cross); Lieut.-Colonel Ulick Bourke, R.A.F.; Lieut.-Colonel Robert Bradley, R.A.F.; Lieut.-Colonel Albert Fletcher, R.A.F.; Lieut.-Colonel Cecil Fraser, R.A.F. (also received the Insignia of an Officer of the Most Excellent Order of the British Empire, Military Division); Lieut.-Colonel Thomas Higgins, R.A.F.

THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE.—Officer.—Military Division.—Major Geoffrey Read, late R.A.F.

The King then conferred decorations as follows:—

THE MILITARY CROSS AND BAR AND THE DISTINGUISHED FLYING CROSS.—Capt. David Stewart, R.A.F.

THE MILITARY CROSS AND BAR AND THE AIR FORCE CROSS.—Major Walter Scott, R.A.F.

THE MILITARY CROSS AND THE DISTINGUISHED FLYING CROSS.—Lieut.-Colonel Harold Blackburn, R.A.F., and Capt Norman MacMillan, R.A.F.

THE MILITARY CROSS AND THE AIR FORCE CROSS.—Major Oliver Stewart, R.A.F.

THE MILITARY CROSS.—Capt. Harold Hamersley, R.A.F., Capt Gilbert McPherson, R.A.F.; Capt. Kenneth Montgomery, R.A.F.; Lieut. Croker Barrington, R.A.F.; Lieut. Eric Birkbeck (North Staffordshire R., attd. R.A.F.).

THE DISTINGUISHED FLYING CROSS.—Major George Sansom, R.A.F.; Capt. Claver Bessett, R.A.F.; Capt. Clarence Williamson-Jones, Capt. Geoffrey Siedle, R.A.F.; Captain Charles Snow, R.A.F.; Captain Walter Southey, R.A.F.; Captain Richard Stephenson, R.A.F.; Capt. John Storey, R.A.F.; Capt. Theodore Studd, R.A.F.; Capt. John Todd, R.A.F.; Capt. Godfrey Thomas, R.A.F.; Capt. Stanley Turner, R.A.F.; Capt. Charles Veitch, R.A.F.; Capt. James Walker, R.A.F.; Capt. John Walmsley, R.A.F.; Capt Leslie Warren, R.A.F.; Capt. Joseph White, R.A.F.; Capt. Arthur Williams, R.A.F.; Capt. Robert Williams, R.A.F.; Capt. Archibald Yuille, R.A.F.; Lieut. Harold St. John, R.A.F.; Lieut. John Shearer, R.A.F.; Lieut. Denys Stuart-Shepherd, R.A.F.; Lieutenant William Sidebottom, R.A.F.; Lieutenant Harold Skinner, R.A.F.; Lieutenant Harold Smith, R.A.F.; Lieut. William Staton, R.A.F.; Lieut. Stephen Stafford, R.A.F.; Lieut. John Stronach, R.A.F.; Lieut. Hedworth Tait, R.A.F.; Lieut. Bryant Taylor, R.A.F.; Lieut. George Thomson, R.A.F.; Lieut. Joseph Todd, R.A.F.; Lieut. Edward Unmack, R.A.F.; Lieut. Christoffel Venter, R.A.F.; Lieut. William Walker, R.A.F.; Lieut. Wilfred Ward, R.A.F.; Lieut. Edward Weakly, R.A.F.; Lieut. David Weston, R.A.F.; Lieut. Clifford White, R.A.F.; Lieut Basil Wilcox, R.A.F.; Lieut. Frederick Williams, R.A.F.; Lieut. Eric Willis, R.A.F.; Lieut. Basil Worthington, R.A.F.; Sec. Lieut Alfred Tutte, R.A.F.; and Sec. Lieut. John Young, R.A.F

THE AIR FORCE CROSS.—Lieut.-Colonel Harold Watkins, R.A.F.; Lieut.-Colonel Hugh Williamson, R.A.F.; Major Frederick Sandford, R.A.F.; Major Frederick Sowrey, R.A.F.; Major John Sowrey, R.A.F.; Major William Sowrey, R.A.F.; Major Benjamin Travers, R.A.F.; Capt Trevor

Salt, R.A.F.; Captain Victor Scriven, R.A.F.; Captain Duncan Stewart, R.A.F.; Captain Charles Sturt, R.A.F.; Captain Robert Tailyour, R.A.F.; Captain William Tait, R.A.F.; Captain Alfred Taylor, R.A.F.; Captain Malcolm Taylor, R.A.F.; Captain George Thom, R.A.F.; Capt Cyril Truran, R.A.F.; Capt. George Turnbull, R.A.F.; Capt. Creswell Turner, R.A.F.; Capt. Stanley Vincent, R.A.F.; Capt. Robert Usher, R.A.F.; Capt. Frederick Walker, R.A.F.; Capt. Lloyd Whitworth, R.A.F.; Capt. Percival Wickens, R.A.F.; Capt. Clifford Wilcock, R.A.F.; Capt. Thomas Williams, R.A.F.; Capt. James Wilson, R.A.F.; Capt. Frank Woods, R.A.F.; Capt. Felix Wollard, R.A.F.; Capt. James Wright, R.A.F.; Lieut. John Hirst, R.A.F.; Lieut. Frederick Shepard, R.A.F.; Lieut. Francis Smith, R.A.F.; Lieut. William Taylor, R.A.F.; Lieut. Collingwood Thompson, R.A.F.; Lieut. Algernon Townend, R.A.F.; Lieut. John Tratman, R.A.F.; Lieut. Harold Ward, R.A.F., Lieut. Weldon Watts, R.A.F.; Lieut. Francis Way, R.A.F.; Lieut. William Westcott, R.A.F.; Lieut. Stephen Wilkinson, R.A.F.; Lieut. James Williamson, R.A.F.; Lieut. Arthur Wray, R.A.F., and Sec. Lieut Cowan Stephenson, R.A.F

The following had the honour of being received by His Majesty, when The King handed to her, as "Next-of-Kin," the decoration won by her husband in the War :—

THE ALBERT MEDAL.—Mrs. Johnson. Awarded to her husband, the late Private Arthur Johnson, R.A.S.C.

On June 30th, 1918, a Corporal of the Royal Air Force, who had been lowered by a rope into a crater caused by a bomb which had been dropped by a hostile aeroplane, was overcome by carbon monoxide gas, which had accumulated in large quantities in the crater. Endeavours were made to haul him out, but his head became caught, and Private Johnson volunteered to descend and readjust the rope, which he did successfully, and the Corporal was rescued, but Johnson was himself overcome. Driver Horn at once put on his respirator and lowered himself to the rescue, but was likewise overcome. Sergeant Brooks then volunteered to attempt to rescue both men, but was also overcome by gas; fortunately, he was hauled out. At this stage Brigadier-General Burt refused to permit anyone else to descend, but did so himself, and succeeded in dragging one of the unconscious men some way towards the rope; he, however, became unconscious and had to be pulled out. There can be no doubt that all knew the risk that they were running, and willingly incurred it in the hope of saving life.

NAVAL.

ADMIRALTY, July 25th.

Ch. Art. Eng. to be Eng. Lt. (Capt., R.A.F.) :—F. H. Williams, Jan. 18th.

* * *

The following concerning the recent visit of H.M.A. R. 34 to Germany is from the Danish correspondent of THE AEROPLANE :—

The flight of R.34, which was visible over most parts of Denmark, acted quite as a stimulant, being especially spectacular at Copenhagen, where the airship stopped over the British Fleet at the harbour and lowered a cable, whereupon the commanders communicated by 'phone for some time on the observations made by the airship in crossing the German North Sea and Baltic coasts.

* * *

On July 30th H.M.A. R.34 left the Naval Airship Station at Pulham, Norfolk, for the station at East Fortune, Scotland, and on her way to the latter place contrived to pay a visit to London. The ship arrived about 7 p.m. and voyaged about overhead for some little time. R.34 has been undergoing overhaul at Pulham since her arrival there after her Atlantic flight.

R.34 arrived at East Fortune at 6.5 a.m. on July 31st.

* * *

On July 28th the British Naval F.5 flying-boat N.4044 (Major Galpin in command), left Christiania for Copenhagen at 11 a.m.

Up to this point all accounts agree, but after that, there is a pleasing variety in the wording of them. Some say that the flying-boat arrived at Copenhagen at 2.25 p.m. the same day, and others that she arrived at 2.25 p.m. the following day, one of her engines having broken down en route.

Had it been war-time, one would have felt inclined to suggest that she had descended on her way to "confer about targets," which would have explained the discrepancy in the two statements.

* * *

At an inquest at Cromer on July 31st on the body of Serjt. Charles H. Lewry, R.A.F., of Gosport, no fresh evidence was forthcoming as to the cause of the accident to H.M.A. "N.S.11."

An officer of the R.A.F. said all that was known officially was that the cause was fire, the origin of which was a mystery. Lewry was second coxswain. He was believed to be steering the airship when the fire occurred. If he were he would be in the forepart of the car, and it was possible that the latter was broken when it reached the water and released his body, as well as two seats which would be near him for the use of the pilot, and were found among the wreckage washed up. It was probable that the body of the car broke down by the two heavy engines sinking with the remainder of the crew imprisoned inside

A witness from the Pulham Aerodrome said when the airship "N.S.3" was lost in the sea some time ago five of the crew were rescued. They were able to escape from the car on to the floating envelope, but in that case there was no fire such as occurred in the wreck of the "N.S.11."

The Coroner recorded a verdict of "Found dead on the beach after being washed ashore from the wrecked airship."

* * *

It is understood that the big triplane flying-boat, known as the "Felixstowe Fury," designed by Lieut.-Col. J. C. Porte, C.M.G., R.A.F., will shortly fly to Egypt. The newspaper, Nationaltidende," of Copenhagen, states that Capt. Scott, R.A.F., the pilot of F.5, 4044, at present at Copenhagen, will make one of the crew.

MILITARY.

WAR OFFICE, July 28th.

REGULAR FORCES.—ROYAL ARMY CHAPLAINS DEPARTMENT.—Temp. Chaplains to the Forces, 4th Class, relinquish their commns. :—The Revs. J. L. Thomas, M.C., on transfer to the R.A.F., June 12th.

INFANTRY.—23RD BN. LOND. R.—Sec. Lt. F. C. Woodman (attd. R.A.F.) is cashiered, Jan. 1st.

WAR OFFICE, July 29th.

REGULAR FORCES.—INFANTRY.—North'd Fus.—Lt. H. A. Fordham (attd. R.A.F.) resigns his commn., July 30th.

R.W.R.—Lt. H. R. S. Birkin (attd. R.A.F.) resigns his commn., July 30th.

Wilts. R.—Capt. C. H. E. Moore to be Maj., Jan. 28th, 1918; Lt. C. W. M. Whitlock (attd. R.A.F.) resigns his commn., July 30th; Sec. Lt. J. Carney retires, receiving gratuity, July 30th

WAR OFFICE, July 30th.

REGULAR FORCES.—Mil. Wing.—Flying Officer (Obsr.).—Temp. Sec. Lt. R. J. Slade, A. Cyclist Corps, and to be transferred to R.F.C., Gen. List, Oct. 26th, 1915.

INFANTRY.—Durh. L.I.—Lt. S. H. Long,—D.S.O., M.C. (attd. R.A.F.), resigns his commn., July 31st.

OVERSEAS FORCES.—Canada.—Nova Scotia R.—Temp. Capt. (actg. Lt.-Col.) G. C. St. P. de Dombasle, O.B.E., ceases to be secd. for duty with the R.A.F., Feb. 27th, and is secd. for duty with the C.A.F., Feb. 28th (substituted for "Gazette" notification No. 31333, May 9th); Temp. Capt. D. Owen ceases to be secd. for duty with the R.A.F., May 31st.

Eastern Ontario R.—The following temp. Lts. cease to be secd. for duty with the R.A.F.—H. R. Kincaid, M.C., July 3rd; S. B. Plummer July 9th.

2nd Cent. Ontario R.—Temp. Lt. E. O. Houghton ceases to be secd. for duty with the R.A.F., July 10th

Western Ontario R.—Temp. Lt. F. Cave-Browne-Cave ceases to be secd. for duty with the R.A.F., and relinquishes commn. in the O.M.F.C., July 14th.

Manitoba R.—Temp. Lt. W. H. Kilby ceases to be secd. for duty with the R.A.F., July 9th.

Saskatchewan R.—The following cease to be secd. for duty with the R.A.F. :—Temp. Capt. (actg. Maj.) R. W. Bruce, July 14th; Temp. Lt. A. H. Bill, May 31st.

British Columbia R.—The following cease to be secd. for duty with the R.A.F. :—Temp. Maj (actg. Lt.-Col.) R. Bell-Irving, O.B.E., April 9th; Temp. Lt. (actg. Capt.) G. Thompson, July 8th, 1918.

E. Ont. R.—Temp. Lt. G. L. Shepherd ceases to be secd. for duty with R.A.F., July 9th.

Can. Mach. Gun Corps.—Temp. Lt. H. C. Young, D.F.C., ceases to be secd. for duty with the R.A.F., July 14th.

Can. Army Pay Corps.—Temp. Capt. P. E. Bishop ceases to be secd. for duty with the R.A.F., July 14th

WAR OFFICE, July 31st.

REGULAR FORCES.—R.A.S.C.—Lt. T. M. Draper, from R.A.F., to be temp. Lt., June 13th.

CASUALTY LIST.

Reported August 5th.

PREVIOUSLY REPORTED MISSING, NOW REPORTED KILLED.—Tucker, Sec. Lt. D. C., R.F.C.
Webb, Capt. N. W., M.C., R.F.C.

FORCES OF CANADA.—ACCIDENTALLY KILLED.—Annis, Lt. W. F., Cent. Ont. Regt., attd. R.A.F.
Munro, Lt. J. W., N.S. Regt., attd. R.A.F.

DIED.—Ferguson, Lt. J. F., Rly Troops, attd. R.A.F.
Price, Lt. J. W., Art., attd. R.A.F

* * *

The War Office announces that the British War Medal Riband may now be worn by all ranks who are entitled to the award of the medal, and that in each case a preliminary issue of two inches of the riband will be made.

Soldiers discharged from the Royal Flying Corps before April 1st, 1918, should apply to the Royal Air Force Record Office at Blandford on the official postcard (F.S. Form 758), obtainable at any post office.

* * *

A message from Peshawar giving further details of the fighting in the Khyber on July 18th says :—

After the Afridis had captured a hill overlooking Fort Maude, and while we were still shelling it preparatory to a counter-attack, they sent by helio a Hindustani message reading: "This is to show you what we can do. Now we are going to retire."

They then retired to Fort Chora, in the Bazar Valley, but there were caught by an aeroplane sent to bomb the fort, and it is believed that 50 Afridis were killed by a single bomb.

* * *

It is stated from that somewhat unreliable source a newspaper, and a Russian one at that, that British aeroplanes bombed the forts at Kronstadt on July 28th. Heavy smoke was seen coming from the forts but no explosion was heard. The forts fired upon the aircraft.

AIR FORCE.

FROM THE "LONDON GAZETTE."

AIR MINISTRY, July 15th.

CONFERRED BY THE KING OF ITALY.

CAVALIERE OF THE ORDER OF THE CROWN OF ITALY.

Sec. Lt. V. Lowe.

SILVER MEDAL FOR MILITARY VALOUR.

Capt. (actg. Maj.) A. B. Shearer, Capt. H. F. Delarue, D.F.C., Capt H. L. Nunn, D.S.C., D.F.C.

BRONZE MEDAL FOR MILITARY VALOUR.

Lt. S. J. Chamberlain, D.F.C.
Sec. Lt. J. McDonald, D.F.C.

THE CROCE DI GUERRA.

Lt. A. C. Getley.
Capt. (actg. Maj.) A. B. Shearer.

AWARDED THE LIBYAN MEDAL.

For services rendered in connection with the Italian Forces at Misurata :—

Capt. S. E. Ball, D.F.C.
Lt. L. de V. Chisman, Lt. (actg. Capt.) C. Chrimes.
Sec. Lt. J. A. Munn.
Capt. R. J. F. Sulivan.
208273 Serjt. K. E. Dawson (Eastbourne).
232635 A./M.1 G. F. Florant (Fulham, S.W.).

204444 Serjt. H. W. Groombridge (Notting Hill, W.).
210629 A./M.1 F. R. Heckford (Ongar, Essex).
234864 A./M.1 P. Kelly (Glasgow).
208592 Serjt. A. F. Millier (Forest Gate, S.E.); 211578 A./M.1 H. Singleton (Garstang).

CONFERRED BY THE KING OF THE HELLENES

GREEK MEDAL OF MILITARY MERIT.

Sec. Lt. J. W. Hoskings, M.B.E.
Capt. H. G. Harrison, Sec. Lt. G. J. Stroud, M.B.E.

CROSS OF OFFICER, ROYAL HELLENIC ORDER OF THE REDEEMER.

Maj. F. W. Gamwell, Maj. J. Weston.

CHEVALIER OF THE ROYAL ORDER, GEORGE I.

Lt. S. W. Briggs.
Lt. T. F. Clarke
Lt. R. W. Kerr
Lt. C. H. A. Willett.

CONFERRED BY THE KING OF ROUMANIA

STAR OF ROUMANIA (OFFICIER).

Maj. J. P. C. Cooper, O.B.E., M.C. (10th Bde.).

STAR OF ROUMANIA (CHEVALIER).

Lt. (actg. Capt.) C. C. A. Pelham (France).
Sec. Lt. (Hon Capt.) (actg. Capt.) H. W. Stockdale, D.F.C. (101st Squadron).

CROWN OF ROUMANIA (CHEVALIER)

Lt. F. H. Knobel (10th (A.) Wing, 40th Squadron).

ORDER OF MICHAEL THE BRAVE, 3RD CLASS.

Lt. J. A. Parkinson (201st Squadron).
Lt. L. H. Ray (91st (A.) Wing, 19th Squadron).

CROIX DE VIRTUTE MILITARA, 2ND CLASS.

222516 Serjt. C. H. O. Allwork (10th (A.) Wing, 98th Squadron); 27032 A./M., 1st Class, H. A. Lockington (5th Balloon Wing); 77088 A./M., 1st Class, J. Melia (19th Balloon Section); Aus/740 Ch. Master Mech. A. Taylor (3rd Squadron, Aust. Flying Corps) (France).

... MEDIALLE BARBATIE SI CREDINTA (1ST CLASS).

2547 Ch. M./Mech W. E. Bennett (84th Squadron), 49532 S./Maj. G. Dixon (France); 200599 S./Maj. S. P. Finch (10th (A.) Wing, 203rd Squadron); 16667 Ldg. A./C. F. Murphy (5th Balloon Wing).

MEDAILLE BARBATIE SI CREDINTA (3RD CLASS).

5 S./Maj. W. E. Moore (9th Squadron); 42833 A./M., 1st Class. A. E. Seed (1st Balloon Wing); 18011 1st A.M. A. S. Wilson (France).

CONFERRED BY THE SULTAN OF EGYPT.

THE ORDER OF THE NILE, 3RD CLASS.

Lt.-Col. (actg. Brig.-Gen.) P. L. W. Herbert, C.M.G., C.B.E. (Notts and Derby R.).
Lt.-Col. C. E. Risk, D.S.O. (R.M.L.I.).

THE ORDER OF THE NILE, 4TH CLASS.

Capt (actg. Maj.) F. G. Brown, O.B.E.
Capt. W. H. Dolphin.
Maj. W. D. Long, O.B.E.
Maj. (actg. Lt.-Col.) S. S. Nevill, O.B.E.

CONFERRED BY THE EMPEROR OF JAPAN

4TH CLASS ORDER OF THE RISING SUN.

Capt. (actg. Maj.) G. de L. Wooldridge, O.B.E.

NOTE.—The "Acting Ranks" indicated against names in this "Gazette" have been relinquished in the great majority of cases since the commencement of the printing, and in many cases the Officers and other ranks have been demobilised.

CORRECTIONS.

The following are the correct descriptions of Officers whose names appeared in the "Gazettes" indicated in connection with the grant of decorations or Mentions in Dispatches :—

Lt.-Col. Sir H. Fowler, K.B.E. ("Gazette" No. 31297, April 15th); Maj. W. D. Long, O.B.E. ("Gazette" No. 31098, Jan. 1st), Capt. L. E. Lander, M.B.E. ("Gazette" No. 31098, Jan. 1st); Capt. J. H. Cooke, M.B.E., M.B. (R.A.M.C., Egypt) ("Gazette No. 31098, Jan. 1st); Lt.-Col. N. J. Roche, O.B.E. ("Gazette" No. 31378, June 3rd); Sec. Lt. (actg. Maj.) A. R. Fulton, M.B.E. ("Gazette" No. 31378, June 3rd); Capt. W. Hayward, M.B.E., No. 4 Group ("Gazette" 31378 June 3rd); Capt. (actg. Maj.) P. P. C. Penberthy (Shrops. L.I.). This officer's name appeared in the list of awards of the fifth grade of the Military Division, British Empire Order, in the "London Gazette," June 3rd (No. 31378), instead of in the list of appointments to the fourth grade (O.B.E.), and the correction is hereby authorised. Lt.-Col. W. S. Fetherstonhaugh (Can For. Corps, attd. R.A.F.) (France). The announcement of the award of the 4th grade, British Empire Order, in "Gazette" No. 31378 of June 3rd, is cancelled, this Officer having been awarded a higher grade. Col. the Rev. R. V. Hanson, O.B.E. (Dep. Chapl.-in-Chief, R.A.F.). The announcement published in "Gazette" No. 31378 June 3rd (award of O.B.E.) is cancelled, this award having been also published in "Gazette" No. 31377 of same date. Lt.-C. W. Seymour-Hall (mentioned in Dispatches, "Gazette" No. 31378, June 3rd); 91075 Serjt.-Obsr. L. H. Rowe, D.F.M. ("Gazette" No. 31378, June 3rd); Lt. (actg. Capt.) G. B. Irving, D.F.C. (19th Squadron, R.A.F., attd. 10th (Army) Wing) (France) (D.F. Cross gazetted Aug. 3rd, 1918) (deceased)

Capt. C. B. Belt, M.B.E., M.C., D.C.M. (S. Staff R.) ("Gazette" 31378, June 3rd); Deputy Adm. Mrs. F. Day, M.B.E. (W.R.A.F.) ("Gazette" 31378, June 3rd); Maj. (actg. Lt.-Col.) A. Levick, O.B.E. (former service in C. Gds.) ("Gazette" 31378, June 3rd); Capt. W. J. Cooper, M.B.E. (Aust. Flying Corps, Recording Offr.) (France) ("Gazette" 31378, June 3rd); Lt. P. A. McBain, M.B.E. (Aust. F. Corps) (Palestine) ("Gazette" 31378, June 3rd); Lt. (actg. Capt.) D. W. Grinnell-Milne, D.F.C. (R. Fus.) (56th Squadron) (France) ("Gazette" 31378, June 3rd, Bar to D.F. Cross); No. 8398 Serjt.-Maj. G. Gilman (53rd Squadron) (France) (the announcement of award of Meritorious Service Medal in "Gazette" No. 31008, Jan. 1st, is cancelled, this award having been already published in "Gazette" No. 30722, June 3rd, 1918); No. Aus./124 Flt. Clk. J. H. Rogers (Aust. F. Corps) awarded the Meritorious Service Medal in "Gazette" No. 30624, April 11th, 1918, for services in connection with the capture of Jerusalem; the second announcement of this reward, which appeared in "Gazette" No 31358, June 3rd, is accordingly cancelled; Maj. H. G. Atkinson, O.B.E., R.A.F., awarded the O.B.E., in "Gazette" No. 31000, Jan. 1st; the second announcement in "Gazette" No. 31098 of the same date is accordingly cancelled.

AIR MINISTRY, July 29th

R.A.F.—The following temp. appointments are made at the Air Ministry :—Staff Officers, 3rd Class.—(Air.)—Capt. V. A. Watson, A.M., July 1st. (Q.).—Sec. Lt. F. A. Holmes, July 21st, from (S.O.2).

The following temp. appointments are made :—Staff Officer, 1st Class. —(Air.)—Lt.-Col. R. P. Mills, M.C., July 26th. Staff Officers, 3rd Class.—(P.)—Capt. F. L. J. Shirley, M.C., April 27th; Lt. C. H. Tancred, May 27th, vice Lt. J. C. Watson.

FLYING BRANCH.—Maj. R. J. Bone, D.S.O., to be actg. Lt.-Col. while empld. as Lt.-Col. (A. and S.), July 11th.

Maj. (actg. Lt.-Col.) E. R. C. Nanson, D.S.C., A.F.C., to be Maj. (S.), from Group Comdr., and to relinquish actg. rank of Lt.-Col., July 16th.

Capt. R. Collishaw, D.S.O., D.S.C., D.F.C., to be actg. Maj. while empld. as Maj. (A.), June 13th.

Lt. W. Dancy to be graded for purposes of pay and allowances as Capt. while empld. as Capt. (A.), May 1st.

Sec. Lts. to be Lts. :—E. K. W. Denton, P. J. Dowell, April 2nd, 1918; J. P. Jones, April 5th, 1918; A. M. Diamant, May 13th, 1918; E. M. Bates, May 17th, 1918; (Hon. Capt.) H. J. Bullock, May 25th, 1918; (Hon. Capt.) J. L. Wilmot, May 26th, 1918; G. Robinson, May 27th, 1918; H. J. Clark, May 31st, 1918; G. M. Ashmore, June 8th, 1918; J. B. Edwards, July 5th, 1918; T. L. Lovell, July 26th, 1918; B. P. Springett, July 17th, 1918; J. Montgomery, August 9th, 1918; H. R. Gunner, Aug. 16th, 1918; V. C. Hemsley, V. R. W. Owens, Sept. 1st, 1918; H. J. Russell, Sept. 13th, 1918; (Hon. Capt.) J. L. McLennan, M.C., T. Large, Sept. 23rd, 1918; E. O. Rutherford, Oct. 3rd, 1918; T. L. Phillips, Oct. 14th, 1918; S. Tweedie, Oct. 16th, 1918; W. F. Robertson, Oct. 20th, 1918; J. R. Bartlett, M.C., Oct. 23rd, 1918; F. E. L. Elliot, C. H. Harwood, G. S. Scott, J. Cafferkey, Oct. 26th, 1918; R. J. Read, A. G. L. Sidwell, Nov. 1st, 1918; (Hon. Capt.) A. W. Bloy, Nov. 7th, 1918; G. R. Bradley, Nov. 10th, 1918; F. L. Wheeldon, D.S.O., Nov. 15th, 1918; K. Boyle, Nov. 26th, 1918; A. Hill, R. O. Goddard, Nov. 30th, 1918; E. Bower, P. G. Clarabut, D. A. Hughes, J. H. Weatherill, Dec. 27th, 1918; C. P. King, Jan. 16th; D. C. Anderson, H. E. Ford, Jan. 19th; L. G. Cunningham, Jan. 23rd; W. J. Goddard, W. J. Porter, D. Young, Feb. 1st; S. Jones, C. S. P. Wallace, Feb. 16th; E. Littlejohn, Feb. 22nd; H. R. Wright, Feb. 26th; J. M. Barlow, J. D. Ford, A. F. Harris, L. F. Hodges, S. H. Spencer, March 1st; C. V. A. Bucknall, March 12th; N. T. North, March 13th; S. A. Dismore, March 23rd; G. A. W. Garland, March 24th; T. R. Adair, J. Atkinson, J. H. Mainwaring, C. Morries, G. H. Simister, F. J. Tilley, C. B. Wilson, March 26th; V. G. Hinds, H. G. Jackson, March 27th; J. Stewart, April 1st; G. D. Wigley, April 7th; P. Bushell, H. Goodwin, B. Reunert, April 11th; W. Rowley-Redwood, April 12th; S. Braby, F. J. Hunt, R. Pyne, April 25th; G. D. Green, April 29th; H. V. Alder, J. F. Blick, C. H. Brazier, V. Harmer, H. Hutchinson, J. W. Kembery, R. F. Saunders, R. W. Silk,, W. Tinsley, May 1st; H. B. Harmsworth, L. Lovatt, A. Shepherd, May 4th; B. H. Matthews, May 7th; A. Beedie, E. A. C. Britton, W. B. Crouch, R. Henderson, C. N. James, W. S. Jenkins, D.F.C., W. H. Jordan, A. D. Kiernander, H. W. Matthews, T. H. Mercer, F. R. Oddy, T. G. Reed, J. W. Sole, A. G. B. Whittaker, L. A. Williamson, May 8th; E. Grayson, May 13th; R. C. Creamer, E. S. Farrand, J. F. Higgins, F. J. Letzer, O. H. P. Lloyd, W. Marsden, G. F. Shreve, J. M. Walker, F. L. Wraight, A. Wroot, May 17th; H. E. B. Holden, May 22nd; W. R. Christian, F. W. Osman, W. Thornton, May 23rd; W. V. Pegden, May 24th; W. Campbell, May 27th; G. W. Armstrong, L. B. Duggan, J. C. Fitzmaurice, J. Glover, C. A. Morris, H. L. Page, J. B. Sanders, S. P. Scott, May 28th; W. J. Cairns, C. C. A. Leppan, H. L. Lomberg, G. L. Nicholson, H. S. Sandford, May 30th; J. Marsden, June 2nd; F. Davison, T. C. Owen, G. Pattinson, R. A. Pearce, D. L. Walker, June 6th; A. Grimshaw, June 8th; J. F. McNamara, E. T. Treglown, June 13th; L. A. S. Harris, T. M. Robertson, R. Walker, June 18th; M. B. Lewis, June 19th; H. P. Crabb, W. Kinghorn, H. Woodcock, June 20th; R. V. Curtis, June 22nd; A. V. Street, June 30th.

Sec. Lt. (Hon. Lt.) E. H. Colman to be Sec. Lt. (Hon. Lt.) (A.), from (T.), Jan. 2nd.

S. L. Cannon (Sec. Lt., Bedford R.) is granted a temp. commn. as Sec. Lt. (A. and S.), May 16th, 1918 (substituted for notification in "Gazette," June 21st, 1918).

C. H. Brown (Lt., King's L'pool R.) is granted a temp. commn. as Sec. Lt. (O.), Oct. 16th, 1918, and to be Hon. Lt.

The following relinquish their commns. on ceasing to be empld. :—Lt. S. J. Lee (Lt., Sask. R.), May 19th; Lt. H. A. D. Mackay (Lt., Hants R.), May 30th; Sec. Lt. (Hon. Lt.) L. R. McKenna (Lt., E. Ont. R.), July 3rd (substituted for notification in "Gazette," May 13th); Capt. R. Hilton, M.C., D.F.C. (Capt., R.G.A.), July 7th; Sec. Lt. (Hon. Capt.) O. Greening (Capt., Can. Engineers), Lt. W. Henderson (Lt., Gordon Highrs.), July 8th; Lt. D. J. G. Webb (Lt., D.C.L.I.), July 10th; Sec. Lt. (Hon. Lt.) A. C. Pollard, M.C. (Lt., Brit. Columbia R.), July 15th; Lt. J. H. Wensley (Lt., Sask. R.), July 20th.

Lt. (actg. Capt.) D. H. D. Bickers is temp. transferred to unempld. list, Jan. 20th.

Transferred to unempld. list :—Sec. Lt. A. Ussher, Jan. 20th; Lt. J. W. Trusler, Lt. (actg. Capt.) J. V. Turner, Feb. 27th; Lt. J. E. Tanner, Feb. 28th; Lt. N. E. Williams, D.F.C., March 1st; Lt. H. Vick, March 12th; Lt. R. C. E. Vernede, March 31st; Capt. N. D. Hall, Lt. W. A. Hunter, Lt. C. L. Hurst, Lt. W. D. Matheson, M.C., Lt. S. W. Taylor, M.C., A.F.C., Sec. Lt. C. W. Treleaven, April 1st; Sec. Lt. R. Hughes, April 2nd; Sec. Lt. P. Hughes, Sec. Lt. H. C. Steele, April 8th; Sec. Lt. W. H. E. Labatt, April 9th; Sec. Lt. G. W. Wills, April 10th; Lt. S. Humphries, Sec. Lt. (Hon Lt.) A. B. Seale (Ches. R.), April 11th; Sec. Lt. G. A. Hunter, April 12th; Sec. Lt. L. S. Campbell, Sec. Lt. P. L. Teasdale, Sec. Lt. W. B. Thomson, April 13th; Lt. S. K. F. P. Humphrey, Lt. W. J. Hutchinson, Lt. H. A. Parry, April 14th; Sec. Lt. C. L. Hudson, Sec. Lt. L. L. Stanton, Sec. Lt. J. Vokey, Sec. Lt. H. Williams, April 15th; Sec. Lt. (Hon. Lt.) A. L. Wimhurst, April 16th; Lt. C. B. Henderson, Sec. Lt. A. W. Hughes, April 17th; Sec. Lt. B. Hutchinson, April 18th; Lt. F. M. Bradfield, Lt. R. H. Roantree, Sec. Lt. H. O. Wilshire, April 19th; Lt. V. U. Downard, Lt. A. V. Speight (substituted for notification in "Gazette," July 18th); Sec. Lt. M. Van Coller, April 20th; Sec. Lt. A. Waller, April 23rd; Sec. Lt. (Hon. Lt.) P. G. Hutson, Capt. G. A. Thompson, Sec. Lt. J. D. Thomson, April 24th; Lt. K. F. Hunt, April 25th; Lt. A. R. Hudson, Sec. Lt. E. A. Marchant, April 26th; Sec. Lt. G. T. Williams, April 29th; Sec. Lt. T. N. Enright, Sec. Lt. R. E. Williams, April 30th; Capt. G. F. Hughes, Lt. W. C. Sidaway, May 1st; Capt. R. M. Hughes, Sec. Lt. F. Stanley, Lt. C. F. Uwins, May 2nd; Sec. Lt. J. C. Humphreys, May 5th; Sec. Lt. W. Marsden, Sec. Lt. H. A. Thompson, Sec. Lt. A. J. Snetsinger, May 6th; Sec. Lt. C. B. Windsor, May 8th; Sec. Lt. A. E. H. Sinclair, Sec. Lt. W. R. Thomson, Sec. Lt. H. R. Young, May 9th; Lt. A. J. Stopford, Sec. Lt. G. H. Wilson, May 13th; Sec. Lt. W. L. Williams, May 14th; Sec. Lt. W. H. Williams, Sec. Lt. W. F. Wilson, May 15th; Lt. W. E. Hicks-Ussher, Sec. Lt. J. B. Weir, Sec. Lt. J. S. Wilson, May 18th; Sec. Lt. R. W. Symmons, Sec. Lt. C. H. Wood, May 19th; Lt. H. E. Freeman-Smith, Capt. R. T. C. Hoidge, Sec. Lt. L. J. Hunter, Lt. C. L. Huskins, Lt. E. J. Salter, Sec. Lt. A. A. Schulman, Lt. A. T. Simons, Sec. Lt. C. M. W. Smallbone, Sec. Lt. H. W. Smith, Lt. R. R. Spafford, Sec. Lt. G. W. Stubbs, Lt. J. E. Sydie, Second Lieutenant A. Talbot, Second Lieutenant A. H. Thompson, Lieutenant J. C. Uhlman, Second Lieutenant T. D. Vezina, Second Lt. J. R. Wilkinson, Sec. Lt. J. C. Williams, Lt. F. L. Yeomans, May 20th; Lt. R. W. Young, May 21st; Sec. Lt. G. V. McNaughton, May 22nd; Sec. Lt. P. R. Hurley, Sec. Lt. W. R. Sisson, Lt. J. D. Smith, Lt. J. A. Stewart, D.F.C., Lt. A. C. Thornton, Lt. E. G. A. Wilton, Lt. V. M. Yeates, May 23rd; Sec. Lt. R. S. Simpson, Sec. Lt. (Hon. Lt.) H. B. K. Trollope, May 24th; Maj. T. Maxwell-Scott, M.C., Sec. Lt. D. G. B. Theunissen, May 25th; Sec. Lt. P. J. Theron,, Sec. Lt. C. W. Travers, Capt. J. H. Vickers, May 26th; Lt. F. L. Collison (substituted for notification in "Gazette," July 1st); Lt. G. T. Verrall, Sec. Lt. L. P. Vigurs, May 28th; Sec. Lt. D. V. Tandy, Sec. Lt. H. L. Williams, Lt. E. H. Wingfield, May 29th; Sec. Lt. W. J. Chenery, Lt. J. P. C. De Vomecourt,

Lt. W. C. Venmore, May 30th; Lt. A. S Turner, June 1st, Lt. H. E. Goody, Lt. (Hon. Capt.) A. B. Wright, June 2nd; Lt. J. Hutcheson, Lt. C. J. McGrane, Sec. Lt. C. Wilson, Sec. Lt. N. B. D W. Wood, June 3rd, Sec. Lt. F. J. Wilcock, Lt. E. G. Wilkinson, Lt. K. G. Witners, June 4th; Lt. M. A. S. Vaile, June 5th; Lt. W. H. Martin, Lt. E. T. Smith, Maj. R. M. S. Veal, June 6th; Lt. L. S. Worthing, Lt. G. Wrapson, June 7th; Lt. W. F. Woods (London R., T.F.), June 9th (substituted for notification in "Gazette," July 16th); Lt. D. K. Winton, Sec. Lt. W. R. Wright, June 10th; Lt. G. G. Wilby, Lt. J. R. S. Young, D.F.C., June 12th; Sec. Lt. F. J. Taylor, Lt. H. G Tinney, Lt. R. Viall, Lt. V. Voss, Lt. J. S. Wood, Sec. Lt. J. L. H. Wright, June 13th; Lt. F. A. Hunter, Sec. Lt. W. Hutchings, Sec. Lt. G. F. Sheard, Sec. Lt. A. T. Sleed, Lt. C E. Thompson, Lt. C. W. Tolson, Sec. Lt. L F. Toucher, Sec. Lt. F. C. Wilton, D.F.C., Sec. Lt. T. G. Woodley, June 14th; Sec. Lt. E. E. Whitelock, June 15th (substituted for notification in "Gazette," July 18th); Sec. Lt. C. P. Smith, Sec. Lt. H. D. Travers, Sec. Lt. G. W. Wollaston, June 16th; Sec. Lt. G. A. Willcox, June 17th; Capt. S. King-Smith, June 18th; Capt. L. F. Hursthouse, Sec. Lt. C. J. S. Tainton, June 19th; Sec. Lt T. F. Sanderson, June 20th; Lt. A. L. Russell Lt. D. C. S. Williams, June 21st; Capt. H. G. Salmond, Lt. J. Seabrook, A.F.C., June 22nd; Sec. Lt. G. V. Straker, Sec. Lt. L. M. Williams, June 23rd; Sec. Lt. T. V. Towns, Sec. Lt. S. Tweedie, Sec. Lt. K. L. Vernon, June 24th; Sec. Lt. H. P. Woodman, Sec. Lt. A. H. Wooster, June 25th; Lt. C. G. Kich, Lt. R. N. Smith, June 26th; Lt. E. P. M Shaw, June 28th; Lt. J. Sangster, Lt. D. W. Saunders, Sec. Lt. R. L. Scharff, Lt. G. T. Scott, Sec. Lt. J. Sproston, Sec. Lt. W. N. Stanley, Sec. Lt. A. E. Stephenson, Lt. R. E. Taylor, Sec. Lt. L. Thompson, Capt. A. M. Tidey, Sec. Lt. J. B. Tiffin, Sec. Lt. R. O. Trentowsky, Sec. Lt. J. L. Trotman, Sec. Lt. E. A. Turner, Lt. E. B. Young, June 29th; Sec. Lt. E. F. V. Chard, Lt. E. A. Simson, A.F.C. (R.F.A.), Sec. Lt. J. H. Wharmby, July 1st; Capt. J. E. L. Hunter. D.S.C., D.F.C., Capt. R. N. Montagu-Stuart-Wortley, Lt. G. S. Swain, July 2nd; Sec. Lt. J. C. Gleave, Capt. A. Lang, Sec Lt. W. McCullagh, Lt. (Hon. Capt.) D. M. Stewart (R. Scots. R., T.F.), Lt. R. J. Thompson, Lt. V. Wigg, Lt. (Hon. Capt.) J. L. Williamson, Lt. J. P. Wilson, July 3rd; Lt. K. H. Smith, Lt. E. J. Stephens, July 4th; Lt. J. Coates, July 5th; Capt. C. F. Latimer, Sec. Lt. A. D. Page, Lt. J. W. A. Woodey, July 6th; Lt. W. Aitcheson, Lt. D. Shanks, Sec. Lt. A. E Tomkins, Sec. Lt. (Hon. Lt.) H. C. H. Townend, Lt. A. G. Walwyn, July 7th; Lt. C. D. Farquharson, Lt. M. C. Hayter, Lt.-Col. F. C. Shelmerdine, Lt. E. T. Simpson, July 8th; Capt. E. R. Barker, D.S.C., Sec. Lt J. Harston, Sec. Lt. G. Norrish, Sec. Lt. J. S. Smith, July 9th; Lt. A. M. Backstrom, Sec. Lt. S. Campan, Sec. Lt. R. S. Doukin, Lt. H. J. Duncan, M.C , Lt. P. F. O. Frith, Lt. H. C. Hunter, Sec. Lt. G. R. Porteous, Sec. Lt. H. G. Schoppe, Sec. Lt. R. W. Simpson, Sec. Lt. A. Smedley, Sec. Lt. C. S Van-Der-Poel, Lt. F. S. S. Wates, Sec. Lt. A. H. K. Youngleson, July 10th; Lt. W. Adamson, Maj. H. A. Buss, O.B.E., D.S.C., Sec. Lt. T. Herdman, Sec. Lt. C. J. G. Hunter, Sec. Lt. A. R. McFarlan, Lt. W. E. Wood, July 11th; Sec. Lt K. W. Akers, Sec. Lt. P. E. Appleby, Sec. Lt. H. J. Armstrong, Sec. Lt. R. H. Balfour, Sec. Lt. J. B. Ballantyne, Sec. Lt. C. W. C. Barber, Lt. C. J. Bayly, Sec. Lt. R. C. Blanchard, Sec. Lt. H. E. Bourke, Sec. Lt. R. P. Bourne, Sec Lt N. C. Boyles, Sec. Lt. S. MacG. Brown, Sec. Lt. J B. Browning, Sec. Lt. H. P. Brummell, Sec. Lt. G. T. Burton, Lt. C. R. Campbell, Lt. C. G. Catto, Sec Lt. S. Chandler, Lt. L. R. Charron, Sec. Lt. H. L. Christie, Sec. Lt A. H. Coles, Sec. Lt. G. T. Collinson, Sec. Lt. H. E. Cooper, Sec. Lt. (Hon Capt.) A. W. Craig, Sec. Lt. W. B. Crealock, Sec. Lt. J. T. K. Crossfield, Sec. Lt. I. L. Cullen, Sec. Lt. J. V. Dallin, Lt. R. T. Eyre, Sec. Lt. H. Floyd, Lt. H. C. Foley, Sec. Lt. P. A. Freeman, Sec. Lt. G. W. French, Sec. Lt. H. H. Gilbert, Sec. Lt. H. B. Gilmour, Sec. Lt. S. J. Goodfellow, Lt J. D. Guild, D.F.C., Sec. Lt. J. R. Guthridge, Lt. C. J. Hall, Sec. Lt. E. St. C. Hammett, Sec. Lt. W. S. Hammond, Sec. Lt L. P. Harlow, Sec Lt. L. F. Hawley, Lt. M. R. Helliwell, Sec. Lt. J. P. Henderson, Sec. Lt. W. R. Henderson, Sec. Lt J. J. Heney, Sec. Lt R. T. Henley, Lt A. L. Huber, Sec. Lt. C. B. Humphrey, Sec. Lt. E. L. Humphreys, Sec. Lt E. S. Hunt, Sec. Lt. N. E. Lashbrook, Sec. Lt. W. M. Laughton, Sec. Lt. A. D. MacPherson, Lt. J. J. Magill, Lt E F. Marchand, Sec. Lt. R G. Mathieson, Lt. F. R. Ross, Lt. L. A Rees, Lt. R. R Richardson, A.F.C., Lt. J. Robertson, Sec. Lt. E. K. Sargent, Lt. G. M. Saunders, Lt. G. W. Schermerhorn, Sec. Lt. S. R. Seaman, Sec. Lt. A. W. Shaw, Sec. Lt. H. F Skelton, Sec. Lt. H. R. Skilling, Sec. Lt. C. O. Smith, Sec. Lt. E. G. Smith, Lt. J. H. Smith, Lt. W. T. Smith, Sec. Lt. E. A. Spence, Sec. Lt. F. G. Stafford, Lt. R. E. Stewart, Sec. Lt. L. H. Stiles, Lt. R. J. Stone, Lt. W. H. Taylor, Capt. G. A. Thompson, Sec. Lt G. O. Thompson, Lt. J. Tompkins, Sec. Lt. C. H. Tripp, Sec. Lt. T. A. Valles, Lt. A. W. Vanderburg, Sec. Lt. H. Vigne, Capt. F. P. L. Washington, Lt. G. A. Wightman (substituted for notification in "Gazette," July 18th), Sec. Lt. J. F. Wilcox, Sec. Lt. K. B. Wilkinson, Sec. Lt. E. W. Williams, Sec. Lt. H. H. Williamson, Sec. Lt. N. C. Wiseman, Lt. J. S. Wood, Lt. A. Woods. Sec. Lt. C. J. Wright, Sec. Lt. H. G. Yerg, July 12th, Sec. Lt. G. T. Burrill, Sec. Lt. W. M. Brewer, Sec. Lt. W. R. S. Henderson, Sec Lt. C. J. Johnson, Lt. C. Mackenzie, Lt. (Hon. Capt.) H. P Valintine, Lt. G. J. Windsor, July 13th; Sec. Lt. A. A. Moir, Lt F. St. J. North, Sec. Lt. W. F. Stevens, July 14th; Capt. J. S. Barnes, Maj. R. W. Heath, Lt.-Col. A. T. Watson, Lt. W. Whittaker, July 16th; Sec. Lt. M. McDonough, Lt. M. C. Mcgregor, D.F.C., Sec. Lt. V. Sveinson, July 17th; Capt. K. G. Boyd, A.F.C., Capt. H. B. Brenton, Sec. Lt. C. R. B. Clarke, Sec. Lt. H. B. Scott. Lt. D. K. Sworder, July 18th; Maj K. R. Binning, M C., Capt. R. Souray, July 19th; Sec. Lt. J. F. Wood, July 21st; Sec. Lt. E. E. A. Mills. Sec. Lt. H. L. White, July 22nd; Sec. Lt. B. F. Bunker, Lt. R. O. Schallaire. Capt. F. H. Wallers, July 23rd; Sec. Lt. H. J. Muir, July 24th; Sec. Lt. S. H. Cooper, Sec. Lt. C. B. Creasey, Lt. W K. McClashan, July 25th; Lt. G. W. Morey, July 28th; Lt. G. K. Chatham, Lt. G. T May, July 30th.

The following Lts. relinquish their commns on account of ill-health and are permitted to retain their rank :—W. F. Hiam (contracted on active service), April 7th (substituted for notification in "Gazette," Jan. 10th); G. M. Duncan (contracted on active service), June 12th; K. B. Preston (caused by wounds), July 16th; G. H Nicholson (contracted on active service), July 18th.

The following Lts. resign their commns. and are permitted to retain their rank :—H. R. S. Birkin (Lt., R. W. R.), C. W. M. Whitlock (Lt., Wilts. R.), July 30th.

The following Sec. Lts. relinquish their commns. on account of ill-health and are permitted to retain their rank :—S J. Bolitho, June 15th (substituted for notification in "Gazette," July 1st); W. L. Vennell, July 12th (substituted for notification in "Gazette," April 11th); F. E. King (contracted on active service), T. V. J. Nicholas, July 18th.

The rank of Lt. W. G. Millar is as now described, and not "Sec. Lt.," as stated in "Gazette," May 30th.

The name of Lt. C. W E. Browse is as now described, and not "C. W. Browne," as stated in "Gazette," July 1st.

The notification in "Gazette," Feb. 28th, concerning Lt. J. E. G. Mosby, D.S.O., is cancelled.

The notification in "Gazette," April 1st, concerning Sec. Lt. J. MacD. Mackinnon, is cancelled.

The notification in "Gazette," April 4th, concerning Sec. Lt. A. R. A. Millar, is cancelled.

The notification in "Gazette," April 4th, concerning Sec. Lt. L. F. Rowsell, is cancelled.

The notification in "Gazette," April 8th, concerning Sec. Lt. R. R. Parker, is cancelled.

The notification in "Gazette," April 11th, concerning Sec. Lt. R. S. Payne, is cancelled.

The notification in "Gazette," April 29th, concerning Sec. Lt. D. Morford, is cancelled.

The notification in "Gazette," June 6th, concerning Sec. Lt. A. A. Moir, is cancelled.

The notification in "Gazette," June 24th, concerning Maj. F. E. Sandford, A.F.C., is cancelled.

The notification in "Gazette," July 8th, concerning Lt. H. R. Owen, is cancelled

ADMINISTRATIVE BRANCH.—Maj. R. B. B. Colmore, O.B.E., to be Maj. from (S.O.), May 12th.

Capt. J. A. M. Lang, O.B.E., to be Capt., from (S.O.), May 15th.

Lt. S. J. Stocks to be Lt., from (S.O.), May 18th.

Sec. Lt. (Hon. Capt.) R. Alston to be Sec. Lt. (Hon. Capt.), from (T.), and to be graded for purpose of pay and allowances as Capt. whilst empld. as P.T.O., May 1st.

Sec. Lts. to be Lts. :—A. G. Buxton, F. W. Day (Hon. Capt.) W. C. Green, M.C., J. W. Harling, G. H. Heys, S. W. Lewis, April 2nd; S. F. R. Hulbert, April 17th, 1918; G. E. Blake, June 15th, 1918; J. B. Martin, Sept. 17th, 1918; H. T. Evans, Oct. 10th, 1918; T. Whitaker, Oct. 13th, 1918; T. Gill, Oct. 15th, 1918; W. Lee, Nov. 9th, 1918; A. E. Holton, Nov. 30th, 1918; G. Oliver, Jan. 31st; G. Waugh, Feb. 2nd; S. R. Payne, Feb. 28th; S. Sprenger, March 1st; J. Peil, March 2nd; H. T. H. Copeland, March 4th; R. R. Trout, March 7th; H. G. Hooker, A. H. Redfern, March 26th; J. A. Elliott, April 11th; H. J. Payne, April 18th; E. N. Allott, April 25th; G. Dolley, May 8th; K. Drago, May 11th; R. J. Bright, E. A. Burridge, May 16th; (Hon. Capt.) D. R. Thomas, H. West, May 17th; H. Cooper, M.C., G. H. Blake, D.C.M., May 21st; A. J. Somers, June 3rd; G. R. La Cecilia, June 5th.

Sec. Lt. W. J. Collins to be graded for purposes of pay and allowances as Lt. whilst empld. as Lt., May 1st.

Sec. Lt. L. E. Pocock to be Sec. Lt., from (A.), April 17th.

The following Sec. Lts. (late Gen. List, R.F.C., on prob.) are confirmed in rank as Sec. Lts. :—W. Lee, Nov. 8th, 1918: Sec. Lt. P. A. Stallard, March 4th (substituted for notification in "Gazette," June 17th); R. W Hyde, June 11th.

Sec. Lt. H. T. Robinson is confirmed in his rank as Sec. Lt., Feb. 20th.

The following relinquish their commns. on ceasing to be empld. :—Lt. H. Hemingway (Lt., Midd'x R.), Feb. 17th; Sec. Lt. L. J. Scott (R.A.O.C.), May 6th; Lt. R. H. S. Waley (Lt., R.F.A.), May 24th; Lt. R. C. Joynson-Hicks (Lt., R.W. Surr. R.), May 30th; Lt. J. P. Sheridan (Lt., L.N. Lancs. R.), July 2nd; Maj. R. M. R. Lamb, D.S.O. (Maj., North'd Fus.), July 4th; Lt. T. G. Beale (Lt., Dn. Gds.); Lt. R. T. Robbins (Lt., Linc. R.), July 9th.

Transferred to unempld. list :—Sec. Lt. J. MacD Mackinnon, Sec. Lt. R. R. Parker, Feb. 27th; Sec. Lt. G. Williams, March 12th; Sec. Lt. A. R. A. Millar, Sec. Lt L. F. Rowsell, March 21st; Sec. Lt. R. E. York, April 1st; Lt. (Hon. Capt.) F. E. Wilshere, April 5th; Lt. T. R. Price, April 7th; Sec. Lt. H. A. Hughes, April 13th; Lt. N. M. Hoskins, April 15th; Sec. Lt. B. Hurdus, April 17th; Lt. (actg. Capt.) F. J. Wood, April 18th; Sec. Lt. Le R. H. Holmes April 19th, Sec. Lt. V. A. Frankish, April 20th; Sec. Lt. S. S. McLeod, Lt. I. Vane-Hunt, Sec. Lt. S. Urwin, April 24th; Sec. Lt. R. J. Hunt, April 26th. Lt. V. Mercer-Smith, May 3rd; Lt. J. E Pike, Lt. C. R. Young, May 6th; Sec. Lt. C. G. Furniss-Williams, May 9th; Sec. Lt. H. G. C. Verge, May 29th; Sec. Lt. J. Sidebotham, May 29th; Lt. N. Smith (K.O.Y.L.I.), May 30th; Lt. F. C. Wild, June 1st; Sec. Lt. H. F. Workman, June 6th: Sec. Lt. J. C. L. Vigne, Sec. Lt. C. S. Wingate, June 13th; Capt. J. R. M. Tweddell, June 14th; Lt E. F. Wright, June 16th; Sec Lt. H. R. Owen, June 26th; Lt. R. C. Vaughan, June 28th; Sec. Lt. E. W. Thomson, June 29th; Lt. A. S. Clarke, Maj H. A. Moore, C.B.E., M C., July 1st; Sec. Lt. F. R. Beaudry, Sec. Lt. J. Robinson, July 10th; Lt. A. H. Clegg, July 11th; Sec. Lt. A. Challins, Lt L. K. Devitt, Sec. Lt W. W. Edward, Capt. E. P. Leigh-Bennett, Sec. Lt. O. Voelker, July 12th; Lt. A. Reardon, July 14th; Capt. J. L. Parsons, July 15th; Maj. W. S. Whitelaw, July 16th; Sec. Lt. C. Thompson, July 23rd.

The following Lts. relinquish their commns. on account of ill-health and are permitted to retain their rank :—J. R. Maloney (caused by wounds), Jan. 11th (substituted for notification in "Gazette," Jan. 10th); C. G. Merryweather, June 12th: J. T. Andrew, July 14th.

Sec Lt. W. H. Dibben relinquishes his commn. on account of ill-health and is permitted to retain his rank, July 16th

Sec. Lt. B. J. Crewe (Oxf. and Bucks. L.I.) relinquishes his commn. on account of ill-health contracted on active service, July 23rd

Sec. Lt. N. F. Hoxie is dismissed the Service for absence without leave, Jan. 26th.

The initials of Sec. Lt. T. L. Price are as now described, and not "T. R.," as stated in "Gazette," May 13th.

The notification in "Gazette," April 20th, concerning Capt. (Hon Maj.) (actg. Lt.-Col.) H. B. Nutting, is cancelled.

The notification in "Gazette," May 2nd, concerning Sec Lt. (Hon. Lt.), P R Cook, is cancelled.

The notification in "Gazette," May 30th, concerning Lt. A. R. Porter, is cancelled.

The notification in "Gazette," July 11th, concerning Lt. D. Miller is cancelled.

TECHNICAL BRANCH.—Lt. C. E A. Moore to be actg. Capt while empld as Capt., Grade (A.), from Aug. 27th, 1918, to April 30th (substituted for notification in "Gazette," Oct. 11th, 1918).

Lt. H. Cooke-Smith to be graded for purposes of pay and allowances as Capt. whilst empld. as Capt., Grade (A.), May 1st.

Lt. F. J. Cooke to be graded for purposes of pay and allowances as Capt. while empld. as Capt., Grade (B), from May 1st to June 30th.

Lt. G. W. M. Whitton relinquishes the grading for purposes of pay and allowances of Capt., July 18th

Sec. Lt. B. Cheeseman to be graded for pay and allowances as Lt. while empld. as Lt., Grade (A), May 1st.

Sec. Lts. to be Lts. :—H. St. C. Roy, M C., April 2nd, 1918; D. Barron, June 12th, 1918; P. H. Morrish, Nov 9th, 1918; E. S. Baker, Jan. 27th; A. G. Ridgon, Feb. 28th; N. B. Hemsley, M.B E., March 17th; N. F. Burch, April 9th; O. N. H. Watson, A. H. Scaife, April 23rd; W. E. Townsend, April 24th; H. Davis, May 1st; F. C. Lyne, May 3rd; C. G. Whitmore, May 4th; G. H. J. Stein, May 26th; J. G. Peacock, June 6th; R. P. Graham, without pay and allces. prior to July 16th, 1918; L. A. Sturrock, without pay and allces. prior to June 16th, 1918; (Hon. Capt.) C. Shears, without pay and allowances prior to July 1st, 1918; H. H. Williams, without pay and allowances prior to Dec. 6th, 1918, April 2nd, 1918; C. B. Dick-Cleland, April 5th, 1918, without pay and allowances prior to Sept. 18th, 1918; G. E. Bower, April 6th, 1918, without pay and allowances prior to June 1st, 1918; E. G. A. Jones, May 26th, 1918, without pay and allowances prior to Aug. 1st, 1918; J. Bullock, June 14th, 1918, without pay and allowances prior to July 1st, 1918.

Sec. Lts. to be Lts. without pay and allowances of that rank :—D. D. Cormack, M.C., W. E. Cowie, E. H. Braunwell, H. V Bevis J. H. Ferguson, M.B.E., F. H. Jefferis, C. I. Labhart, H. D. Patterson. J. J. Page, M. R. Preece H. S. Royffe, E. L. Rhodes (Hon. Maj.) A. H. W. Saunders-Knox-Gore, April 2nd, S. K. D'A. Ferrars, April 5th, 1918; J. O. Cooper, April 12th, 1918; A. H. Varian, June 2nd, 1918; C. B. Hudson, Sept. 10th, 1918; E. C. Ponking, Sept 14th, 1918; W. H. Hoile Jan. 12th;

J. D. Graham, Jan. 16th; J. E. Kingham, Jan. 27th; G. S. Crowther, Feb. 4th; F. W. G. Ticehurst, Feb 12th; W. J Harries, Feb. 24th; H. J. Kibble, Feb. 28th; L. F. W. Stone, March 1st; R. H. Nicol, March 6th; A. Bolton, March 8th; W. J. Cleasby, March 12th; M. J. Curtis, T. H. Maltby, March 21st; W. Massey, March 24th; J McKeown, April 8th; A. R. Conder, C. H. Greenhouse, H. B. Long, G. Spurgin, April 19th; B. Freeman, April 23rd; M. L. Lobbin, April 25th; N. D. Bryce, April 30th; G. C. Kemp, May 1st; E. A Gater, May 3rd; F. A. Bracher, May 11th; W. A. Mansfield, A. E Fallon, May 12th; W. E. Critchley, G. Johnson, J. A. Leonard,, A. Ward, May 13th; H. W. Baylis, C. W. Bertley, H. J. Dann, E. T. W. Nockold, H. G. Smith, B P. K. Walsh, May 16th; A. L. Flaws, E. M. Ling, C. Mansfield, E. V. Soloman, May 26th; F. Simpson, A. C. Tinkler, F. C. Worton, May 28th; A. B. West, A. Wilkins, June 1st; A. V. Baker, H. Berridge, W. F. Chauncey, H S. Given, V. S. Lord, W. R. Tuddenham, L. H. Vernon, June 3rd; H. Barnes-Moss, June 8th; W. R. Day, J. E. C. Hammond, June 10th; E. Whitmore, June 12th; E L. Hocking, June 15th; A. M. R. Nicholson, June 18th; C. Rapley, June 21st, A. H. Knight, June 27th; F. S. Hetherington, F. W. Martyn, June 28th.

Sec. Lt. A. W. Whistlecroft to be Sec. Lt., Grade (A.), from (Ad.), Dec. 1st, 1918 (substituted for notification in "Gazette," Feb. 4th).

Sec. Lt. (Hon. Lt.) F. McGuffie to be Sec. Lt. (Hon. Lt.), from (S.O.), March 5th.

Sec. Lt. (Hon. Capt.) W. C. Green, M.C., to be Sec. Lt. (Hon. Capt.), Grade (B), from (Ad.), July 1st.

Sec. Lt. F. A. Osborn to be Sec. Lt., Grade (B), from (Ad.), June 3rd.

Sec. Lt. S. E. White to be Sec. Lt., from (unempld. list), July 14th, with precedence next below Sec. Lt. J. S. Viner.

Lt.-Col. Lord A. R. Innes-Ker, D.S.O. (Capt., R.H. Gds.), relinquishes his comm. on ceasing to be empld.

Transferred to unempld. list :—Sec. Lt. J. Young, April 8th; Lt. E. C Hucklebridge, April 9th; Sec. Lt. H. N McLeven-Roberts, April 10th; Lt. (Hon. Capt.) C. A. Hudson, Lt G. V. Udale, April 16th; Lt. J. W. Thomson, April 19th; Lt. R. G. Hughff, May 1st; Capt. E. C. Hugh, May 9th; Capt. J. Young, May 17th; Lt. D R. Snider, May 20th; Lt.-Col. W. A. Bristow, May 22nd; Capt. C. R Fleming-Williams, May 28th; Maj. G. K. Field, May 30th; Lt. D. W. Sedgwick, June 1st; Lt. A. N. Meier, June 7th; Sec. Lt. E. R. Wood, June 16th; Sec. Lt. W. Padoon, June 1st; Capt. L. Y. Stott, June 19th; Sec. Lt. R. Wylie, July 1st; Sec. Lt. W. Vaughan, July 2nd, Lt. A. C. Blackmore, July 3rd; Lt. P. N. Shoue, July 4th; Sec. Lt. K. B. Voss, July 7th; Lt. C. J. Hewens, Lt. J. Witt-Man, July 8th; Lt. T. B. Hardy, July 9th; Lt. C. H. Mendham, July 10th; Sec. Lt. A. W. Hatfield, Lt. E. C. Hubbard, July 11th; Lt. R. J. Anderson, Sec. Lt. G. Clark, Sec. Lt. M. H. B Heigham, Sec. Lt. T. E. Winckworth, Sec. Lt. R. P. Wilmot, July 12th; Lt. F. Cain, July 13th; Sec. Lt. A. Shires, July 16th; Sec. Lt. F. T. Sanford, July 23rd; Sec. Lt. L. E. Currey, Capt. N. F. W. Paul, July 28th.

Lt. (Hon Capt.) C. S Willmott relinquishes his comm on account of ill-health, and is permitted to retain the rank of Capt., June 10th (substituted for notification in "Gazette," June 27th).

Sec. Lt. F. Boult relinquishes his comm. on account of ill-health and is permitted to retain his rank, May 14th.

The notification in "Gazette," July 22nd, concerning Sec. Lt. S. King-Smith, is cancelled.

MEDICAL BRANCH.—Maj E. M. W. Hearn (Lt.-Comdr., R.N.) relinquishes his comm. on ceasing to be empld., May 30th.

Transferred to unempld. list :—Lt. L. C. Broughton-Head, May 14th; Lt. C. H. Vernon, May 29th; Capt. N. R. Williamson, June 10th.

The rank of Lt. Col. H. Pritchard is as now described, and not Maj. as stated in "Gazette," July 4th.

DENTAL BRANCH.—Lt. P. J. Prond is transferred to unempld. list, July 14th.

MEMORANDA.—Lt. J. W. Harling to be Hon. Capt., Sept. 1st, 1918.

Sec. Lts. to be Lts.—H. K. Fairbrother, Sept. 9th, 1918; A. E. Hale, March 16th; H. F. Webb, March 21st.

The following Cadets are granted hon. commns. as Sec. Lts. :—117198 J. Innes, Dec. 27th, 1918; 160111 R. W. R. Cartwright, Dec 30th, 1918; 100452 M. G. Cole-Hamilton, 48308 R. G. Lindsay, 23909 R. G Leyden, 22778 R. W. Rae, 120508 A. Sandilands, Jan. 3rd; 110589 F. Burrell, 128824 G. R. Chappel, 137068 A. S R. Pratt, 137098 H. Rollins, 47978 H. L. Wightman, Jan. 4th; 404903 M. Ratcliffe, Jan. 8th; 23187 E. Rice, Jan. 11th; 137065 C. H. Preece, Jan. 13th; 128029 G. S. McDonald, 52676 W. Sugden, Jan. 15th; M/157159 B. B. Clarkson, 137468 H. C. Tapping, Jan. 16th; 49308 W. F. Ward, Jan 17th; 515057 H William Lloyd, Jan 20th; 128802 O. Anderson. 14002 T. Johnson, 137024 M. E. Nalty, 30603 G. I. Kanyor, Jan. 21st; 175034 H. Allchin, 355342 C. W. Blogden, 128388 R. S. H. Houseman, 126723 W. H. Leng, Jan. 22nd; 280272 W. Foster, 17636 S. Shepherd, 14403 C T. Sweatland, Jan. 23rd; 110140 S. Hulbert, Jan. 24th; 65435 H. Haigh, Jan. 25th; 22669 W. H. Lomax, 176291 J. T. F. Wyllie, Jan. 28th; 5688 J Carter, Jan. 29th; 137114 M. Shutte, Jan. 30th; 401085 J. M. Deas, 352035 J M Walker, Jan. 31st; 9946 J. Killoran, Feb. 5th: 217469 S. Joseph, Feb 8th; 240278 A. Thompson, Feb. 10th; 128113 S. H. Thomas, Feb. 11th. 176632 D W. Anderson, 137127 R. C. Bird, 137673 C. F. Bruncker, 134527 T W. Campbell, 16551 J. Campbell, 180111 T. J. Carpenter, 110159 F E. Carter, 175337 W. L. David, 180025 C. I. Darlington, 40681 C. Fryer, 9752 H E. Fletcher, 330534 J. M. Fyfe, 117300 T. R. Garden, 767444 B. E. Goodwin, 137466 H. Harvey, 179630 W. Hersee, 180137 G. G. Hall, 1807 E. L. Hobbs, 176338 J. A. Hewitt, 492296 H. W. Knott, 93346 G. S. Linaker, 137012 G. H Mardon, 29130 L. C. McQuibban, 179451 R H. Massey, 117800 D. McGhee, 128889 J. E. McCann, 117578 E. Mortimer, 176266 J. E. Nicholson, 178902 A. F. Parsons, 179070 C. N. Pugh, 110461 M. Parkins, 219443 F. F. Pembrey, 137501 L. J. Richardson, 176270 L. C Richards, 176126 C. E. Smith, 28123 D. A. Spicer, 178833 S. L. R. Scott, 176139 C. W. L. Trusk, 10498 F. G. V. Vincent, 480257 C. M. Webster, 137513 J. Wilkes, 88658 A. J. M. Williams, 64 A. M. Woodward, 15552 A. B. Wilson, Feb. 13th; 204237 W. P. J. Flannery, 215369 A. M. Locke, Feb. 15th; 175191 S. B Henderson, 233162 A. E. Moffatt, Feb. 17th: 215360 E. V. C. Bolton, 180110 W. E. Cressey, Feb. 18th: 59680 B. E. Baxter, 76680 B. E. Hobbs, Feb 20th; 163801 C. N. Brooker, 92027 F. R. Douglas, 89941 J. C. Robinson, 110072 S. J. Whitfield, 185687 E. Wilson, Feb. 21st; 137123 G. R. Auchterlonie, 137151 J. Brooker, 476279 B. Broadhead, 33341 C. Dowling. 29175 C. G. Furber, 70750 G. E. Gudgin, 464035 J. J. Hickman, 7228 F. H. Hughes, 117515 H. Humphreys, 28019 A. L. Irving, 204187 C. R Lucato, 16568 F. R. Milne, 110386 H. A. McMillan, 117808 J. Moffatt. F1406 W. Naylor, 137033 R. Norris, 203577 R. F. Oakley, 137879 R. Phillips, 133707 E. Preece, 176379 W Semple, 175621 J. A. Saward, 30877 H. R. H. Scallan, 128698 A. Smith. 110756 C. N. Tonley, 238048 D. Wray, Feb. 22nd; 117616 T. M. Brown, Feb. 23rd; 16743 H. Lea, Feb. 25th; 52595 J. M Gerrard, Feb. 27th; 180154 H. S Marriott, Feb. 28th; 110233 W. G. B. Bristow. March 1st; 96510 W. Griffiths. 107602 C. Law, March 3rd; 201051 R. D. Clements, March 4th; 154859 D. McCalder, March 14th; 204581 S. C. Knight, March 15th; 13/58408 W. J. Burgon, 10584 J. G. Gregson, 5302 H. H. W. Pope March 17th; 36760 G. S. U. Alexander, 763610 L. Brown, 5/065510 J. Fairbairn, 204001 W. R. Simpson, March 18th; 23191 C. B. Armit, March 21st; 766203 J. C. Tibbles, March 22nd; 220027 Langman, March 28th; 170565 H. Allen, 96438 J. Graham, 112088 W. Hodgkinson, 180603 H. Longley, 100640 P. C. Plumb, April 11th: 556875 B Lillywhite, May 27th; 18070 F. Hillyard, June 13th: M2/054150 P. C. Lowman, June 14th.

Temp. Hon. Lt. G. A. Hopper relinquishes his comm. on ceasing to be empld., July 16th.

Transferred to unempld. list :—Capt. C. W. Wise, M.C., from (S.O.), May 9th; Maj. E. F. Hutchinson, from (S.O.), May 9th; Capt. H. A. Fordham (Lt., Northumberland Fus.) resigns his commn. and is granted the rank of Maj., July 30th.

The notification in "Gazette," July 8th, concerning Maj. H. A. Moore, C.B.E., M.C., is cancelled.

The notification in "Gazette," July 8th, concerning 522564 Cdt. E. B. Saunders, is cancelled.

The notification in "Gazette," July 18th, concerning Lt. J E. Pike, is cancelled.

AIR MINISTRY, August 1st.

R.A.F.—The attention of the officers named in this "Gazette" is directed to the Air Ministry Weekly Order, now in course of issue, relating to the grant of permanent commns. and to the new rates and conditions of pay and other emoluments.

The following are granted permanent commns. in the R.A.F. in the ranks stated, Aug. 1st :—

MAJOR-GENERALS.

Sir H. M. Trenchard, K.C.B., D.S.O.
Sir G. M. Paine, K.C.B., M.V.O.
Sir J. M. Salmond, K.C.B., C.M.G., C.V.O., D.S.O
J. F. A. Higgins, C.B., D.S.O., A.F.C.
E. L. Ellington, C.B., C.M.G.
Sir W. G. H. Salmond, K.C.M.G., C.B., D.S.O.

COLONELS.

A. V. Vyvyan, C.B., D.S.O.; P. W. Game, C.B., D.S.O., O. Swann, C.B., C.B.E.; F. R. Scarlett, C.B., D.S.O.; C. L. Lambe, C.B., C.M.G., D.S.O.; J. M. Steel, C.M.G., C.B.E.; C. A. H. Longcroft, C.M.G., D.S.O., A.F.C.; T. I. Webb-Bowen, C.B., C.M.G.; L. E. O. Charlton, C.B., C.M.G., D.S.O.; D. le G. Pitcher, C.M.G., D.S.O.; R. M. Groves, C.B., D.S.O., A.F.C.; E. A. D. Masterman, C.M.G., C.B.E., A.F.C.; J. H W. Becke, C.M.G., D.S.O.; E. L. Gerrard, C.M.G., D.S.O., H. P. Smyth-Osbourne, C.M.G.; F. C. Halahan, C.M.G., D.S.O., M.V.O.; P. R. C Groves, C.M.G., D.S.O.

LIEUTENANT-COLONELS.

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G. R. O'Sullivan (A.); C. McM. Laing, M.C. (A.); W. G. E. Hayman (S.O.); W. Scott (T.); S. E. Toomer (A.); C. R. Strudwick (A.); C. J. S. Dearlove (A.); W. R. Curtis (A. and S.); F. C. B. Savile (A.); C. Bousfield (O.); C. N. Ellen, D.F.C. (O.); E. S. Ades (S.); R. St. H. Clarke, A.F.C. (A. and S.); G. H. Elliott (O.); F. Leathley, M.C. (A.); M. A. Benjamin, M.C. (S.O.); J. F. Nalder (Ad.); A. W. Symington, M.C. (S.O.); G. G. Banting (A.); K. C. Tilman (A. and S.); R. J. Montgomery-Moore (Ad.); G. M. Carter (A.); F. M. F. West, V.C., M.C. (A.); D. F. Lawson (A.); C. E. W. Lockyer (A.); J. H. Winch (T.); F. Thompson (A.); J. A. W. Binnie (A.); J. Bussey (A.); M. H. Findley, D.S.C., D.F.C. (A.); R. Halley, D.F.C. (A.); G. E. Creighton (A.); D. R. Mullan (Ad.); V. R. S. White, M.C. (Ad.); C. D. Pyne (A.); C. Findlay, D.F.C. (A.); R. L. Sweeny (Ad.), E. L. Ardley (Ad.); A. C. B. Harrison, M.C. (Ad.); H. B. Maund (A.); W. M. M. Hurley (Ad.); C. F. Le P. Trench (A.); H. L. Macro, D.F.C. (S.); N. B. Ward (A. and S.); A. W. Simon (A.); P. J. Gardiner (A.); C. A. B. B. Wilcock (A.); G. M. Knocker (A.); F. R. Openshaw (A.); S. P. Marcus (A.); D. W. Sibley (A.); N. S. Paynter (A.); A. H. G. Dunkerley (A.); E. G. Hilton (A. and S.); C. H. Harrison (A.); C. H. Noble-Campbell, A.F.C. (A.); C. P. Brown, D.F.C. (A. and S.); R. T. B. Houghton (A.); L. W. Jarvis (A.); G. R. C. Oliver (Ad.); H. M. Moody, M.C. (A.); D. Price (A.); E. I. Bussell, (A.).

J. R. Bell, D.F.C. (A.); J. H. Dand (A.); A. A. C. Hyde (A.); W. J. N. King (S.O.); C. J. Brockbank (T.); J. R. M. Simpson (A.); E. N. D. Worsley (Ad.); D. d'H. Humphreys (A. and S.); G. G. Walker, M.C. (A.); J. M. Bell (S.O.); F. Wood (A.); J. G. Western (T.); R. L. Crofton (A.); A. H. Beach (A.); A. W. Beauchamp-Proctor, B.C., D.S.O., M.C., D.F.C. (A.); G. R. Barry (T.); A. H. Paull (A. and S.); J. K. A. Jeakes, D.F.C. (A. and S.); C. B. Godfrey (S.O.); B. G. H. Keymer, D.F.C. (A.); E. J. L. Hope (A. and S.); P. C. Campbell-Martin (O.); I. F. G. Boyle (O.); F. T. McElwee (T.); J. Duncan (S.O.); J. J. Williamson, A.F.C. (A.); G. G. G. Graves (A.); D. S. Allan (A.); L. E. M. Gilman (S.O.); G. S. Shaw (A. and S.); R. B. T. Hedges (A.); R. Grice (A.); E. J. Barrington, M.C. (A. and S.); N. S. Dewey, M.C. (A. and S.); S. D. Culley, D.S.O. (A. and S.); M. M. Brechill, D.F.C. (A.); C. T. Walkington (A.); W. E. Staten, M.C., D.F.C. (A.); H. O. Prout, A.F.C. (A.); W. E. Windover (A.); E. S. Robins (A.); S. Jones, D.F.C. (A.); C. D. Skinner (A.); A. Sutton-Jones (Ad.); T. Roberts (A.); D. G. A. Batterbury (A. and S.); S. E. S. McLeod (T.); S. C. Strafford (A. and S.).

P. J. Murphy (Ad.); J. D. Breakey, D.F.C. (A.); A. E. Lindon (T.); C. W. H. Moller (O.); E. H. Richardson (A.); A. L. Paxton (A.); R. J. Rodwell (A.); A. McGregor, D.F.C. (A.); H. W. L. Saunders, M.C., D.F.C., M.M. (A.); G. H. H. Scutt, M.C. (O.); A. O. Lewis-Roberts, D.F.C. (A.); R. C. B. Brading, D.F.C. (A.); J. W. Baker, M.C. (A.); R. H. W. Empson (O.); B. S. Wilcox, D.F.C. (A.); H. I. T. Beardsworth (A.); C. L. Cox (A.); L. de V. Chisman (A.); J. H. Dale (T.); P. Murgatroyd (A.); J. W. Young (A.); F. N. S. Creek, M.C. (O.); D. E. D. Taylor, M.C. (A.); F. Keith (O.); J. A. Gray (A.); W. A. Duncan (A.); A. W. Franklyn, M.C. (A.); M. G. McL. Cahill-Byrne (O.); J. S. C. Robinson (O.); E. K. Blenkinson (A.); M. G. S. Burger, D.F.C. (A.); F. H. Ronksley, M.C. (A.); H. P. Lloyd, M.C., D.F.C. (A.); W. D. Gairdner, D.F.C. (A.); I. McBain, D.F.C. (A.); A. T. Laing (Ad.); H. W. Clayton (S.O.); E. B. Wilson (A.); G. Verden (Ad.); R. L. McK. Bar-

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H. E. Forrow (A.); A. Rowan (S.O.); L. M. Nixon (Ad.); W. Elliott, D.F.C. (A.); R. E. Keyes, D.F.C. (A.); J. I. T. Jones, D.S.O., M.C., D.F.C., M.M. (A.); R. Ivelaw-Chapman, D.F.C. (A.); E. E. P. Smith (A. and S.); S. A. Turner, M.B.E (T.), C. J. Sims, D.F.C. (A.); C. E. H. Allen, D.F.C. (A.), F. F. Garroway (A.); C. R. Pither, D.F.C. (A.); V. E. Groom, D.F.C. (A.); G. S. Peffers, D.F.C. (A.); J. F. V. Sugars (O.), A. V. Shewell (T.); K. Lister-Kaye (A.); Cuthbert Harrison (A. and S.); W. Sanderson, D.F.C. (O.); C. A. Hoy, M.C. (T.); F. R. Hockney (A.); E. J. Ffoulkes-Jones (A.); R. H. Hanmer, M.C. (A.); R. M. Davy (T.); R. R. Evans (A.); W. A. Hancock (T.); T. Everett (T.); W. F. Floyd (T.); J. C. Andrews (T.); M. J. James, M.B.E. (T.); H. J. Gilbert (T.); O. S. Waymouth (T.); E. S. Steddy (T.); C. C. Bayzell (T.); H. W. Heslop (A.); W. G. Stafford, M.C., D.C.M. (T.); Hon. M. H. R. Knatchbull-Hugessen, M.C. (S.O.); F. Grave (T.); R. E. Casey, D.F.C. (O.); R. N Essell (A.); J. C. Belford (A.); E. C. Delamain, M.C. (O.); A. Garrity (T.); H. A. L. Pattison (A.); F. Whittaker (Ad.); G. B. Booth (Ad.); C. F. B. Basil (T.); T. L. Jones (O.); W. Myers, M.C., D.C.M. (S.O.); W. F. Wood (T.); V. H. Tait (T.); J. M. McEntegart (T.); J. F. Clark (T.); H. G. Rowe (O); A. McC. Goddard (Ad.); S. T. Kemp (T.); A. Ledger (T.).

M. B. Fitzgerald (T.); R. G. Fussell (Ad.); B. T. Hood (T.); A. J. Elliott (T.); F. J. W. Humphreys (S.O.); J. Bullock (T.); J. A. Allen (S.O.); D. R. Mitchell (T.); N. B. Hemsley, M.B.E. (T.); W. J. Richards (T.); C. J. Poole (T.); C. A. C. Fidler (T.); H. T. H. Copeland (Ad.); R. D. Lambert (T.); M. R. Preece (T.); F. H. Astle (T.); W. R. Day (T.); F. S. Wainscot (T.); C. V. Lacey, A.F.C. (A.); H. Hackney (S.); R. W. Edwards (T.); G. J. Davies (T.); H. Norrington (T.); J. W. Jean, D.S.M. (T.); W. Liniker (T.); J. W. Hosking, M.B.E. (T.); C. Attrill, M.B.E. (T.).

(To be continued.)

PAY IN THE ROYAL AIR FORCE FOR WARRANT OFFICERS, NON-COMMISSIONED OFFICERS AND AIRMEN OF THE ROYAL AIR FORCE.

1. The rates of pay and pension for the ranks of the Royal Air Force below commissioned rank have been under review and the standard rates now authorised are as shown in the accompanying statements.

2. The rates of pay will come into force on the 1st August, for all men not dispensed before that date, in substitution for existing rates and bonus, but in any case where the present rates of pay together with Army of Occupation bonus are more beneficial than the new standard rates a vested right to the old rates will be allowed as follows:—

(a) Men on regular engagements may draw their present rates plus bonus, if more beneficial than the new rates, up to the 31st March, 1920. This will include men now serving who may without a breach in their service, re-engage or sign regular engagements.

(b) *New enlistments.*

All men enlisting on or after 1st August, 1919, whether with previous service or not, will come on the new rates of pay forthwith.

(c) *Men serving for Occupation Period.*

These men, if not on regular engagements, retain the old rates plus bonus until discharge, if more favourable.

3. Rates of pay for the Medical and Schoolmaster Branches will be subsequently announced.

4. Badges for good conduct will be granted, under regulations to be promulgated, after 3, 8 and 13 years' service. Each badge will carry pay of 3d. a day up to a maximum of 9d.

5. The present rates of separation allowance will be continued under existing conditions as to entitlement until 31st December, 1919, when the rates and conditions of issue will be again reviewed. This will not, of course, affect the position of men serving for the Period of Occupation or those who have extended their service for 2, 3, or 4 years with reserved rights to this allowance.

6. A further announcement will be made as to allowance (other than separation allowance).

7. Further details as to rates and the conditions of their issue will be published in Regulations in due course.

ROYAL AIR FORCE (OTHER RANKS).

The rates of pay proposed are as follows:—

TECHNICAL.—GROUP I.

Sergeant-Major, Class I., 14s. rising by 1s. a day a year to 18s.

	s. d.	Over 3 years. s. d.	Over 6 years. s. d.
Sergeant-Major, Class II. ...	13 0		
Flight-Sergeant	11 6	12 0	12 6
Sergeant	9 6	10 0	10 6
Corporal	7 9	8 0	8 6
Leading Aircraftman	5 6	5 10	6 2
Aircraftman I.	4 6	4 10	
Aircraftman II.	4 0		
Boy	1 6		

Applicable to the following trades and occupations:—
Blacksmith.
Carpenter (boat builder).
Carpenter (motor body builder).
Carpenter (propeller maker).
Carpenter (rigger).
Coppersmith (1).
Draughtsman (normally boys only).
Electricians (compass setter and repairer).
Fitters and subsidiary combined trades.
Fitter (aero engine).
Fitter (general).
Fitter (M.T.).
Fitter (constructional).
Fitter (drivers: petrol, steam).
Fitter (motor boat).
Fitter (armourers).
Fitter (motor boat coxswain)).
Fitter (millwright).
Fitter (jig and tool maker).
Instrument maker and camera repairer.
Moulders.
Pattern maker.
Turner (2).
Wireless operator (mechanic).

(1) Not to be promoted beyond Sergeant unless qualified as both Coppersmith and Tinsmith.

(2) Not to be promoted beyond the rank of Flight-Sergeant unless qualified both as Machinist and Turner.

All boys (trained in the Service) will be advanced to leading aircraftsman on satisfactory completion of training.

TECHNICAL.—GROUP II.

Sergeant-Major, Class I., 12s. 6d., rising by 6d. a day a year to 15s.

	s. d.	Over 3 years. s. d.	Over 6 years. s. d.
Sergeant-Major, Class II. ...	11 6		
Flight-Sergeant	10 0	10 6	11 0
Sergeant	8 6	9 0	9 6
Corporal	6 8	7 0	7 4
Leading Aircraftman	5 2	5 6	5 10
Aircraftman I.	4 6	4 9	
Aircraftman II.	3 9		
Boy	1 6		

Applicable to the following trades and occupations:—
Acetylene welder.
Balloon basket maker.
Camera repairer.
Electrician.
Machinist.
Carpenter.
Coach painter.
Photographer
Rigger (aero).
Rigger (airship).
Sheet metal worker.
Tinsmith.
Wireless operator.

TECHNICAL.—GROUP III.

Sergeant-Major, Class I., 11s. rising by 6d. a day a year to 15s.

	s. d.	Over 3 years. s. d.	Over 6 years s. d.
Sergeant-Major, Class II. ...	10 0		
Flight-Sergeant	8 6	9 0	9 6
Sergeant	7 0	7 6	8 0
Corporal	5 10	6 2	6 6
Leading Aircraftman	4 6	4 10	5 2
Aircraftman I.	4 0	4 4	
Aircraftman II.	3 6		
Boy	1 6		

Applicable to the following trades and occupations:—
Driver (Petrol) (3).
Motor-boat coxswain.
Driver (steam).
Driver (winch).
Motor cyclist (1).
Cook and butcher.
Shoemaker (so long as present conditions of free repair continue).
Tailor (so long as present conditions of free repair continue)
Musician (permanent bands only)
Hydrogen worker.
Vulcaniser.
Motor-boat crew (2).
Stoker (not to be promoted beyond Corporal).
Fabric worker.
Upholsterer.

(1) Not to be promoted beyond Corporal unless qualified as driver (M.T.).

(2) See under Non-substantive Pay, etc., as to hard lying money.

(3) Not to be promoted beyond Sergeant unless qualified as fitter.

ADMINISTRATIVE.—GROUP IV.

Sergeant-Major, Class I., 11s. by 6d. a day a year to 15s.

	s. d.	Over 3 years. s. d.	Over 6 years. s. d.
Sergeant-Major, Class II.....	10 0	9 0	9 6
Flight-Sergeant	8 6	7 6	8 0
Sergeant	7 0	6 2	6 6
Corporal	5 10	4 10	5 2
Leading Aircraftman	4 6	4 4	
Aircraftman I.	4 0		
Aircraftman II.	3 6		
Boy	1 6		

Applicable to the following occupations:—
Clerk (general).
Clerk (pay).
Clerk (stores).
Clerk (Q).
Meteorologist.

NON-TECHNICAL.—GROUP V.

	s. d.	Over 3 years. s. d.	Over 6 years. s. d.
Sergeant-Major, Class I.	10 0		
Sergeant-Major, Class II. ...	9 0		
Flight-Sergeant	8 0	8 6	9 0
Sergeant	6 6	7 0	7 6
Corporal	5 0	5 4	5 8
Leading Aircraftman	4 0	4 4	4 8
Aircraftman I.	3 4	3 8	
Aircraftman II.	3 0		
Boy	1 6		

Applicable to the following trades and occupations:—
Aircraft hand (batman, G., P.T.I., G.I.).

See under "Non-substantive pay," etc., as to addition to substantive pay for the performance of specific duties.

NON-SUBSTANTIVE RATES OF PAY, ETC.

Gunnery Instructor.—1s.
Physical Training Instructor, 1st Class.—1s
Physical Training Instructor, 2nd Class.—8d.
Aerial Gunner.—6d.
Interpreter.—Naval rates (1s. per hour with a maximum of 5s. a day; days of employment only).
Schoolmaster (to men not of Schoolmaster Branch).—3d.; days of employment only.
Crew pay.—Coxswain, 4s.; other members of crew 2s. a day continuously whilst borne on the establishment of a squadron for service in aircraft.
Hard lying money.—To be paid at Naval rates and under Naval conditions to the Marine Branch of Royal Air Force.
In addition to crew pay of 2s. per day whilst employed on the authorised establishment of a squadron.

GOOD CONDUCT PAY.

As for the Army.

PENSIONS.

1. The minimum qualifying period will be 24 years from the date of attestation at the age of 16½ years.

2. The numbers allowed from time to time to re-engage for pension will be determined by the requirements of the Service and will in any case be restricted to men who have reach N.C.O. rank.

3. The pension will be granted on the basis of a daily rate for each complete year of service in each rank, with proportionate amounts for completed months. The daily rate will be uniform for all branches.

The daily rate for ranks other than Warrant Officers is as follows:—
Aircraftman, 1½d

Corporal, 2d.
Sergeant, 2½d.
Flight-Sergeant, 3d.

4. WARRANT OFFICERS.—The scale for warrant officers will remain as at present, namely :—
For each completed year prior to warrant rank—£3.
For each year as warrant officer :—
(a) If retired as warrant officer, Class II.—£4.
(b) If retired as warrant officer, Class I.—£5.
The above scale is subject to maximum rates as follows :—
Warrant officers, Class II.—£120.
Warrant officers, Class I.—£150

5. All men discharged to pension will thereupon become members of the R.A.F. Reserve.

6. If after 24 years' service a man continue to serve, he will draw the pay of his rank and his time will count for increased pension

7. COMMUTATION.—Commutation of pension will be allowed *where it would be a distinct and permanent advantage to the pensioner*, always provided that a minimum of 2s. a day is left uncommuted.

THE NEW RANK TITLES IN THE R.A.F.

The Secretary of the Air Ministry made the following announcement on August 4th :—

His Majesty the King has been pleased to assume the title of Chief of the Royal Air Force.

His Majesty, on the advice of the Secretary of State for War and Air, has approved of new titles for the commissioned ranks of the Royal Air Force. These are set out below with their corresponding ranks in the Army and the Navy :—

Air Force	Navy	Army
Marshal of the Air	Admiral of the Fleet	Field-Marshal
Air Chief-Marshal	Admiral	General
Air Marshal	Vice-Admiral	Lieut.-General
Air Vice-Marshal	Rear-Admiral	Major-General
Air Commodore	Commodore	Brig.-General
Group Captain	Captain	Colonel
Wing Commander	Commander	Lieut.-Colonel
Squadron Leader	Lieut.-Commander	Major
Flight Lieutenant	Lieutenant	Captain
Flying Officer (or Observer)	Sub-Lieutenant	Lieutenant
Pilot Officer	Midshipman	Sec. Lieutenant

The object which has been held in view is to preserve and emphasise the principle of the independence and integrity of the Royal Air Force as a separate Service among the fighting Services of the Crown. Hitherto the titles borne by officers of the Royal Air Force have been exclusively military in character, and as such they are not suited to a Service which has not only to serve the special services of the Army, but also those of the Navy, and in addition has a strategic and tactical sphere of action independent of the other two fighting Services.

It is, of course, not easy to command unanimous agreement on matters of nomenclature, but very long and careful consideration has been given to the choice of the titles now approved and many interesting alternative suggestions have been rejected.

The scheme is framed on the principle (a) that the ranks should as far as possible correspond to actual functions; (b) that the ranks should as far as possible correspond to equivalent status in the three Services; and (c) that there should be no repetitions in titles apart from the prefixes in the higher ranks. A distinction is preserved between the regimental officers and officers of General rank. Officers of General rank in the Royal Air Force are "Air Officers," and the expression "Air Officer" corresponds to the expression "General Officer" in the Army or "Flag Officer" in the Navy.

The new titles will come into force on Monday, August 4th.

A ROYAL AIR FORCE CADET COLLEGE.

The Air Ministry makes the following announcement :—

1. A Royal Air Force Cadet College for the training of the permanently commissioned officers of the Royal Air Force will be opened in February next.

The number of Cadets to be admitted on the opening of the College will be 55. Admission will be by competitive examination.

The examination for admission will be held by the Civil Service Commissioners, and will be the examination now in force for admission to the Royal Military Academy, Royal Military College, and Cadetships in the Royal Navy. (Special entry.)

2. Candidates may compete for one or more of the above colleges and cadetships alternatively at the same examination. The subjects in the case of the R.A.F. Cadet College will be as follows :—

OBLIGATORY.—1. English; 2. English History and Geography; 3. Mathematics A (elementary); 4. One of the following languages —French, German, Italian, Spanish, Russian, Arabic, Hindustani.

OPTIONAL.—1. Latin; 2. Greek; 3. Any one of the seven languages mentioned above other than that taken as an obligatory subject; 4. Mathematics B (intermediate); 5. Mathematics C (higher); 6. Science (Physics and Chemistry); 7. Elementary engineering.

All obligatory subjects must be taken up and not more than three of the optional subjects. Each subject will carry 2,000 marks.

In addition candidates may take up freehand drawing, to which 400 marks will be allotted.

The syllabus in each subject will be that now in force for the other Colleges and cadetships mentioned above. Candidates will be required to qualify, i.e., to obtain not less than 33 per cent. of the total marks alloted in each of the obligatory subjects.

Provided a candidate qualifies, the total of marks gained in all the subjects taken up will determine his place on the list.

The examination will be held in November.

3. Candidates must have attained the age of 17½ and must not have attained the age of 19 on January 1st, 1920, to be eligible to compete.

4. Candidates will be required to pass a medical examination which will be conducted at or about the time of the competitive examination.

5. The course at the College will last two years. During the second year of the course Cadets will be taught to fly.

6. The Regulations governing the entry of King's Cadets, Honorary King's Cadets, and candidates specially nominated by the Air Council will be similar to those now in force in the case of the Royal Military Academy and the Royal Military College.

7. Detailed regulations for admission and for the course at the College will be issued shortly, and will include full information as regards fees and allowances.

8. The Air Council has fully considered the alternative of admission by nomination combined with a qualifying literary examination, but has decided to adopt for the present the system now in force for the entry of Cadets to the Royal Military and Royal Military College in order to secure an early entry and to make the training of the future officers of the Royal Air Force to commence at the earliest possible moment. This decision does not prejudice future modifications in the system of entry designed to substitute nomination for a competitive examination, should experience show such a course to be desirable.

* * *

Recruiting is being started by the Royal Air Force to obtain 15,000 men, of whom 12,000 are required to be skilled workmen. Ex-Service men who have served in the Air Services are especially wanted. Men between the ages of 18 and 26 are eligible, but men will be accepted over 26 if they are skilled. The term of service is four years.

GERMANY.

The Berlin "Post" publishes a letter which Herr Erzberger sent in September, 1914, to General von Falkenhayn, who was at that time War Minister. The latter recommends a flame-thrower, which Herr Erzberger thought might be used successfully from airships against England, and saying that in his view all humanitarian considerations and scruples relative to the violation of international law must be entirely set aside.

CZECHO-SLOVAKIA.

The Czecho-Slovak Premier, M. Tusar, has addressed a Note to Bela Kun protesting, among other things, against the bombing of the town of Csaba (near Arad in Old Hungary), and accusing Hungary of violating the neutral zone, and thus failing to observe the Armistice conditions.

RUSSIA.

OFFICIAL COMMUNIQUES (BOLSHEVIK).

JULY 31ST.—In the Gulf of Finland an enemy aeroplane has dropped bombs in the region of Kronstadt.

* * *

It is reported that a number of aeroplanes has arrived at Helsingfors for the Russian North-West Army.

NORWAY.

The following is from the Danish correspondent of THE AEROPLANE :—

From the middle of July to August 20th a number of air manœuvres is taking place over the southern part of Norway, in which 20 Army pilots partake with scouts and patrol aircraft. Beside military manœuvres the Army aeroplanes will carry out long passenger overland flights as trials, before the inauguration of regular air services.

Being the last of the three Scandinavian countries to enter upon aviation activities, Norway leads at present, which fact it owes chiefly to its good connections with England, wherefrom it has during the years of war been successful in drawing equipment, even if not of the very latest active service mounts.

As has been the case, too, in Sweden and Norway, like even the Allied warfaring countries, Henry and Maurice Farman biplanes made the chief composition of both the Army and the Naval Flying Services both before and while expanding early in the war.

The chief naval air station is by the Royal Dock yard in Horten, and other stations are along the coasts of the North Sea and Skager Rak, like Christiansand, while the main Army flying ground is at Lilleström, near Christiania.

The respective Government factories are at each of the two centres, under the command of Captain Dehli (Navy), and Captain Sem-Jacobsen (Army), the same officers commanding formerly the flying services. Colonel Grüner is now chief of the Army Corps.

The Army factory has built both Henry and Maurice Farman Longhorn and "Horace" Farman models, for which the Frederiksstad Mechanical Works produced 130 h.p. Renault motors,

while of advanced types monocoque scouts with snow-skites [*sic*] for winter flying, equipped with 150 h.p. Hispano-Suiza engines, that were fetched early from Spain, and a two-seater patrol biplane of British influenced outlines and powered by a R.A.F. motor, have been produced. B.E. and Avro biplanes have further been acquired in England.

The Navy long stuck to a twin-float Farman type pusher biplane with F.E. tail fin fashion, equipped first with Curtiss motors, and next with some 170 h.p. Sunbeam engines, obtained from England. Various Naval flying officers, like Lieuts. Lützow-Holm and Rüser-Lassen were allowed to undergo a war instruction course at a British Naval flying school, and some 130 h.p. Clerget-engined Sopwith "Baby" seaplanes were acquired.

Nielsen and Winther, in Copenhagen, built a tractor school seaplane for the Norwegian Naval Air Service, equipped with a 100 h.p. Swedish-built Scania-Vabis Mercédès motor.

PERSONAL NOTICES.

NAVAL.

Death.

WHITE.—Major Evelyn Neville Lewis White, R.A.F. (Lieut.-Commander, R.N., retired), who died on July 29th at Trethevy, Tintagel, Cornwall, was the only son of Brig.-General W. L. White, C.B., C.M.G., and Mrs. Lewis White, of 10, Castle Street, Farnham, Surrey. He was 30 years of age.

Engagement.

SMYTH-PIGOTT—FEILDING.—The engagement is announced of Lieut.-Col. Rusconibe Smyth-Pigott, D.S.O., R.A.F. (late R.N.A.S.), youngest son of the late Hugh Cecil Smyth-Pigott and Mrs. Smyth-Pigott, of Brockley Hall, Somerset, and Lady Clare Feilding, daughter of the Earl and Countess of Denbigh.

Marriage.

SHARROD—LANDER.—On July 30th, at the Parish Church, Wellington, Salop, Surgeon-Lieut. Arthur R. Sharrod, R.N., attd. R.A.F., son of the late Mr. F. H. and Mrs. Sharrod, formerly of Cherrington Manor, was married to Gwendoline Lander, younger daughter of Mr. and Mrs. J. V. T. Lander, "Sunnycroft," Wellington.

MILITARY.

Death.

DEVONSHIRE.—Lieut. Feray Vulliamy Devonshire, 7th Hussars, attached R.A.F., who was killed on the Afghan Frontier on July 20th, was the only son of Robert and Henrietta Devonshire, of Heston, Middlesex, and Maadi, near Cairo. He was 28 years of age.

TUCKER.—Sec. Lieut. Donald C. Tucker, R.F.C., who was reported missing on March 24th, 1918, is now officially reported killed in action on that date. He was the youngest son of Frank J. Tucker and Mrs. Tucker, Durley Park House, Keynsham, Somerset, and was 19 years of age.

Engagements.

BLAKE—SHORE.—An engagement is announced between Lieut. George Godfrey Leigh Blake, D.F.C., D.C.M., R.A.F., elder son of the late Rev. G. L. Blake, R.N., and Mrs. Blake, of 19, Redcliffe Square, S.W., and Vera Henrietta Louise, third surviving daughter of Charles R. Shore, Esq., and Mrs. Shore, of Barngates, Binfield, Berks.

LLOYD—MEADOWS.—An engagement has been announced between Captain Hugh Pughe Lloyd, M.C., D.F.C., Croix de Guerre, R.A.F., second son of Mr. and Mrs. L. T. Lloyd, of Alfrick, Worcester, and Kathleen, youngest daughter of Major R. T. Meadows, D.S.O., and Mrs. Meadows, Dunheved, Saltash, Cornwall.

MAUDUIT—BROOKSBANK.—The marriage arranged between Captain R. F. S. Mauduit, M.C., R.A.F., and Irene Helen Brooksbank will take place at Middleton-on-the-Wolds, East Yorkshire, on August 7th, at half-past two o'clock.

MITTON—DE BELABRE.—The engagement is announced of Capt. Mitton, Lincolnshire Regt. and R.A.F., only son of Mr. and Mrs. W. H. Mitton, of Sunnyside, Sleaford, and Daphne Yseult, daughter of Baron de Belabre, French Consul, Newcastle-on-Tyne, and great-granddaughter of Admiral Sir John West, G.C.B.

Marriage.

PORTAL—WELBY.—The marriage took place on July 22nd, at Denton, Grantham, of Major C. F. A. Portal, D.S.O., M.C., R.A.F., son of Mr. E. R. Portal, formerly Master of the Craven Hounds, of Eddington House, Hungerford, and Miss Joan Margaret Welby, third and youngest daughter of Sir Charles Glynne Welby and Lady Maria Welby, of Denton Manor. The service, which was choral, was conducted by the Rev. Lord Manners Hervey, rector of Horringer, Suffolk, and the Rev. B. W. Keymer, O.B.E., R.A.F.

Births.

CORDING.—On July 15th, at 109, Winnock Road, Colchester, wife of Capt. Lewis E. Cording, M.C., M.M., R.A.F., of a son.

DISNEY.—On July 26th, at the residence of her parents, 68, Cadogan Square, S.W., the wife of Major Gervase Disney, Essex Regt. and R.A.F., of a daughter.

PRATT.—On July 20th, at The Meads, Hemingford Abbots, Hunts, to Grace Marian, wife of Capt. G. Brian Pratt, R.A. and R.A.F.—a son.

ROCKINGHAM GILL.—On July 21st, to Christina (*née* Court Treatt) and Captain Rockingham Gill, R.G.A. and R.A.F., a son.

AIR FORCE.

Deaths.

CAIN, GAMMIE, and GRIFFITHS.—An accident occurred on July 18th, at Hendon Aerodrome, in which three aviators lost their lives. Lieut. Cain, R.A.F., accompanied by Corporal Gammie, R.A.F., and Air Mechanic Griffiths, R.A.F., had just ascended in a new machine, which was being taken to another aerodrome, when, in making a turn, it suddenly nose-dived, and on reaching the ground burst into flame.

All three occupants were burned to death before they could be rescued.

At the inquest at Hendon on July 21st, Major Mounsey, R.A.F., identified the bodies, and said that he gave Lieut. Cain permission to ascend. The machine was new, and had just been overhauled.

The Coroner (Dr. Cohen): If the machine was in perfect order, to what do you ascribe the accident.

Witness: To misjudgement of the pilot. The best pilots are liable to make an error of judgment. Lieut. Cain was a fine pilot and had won the Distinguished Flying Cross in Italy.

Corpl. Wright, R.A.F., said that the machine was examined before the flight, when the engine and rigging were found to be in perfect order.

Lieut. F. E. Hills, R.A.F., said that he saw the machine leave the ground. "I next saw them about 150 ft. up. The machine was turning gently, until it nose-dived and fell to the earth. I ran up, but it was too late to give any assistance. The three men were burned to death almost instantaneously."

Lieut. Shaw, of the Aircraft Manufacturing Company, said that he flew the machine three times before handing it over to the Royal Air Force, and it was in perfect order.

The Coroner said that the margin of error in flying was not very great. It was evident that there had been some error of judgment. Errors of judgment in flying, however slight, very often had terrible results.

The jury returned a verdict of "Accidental death."

HERBERT, BIZIOU, and HIELEY.—At the inquest at Farnborough on July 16th a verdict of accidental death was returned on the bodies of Lieutenants Herbert and Biziou and Air Mechanic Charles Hieley, who were killed on July 14th, when an Avro biplane and an S.E.5 collided. The coroner stated that he had dispensed with a jury as he was convinced that prior to the ascent the machines were in perfect flying condition.

Thomas Smith, a workman at Farnborough Court, said he noticed the two machines in the air. One was coming in a north-easterly direction, and the other in a south-easterly.

They were 300 ft. or 400 ft. high, and approached each other in V formation. Both rushed nose to nose on each other, twisted about, and then crashed to the earth, one 200 yards from the other. There was no mist, and he thought that the pilots could have seen each other.

Major Hills, R.A.F., said that the visibility might have been termed poor on that afternoon, but it was not at all dangerous. In France hundreds of machines had worked in the air under much worse conditions.

The Military had already held an inquiry, and were satisfied that the disaster had been entirely accidental. He was convinced that no stunting had taken place.

Engagement.

FRANKISH—WHITEHEAD.—The engagement is announced of Captain J. R. Frankish, M.B.E., R.A.F., eldest son of the late Mr. and Mrs. W. J. Frankish, of Kinnington House, Lincolnshire, and Dorothy Edith, elder daughter of Jeffry Whitehead and Mrs. Whitehead, of Croydon, Surrey.

Marriage.

BROWN—KENNEDY.—On July 28th, at the Chapel Royal, Savoy, Lieut. Sir Arthur Whitten Brown, K.B.E., R.A.F., only son of Mr. and Mrs. A. G. Brown, of Manchester, and Marguerite Kathleen, elder daughter of Major and Mrs. D. H. Kennedy, of Ealing, by the Rev. Hugh Chapman.

Births.

ACLAND.—On July 24th, at 11, Courtfield Gardens, the wife of W. H. D. Acland (late Major, R.A.F.), of Barnes Wood, Welwyn, of a daughter.

KIDDY.—On July 24th, at "Welbeck Lodge," North Finchley, to Dorothy (née Kynoch), wife of Captain M. G. Kiddy, late R.A.F., a daughter.

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ON THE BEGINNING OF INTERNATIONAL AVIATION.

SOME IMPRESSIONS FROM AMSTERDAM.

In the days of one's youth one was taught that Holland was the flattest country in the world and that the Hollanders, or Dutch as we wrongly call them, were a great commercial people. It seemed peculiarly apposite then that Holland should have the distinction of being the first country to encourage International commercial flying by holding an exhibition of aircraft as soon as possible after the outbreak of Peace. The Hollanders are a singularly pleasing people with a fund of quiet humour, so they will forgive me for pointing out the irony of the situation in view of the fact that they possess that very beautiful monument of irony, the Palace of Peace at The Hague.

Holland is perfectly flat, so flat that when at the very beginning of the war one suggested bombing Essen from Antwerp by flying over the south-east corner of Holland an Anglo-Dutch friend remarked, "But you cannot do that! You would have to fly over the Dutch Alps. Some of them are as much as thirty metres high!" Yet despite the flatness of Holland it is probably the worst country in the world over which to fly on a land-going aeroplane.

In passing through Holland one sees vast expanses of magnificent grass land, apparently ready-made aerodromes. But as one comes close to them one finds them cut into small rectangular patches by little ditches. In fact, one doubts whether anywhere in western Holland there is a piece of ground 200 yards square without a dyke.

A Hint to Designers.

Here then is the first impression, for the benefit of any constructor who thinks of building big land-going machines for use in the Low Countries. All such machines must be fitted with wide flat skids at least twelve feet long, so that if the machine has to make a forced landing it may be able to slide across the small dykes.

Even a better way would be to make the lower longerons of the machine so that they could act as skids—as in fact the longerons of the F.K.26 B.A.T. are already—and then fit a retractable under-carriage more or less of the Martin type. Then there could be no chance of a machine turning over on its nose or wiping off its under-carriage if forced to land in one of these dyke-infested fields, or in boggy ground. The performance of the Handley Page on its first arrival at Amsterdam was a case in point—but that affair will be described in due course.

The Seaplane's Country.

On the other hand Holland is the ideal country for seaplanes. The pilots who have flown over it from England say that if one flies at 2,000 feet one is always within gliding distance of one of the great canals, and that it would be possible to bring a seaplane down safely on any of them. On many of them a flying-boat of the largest type could alight with perfect ease.

Now the Hollander, like most successful business men, is a man who knows the value of time. His trains are good, but they are not up to aeroplane speed by a good deal, and so it should be possible to do quite good business in Holland with seaplanes. One suggests, therefore, that if an enterprising seaplane firm started a seaplane hire service in Holland it would pay well in time.

Lost Opportunities.

One does not suggest for a moment that a firm has only got to open a shop in Amsterdam and sell seaplanes across the counter, but one does believe firmly that a seaplane "joyride" business would pay its way, and that from it would grow a regular business. First of all it would develop into hiring seaplanes to commercial men, and later this again would develop into a sale-and-maintenance business on quite a big scale.

TO BELIEVERS IN AIRSHIPS.

Those who believe in the future of airships will do well to order at once a copy of THE AEROPLANE for next week (dated Aug. 20th). That issue will be a Special Airship Number and will be devoted to describing the use, construction and design of airships. It will also contain a description and specification of practically every type of airship at present in use in the world.

Great assistance has been given in compiling this Special Number by Vickers, Ltd., Sir Wm. Armstrong, Whitworth and Co., Ltd., Wm. Beardmore and Sons, Ltd., Short Bros., Ltd., and Airships, Ltd. The technical department of each of these great firms has contributed an article of great interest, each on an entirely different phase of the subject.

Authorities on airships in various countries have kindly furnished figures concerning their national ships. Altogether, the Special Airship Number of THE AEROPLANE will contain more information about airships than has been collected within the covers of one publication since the first Airship Number of THE AEROPLANE was published in 1916.

As newsagents are not, as a rule, interested in aeronautics, those who want to make sure of securing a copy of the Airship Number are advised to order it in advance from "The Aeroplane" Publishing Dept., 61, Carey Street, W.C.2. The price is 9d. post free.

As usual we are losing our opportunities. Here is the first International Aeronautical Exhibition since the war, and there is not a single seaplane on view or in use, except a couple of machines built in Holland from parts of German machines fished out of the North Sea, and one F.5 flying-boat, built by the Gosport Co., flown to Amsterdam, not flown during the show for reasons which will be explained later, and moored out in Het Ij where it cannot be seen except from passing boats and where it cannot be inspected at all.

That apparently is our typically British way of getting business. One hardly knows whether it is the fault of the Air Ministry or of the Society of British Aircraft Constructors or of the individual aircraft firms. Probably the fault is divisible among all of them in variable degrees.

To Whom the Blame?

The individual seaplane firms are certainly to blame for not following the obviously sensible policy of being first in the first of the world's open markets since the war. But one cannot be sure of how much hindrance has been put in the way of the Trade by the Air Ministry, so perhaps the fault is not altogether that of the individual firm.

The S.B.A.C. is certainly to blame for not encouraging the Trade to exhibit at Amsterdam. Of course one can quite understand that the S.B.A.C. wants its own first show in London to be the greatest thing that ever happened. But even if that show is to occupy the whole of the Crystal Palace, or if Hyde Park is to be covered with marquees for the occasion, that will not bring to London the actual individual buyers who would buy seaplanes at their own doors if the machines were brought there, and if they had the practical value of the seaplane demonstrated by a successful joy-ride service. The policy, or lack of policy (whichever it may be) of the S.B.A.C. is short-sighted and small-minded. One had hoped for better things from a combination of men who were so successful in war-time. But peace is ever a more serious test of ability than is war.

The Air Ministry's Part.

Just what the Air Ministry has done to help British industry in this market is precisely nothing. One hears that the Ministry may perhaps send a high official to Holland to "talk pretty" to those Hollanders who are becoming so keenly interested in aeronautics. But what the Ministry is *going* to do matters rather less than what it *has* done. And anyhow we have had more than enough pretty talk from the Civil Aviation Department. In fact most of us are becoming rather nauseated by it. And in any case we want something done.

So far the Ministry has kindly permitted the Gosport Aviation Co. to fly a boat to Amsterdam—as already stated. And that seems to be the net amount of help given.

It is true that the boat is some day to become the property of the R.A.F., and so it is desirable that it should not be worn out before it is delivered. But it seems purely imbecile to forbid the Gosport Co. from flying it at all during its visit to Holland. Considering that the R.A.F. has some dozens of boats sitting in sheds at Felixstowe, minus wings, rusting and drying to death (a boat hull must be kept in water or it becomes dangerous), it is fairly futile to talk such a lot about helping aviation and then do nothing to help.

If the Air Ministry had had any common sense at all, it would have started a regular flying-boat service between Harwich and Amsterdam, via Ijmuiden, for the benefit of those concerned with the Exhibition, and any others who might care to pay the price to use it.

A Great Chance.

There is no more objection to the R.A.F. running a flying-boat service than there is to the State running the railways, and, badly organised as the R.A.F. may be, it could not possibly make as big a mess of such a service as the State has made of the railway and telephone services since it took them over. In fact the flying-boat people have done such good work in the past that they would probably run a line to Holland extremely well.

One has been told by one of the ablest of our seaplane officers that the R.A.F. flying-boats have flown more than a million (1,000,000) miles without a fatal incident, and this despite the fact that by far the greater part of this flying was done in time of war, when people flew in weather in which they would not have flown in peace-time. Surely such a record should encourage the Air Ministry to start a regular service to Holland at once.

We hear a lot about "blazing the trail" for Civil Aviation, and we hear of silly voyages to India and Central Africa, which cost thousands of pounds and merely demonstrate that an aeroplane is slower than a camel, and yet the Air Ministry lacks the common gumption to blaze the trail by opening an experimental service which is not only bound to be a technical success, but might with very little luck pay its way.

A Paying Proposition.

The fare from London to Amsterdam is roughly six pounds. With all incidentals thrown in there is not much change out of ten pounds. And the journey takes twenty-four hours, the Zeeland boats being skilfully timed so that one has to spend an uncomfortable night on board at the price of a super-Ritz for accommodation. Besides which there is all the annoyance and fatigue of the passport formalities on the quays at Folkestone and Flushing.

Anybody who wanted to go to or from Amsterdam in a hurry would gladly pay £15 or £20 for a flight across the North Sea and a quick railway journey between London and Harwich.

Let the much-advertised Civil Aviation Department of the Air Ministry work it out and see whether it could not make enough out of fares at that rate to pay at least for petrol and wear-and-tear of boats and engines. If it could do so it would be more than justified in running the service, for it would then provide its pilots and mechanics with plenty of practice at no more cost than that of their pay and maintenance, it would confer a benefit on the business community, and it would do a very great deal to develop Civil Aviation.

But of course it would be asking far too much of the Civil Aviation Department to expect it to wrestle with the Air Ministry as a whole to achieve three such desirable objects. The only object of the Department so far seems to be to provide restful places for incompetent officials and to talk without acting. Its motto might well be "*Verba non res.*"

A Brilliant Act.

Another brilliant act of the Air Ministry was forbidding the Boulton & Paul "Bourges" biplane from going to Amsterdam, where its fine performance and magnificent workmanship would have materially enhanced the reputation of British aircraft on the Continent. Just what right the Air Ministry had to exercise its predilection for Prussianism one cannot quite understand.

One is told on quite good authority—though not by anyone concerned with the B. & P. firm (this explanation is necessary in view of possible official reprisals)—that the Air Ministry has neither paid for, bought, nor even ordered the "Bourges" which it was proposed to send to Amsterdam. Also, it was designed by Mr. J. D. North and not by the Technical Department, whom none would suspect of doing anything so intelligent, so that there is not even the excuse that it is a machine of Government design, so what earthly or aeronautical reason can there be for prohibiting its exhibition?

G R

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When such things happen one can understand the belief held by many people that the Air Ministry is trying to play the old game of the Department of Military Aeronautics when it tried to make aircraft design a Government monopoly and tried to make aeroplane production the job of a few "tame" or "favoured" firms. Personally one ascribes all the Air Ministry's actions up to the present merely to congenital imbecility. In this instance it is probably inspired by a foolish idea that it is really protecting the safety of the Empire by preventing undesirable aliens from seeing our newest designs.

A Simple Lesson.

One commends to the Air Ministry the saying of a great American manufacturer some 25 years ago. One happened to be showing him round a certain big British factory, the head of which was more enlightened than his contemporaries and did not believe in the usual British policy of silly secrecy. Being very young, one remarked to the American that he was highly privileged to be allowed to see over our excellent works. The American replied quite simply that he always made a point of showing his rivals all his latest productions, because they talked about them and so gave him the best possible advertisement, and if they saw anything in his works worth copying, and managed to copy it in time to compete with him, that merely showed that his ideas were out of date and it was time for him to think and act more quickly.

Not only the Air Ministry but the Aircraft Industry might well profit by that simple lesson. By showing the World our best we increase the World's respect for us. And if other nations can produce machines as good before we have produced something better it is proof positive that we are not progressing as we should.

An Imbecile Policy.

Perhaps the most imbecile of all the imbecile things which we have done in connection with the Amsterdam Show was to bring pressure to bear on the Hollanders to prevent the Germans from showing aeroplanes there. Such action on our part must have seemed an obvious confession of weakness.

Surely if our machines are better than those of the Germans we have every reason to profit by putting the two side by side. As a matter of fact we should have scored immensely by having German machines there. The Royal Netherlands Flying Corps had several Hun aeroplanes, and there were three Fokkers, evidently built in Germany, but they could not in the least compete with their "opposite number" the Bantam Bat. And the bigger Hun machines would have compared equally badly in the eyes of a Hollander with Aircos, H.Ps., and Vickerses.

None knows what is good work and what is not so well as does the Hollander, whose own work in everything he touches is a marvel of finish and craftsmanship. We have lost yet another opportunity by thus barring German machines, besides giving the World an impression of our small-minded meanness to a beaten foe.

Perhaps some more imaginative person than oneself can give some reasonable explanation of why Hun machines were boycotted. For oneself one fails entirely to imagine why a neutral country should thus become partisan *after the war*.

An Extraordinary Official.

Before closing these few kind remarks on the Air Ministry one would like to refer to one Government official who deserves a paragraph to himself. One does not know his name, nor his rank, but he is a Customs official at Hounslow, and one is told that he is doing everything in his power to help Civil Aviation by doing his job courteously and efficiently. He is said to simplify formalities and to explain difficulties most pleasingly. And he is even reported to have wished aerial travellers good luck on their journey. One hopes that this testimonial will not damage his career under the Air Ministry, but he is so unusual that one feels that he deserves notice. Perhaps, though, he is a real Custom-House officer, in which case he is perhaps not so exceptional and may be able to continue his career of usefulness. Would that there were more like him.

On the whole we have lost some fine opportunities at Amsterdam, but none which we cannot regain if we act at once. There is, however, no such chance. Having thus emphasised our defects in large print, according to custom, one now proposes, for the benefit of those who are not already bored with the subject, to set forth in smaller print some of the really good things which British Aircraft have done at the Amsterdam Aero Show.

AT THE AMSTERDAM AERO SHOW.

The Amsterdam Show is known all over Holland as the Elta. The letters stand for Eerste Luchtvaart Tentoonstellings Amsterdam, otherwise First Airtravel Exhibition, Amsterdam. Never has one seen an exhibition so well advertised, and never has one seen a whole country so interested in an exhibition. The word Elta is about as familiar in Holland to-day as the words Kaas or Bier. Truly, the Amsterdammer is a fine commercial man, and well worth cultivating.

Holland to-day is probably the richest country in the world per head of population, thanks to the war, and now in time of peace, Holland is growing still richer, as the *entrepot* between England and Germany. Holland is at present making England pay for Van Tromp's ships sunk some hundreds of years ago, and in making Germany pay for the Batavia Liners sunk a year or two or three ago.

The method is quite simple. Everything is charged in things that look like francs on a bill, and become florins (commonly called gelder) in practice. One thinks in tuppences and pays in two-shilling pieces. As one remarked at the beginning of this article, the Hollanders are a great commercial people.

Owing to this plan everything in Holland costs exactly twice what it costs in London to-day, which is to say that it costs just four times the pre-war price. And so the Hollands merchant does well.

Against this predatory habit one sets the fact that the Hollander is one of the best fellows in the world. He is most hospitable, he is wonderfully good-tempered, and he is good to behold. So is she, especially the last.

Amsterdam is what London might be if it had a County Council which possessed civic pride instead of a passion for



ON THE WAY TO THE ELTA.—The two first Avros replenishing at Evère in Belgium.

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politics, and if it were planted on the site of Venice. That is to say, it is the cleanest city in the world, full of the most beautiful buildings, and it lives on its canals. It is the handsomest city one has seen.

The people look like advertisements for somebody's health-salts, though how they retain their complexions and figures along with their appetites is one of the Wonders of the World. Presumably, their energy absorbs the vast amount of fuel they consume, and keeps them fit. Surely the Hollander must be the healthiest person in the world, as well as one of the best.

The most astonishing thing about the Amsterdammer is that he looks so English. One can walk all over the place without seeing anyone who "looks foreign," as we should say in England. The Hollander dresses well but not stylishly, and one might fancy oneself in Manchester (minus its dirt and its poor) if one glanced at an Amsterdam crowd, but one would never think oneself in Piccadilly.

The Hollander being what he is, as mentioned herebefore, it was natural that the Elta should be a success, for it interests the business man, and the sportsman equally. And so Holland goes to the Elta in its thousands.

At the Elta Aerodrome.

One arrived in Amsterdam too late for the "Oopeningsplechtigheid" (or opening ceremony)—a lovely word that. Anyhow, one was told that the "opening splash" did not signify much, because the real ceremony was being kept for Captain Sir John Alcock, K.B.E., D.S.C., who was the distinguished guest of the Elta Committee on Sunday. And certainly Sir John got a reception. It is demonstrably true that it was far better organised officially and spontaneously bigger than that which he received in London. You see there was no preliminary anti-climax nor ill-judged newspaper booming to spoil the effect. The Netherlands newspapers merely announced that the man who had flown the Atlantic was coming to Amsterdam at a certain hour, and the people flocked in their tens of thousands to greet him.

A Dutch welcome is really rather a terrifying proceeding, for it involves lunches and banquets and healths innumerable. And Dutch hospitality is of the most lavish kind. After about three days of it one could see the British guests swelling visibly, and after five days one gallant lieutenant-colonel, R.A.F., said that on the next morning he had to be led by the hand along the corridor of his hotel because he was so stodged with food that he could not see out of his eyes. Which expressed very well what all of the visitors felt.

On arrival at the Elta aerodrome, Sir John Alcock, Captain Acland, of Vickers, Ltd., and all the other British visitors were entertained to lunch by the Elta committee, with General Snyders in the chair. Next to the magnificence of the lunch the most striking thing was the fact that all the speeches—which were interlarded between the courses—were delivered in excellent English. The upper class Hollander seems to speak English, French, and German with as much fluency as his own expressive tongue—which probably explains Holland's success in business.

In the evening everybody was entertained to dinner by the Nethmy—which stands for Nederlands-Englisch-Technich-Handels-Maatschapij—which is the Dutch Vickers Co., and that was as fine an affair as the lunch. Next day everybody who had been there looked like it. After that there were private or business entertainments of one sort or other every day.

Flying to Holland.

The Elta aerodrome itself was vile, considered as an aerodrome surface, but it is excellently situated, dead flat, free from obstructions all round, and of a size adequate for the biggest machines. In reality it is a splendid testimony to the energy of the Hollanders, for a few weeks ago it was just a stretch of bog, thinly covered with sand and patches of skinny-looking grass here and there. By the time the Elta opened it was quite serviceable for light and medium machines, but the big ones such as the H.P.'s and Vimy's bogged up to the axles every time they landed, until the pilots learned to know the hard spots by name. When the surface has been properly doctored it should be one of the best and most important of the famous aerodromes of the world.

At the beginning of the show Herr Fokker had the flying all to himself. German machines were barred from the show, it is true, but Herr Fokker, who became a naturalised German during the war, is now de-naturalised and is again a Nederlander, so of course he is entitled to show. On account of his skill as a pilot and of the fame of his machines in the war, and of his nationality, he was naturally the popular hero till the British machines began to arrive, and then he took a back seat several rows behind.

The First Arrival.

The first British machine to arrive by air, so far as one could gather, was a four-engined Handley Page, piloted by Major Douglas. By good luck it bogged without overturning, and was thereafter towed into one of the two big exhibition halls. Getting it into the hall necessitated pulling down telegraph wires, kiosks, offices, triumphal pillars, and eventually almost the whole front of the hall. And even when it was got inside it was only possible to open one wing, for it then extended the full width of the hall. However, it was better to show it with one wing folded, as an example of ingenious design.

A Fine Performance.

The next arrival was a Gosport flying-boat, which put up one of the most striking performances in the brief history of commercial aeronautics. This boat, an F.5, with Rolls-Royce engines, is an Air Ministry order, so, though the Ministry has not paid for it, the boat is under official control. By some wonderful effort of intelligence the Ministry allowed the firm to fly the boat to Amsterdam, but absolutely and utterly forbade the firm to fly it while there, except when it is flown away again.

Which, of course, is so useful as a means of demonstrating the usefulness of British aircraft. It would be like a cautious Hollander or any other business man to buy a boat which he was not allowed to try. The buyer's natural argument would be that if the boat is only fit to fly to Amsterdam and to fly away again, and is not fit for trial flights while there, it cannot be worth very much. But of course that is all in accord with the Civil Aviation Department's *blâgue* about "blazing the trail" for commercial aeronautics.

Anyhow, the flight was unusually fine. The boat left the Gos-



AN OFFICIAL RECEPTION.—Captain Sir John Alcock, K.B.E., D.S.C., entering the Elta, escorted by General Snyders (on his left) and the Elta Committee.



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port Aviation Company's works at Southampton on Wednesday, July 31st, piloted by Lieut.-Col. Hope-Vere, R.A.F., and Lieut. Carnegie, R.A.F., carrying as passengers Dr. Bisschop (who brought the diplomatic mail with him), Mr. M. H. Volk (manager of the Gosport Co.), Mr. Nicholson (son of Mr. Charles Nicholson, the famous yacht builder), and an engineer. They followed the British coast to Beachy Head, crossed thence to Gris Nez, and so along the French, Belgian, and Nederlands coast to Ijmuiden, whence they followed the ship canal to Amsterdam, where they arrived at 8.25 p.m.

Southampton to Amsterdam non-stop in 5 hours and 35 minutes is a splendid demonstration of the value of the flying-boat for international communication. Incidentally the boat carried the London morning papers, which thus reached Holland for the first time on the day of publication, in spite of going all the way to Southampton.

After its arrival the boat was moored out in the Ij, where it was only visible at a distance to those who went to the Elta by boat instead of by road and ferry. And, presumably because it is a Government order, there was no advertisement on it to proclaim its performance, or the fact that it was made by the Gosport Co. Thus do we English hide our lights under many bushels.

The Pride of Holland.

The Hollanders themselves were filled with pride when the F.K.26 Bat arrived, piloted by Major Draper, and carrying Mr. and Mrs. Koolhoven, and the invaluable "Tom" (Mr. Koolhoven's chief aerodrome engineer) as passengers. As they emerged from the big black and white machine with their many suit-cases, rugs, coats, spare tyres and so forth, the crowd waxed joyful at this example of aerial "tourism," and the Amsterdam Press quite let itself go on the subject, even to the extent of pulling Mr. Koolhoven's leg and reminding him that as a motor-racing hero he was popularly known as Fritz before he became a naturalised Englishman and took to calling himself Frederick.

But Holland's pride in Mr. Koolhoven grew exceedingly when a Bantam Bat with the 170 A.B.C. engine arrived, piloted by Mr. Duke, late Lieut., R.A.F., and proceeded to show Amsterdammers real flying for the first time. Mr. Duke has beautiful hands for a fast machine, and he did everything that a first-class scout pilot can do—which is rather wonderful considering that he spent the last year of the war as a prisoner in Germany.

Then Major Draper took the machine over, and in an evil moment Herr Fokker chose to come and gaze closely at the machine while the engine was being started. That settled the matter for ever. The pilot's blood was up, and never in ten years' experience of flying has one seen such an exhibition of real skill. Without ever taking a risk, without once endangering the spectators, and always in full view well out over the aerodrome, Major Draper made the little Bat do everything that an aeroplane can do. Short of turning the machine inside out, or taking it to pieces and putting it together again in the air, there was nothing left to be done. The crowd shouted itself hoarse, and the Fokker reputation faded away into the *ewigkeit*.

Let it be said in fairness that when Major Draper came down Herr Fokker went up to Mr. Koolhoven and said, "It is a good thing for us that those machines did not come into the war!" and he congratulated the pilot on his fine flying. It was a handsome acknowledgment of defeat. But when one considers that, only for the imbecility or knavery of the Technical Department, those same Bats might have been in the war from the middle of 1917 onwards, it makes one feel inclined to go out and assassinate somebody. Incidentally Herr Fokker was not quite a good enough sportsman to accept challenges to a flying competition sent to him by Sir John Alcock and Major Draper.

A Cause for Thanksgiving.

The contrast between the way the Germans treated the Dutchman Fokker and the way the English treated the Dutchman Koolhoven ought to be a lesson to us. And we ought to thank all our Gods that the latter has a Franco-Belgian wife and so was prevented from going to Germany. If the Germans had had the machine which we know as the Bantam Bat they would have treated our much-advertised S.E.5s in 1917-18 just as their Fokkers treated our equally advertised B.E.2s in 1915-16. Certainly the R.A.F. owes Fritz Koolhoven a debt of eternal gratitude for not becoming a German, but gratitude is all he is ever likely to get, for the Government technical official cannot forgive the man who is a better technician than he is himself. The future of the Bat aeroplane lies in international commercial aeronautics, for the Technical Department will never forgive Fritz Koolhoven for being a genius while the best men the Technical Department could produce were merely fair average journeymen-designers, and so the firm need never expect Government orders.

The Dutch Eye.

Incidentally one's visit to Holland has cleared up a mystery about those Bat machines. One could never quite place their origin. They are English enough in excellence of workmanship and construction, but there is an un-English neatness and cleanness of line about them. The journey through Holland fixed them. Mr. Koolhoven must have taken his inspiration for the big passenger machine from one of those beautiful black-and-white Dutch cows, either black with white heads or white with black heads, which cover the whole country. And the Bantam gambolling in the air reminds one of a fat little Dutch bull calf that has gone mad.

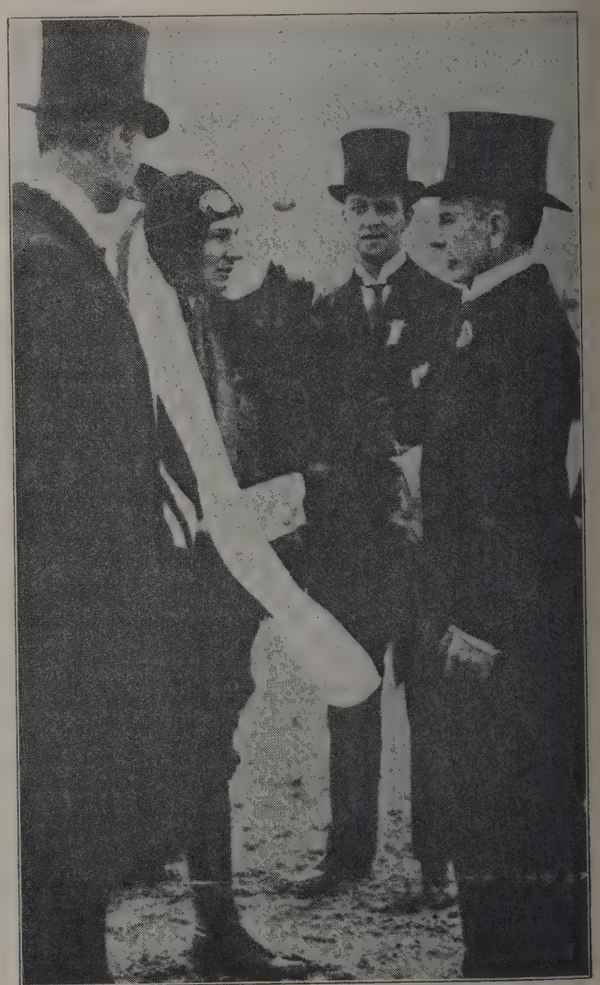
The Fokker is also essentially Dutch, but of a distinct type. Its short stubby fuselage, thick wings, and quick jerky manœuvres remind one of the little tubby high-bowed boats with brown sails which one sees on the big canals and rivers. Equally, Mr. Wijnmalen's beautifully-built Spijker biplanes suggest the unfailing eye for line and finish which produces the best buildings in Holland.

Some very good flying of the non-acrobatic kind was done by various Dutch civilian pilots, and by officers of the Flying Corps on Spijker machines, and on German machines which had been crashed in Holland and rebuilt at Soesterburg, the headquarters of the Army's aviation.

A Credit to Great Britain.

A terrific amount of hard work was done, purely for the credit of the old country, by a pair of Australian Flying Corps officers who flew a couple of 110 Le Rhône Avros to Amsterdam early in the Show. Seemingly all the Avro "joy-ride" pilots were too busy in England to go to Holland, so these two sportsmen volunteered to ferry the machines over. When they arrived they found that the Avros were expected to give joy-rides, so they set to work and carried passengers all day long. Being on the active list they could not take pay for it, but rather than let down the Avro firm before the Amsterdam public they became volunteer chauffeurs for a week or so, pending the arrival of the regular pilots.

Although they took up some fifty passengers a day there was always a queue waiting for flights, and they flew so well and safely that they did excellent propagandist work for British aviation. At times they did some "stunt" flying to amuse the crowd, and were duly presented with wreaths of honour by the Elta Committee. One of them in particular won much kudos by going up alone in the back seat of his machine and coming down in the front seat. As one was leaving Amsterdam a third Avro



AT THE ELTA.—Herr Fokker, encircled by a triumphal wreath, talking to General Snyders after an exhibition flight.


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arrived with two of the regular joy-ride pilots on board, but one believes that for the next two months Holland could keep a couple of dozen joy-ride machines fully occupied.

The Big Machines.

Despite the bogginess of the ground Sir John Alcock made several flights on a Vimy passenger machine, which had been flown over full of passengers and luggage by Captain Cockerell, R.A.F. The machine flies beautifully, the big streamline body making it faster and easier to handle than either the bomber or the trans-Atlantic machines—which seems to confirm Mr. José Weiss's theory that to get the best results out of a machine the cross-section of the body must bear a definite relation to the span and chord of the wings.

The little leading wheel of the Vimy saved her more than once from turning over onto her nose. Both Sir John Alcock and Captain Cockerell handled the machine splendidly, and gave the various people in high society in the Netherlands who were privileged to fly in the machine an excellent opinion of her suitability for her work.

A twin-engined Handley Page arrived about the middle of last week, piloted by Captain Meintjes, a South African Dutch pilot, formerly a star turn of the famous 23 Squadron, R.F.C., and a noted Hun-killer. He handles the big machine as well as he used to fly a scout, and made a perfect landing. As he was taxying to his shed—directed by a Dutch officer—his wheels sank into a hidden bog and the machine, after hesitating for what seemed like minutes, solemnly and slowly stood on its nose, where it remained bowing to the crowd with its nose in the sand and its tail in the air, like a Mussulman praying. It was very sad, but it was extraordinarily funny to watch.

It took six hours to get it right side up and out of the bog and into its shed, but happily it was quite undamaged, except for its wireless mast.

Late Arrivals.

Towards the end of last week various other machines began to arrive. Just as one was leaving the Show, with the cheering prospect of a 24-hour journey to London before one, Captain Lawford, R.A.F. (who will be remembered as the proprietor of a Champel biplane at Hendon before the war) drifted in happily on an Airco 9 with a Siddeley Puma B.H.P. engine, having come from Hounslow (which, with our usual intelligence, is a terminal air station ten miles the wrong side of London) to Amsterdam in three hours. Captain Saint, R.A.F., also came in on an Airco 4, having taken about the same time. General Brancker was expected some days earlier, but it was reported that he was staying a while in Brussels before coming on to Amsterdam.

No French machines arrived, which is rather remarkable, but Italy sent three excellent specimens, all of which put up a very good show.

Italy's Part.

The famous Lieut. Brack-Papa, one of the most charming as well as one of the most gallant and skilful of Italian pilots, arrived from London with that excellent little sportsman, Lieut. Buonocini, on the great 700-h.p. Fiat biplane which they flew from Rome to London in the day. So far she is the fastest publicly proved machine in the world, with her 160-mile-an-hour touring speed. The roar of that engine is a joy to hear, and Lieut. Brack-Papa handles her like an artist.

There was also a little S.V.A. two-seater which flew very well, and was cleverly handled. On Thursday a three-engined Caproni biplane arrived, making much noise, and carrying many passengers. It is not a pretty machine, and it seems to depend entirely on the pilot for its stability, but it does its job. Its turn seems to take the form of a flat spin checked by the three vast rudders after a quarter of a circle, which is terrifying but effective, for it has not fin area aft at all.

The Exhibition Itself.

The actual Aero Show itself is very well arranged in two big wooden halls. Naturally it is not a big show, judged by the standards of London and Paris, but what there is is good. British exhibits predominate, but the Hollanders themselves make a very creditable display. Mr. Henry Wijnmalen's Spijker-Trompenburg biplane, though of conventional design, will stand comparison with the machines of any other country. He shows a single-seater scout, and a two-seater, and on his stand is a Spijker sporting model car which fills one with covetousness. A particularly neat fitting in the Spijker machines is the method of fixing the steel ribbons which are used for bracing instead of our over-rated raf-wires. The Spijker way seems just as good, and about a quarter as costly.

Herr Fokker shows a biplane and a parasol monoplane of the war type, and an ingenious folding biplane, with a Morane-type fuselage. This last is shown with the left plane folded and laid flat against the body for road transport. The tail-skid is hitched onto the stern of an Opel car (a very smart two-seater), to demonstrate how the sporting aviator may tow his machine from aerodrome to aerodrome. It is pretty, but in this country our aviators prefer to fly from one place to another.

The Royal Nederlands Navy shows a well-built Friedrichshafen seaplane, built in the naval workshops from the wreckage of a German machine which was fished out of the North Sea. It is a highly creditable piece of work.

The Royal Nederlands Army shows a cleverly designed twin-engined machine, with two 110-h.p. le Rhônes, rather on Caudron lines, built at the military aerodrome at Soesterburg, out of the material of two Sopwith 1½ strutters which were compelled to descend in Holland and partly crashed. With two 80-h.p. le Rhônes the machine flies very well, but it has not yet been tried with the 110's. The workmanship throughout is up to the high standard of all work in Holland.

The remaining Dutch exhibit is a seaplane of Brandenburg type, minus an engine, built by Van Berkel's Patent, of Rotterdam, the firm which is famous for the slicing and cutting machines so popular in hotels and cook-shops. The combination is curious. As usual, the workmanship is good.

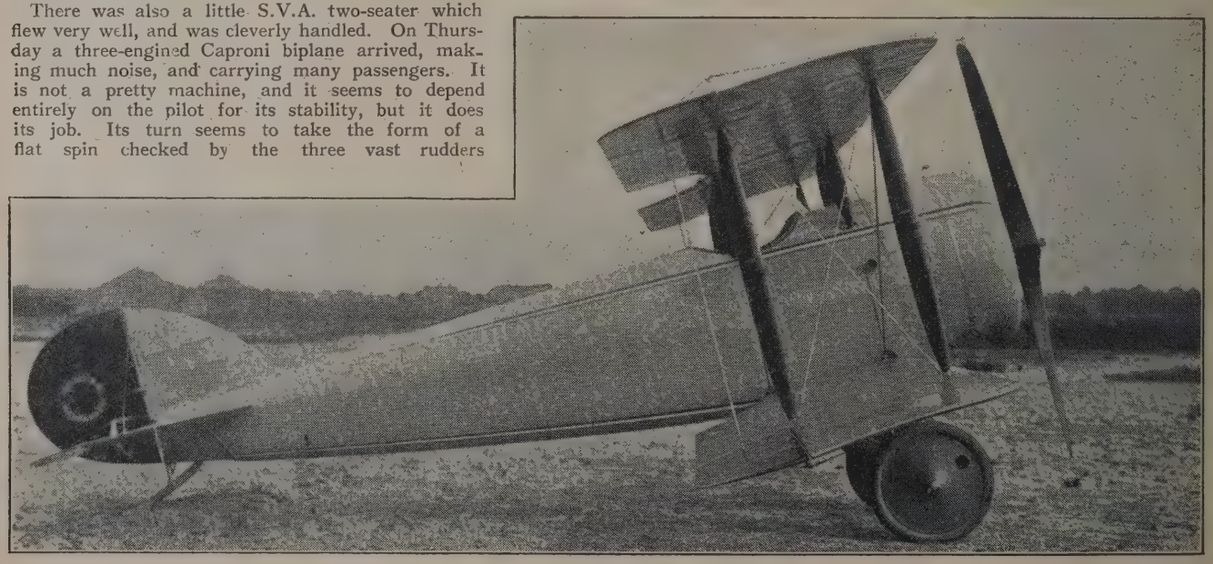
There are a good many accessory stands showing tools, material, lamps, and so forth, but nothing of particular note except the "Picus Triplex," which appears to be a very excellent breed of three-ply wood at very much less than the price which we are accustomed to pay in this country.

The French Exhibits.

The French exhibit consists of a stand of the Messageries Aériennes—a combine of Blériot, Bréguet, Caudron, and Morane. The only machines on view are a Bréguet war machine with five machine-guns, and a Caudron, neither of new type. The Gnôme and Le Rhône Co. also have a stand.

The British Exhibits.

There are several British machines in the show. The biggest is, naturally, the four-engined Handley Page already mentioned. The next is a Vickers-"Vimy"-Rolls-Royce bomber, and on



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AVIATION IN HOLLAND.—The latest type Spijker Biplane under test at Soesterburg.

the stand is the passenger cabin of a Vimy commercial machine, now improved by having a door at the back. The Vickers people also show a very neat model of their "Valentia" flying boat, and a model of a Vimy reposing inside a model of an Alban Richards hangar. Altogether it is a very taking exhibit.

The British Aerial Transport Co. show a Bantam Bat, and also a Bat "Crow," an up-to-date version of the early "Demoiselles." These machines have already been described in this paper.

The Airco had just received an Airco 4, with enclosed passenger compartment, when one was leaving. Their stand is strikingly arranged with very good paintings of Airco machines by Mr. Hill Reid, and a big model of Hendon aerodrome. A prominent feature on the stand is a Napier "Lion" engine, which attracts much attention from the motor engineers of all nations, and has produced very favourable comments.

The Gosport Co. and the Blackburn Co. both have stands, but either because of strikes or Government officials (one never knows which are hanging up industry in these days) their exhibits had not arrived when one left. The General Aeronautical Co. also have a stand, which was similarly lacking in exhibits at the time, though British Emaillite, which pertains to their business, was well represented in the show. The Palmer Tyre Co. have a good show of their famous products. Adastra Clothing is well shown, but for some curious reason the London address of the firm was not to be seen, so far as one could discover. The Marconi Co. show wireless sets for field and aerial work of all sorts. And the Farringdon Propeller Co. make a good show.

Holland's Aircraft Factory.

A very pleasing interlude in one's work at the Elta was a visit to the Spijker works, in company with Lieuts. Brack-Papa and Buonocini, at the invitation of Mr. Wijnmalen. Those who were concerned with flying in its early days will remember Mr. Wijnmalen as a singularly fine pilot of Farman biplanes. On October 1st, 1910, he beat the world's height record by reaching a height of 9,118 feet (2,780 metres) on a 50-h.p. Gnôme box-kite, so modern pilots may judge that he was an aviator of great ability. Though he is now the head of the biggest motor works and the only aircraft factory in Holland, he looks as young and is as energetic as he was nine years ago.

His works are at Trompenburg—the site of the castle of our ancient enemy, Admiral Van Tromp—and they would cheer the heart of any enthusiastic motor maker in this country. The showroom is a thing of beauty which would kill any car which was less than first class, but the cars are worthy of the showroom, for Mr. Wijnmalen is an artist as well as an engineer. Never has one seen more beautiful chassis lines nor finer *carrosserie*.

The works themselves are worthy of their products; they are exquisitely neat, they are arranged on the most modern system, everything possible is done for the health and comfort of the workpeople, and they are equipped with the latest thing in machinery—chiefly American, sad to say.

The aeroplane section of the works, which exists on orders for the Royal Nederlands Flying Corps, is on a par with the firm's motor works. The machines are thoroughly well made, and the internal finish of the parts is equal to our own best work. Though Mr. Wijnmalen has adhered to conventional lines in his designs his machines have a distinctive appearance, thanks to their typically Dutch cleanness of outline, and one feels sure that when international commercial flying develops the Spijker aeroplanes will make a big name for themselves.

After the inspection of the works Mr. Wijnmalen and his charming wife entertained the visitors with even more than that hospitality which seems to be one of the national industries of their country, and one confesses to a feeling of helpless envy after seeing the artistic treasures which he has accumulated in his house. One takes this opportunity of thanking Mr. and Mrs. Wijnmalen on behalf of their various guests from England for adding very greatly to the pleasure of their visit to Holland. It is to be hoped that ere long they themselves will come to England and afford us an opportunity of returning their hospitality.

Thanks to Elta.

Taking it all round, the promoters of the Elta may congratulate

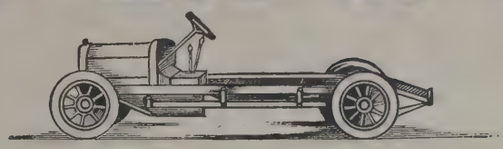


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themselves on Holland's first aero show, and none is better deserving of congratulation than is Mr. Van Der Steen, the organiser in London of the British section. Mr. Van Der Steen's energy and assiduity brought many of the best people in the Aircraft Industry to Amsterdam, and his care for their welfare when they arrived deserves the thanks of all concerned.

As one has indicated in these notes, the show is not a big show, but it is a very good show, and it is fulfilling an excellent purpose. It is interesting the international commercial men of Holland in aviation, and it is demonstrating to all and sundry that, despite strikes and Government officials, the British Aircraft Industry still leads the world in its own particular line of business.

Therefore one feels that the Elta deserves the thanks of the aeronautical community for the good work it is doing. To the President and to the Committee of the Elta one offers compliments on their success and thanks for their hospitality on behalf of all their British visitors.

C. G. G.

P.S.—As this number is going to press on Aug. 12th a telegram, sent from Amsterdam on Aug. 10th at midday, arrives stating that a Gosport flying-boat of the school training type, with a 120-h.p. British Anzani engine, had arrived at the Elta in 4½ hours' flying time from Southampton, piloted by Mr. Ash, with an engineer as passenger. So it takes two days for a telegram to get from Amsterdam to London, and 4½ hours for a little school boat to get from Southampton to Amsterdam.

THE CANADIAN AIR BOARD.

The following appeared in the issue of "Canada," dated Aug. 2nd:—

"The Civil Service Commission, Ottawa, state that a Canadian Air Board having been constituted, the following appointments have become available at the following initial salaries:—Secretary, $3,000 per annum; Superintendent of Certificates Branch, $3,600 per annum; Superintendent Government Flying Operations, $4,500 per annum; Medical Officer, $2,400 per annum. All salaries are subject to annual increase.

"These appointments would be for three years, renewable, and candidates who do not secure appointments may be eligible for other positions under the Air Board, probably including the following:—Assistant Secretary, 2 Inspectors in the Certificates Branch (1 for pilots and navigators, 1 for aeroplanes and mechanics), a Flying Officer in Operations Branch, and Equipment and Supply Officer in Operations Branch. The appointees of all positions must be willing to fly.

"Application should be made to the office of the Director of Air Services, Canadian Air Force, Oxford Circus House, London, not later than Aug. 21st, 1919."

THE ROYAL AERO CLUB.

VICE-PATRON OF THE CLUB.

H.R.H. The Prince of Wales has honoured the Club by becoming a Vice-Patron.

THE SOCIETY OF BRITISH AIRCRAFT CONSTRUCTORS AND THE ROYAL AERO CLUB.

A meeting of the Joint Standing Committee of the Society of British Aircraft Constructors and the Royal Aero Club was held on Thursday, July 24th, 1919, when there were present:—Royal Aero Club: Lieut.-Col. J. T. C. Moore-Brabazon, M.P. (in the Chair), Lieut.-Col. F. K. McClean, Lieut.-Col. Alec Ogilvie, and Mr. Harold E. Perrin (Secretary). Society of British Aircraft Constructors: Mr. R. O. Cary, Mr Hamilton Fulton, Mr. N. G. Gwynne, and Mr. Charles V. Allen (Secretary).

CHAIRMAN.—On the motion of Mr. N. G. Gwynne, seconded by Lieut.-Col. F. K. McClean, Lieut.-Col. J. T. C. Moore-Brabazon, M.P., was unanimously elected to the Chair.

The appointment of the Joint Standing Committee was reported as follows:—

SOCIETY OF BRITISH AIRCRAFT CONSTRUCTORS.—Capt. P. D. Acland, Mr. R. O. Cary, Mr. Hamilton Fulton, Mr. N. G. Gwynne.

ROYAL AERO CLUB:—Lieut.-Col. F. K. McClean, Lieut.-Col. J. T. C. Moore-Brabazon, M.P., Mr. J. H. Nicholson, Lieut.-Col. Alec Ogilvie.

RECORDS.

It was decided that the word "Record" should not be used in any advertisement except in the case of a definite record having been granted by the Royal Aero Club.

SPECIAL COMMITTEE MEETING.

A Special Meeting of the Committee was held on Wednesday, July 30th, 1919, when there were present:—Brig.-Gen. Sir Capel Holden, K.C.B., F.R.S. (in the Chair), Mr Ernest C. Bucknall, Lieut.-Col. John D. Dunville, R.A.F., Lieut.-Col. Spenser D. A. Grey, D.S.O., R.A.F., Lieut.-Col. T. O'B. Hubbard, M.C., R.A.F., Lieut.-Col. F. K. McClean, Lieut.-Col. Alec Ogilvie, Col. C. R. Samson, D.S.O., R.A.F., and Mr. Harold E. Perrin (Secretary).

GOLF.

A golf match between the Royal Air Force Club and the Royal Aero Club took place at Worplesdon on Tuesday, July 29th, 1919. The morning's play resulted in the Royal Air Force Club being defeated by 6 matches to 1. The afternoon was given up to four-ball matches, in which the teams finished "2 all." The Royal Aero Club won, therefore, on the day's play by 8 points to 3.

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SUBSCRIPTIONS:

Total subscriptions received to July 29th, 1919	£15,077 19 1
Amount paid for a passenger flight with Mr. H. G. Hawker on May 31st, 1919, per the Sopwith Aviation and Engineering Co., Ltd.	42 0 0
Total, August 1st, 1919 ...	£15,119 19 1

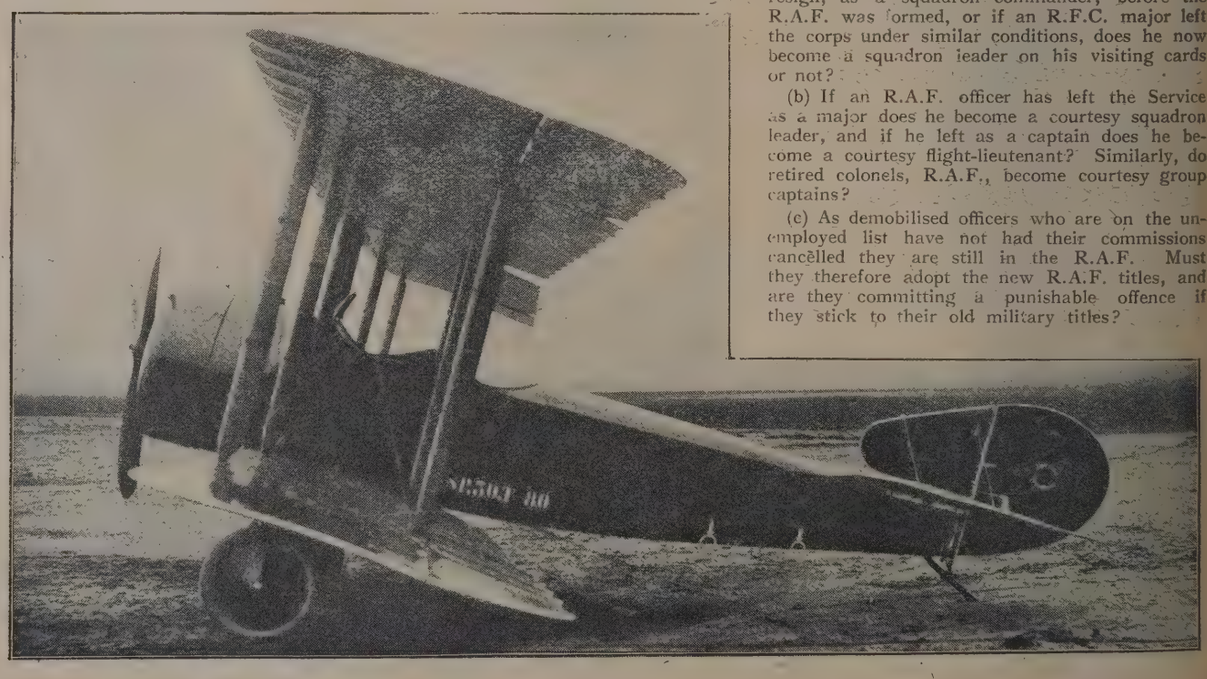
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Will the Invention of Rank Titles Department of the Air Ministry please give rulings on the following points?

(a) If an R.N.A.S. officer was invalided out or was permitted to resign, as a squadron commander, before the R.A.F. was formed, or if an R.F.C. major left the corps under similar conditions, does he now become a squadron leader on his visiting cards or not?

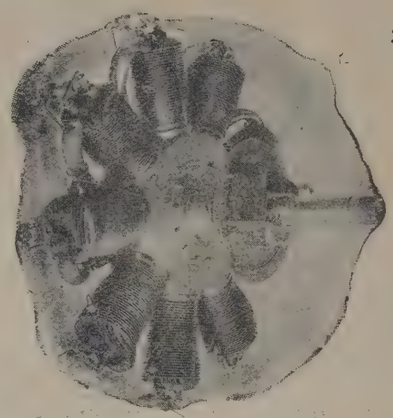
(b) If an R.A.F. officer has left the Service as a major does he become a courtesy squadron leader, and if he left as a captain does he become a courtesy flight-lieutenant? Similarly, do retired colonels, R.A.F., become courtesy group captains?

(c) As demobilised officers who are on the unemployed list have not had their commissions cancelled they are still in the R.A.F. Must they therefore adopt the new R.A.F. titles, and are they committing a punishable offence if they stick to their old military titles?



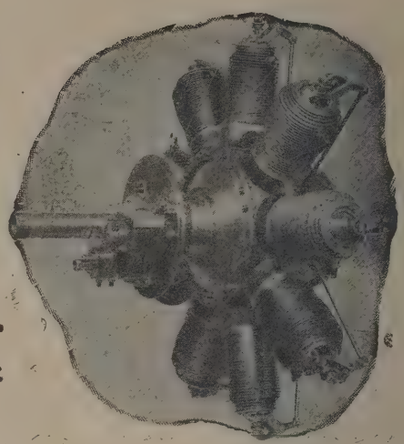
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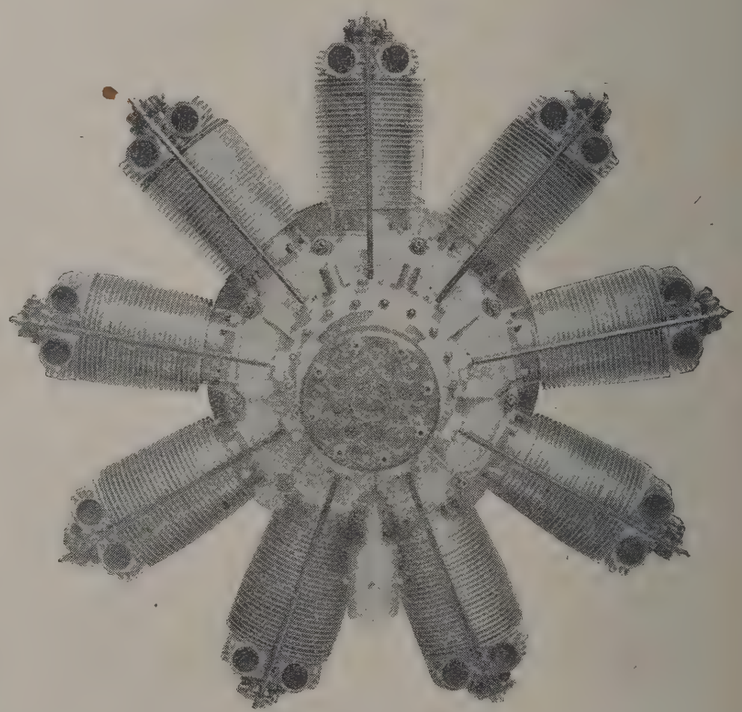
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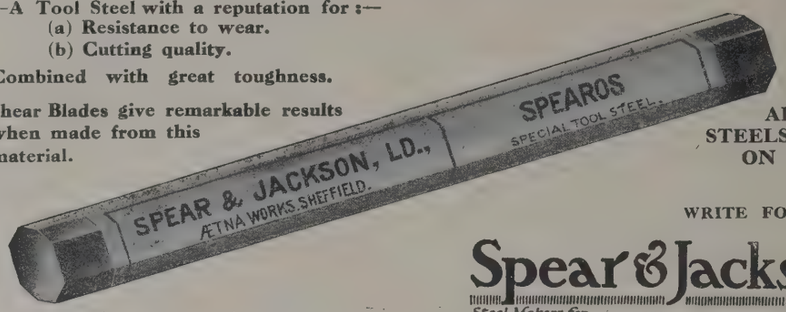
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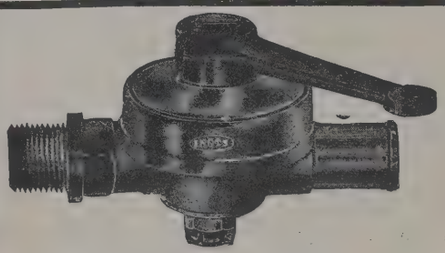


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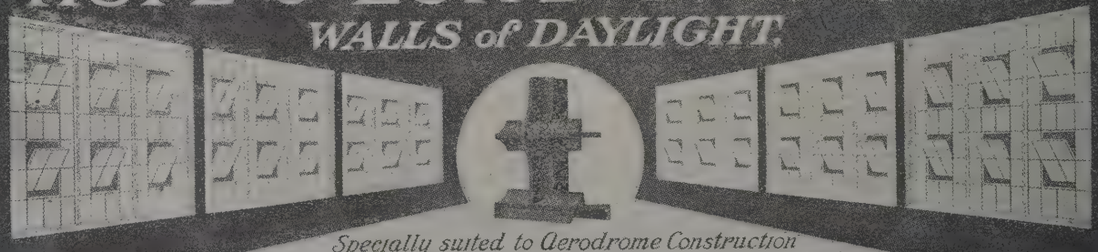
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THE WEEKLY COMMENTARY.

In an article on "Aerial Propulsion," Capt. W. H. Sayers discusses the inefficiency of the method now employed in the propelling of aircraft.

He shows that the heat energy of burning fuel is used directly to set gas in motion, this motion is communicated by a complicated mechanism to the airscrew, finally to set in motion once more another body of gas—the airscrew slipstream.

The turbine is considered as a simplification of the chain of mechanism between the first and the final stage.

A new passenger-carrying machine designed and built by the Westland Aircraft Works for commercial purposes is described in this issue.

The Handley Page multiple-engine machines of the O/400 and the V/1,500 types are described in this week's instalment of the series on "Modern British Aeroplanes."

A letter from M. L. P. Frantzen describes the French Couade tandem parachute system of 1913, which bears a close resemblance to the tandem parachute system described by Lieut.-Col. Holt in recent issues of this paper.

AERIAL PROPULSION.

By Capt. W. H. SAYERS, late R.A.F.

The future of the aeroplane as a commercial vehicle is to a very large extent dependent upon the cost of operating aerial services.

Whether the aeroplane remains as it now is, a costly method of transport, or whether it can be made cheap to build and to run, it undoubtedly has a future.

Unless the world at large relapses into mere savagery, there will always be occasions upon which the saving in time on a journey, which the aeroplane alone can secure, will be of greater value than the cost of thus saving it.

If, on the other hand, aerial transport can be made really cheap and at the same time safe and reliable, then its uses will be enormously extended.

Practically the whole question of the cost of aeroplane travel is a question of the method of propulsion.

The prime cost of an aeroplane of any normal type is very largely composed of items relating to the propelling plant.

The Direct and Indirect Cost of Power Plant.

In very few modern machines does the cost of the aeroplane itself, without engine, fuel tanks, radiators, airscrews, and the instruments and controls incidental to the power plant, exceed one half of the total cost of the machine with these items installed.

Of the cost of maintaining an aeroplane in service, at least 50 per cent. is directly chargeable to the cost of power plant overhaul and maintenance, and with present-day machines the weight of engines and their accessories, together with fuel and oil, is always very much greater than that of the useful or paying cargo which can be carried.

Of the actual cost of running an aeroplane over any given stage, fuel and oil account for no inconsiderable proportion.

Finally, apart from accidents caused either directly or indirectly by failure of the propelling mechanism, the aeroplane is probably the safest type of vehicle in existence.

Thus the importance of improving upon the present methods of propelling aeroplanes cannot be exaggerated.

It is well worth while to consider in some detail the chain of processes which in the aeroplane convert the latent energy of the fuel into a propulsive effort.

A Complex Cycle.

In the first place, the fuel, mixed with an appropriate amount of air, is burnt, raising the temperature of the products of combustion to a great extent, and causing them to expand. In so expanding, this gas drives before it a piston, which in its turn, through the connecting-rod, drives round the crankshaft.

The crankshaft by its rotation causes the airscrew to revolve, and the airscrew reacts upon the air in which it works and drives backward from the aeroplane a column of air.

The actual propulsion effort exerted upon the aeroplane is equal, and in the opposite direction, to the force which is exerted upon the air driven backwards, and which serves to put it in motion.

Thus the process begins with the setting in motion by the application of heat of a mass of fluid. This motion is in turn converted into a linear movement of the piston, a rotary motion of crankshaft, airscrew, and finally into a more or less linear movement of a further mass of fluid.

In each of these changes in the nature of the movement there is a loss of some of the original energy of combustion.

In the first place, of the heat energy liberated at combustion some large proportion is absorbed in heating cylinders and pistons, and is carried off by the cooling water and air. Secondly, the heated gas within the cylinders is liberated long before it has given up all its heat energy, and is allowed to escape, carrying the remnant with it. Some 55 per cent. or more of the total heat energy of the fuel is thus lost.

In the translation of the linear motion imparted to the piston into the rotary motion of the crankshaft there are frictional losses. In addition to those which occur in the actual translation there are losses involved in driving the valve gears, oil and water pumps, and magnetos, which have to be deducted from gross

power delivered by the piston to the crankshaft. In such ways some 10 per cent. of the energy delivered to the piston, or 5 per cent. of the fuel heat energy, is dissipated.

Thus at the most 40 per cent. of the total stored energy in the fuel is available at the crankshaft end for driving the airscrew.

In the final translation of the rotary motion of the crankshaft to the linear motion of the slipstream, by the airscrew, there is a further loss of at least 20 per cent. of the net output of the engine, or 8 per cent. of the original energy of the fuel.

A Low Efficiency.

Thus the overall efficiency of the propelling mechanism of the aeroplane is not more than 32 per cent. In practice this figure is never reached. It is based upon a combination of the best possible results right through the whole cycle of propulsion.

Probably 28 per cent. overall efficiency is about as high as can be relied upon under practicable conditions.

Since an aeroplane in flight is entirely immersed in the air, and has no connection with any other body, there is obviously no other abutment against which a propelling force can act. As the air is fluid, any force applied to it will set it in motion, and it is not possible to propel an aeroplane without driving a current of air astern, not merely relatively to the aeroplane, but relatively to the whole body of air.

The propulsive effort obtained by so driving a current of air astern depends upon the mass of air affected and the speed of the current. Thus an airscrew which drives an air current astern at 32 ft. per second will give a thrust of one pound for every pound of air which passes through it per second. If the air speed of the aeroplane to which the airscrew is attached be 88 ft. per second, the slipstream velocity past the aeroplane must be 88 + 32 or 120 ft. per second to keep the thrust to that value.

If the slipstream velocity relative to the aeroplane is reduced to 104 ft. per second, making the real velocity of the air current 16 ft. per second, a thrust of only half a pound for every pound of air passing the airscrew per second is obtained.

The stream of air moving astern has, in virtue of its motion, kinetic energy, which has to be supplied by the engine driving the airscrew. Thus a certain amount of the engine power is necessarily expended in propelling air instead of propelling the aeroplane.

For any given thrust the amount of this loss is entirely dependent on the relative velocity of the slipstream to the general body of the air.

Thus with a slipstream having an absolute velocity of 32 ft. per second the loss is 1 × 32 = 32 ft.-lbs. per second = 32/550 = 0.058 h.p. per lb. of thrust obtained.

With the absolute slipstream velocity of 16 ft. per second the loss is only 16 ft.-lbs. per second = 0.029 h.p. per lb. thrust, although twice as much air must be set in motion to give that pound of thrust.

The Real Problem.

Thus the problem of aeroplane propulsion is to provide a stream of air of the greatest possible mass, or cross-section, and moving, relatively to the undisturbed air around, at the least possible velocity.

In its present form the airscrew can be made to give efficiencies up to 80 per cent., but, except for machines of very much greater speeds than have at present been reached, there is little likelihood of any great advance. As a device for transforming rotary motion into a propulsive effort there is little hope of greatly improving upon the airscrew as it is now known.

The internal combustion engine converts the heat energy of the fuel into energy in a form suited to the driving of the airscrew with an efficiency of rather less than 40 per cent. Here again there is little prospect of, if much room for, any great improvement without an entire change in the type of engine used.

The idea of using some form of turbine in place of the reciprocating engine has many attractions.

A Real Simplification.

The turbine in effect cuts out two of the transformation steps in the conversion of the energy of expanding gas into the energy of rotation of the engine shaft. The hot gas is allowed to expand in flowing past the blades of the turbine wheel, and in so flowing gives up part of its kinetic energy directly to the rotating blades. It is thus possible to avoid many of the mechanical losses which are inseparable from the reciprocating engine.

Also, the turbine promises a large reduction in weight as compared with the reciprocating engine.

So far, though there are certain rumoured experimental productions, no internal combustion turbine is doing practical work. In any form the steam turbine is scarcely a practicable aero-engine.

The best steam turbine fuel consumption per h.p.-hour still exceeds that of the petrol engine to a very appreciable extent. The weight of water which must be evaporated is something like 10 lbs. per h.p.-hour, and, although this can be condensed and returned to the boiler after exhaust, a certain loss occurs in the process. To make up for this, a weight of water probably not less than half a pound per h.p.-hour will have to be carried as a "make-up."

Thus water and fuel together will weigh at least twice as much as the fuel and oil required for a petrol engine of equal output.

In addition, the steam turbine loses immensely in efficiency unless a very high vacuum is maintained at the exhaust outlet. This calls for large condensing plant and air pumps. Condensers may be made light by air-cooling them. Unfortunately an enormous surface is needed, and the head resistance would then become excessive. Altogether, steam plants do not appear to have any very great future.

An Experimental Effort.

There has been suggested, and it is understood that experiments are to be made with, a type of turbine generally similar to the steam turbine of commerce, but employing the vapour of some fluid other than water.

This fluid is preferably to be an inflammable one, with a considerably lower boiling point and a lower latent heat of evaporation than has water.

Owing to the low latent heat, it is hoped that condensers small and light compared with those needed for steam will suffice, and it is proposed to use a small proportion of the exhaust as a fuel in the boiler.

It is hoped that by such methods it may be possible to produce large power plants which shall not exceed either in plant weight or in fuel consumption petrol engine plants of equal output, and which will be very much more reliable than are these.

The author must confess that he does not see any great likelihood of success along such lines.

Putting an inflammable liquid into a boiler and vaporising it does not sound a particularly safe proceeding, particularly in an aeroplane, and the prospects of greatly reducing the total weight to be carried for power plant and accessories seem remote.

However, the scheme is being considered by a firm of the highest standing in the engineering world, with a very large turbine experience, so that it may fairly safely be presumed that the scheme has advantages as yet undisclosed to recommend it, and the fact that any such experiment should be put in hand in earnest is at least a hopeful sign.

(To be continued.)

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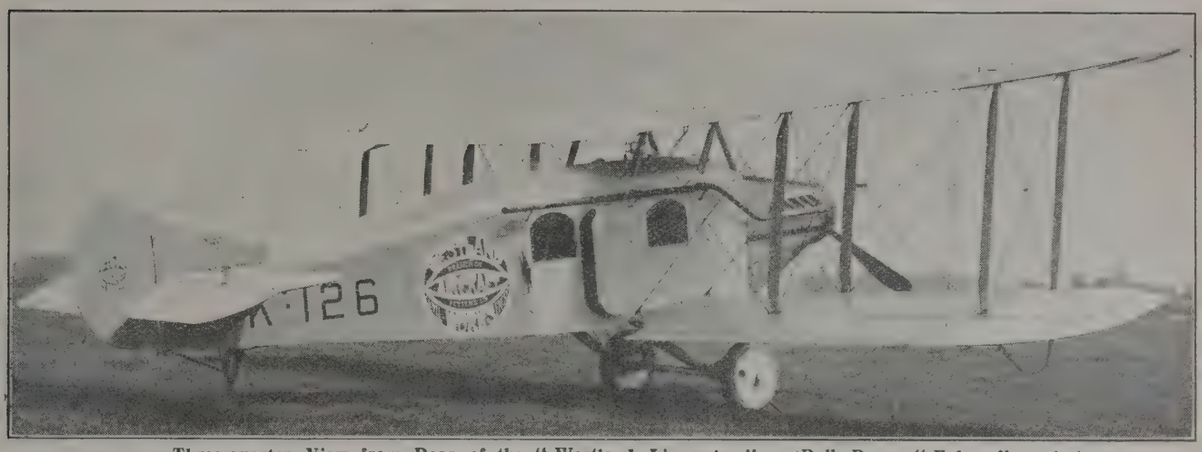
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THE "WESTLAND LIMOUSINE."



Three-quarter View from Rear of the "Westland Limousine" (Rolls-Royce "Falcon" engine).

Of the numerous engineering firms which during the war have undertaken the manufacture of aircraft, Petters, Ltd., of Yeovil—known as regards their aeroplane department as the Westland Aircraft Works—have taken a prominent place. Their aircraft products have gained for themselves a uniform and high reputation for excellent workmanship and finish.

The success of their efforts at producing machines to official specification encouraged them to proceed to original design work, and they have built, for war purposes, the experimental seaplanes N.16 and N.17, the Westland "Wagtail" and the Westland "Weasel," all of which have given excellent results.

Messrs. Petters' experience of war aeroplane building has left them with a firm confidence in the future of aviation as a means of transport, and the firm has determined to develop aircraft for commercial transport services.

At the invitation of the company, representatives of the Technical Press were given on July 31st, an opportunity of inspecting and making trial flights in the first of the firm's machines designed for commercial work.

This—which is to be known as the "Westland Limousine"—is a small four-seater passenger-carrying machine, designed for the use of business men and the like to whom time is of value, but who wish to travel in reasonable comfort.

In so far as its aerodynamical features are concerned, the machine is a perfectly normal tractor biplane.

The fuselage is a totally enclosed affair containing four seats. Of these the after one on the port side is raised above the cabin floor some 2 ft. 6 ins., and has above it an opening into the outer air. This is occupied by the pilot, and is fitted with the usual controls.

The three remaining seats are at a lower level, so that the occupants are entirely within the fuselage.

One seat is beside that of the pilot, facing forward, and the remaining pair, in the front end of the cabin, face one forward and one back.

The passenger cabin, which forms one unit of the three comprising the fuselage, is a three-ply and timber structure, free from all internal crossbracing, and has at its for'ard end a double bulkhead of three-ply with an asbestos filling between, which acts as an insulation against both the heat and the noise of the engine.

The engine exhaust is carried back past the pilot by long exhaust pipes, and the cabin is fitted with a ventilator, adjustable from within, which allows air from the slip stream to enter at the for'ard end and pass out by the pilot's cockpit.

The interior of the cabin is upholstered in the style characteristic of the very finest class of motor-car bodies, the seats are extremely comfortable, and there is ample leg room.

Conversation can be carried on with ease, and although there are no draughts, there is no trace of odour from the engine.

After a fairly long experience of flying in open machines the writer must confess to a feeling of discomfort when flying in the totally enclosed cabin of this machine.

The discomfort is by no means uncommon, and is probably due to the fact that though one knows that one is flying, one misses most of the accustomed sensations of the sport.

It is, in fact, very terrifying to miss that comforting 100-mile an hour blast straight in the face that assures one that though the earth is apparently trying its hardest to fall on one from the side it will not succeed, and a muffled kind of moan is a poor substitute for the healthy roar that tells of 12 cylinders all firing regularly.

Thus the feeling is, in fact, a measure of the designers' success. It can certainly be said that the "Westland Limousine" is considerably more comfortable to travel in than was the dining-car upon which the return journey from Yeovil to London was made.

There was no more noise, considerably less oscillation—and that under very bumpy weather conditions—certainly less smell, and considerably less of that leg-cramping effect which is common to railway carriages and theatre seats.

To the front end of the cabin structure ahead of the bulkhead are affixed beams for fuel tanks and the engine mounting.

The latter is in this case an affair of steel tubes arranged to carry a Rolls-Royce "Falcon" engine. The whole structure is removable, and engine mountings for other types of engine may be fitted without any structural alterations to the cabin unit.

The rear part of the fuselage is of the usual wire braced construction.

Very great care has been taken over the engine installation to secure cleanliness.

The whole body is painted in a very pleasing shade of grey—one which would easily rival "Bolo blue" in its capacity for showing dirt.

Upon the arrival of the party at the aerodrome the machine had the appearance of having just left the paint shop. At the end of the afternoon—after four or five flights—of a total of probably an hour and a half, it was impossible to discover any sign of oil or dirt about the body.

As a demonstration of the conditions prevailing within the cabin, one of the typists from the works office, complete with note-book and typewriter, made a flight in the machine. Whilst in the air letters were dictated to her and were successfully typed.

This particular demonstration was partially marred by a hitch which would appear to demand the immediate attention of the Department of Civil Aeronautics. The ground staff at the aerodrome appear to have been totally inexperienced in the erection and truing up of typewriter machines, and, on the first trial, it was found that insufficient clearance had been allowed for the operation of the shift key. Quite a number of otherwise excellent letters were thus deprived of their Capitals, and unless a new department is immediately formed to supervise the installation of aerial typewriters, a number of accidents even more serious may occur.

By the removal of the upholstery and the seats the "Limousine" may be converted to a mail-carrier. There is available about 95 cub. ft. of space, and the machine would carry comfortably from 500 to 600 lbs. of goods.



The "Westland Limousine" in the Air.

A careful observation of the pilot's actions in the air leaves no room for doubt that the machine is in excellent balance, and is both light and quick in answering its controls.

Altogether, the machine reflects great credit upon the enterprise of its makers and upon its designers, Mr. R. A. Bruce, the managing director, and Mr. Davenport, the chief draughtsman, of the Westland Aircraft Works.

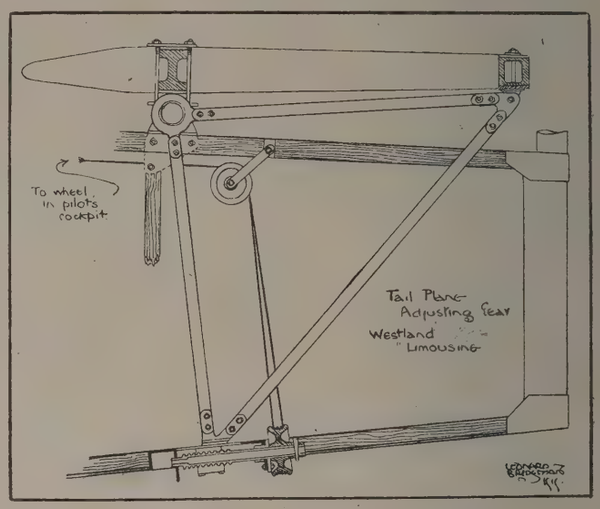
Amongst the noteworthy details of construction the tailplane adjustment gear, which is illustrated herewith, is of interest. The mechanism is covered by a patent, and the essential feature is the complete and simple triangulation of the tailplane bracing which is secured.

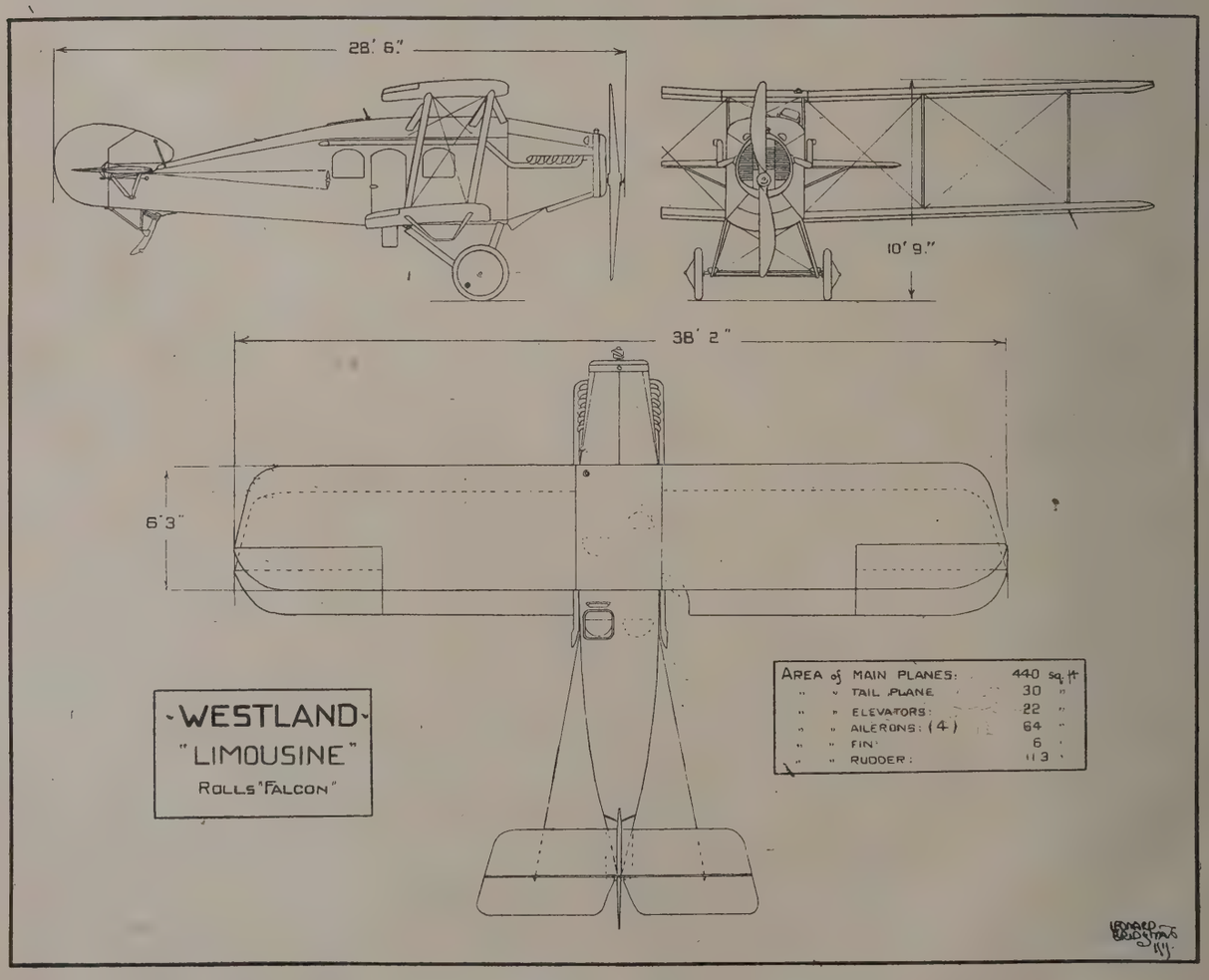
At the conclusion of the visit, Mr. F. W. Petter, one of the joint managing directors of Petters, Ltd., in a short speech, expressed the confidence of the firm in the future of commercial aviation, and their determination to take an important part in that future.

To him, to Mr. Chandler, the works manager, of the Westland Aircraft Works, and to Capt. Keep, M.C., late R.A.F., the firm's very able pilot, one must express one's thanks for a very pleasant and a very interesting day.

The attached specification gives all the main particulars of the Westland "Limousine."

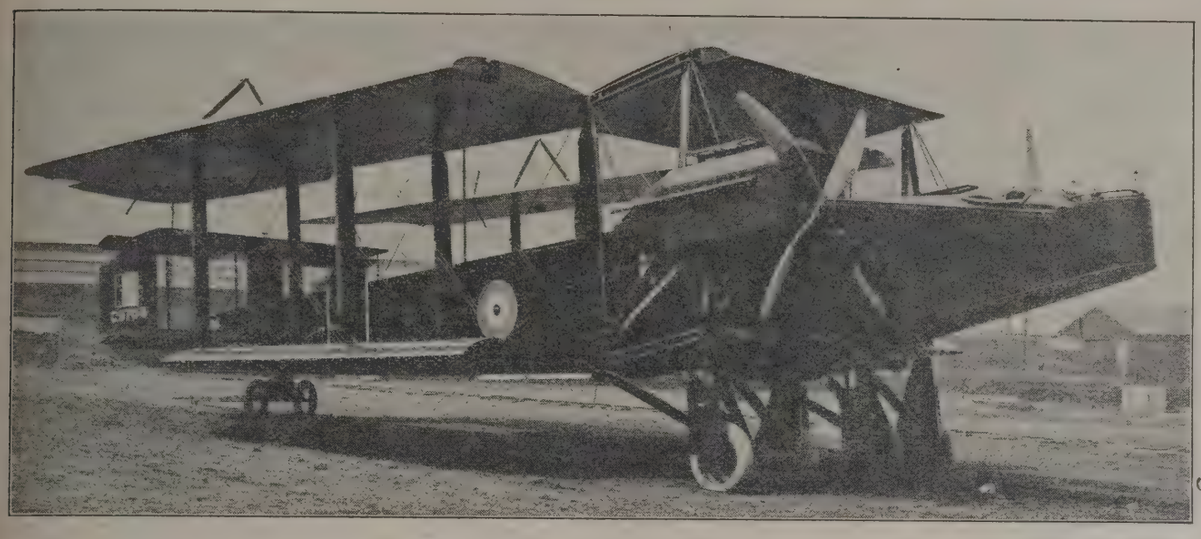
Length overall	28 ft. 6 in.
Span	38 ft. 2 in.
Chord	6 ft. 3 in.
Gap	6 ft. 0 in.
Stagger	1 ft. 0 in.
Total wing area	440 sq. ft
Dihedral angle	2 deg.
Total aileron area	64 sq. ft.
Area of tail plane	30 sq. ft.
Area of elevators	22 sq. ft.
Area of fin	6.0 sq. ft.
Area of rudder	11.3 sq. ft.
Engine	Rolls-Royce "Falcon."
Weight, empty	2,010 lbs.
Weight, loaded	3,226 lbs.
Weight, useful load	540 lbs.
Fuel capacity	3 hours.
Loading	7.8 lbs. per sq. ft.
do.	15.6 lbs. per h.p.
Performance—	
Speed low down	100 m.p.h.
Speed 10,000 ft.	91 m.p.h.
Speed 15,000 ft.	85 m.p.h.
Climb—	
5,000 ft.	8.35 mins.
10,000 ft.	19.6 mins.
15,000 ft.	37.5 mins.
Ceiling	17,000 ft.





MODERN BRITISH AEROPLANES.

XI.—Handley Page, Ltd.



The twin-engined Handley Page Type O/400 Biplane with wings folded (two 375 Rolls-Royce "Eagle" engines)

Mr. F. Handley Page is one of the earliest British experimental aircraft constructors. Originally—like quite a number of others of the pioneers of aviation in this country—an electrical engineer, Mr. Handley Page abandoned this profession *circa* 1908, and founded the firm of Handley Page, which became Handley Page, Ltd., in 1909. At their works in Barking they produced the extraordinarily successful two-seater monoplane with a 50 Gnôme engine, which was affectionately known as the "Yellow Peril," the 70 Gnôme-engined monoplane of the 1912 Military Trials, and the 1914 Handley Page biplane. All these machines were fitted with wings which followed upon the lines of the wing of a bird, both in plan form and in section, and they were all of them possessed of a very considerable degree of inherent stability.

During the early stages of the war, Handley Page, Ltd., were confined to building aeroplanes to official specification.

Towards the end of 1915 they produced the first of the now famous twin-engine H.Ps., and since then have been entirely engaged upon the production of this and its elder brother, the four-engined type V/1500 machines.

THE HANDLEY PAGE TWIN-ENGINED BIPLANE.

The Handley Page twin-engined biplane o/400 type was designed and built in 1915 as a bomber, but was not adopted as a service machine until 1916, when the R.N.A.S. commenced their heavy night raiding along the Belgian coast.

The machine follows the usual practice in twin-engined biplanes in having a centre fuselage with the pilot's cockpit situated in advance of the leading-edge of the main planes and the two observers' cockpits are one right in the nose and the other in rear of the main planes.

The two engines are carried in streamline nacelles between the planes on the first pair of interplane struts driving two tractor airscrews.

The upper plane has a considerable overhang which is braced above and below from a pylon over the last set of struts and the bases of the last sets of struts respectively.

The tail unit is of the biplane type and has two rudders. Two separate undercarriages are carried, one on either side of the fuselage, and each consists of three Vees attached to a stub skid, the axle being supported by oleo-pneumatic shock-absorbers as shown in the photographs.

Since the armistice the o/400 type has been converted for commercial and passenger-carrying work by having the central internal bomb racks and back observer's cockpit removed, the resultant space being fitted up with seats.

SPECIFICATION.

Type of machine	Biplane.
Name or type No. of machine	o/400.
Purpose for which intended	Night bombing.
Span	100 ft.
Gap, maximum and minimum	11 ft.
Overall length	62 ft. 6 in.
Maximum height	22 ft.
Chord	10 ft.
Total surface of wings	1,630 sq. ft.
Maximum cross section of body	6 ft. 10 ins. × 4 ft. 9 ins.
Engine type and h.p.	2 R.R. "Eagle VIII." Standard equipment.
Airscrew, diam., and revs.	11 ft. diam., 1,080 r.p.m.
Weight of machine empty	8,200 lbs.
Load per sq. ft. fully loaded	8.5 lbs.
Weight per h.p.	20 lbs.
Tank capacity in hours	8½ hours.
Tank capacity in gallons	300 gallons.
Performance—	
Speed low down	97 m.p.h. fully loaded.
Speed at 6,500 feet	95 m.p.h.
Speed at 10,000 feet	93 m.p.h.
Landing speed	50 m.p.h
Climb—	
1,000 ft. per min. lightly loaded	
To 5,000 feet	10 mins.
To 10,000 feet	25 mins.
Disposable load apart from fuel	3,500 lbs.
Total weight of machine loaded	14,000 lbs.

ALTERNATIVE ENGINES.—2 "Liberty's," 2 "Sunbeam Maori," 2 "Sunbeam Cossack," or 2 "F.I.A.T.," etc.

THE HANDLEY PAGE FOUR-ENGINED BIPLANE.

The Handley Page 4-engined biplane, type V1500 is a development of the smaller o/400, the principle alterations being the increase of dimensions all round, with exception of the length, the



The four-engined Handley Page in the Air.

abolition of the overhang by increasing the span of the lower plane and the addition of two engines, which are carried tandem-wise to the two front engines in the same nacelles, the front engines driving two two-bladed tractor airscrews and the rear engines two four-bladed pusher airscrews. The fuselage is almost identical with the smaller edition but is much deeper towards the rear end.

The undercarriage and tail-skid are of a simpler form, as can be seen in the photographs.

These machines can be converted to commercial vehicles by the mere elimination of the military apparatus—bomb gear and guns—and the refitting of the interior of the fuselage for the accommodation of passengers and/or goods.

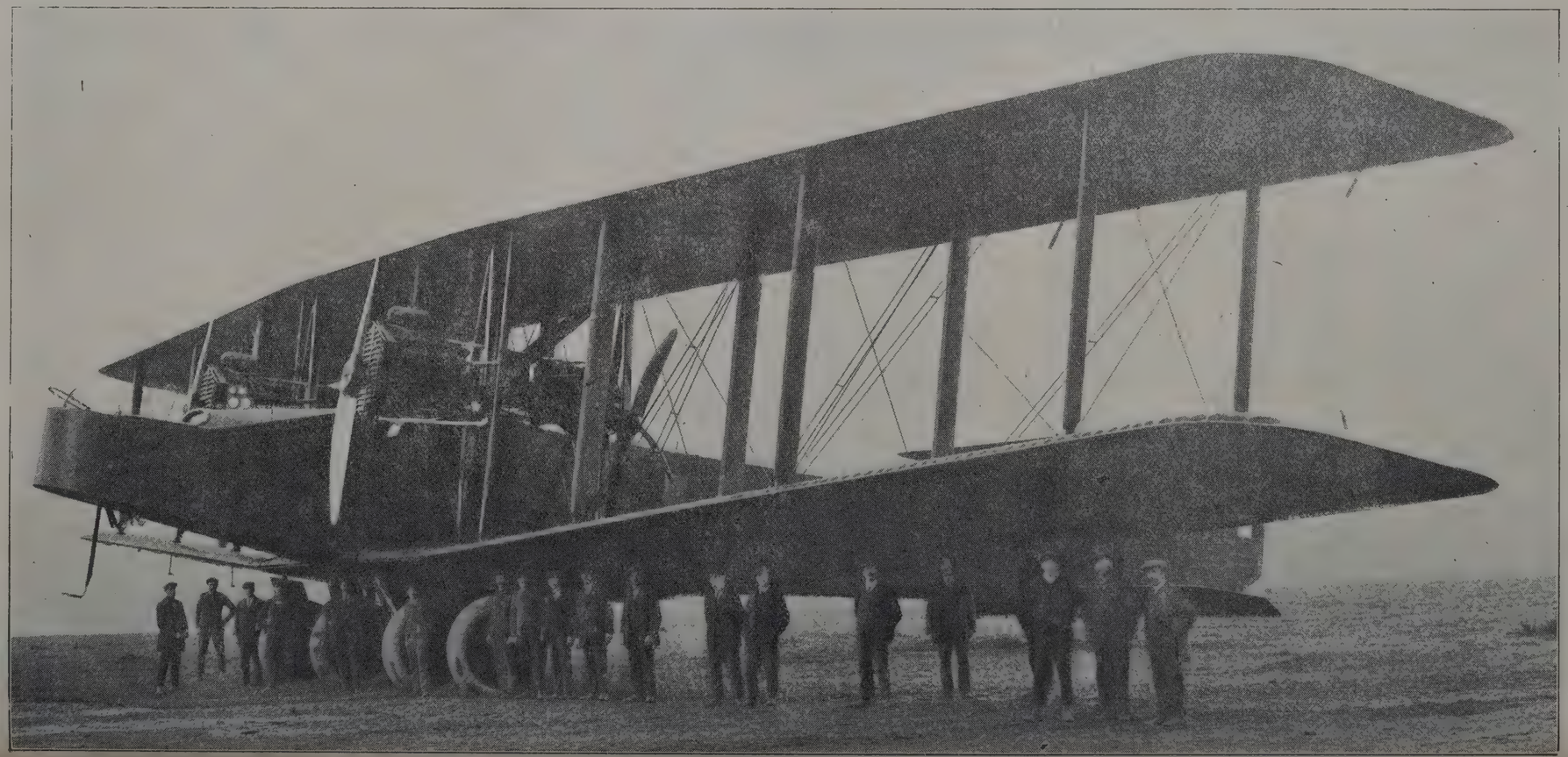
In the event of passengers, mails and goods all being carried by the same machine, each would be conveyed in a separate compartment.

SPECIFICATION.

Type of machine	Biplane.
Name or type No. of machine	V/1500.
Purpose for which intended	Night bombing.
Span	126 ft.
Gap, maximum and minimum	15 ft.; 12 ft.
Overall length	62 ft.
Maximum height	23 ft.
Chord	12 ft.
Total surface of wings	3,000 sq. ft.
Maximum cross section of body	8 ft. × 6 ft. 2 ins.
Engine type and h.p.	4 R.R. Eagle VIII.
Airscrew, diam., and revs.	13 ft. 5 ins.; 10 ft. 4 ins.; 1,080; 1,080.
Weight of machine empty	15,000 lbs.
Load per sq. ft. fully loaded	10 lbs.
Weight per h.p.	21 lbs.
Tank capacity in hours	14 hours.
Tank capacity in gallons	1,000 hours.
Performance—	
Speed low down	103 m.p.h. fully loaded.
Speed at 6,500 feet	99 m.p.h.
Speed at 10,000 feet	95 m.p.h.
Landing speed	50 m.p.h.
Climb—	
1,200 ft. per min. lightly loaded	
To 5,000 feet fully loaded	8 mins.
To 10,000 feet	21 mins.
Disposable load apart from fuel	7,000 lbs.
Total weight of machine loaded	36,000 lbs.

Alternative Engines.—

4 B.H.P. "Atlantic's," each 500 h.p., or 4 Napier "Lion's," or 2 R.R. "Eagle" and 2 "Liberty" (400 h.p.).



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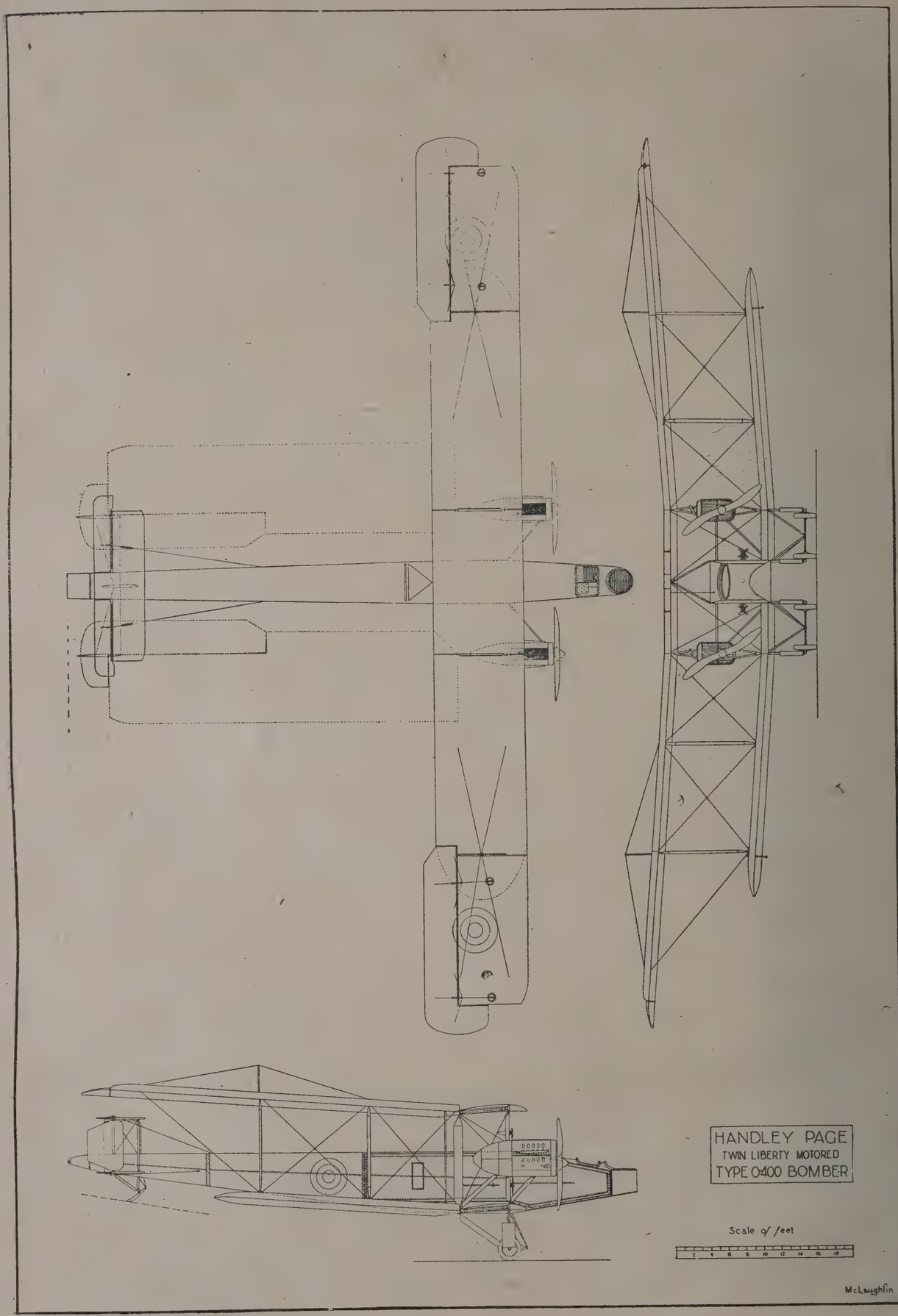
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TANDEM PARACHUTES.

The following letter has been received :—

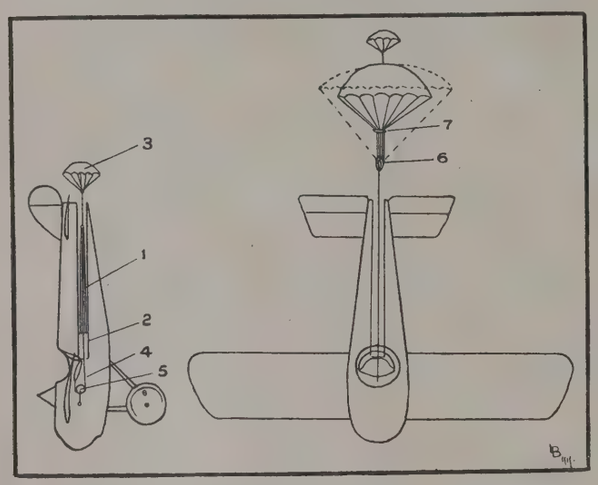
Sir :—In the very interesting series of notes on parachutes which have recently appeared in your excellent journal, Lieut.-Col. Holt has described the arrangement of a tandem parachute system wherein a parachute of small diameter is first released and serves to draw out the main parachute. This idea is excellent, but it is not novel. Several investigators have suggested it since 1910, and in 1913 Lieut.-Col. (then Captain) Couade, of the French Army, had already used this system.

On Oct. 2nd, 1913, a note describing the Couade Sloan parachute was communicated to the French Academy of Sciences by M. Léon Lecormi (Comptes Rendu Acad., t.C.L. VII, page 167).

This descriptive note gave a number of results obtained with the arrangement which had been tested in model form by Capt. Couade in collaboration with M. Sloan, who may be remembered as the inventor of a curious aeroplane (circa 1910) known as the Sloan Bicurve.

The following extract describes the features of the Couade system, which could not only be used for saving the pilot from danger, but which it was proposed to employ for salving the complete aeroplane :—

" The parachute (1) is fitted within a tube (2) placed in the fuselage which emerges behind the control surfaces of the tail, and it



(the parachute) has attached to its summit a small ' tractor ' parachute (3) fitted with elastic ribs, which alone projects beyond the tube.

" This ' tractor ' is normally held closed, but may be freed when necessary by the pilot. It then draws from its case the main parachute and brings it out into the air current. This then opens in its turn without any risk of its unfolding being interfered with.

" The surface of the parachutes is designed to allow a fall at the rate of 6 m. 50 per second.

" In order to avoid dangerous accelerations which would be caused by a sudden opening of the parachute when the machine is travelling at a great speed were the parachute directly attached to the machine, there is interposed between the two a cable (4) which passes round a brake (5). The acceleration cannot then exceed the effort applied by the brake. A shock absorber (6) is fitted which relieves the parachute of the effects of a brusque action on the part of the brake.

" In order to reduce the slip past the brake, the parachute is arranged to open in two stages.

" This is accomplished by a tie (7) which holds the suspension ropes together in their middle.

" The parachute opens partially, and when the load on 7 reaches a certain value this tie ruptures and allows the complete opening.

" For high speeds of fall (50 metres per second) the parachute should open completely within 100 metres."—L. P. Frantzen.

BY ERROR.

In the article by M. L. P. Frantzen on "Aerial Safety and the Aeroplane Parachute," published in this paper on July 23rd, two unfortunate errors occurred.

The Couade parachute system was referred to as the Conade (page 317), and on page 318 René Lallemand was described as Roger Lallemand.

TECHNICAL KNOWLEDGE.

Following are some questions and answers collected by an instructor of R.A.F. Cadets :—

How is a machine supported in flight?—By flying wires.

What is the object of a tail plane?—It is fitted for stabling purposes.

What is propeller torque?—When the propeller is loose on its boss and rattles.

How does a machine get into a glide?—By gravity acting through the propeller boss.

How is rotary motion obtained in a rotary engine?—By means of two eccentric circles.

What is the construction of the crankcase of a mono?—It is made of clamped iron filings.

What are the chief points of a R.A.F. engine?—It has crinkly cylinders.

How would you find the direction of the wind?—By holding out my handkerchief.

You lose your way over the enemy lines. How would you find your way back?—I would come down and wait for someone to approach. I would then talk to him in English, and if he answered in German, I would turn round and fly back in the opposite direction.

What is the right bank of a river?—That bank on your right when you are speaking from the mouth of the river.

What are iso-bars?—Hot air rises from the ground, and where it meets cold air coming down from the sky, it freezes and forms iso-bars.

What are the chief duties of an Equipment Officer?—He acts as adviser to his C.O., looks after stores, etc., and sees that all rubber articles are wrapped in French chalk.

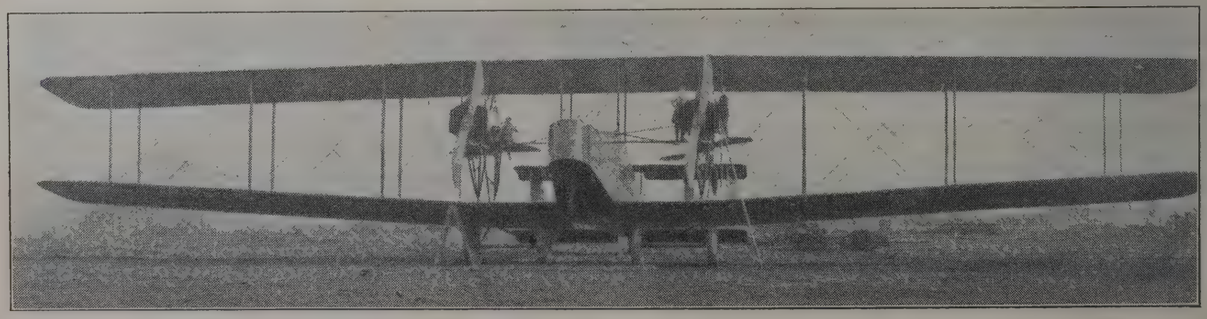
THE REPAIR OF MAGNETO PARTS.

It is not generally known that the vulcanite parts of magnetos (slip rings, distributors, etc.) can be effectively repaired if broken, and that the results secured are so satisfactory that repairs of this nature for aeroplane and other important work were carried out during the war with the full approval of the Government inspectors.

Messrs. Harvey Frost and Co., Ltd., who are responsible for this innovation, expect a large demand as soon as it is realised by motorists and the motor trade that valuable magneto parts, sometimes irreplaceable, need no longer be scrapped when broken, but that they can be repaired efficiently at trifling cost. They have opened, therefore, a special department to deal with this business, and they now invite anyone who may have broken vulcanite magneto parts on their hands to send them to 148-150, Great Portland Street, W.1.

A BELGIAN DECORATION.

The King of the Belgians has conferred the title of Commandeur de l'Ordre de Leopold II upon Sir Herbert Austin, managing director of the Austin Motor Co., Ltd., in recognition of "constant and generous help given to this country in the course of the war."



Front View of the Type V/1500 four-engined Handley Page Biplane described on page 616.

PATENTS INDEX

The subjoined list of recent inventions has been specially compiled by THE AEROPLANE from the current Official Patents Records :—

PATENTS APPLICATIONS.

Cummuskey, G. Device for locking steering gear and switching-off electric current from magnetos of motor-cars, boats, aeroplanes, etc. No. 14731. June 11th.
Dupigny, L. E. Toy aeroplane. No. 14646. June 10th.
Gosport Aircraft Co. Aerial machines. No. 14897. June 12th.
Houlden, H. W. Motive-power vehicles, ships and aircraft. No. 14727. June 11th.
Lyons, L. A. Aeroplanes. No. 14881. June 12th.
Macdonald K. Turbine for aeroplane and airship propulsion. No. 14628. June 10th.
Morris, F. Devices for automatically controlling aircraft. No. 14752. June 11th.
Palethorpe, J. Tail-skids for aeroplanes, etc. No. 14933. June 13th.
Potral, A. Flying-machines. No. 14815. June 12th.
Power, R. F. Aerial observation. No. 14767. June 11th.
Siddeley Deasy Motor Car Co. Balanced rudders, flaps, etc., of aircraft. No. 15029. June 14th.
Siddeley Deasy Motor Car Co. Fittings for metal framework of aeroplanes, etc. No. 15030. June 14th.
Siddeley Deasy Motor Car Co. Control mechanism of balancing flaps, etc., of aircraft. No. 15031. June 14th.
Supermarine Aviation Works. Flying-boats, etc. No. 14681. June 10th.
Tebaldi, A. Aeroplanes. No. 14687. June 10th.
Worsley, L. S. Undercarriage and landing device for aircraft. No. 14826. June 12th.

COMPLETE SPECIFICATIONS ACCEPTED, PRINTS OF WHICH CAN BE OBTAINED ON AND AFTER JULY 3RD, 1919.

127620. May 1st, 1917. Lanchester, F. W. Mechanism for receiving and launching aeroplanes at sea
127627. May 2nd, 1917. Lang Propeller, Ltd., and Mills, G. Construction of aerial propellers.
127628. May 3rd, 1917. Wolseley Motors, Ltd., and Remington, A. A. Internal-combustion engines (particularly aircraft engines) which are required to work under considerable variations of air pressure.
127633. May 5th, 1917. Aeronautical Instrument Co. and Brewer, G. Ripping panels for balloons and other aerostats.
127637. May 7th, 1917. Aeronautical Instrument Co. and Brewer, G Ripping panels for balloons and other aerostats.
127643. Jan. 27th, 1917. Birkigt, M. Combined gun and engine for aerial machines.
127644. Feb. 12th, 1917. Birkigt, M. Means for coupling internal-combustion engines.
127648. May 10th, 1917. Dawson, Sir A. T., and Buckham, Sir G. T. Aircraft gun mountings.
127658. May 15th, 1917. Roe, A. V. Device for anchoring bracing cable and the like.
127665. May 17th, 1917. Tarrant, W. G. Construction of girders, beams, struts, and the like for aircraft and other purposes.
127667. July 22nd, 1916. Soc. dite "Spad." Control of aerial machines.
127671. June 26th, 1916. Bleriot, L. Joints particularly for aerial machines.
127673. May 22nd, 1917. Sopwith Aviation Co. and Cato, H. E. Tool for extracting the fixing bolts of the propellers of aeroplanes and other aircraft.
127676. May 23rd, 1917. Armstrong Whitworth and Co., Sir W. G., and Allan, A. Hydraulic transmission apparatus.
127684. March 2nd, 1918. Woyevodsky, N. Aircraft.
127691. May 1st, 1918. Bowden Wire, Ltd., and Sentinella, A. E. Bowden Wire Mechanism.
127695. May 4th, 1918. Patent Corporation and Thompson, W. P. Flying-machines.

PATENTS APPLICATIONS.

127703. May 31st, 1918. Robins, T. H., and Thompson, G. H. Device for indicating the angular position of an aeroplane or like machine with respect to the horizontal.
127710. May 31st, 1918. Mooney, D. J. Method of or apparatus for building aeroplane wings.
127711. May 31st, 1918. Mooney, D. J., Brown, E. E., and Westcombe, A. C. Aeroplane wings having metal frames.
127743. June 18th, 1918. Rudge-Whitworth, Ltd., Pugh, J. V., Holroyd, V. A., and Nelson, W. H. Fairings or streamlinings for aircraft.
127748. June 20th, 1918. Hobbs, E. Sighting apparatus for dropping bombs from aircraft.
Aguirre, A. Means for automatically controlling steering mechanism of marine or airships. No. 15279. June 18th.
Austin, G. B. H. Aeroplanes. No. 15319. June 18th.
Blakoe, R. Friction driving gear for motor vehicles, boats and aircraft. No. 15517. June 20th.
Brown, E. E. Metal framework for aircraft. No. 15553. June 21st.
Duplan, A. E. Machines to travel on land or in air. No. 15239. June 17th.
Foster, G. H. Aeroanutical apparatus. No. 15220. June 17th.
Gangler, J. B. E. Aeroplane construction. No. 15478. June 19th.
Gath, J. H. Indicator for lateral shifting of aircraft. No. 15370. June 10th.
Gath, J. H. Indicator for lateral shifting of aircraft. No. 15634. June 21st.
Holmes, W. Aeroplane. No. 15158. June 17th.
Irving Airchute Co. Safety parachute pack device. No. 15473. June 19th.
Jubey, H. Instrument for measuring divergence of aircraft from horizontal. No. 15627. June 21st.
Mackworth, J. D. Ballonet diaphragm systems for balloons. No. 15435. June 19th.
Marriott, R. H. Course-indicating means for water, land, or aircraft. No. 15607. June 20th.
Moore, H. R. Rivers-. Method for navigating aircraft. No. 15409. June 19th.
Reid, G. H. Apparatus for indicating position of controls on aircraft and operating same. No. 15306. June 18th.
Rumbelow, J. J. Level indicator for aeroplanes. No. 15545. June 20th.
Schneider et Cie. Fuse for aviation bombs. No. 15582. June 20th.
Stafford, F. Airships, etc. No. 15493. June 20th.
U.S. Industrial Alcohol Co. Aeroplane motor fuel. No. 15124. June 16th.
U.S. Industrial Alcohol Co. Aeroplane motor fuel. No. 15125. June 16th.
U.S. Industrial Alcohol Co. Aeroplane motor fuel. No. 15126. June 16th.
Vanattenhoven, G. Aerial transport device. No. 15436. June 10th.

COMPLETE SPECIFICATIONS ACCEPTED, PRINTS OF WHICH CAN BE OBTAINED ON AND AFTER JULY 10TH, 1919.

127841. May 26th, 1917. Robinson, C. J. Machines for shaping propeller blades and the like.
127842. May 26th, 1917. Lott, R. E. L. Means for supporting fuel tanks on aeroplanes and airships.
127844. May 26th, 1917. Tarrent, F. G. Construction of and method of joining together girders, beams, struts, and other frame members of airships.
127847. May 29th, 1917. Sopwith Aviation Co. and Hawker, H. G. Cowls for engines of aeroplanes.
127857. June 2nd, 1917. Thomas, G. H., and Havilland, G. de. Radiators on aeroplanes.
127858. June 4th, 1917. Sopwith Aviation Co. and Sigrist, F. Struts, spars, and the like used in aircraft construction.
127862. June 5th, 1917. Flower, S. A. Airships.
127866. June 6th, 1917. Sage and Co., F., and Turnbull, W. R. Floats for hydro-aeroplanes and the like.
127867. June 8th, 1917. Brotherhood, Ltd., P., Bryant, C. W. and Jones, G. F. Aero engines.
127868. June 8th, 1917. Brotherhood, Ltd., P., Bryant, C. W. and Jones, G. F. Aero engines.
127874. June 9th, 1917. Waring and Gillow, and Richmond, W. H. Spars, struts, or like members of aircraft, and the like.
127877. June 11th, 1917. Taylor, A., and Gray, P. W. Optical sighting-devices for aircraft and the like.
127881. June 12th, 1917. Calthrop, E. R. Parachutes
127882. June 13th, 1917. Page, F. H. Rapidly-releasable fastening devices.
127884. June 13th, 1917. Western Electric Co. Telephone apparatus particularly for use on aeroplanes.
127898. June 20th, 1917. Joseph, G. F., Portholme Aerodrome and Pape, F. Wings for aeroplane flying-machines.
127904. June 21st, 1917. Vickers, Ltd., and Duncan, T. S. Landing devices of aeroplanes.
127905. June 21st, 1917. Anderson, D. Aeroplanes, hydroplanes, seaplanes, and like craft.
127910. June 23rd, 1917. Aeronautical Instrument Co. and Brewer, G. Balloons.
127911. June 23rd, 1917. Levland Motors, Ltd., and Thomas, J. G. P. Internal-combustion engines especially for use on aircraft.
127917. August 27th, 1917. Danielson, O. A. Indicating-devices for aeroplanes and other aerial machines.
127943. June 3rd, 1918. Mooney, D. J. Construction of fuselages and the like for aviation.
127944. June 3rd, 1918. Innes, J. Hangars and like buildings.
127989. June 12th, 1918. Kent, W. G., and Hunt, N. H. Aircraft instruments for sighting terrestrial objects.
128040. July 11th, 1918. Taplin, T. J., and Taplin, T. J. Stabilisers for aeroplanes.
128076. Sept. 3rd, 1918. Mooney, D. J. Metallic frame-members for aircraft.
121459. Dec. 12th, 1917. Caretta, E. Girders.
124709. March 25th, 1918. Caretta, E. Girders.
128131. Dec. 24th, 1918. Brown, E. E., and Mooney, D. J. Metal construction for aircraft.



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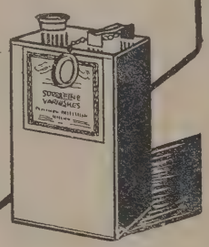
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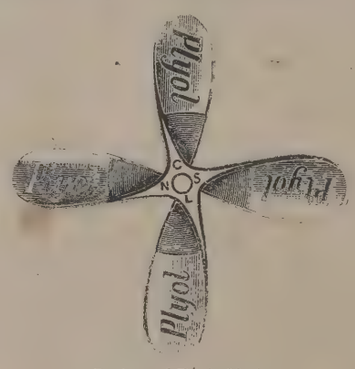
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COMMERCIAL AERONAUTICS & CIVIL AERIAL TRANSPORT

CO-OPERATIVE PROPAGANDA. (COMPETITION FLYING.)

By "MEDWAY."

When dealing in my last article with the conduct of propaganda by individual firms, I hinted at my own opinion that the bulk of the work towards the development of commercial aeronautics throughout the world must be the result of co-operative rather than individual action.

The most obvious form of co-operative propaganda is to be found in races, trials, and other competitions. All these are certainly worth doing, provided that they are done well. We must have no nonsensical official interference calculated to give the world the impression that the machines turned out in this country are slow and feeble.

Up to a point races will serve our turn, because there are many forms of commercial aeronautics in connection with which speed is the first and most valuable factor. This applies to mail services, express passenger services, and attempts to create a rapid system of communications where cables do not exist or are inefficient or inadequate. Speed is not, however, the beginning and end of all things.

Endurance Tests.

I am convinced that the future depends in an even greater measure upon reliability, economy, and weight-carrying capacity. To prove these qualities we want trials more on the lines of endurance tests. To take an analogy from the Motor Industry, the private car benefited very much from the racing in the Isle of Man and on the Brooklands track. The best thing that was ever done for the commercial motor vehicle was the Royal Automobile Club's five-week trial, held in 1907. On each day of the trial the vehicles covered only a moderate distance at a moderate speed. Each day they moved from one centre to another, with the exception of an occasional day's rest at some large centre, where a sort of extemporary exhibition was held. The consumption of fuel, oil, and so on was very carefully noted and checked by observers. At the end of the trial all the machines were thoroughly inspected and examined for wear and depreciation.

I am convinced that it would be well worth the while of the British Aircraft Industry to work up an event on similar lines, covering anything from three to six hundred miles a day, and holding little exhibitions at a number of important points. The trials would result in some very useful figures bearing upon operating costs, and would give a good idea of the degree of reliability at present secured.

Experimental Services.

Last week I suggested that individual propaganda should take the form of the establishment of experimental services in various parts of the world. It would be better still if the Industry as a whole could co-operate for the establishment of, say, forty or fifty such services. Machines of a variety of British makes would be used. The central organisation would supervise the accounts of every service. Tremendously valuable data would be collected, as a consequence of which anyone contemplating the establishment of a service of any kind would be able to come to the central body representing the British Industry and to get some really reliable guide as to probable operating costs, based on experience and not on guesswork. The fee charged for such advice would be a heavy one, but the bulk or the whole of it would be returnable if the service were subsequently established and the orders for machines were placed solely with British firms.

The central organisation would also receive Press matter and photographs from all of its affiliated services and would distribute these, not so much for the glorification of individual firms, whose names would only figure incidentally, but for the purpose of rubbing into the world the supremacy of the British Industry as a whole.

In the first instance this last form of propaganda would be an expensive matter. Later on, as I have already suggested, a fair proportion of the services established would become profitable, and these would be floated as public companies or sold as going concerns. In this way I think that the bulk of the initial losses would be recovered. At any rate the risk would be far less and the possible loss far smaller if we took an average of a large number of services than it would be to the individual firm necessarily experimenting only in a few quarters.

It will be noticed that, in connection with this last scheme, I have referred only to the use of British aircraft. In such a scheme we should not want to advertise our competitors' goods, or to create goodwill for them by getting them known locally in various promising districts.

[One fears that a co-operative effort of this kind would not appeal to the individualistic Englishman.—Ed.]

The Policy of the Open Door.

On this whole question of whether we should limit propagandist competitions to British vehicles, whether we should exclude German machines, or whether we should open the door to the whole world, a very sharp division of opinion is possible. I do not altogether share what I regard as the super-cosmopolitan attitude of C. G. G. I admit that if you want to prove your ability to knock out Beckett in five rounds it is perfectly useless to advertise the fact that you have punched your small brother's head. Similarly, the fact that one British machine can beat another in a race or durability test does not prove that either of them can beat the foreigner, and this is really what we ultimately have to demonstrate. I think that in all speed tests the foreign machine, whatever its country of origin, should be allowed free rights of participation. Even if other countries do not follow our lead in this matter, the policy of the open door would be of advantage to us.

When it comes to any competition, part of the purpose of which is to secure reliable data of operating costs and so on, the case is different. One of our prime needs of the moment is to be able to show the prospective investor what it will cost to do certain work by air. We are very short of reliable data. So also are our foreign competitors. If we can provide such data in respect of our own machines, we are one up. Supposing that the foreigner has an even better proposition to offer, but

cannot put that proposition in convincing form because he has no accepted figures to show, it is not our business to provide him with them. I should therefore limit him to participation in races, stunts, and performances of a kind calculated to encourage the exceptional machine evolved for that purpose rather than the normal machine designed purely for commerce.

No Stupid Traditions.

Reverting to the question of experimental services, I recognise the difficulties in the way of co-operative action. I think, however, that these ought to be overcome by a young and progressive Industry with no stupid traditions in its way. In that case it would be far better for the Industry as a whole to organise these experimental services than for single firms to do so. Whatever may be the real ultimate intention, the manufacturer who starts to operate his products personally for profit lays himself open to the accusation of competing with his own customers on preferential terms, inasmuch as he can get his stuff at cost price. This encourages the customer to go elsewhere or to start manufacturing on his own account.

The existing manufacturer may reiterate the assurance that he was merely experimenting and had no intention of remaining permanently in the business, but it is very doubtful whether he would be believed. On the other hand, if the Industry as a whole worked out a scheme and publicly stated its intentions from the first, it is not likely that anyone would suspect it of ulterior motives. Moreover, the accumulated data, which would in this way be made available at one single centre, would be of immense value as bearing upon the prospectuses of independent operating concerns. Promoters of such concerns, if they really honestly believed in them themselves, would be quite willing to go to the central body to get a certificate to the effect that their estimates of operating costs were in accordance with the figures in the possession of that body. This would give much increased public confidence, and therefore would encourage the investment of money in aerial enterprises.

THE COPENHAGEN AERO-SHOW.

By ERIK HILDESHEIM (Copenhagen).

Under Peace conditions the second Scandinavian aero exhibition chiefly stimulated interest for coming events, the shows of the Danish Army and Navy being most attractive, the stand of the former including a Vickers 100 h.p. Gnome monosoupape pusher, an H. tractor of own model with 140 h.p. Argus, a Maurice Farman longhorn school biplane, and a 30 h.p. B. and S. monoplane, beside home-made 70 h.p. Renault motors.

The Navy exhibited their first aeroplane, a 50 h.p. Farman box-kite, a school flying boat with 100 h.p. home-made Curtiss motor, a 160 h.p. twin-float seaplane, and a 200 h.p. flying boat of the Danish type. The Swedish Army Works showed a biplane of German outlines with a 260 h.p. Mercédès, the stand of Thulin containing a single-seater and a two-seater scout and a 160 h.p. tractor.

Owing to the many service accidents the advisory committee, appointed by the Parliament, forbade the army all flying with the worn-out monosoupapes of the Vickers, as well as the Argus motors, with their vibrating camshafts, of the H tractors, and the Thulin engines of the scouts. Thus only the 1912 M. Farman model remained, on which Sergeant Bjarkow covered the longest distance in to and fro flying by Copenhagen, in the 12 hours allowed in the "Star Flying" called so for its demonstrating character of ending, from all corners of the Scandinavian countries, in Copenhagen, to arouse interest in the show.

The Danish naval pilots were not followed by luck, Lieut. Gylling on a flying boat being prevented by rain and mist from carrying out his full course between the extreme points of Denmark, and Lieut. Thiele having the screw of his tractor seaplane damaged by the rough sea at an intermediate landing which blew then off in the continued flight and smashed one float.

The Swedish competitors were prevented from completing by meteorological conditions, and thus the Norwegian partakers showed off best, being even to the credit of the British aircraft trade, as the two naval pilots, Lieuts. Lützow-Holm and Riiser-Lassen flew 130 h.p. Clerget Sopwith Baby seaplanes from the naval air station at Horten by Christiania to Copenhagen with one landing at Gothenburg.

Lieut. Ibsen of the army, a grandson of the two well-known Norwegian authors, Henrik Ibsen and Björnstjerne Björnson, on the first army-built tractor biplane with a R.A.F. motor put up a fine performance from the army Christiania aerodrome at Lillestrom, in spite of bad weather conditions.

As these three Norwegian pilots gave an exhibition of fancy flying over the Danish capital, this performance impressed too well of the training that the two naval officers had undergone at an English war flying school.

A passenger service was to have been run during the exhibition between Copenhagen and the Swedish city Malmö, but the Nielsen and Winther seaplane was smashed after forced landing in first two flights, and the Thulin seaplane was stopped by the Swedish police, till it had passed a technical examination, and carried then on the last days out a number of flights.

The first foreign pilot to come attracted by the show, was the German Sablatnig, who landed with two passengers at Copenhagen, after long efforts to be allowed to continue his service from Berlin to the last German station, Warnemünde on to Copenhagen. He flew his own type, the model N for night flying, with 230-h.p. Benz motor, and the front cockpit enclosed with Cellon plates to form a narrow cabin for three passengers.

Two more Sablatnig biplanes came later, one piloted by Capt.-Lieut. Berchtold, and were sold to a new Danish company named Airexpress, formed chiefly for joyriding, and said to have ordered eight more Sablatnig aircraft, two of which are to have sleeping accommodation in lying position for two passengers.

Next came a number of L.V.G. biplanes to a dairy-exporter to Germany, one of which, after an exhibition tour, was sold to a provincial haulage contractor, while the other ones have been demonstrated to the army, their sale or use for a flying school being negotiated.

A young war-profiteerer imported sundry Rumpler and other type slough relics from the German Adlershof aircraft churchyard and after superficial reviving sold a number of them, but the first customer, a young sportsman met, a few days after taking his ticket, with a fatal accident, both he and his passenger, being burned to death on an overland flight. The papers therefore ask for restrictions on the imports, but as the flying regulations have not been issued so far, the air bill monopolising all air traffic to the Government, which will give concession to influential companies in return for their big financial outlays, has not been passed yet, the police do not see fit to forbid hurried efforts, in most cases associated with German enterprise, otherwise than declining to grant passports for foreign aviators, and limiting the duration of those pilots, staying in the country already.

A Sleswig aviator piloted the other day a British Red Cross officer from Berlin to Copenhagen on an Albatros, and afterwards carried out an altitude flight to 20,000 ft. with two passengers.

The former C.O. of the Richthofen fighting squadron, Lieut. Göring, flew over a Fokker D VII scout with B.M.W. motor, and gave a demonstration to the military authorities, afterwards going out on exhibitions, but when a big meeting was to have been organised, which was patronised by the King and a number of members of the Royal Family by their presence, his motor gave troubles, and as the army pilots were forbidden to partake, and other expected partakers turned up neither, the show was very poor.

The best performance was by the Danish pilot Reichert, who has returned from Johannisthal with 3 Albatros biplanes, of which he put during the war 1,100 through their delivery tests, experiencing later a narrow escape with his two passengers, when one of his biplanes caught fire and was burned.

To have appeared was the Austrian pilot Sparmann, of pre-war fame as a Lohner pilot, and now chief design pilot to the Phönix Works, the largest Austrian aircraft manufacturing company and successors to the Albatros firm of Austria, who, flying a scout, turned up later in the company of Capt. Perelli, who flew a two-seater in 8 hours from Vienna to Copenhagen with two stops at the Szeco frontier and in Berlin. After demonstrating their aircraft to the advisory committee and others they continued their flight to Stockholm and later to Christiania. It is said that Sparmann has been engaged as designer and school instructor by the Thulin works that are to turn out Phönix aeroplanes.

Dutch pilots turned up too as guests at the Copenhagen show. First arrived a two-seater Friedrichshafen seaplane with naval officers, and next an Argus-engined Rumpler with officer pilots. Another aeroplane of same make and starting at the same time, met with a fatal accident to the two officers manning it, in Sleswig.



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A BREACH OF AGREEMENT.

In an official document entitled "Directions Issued by the Secretary of State for Air, under para. 3 of the Air Navigation Regulations, 1919, dated April 30th, 1919," which bears what purports to be a reproduction of the signature of the Right Hon. Winston Spencer Churchill, there is laid down a scale of the charges which will be made to the owners of civil aircraft for accommodation and for landing fees at R.A.F. aerodromes.

These charges are based upon the floor space occupied by the machine. This is assessed on the product of overall span and overall length, and machines are classified therein as:—

Small type, less than 900 sq. ft.
Medium type, not exceeding 1,800 sq. ft.
Large type, over 1,800 sq. ft.

It appears, however, that the Civil Aviation officials at official aerodromes have received entirely different instructions, and that machines are to be classed as single-seaters, two-seaters, and large aeroplanes.

Thus, anyone flying a four-seater machine which comes within the published definition of a small machine must be prepared to be charged at the rate laid down for the large type if he is so ill advised as to land at a Government aerodrome.

It is not quite clear whether this performance on the part of the authorities is to be classed as foolishness or roguery.

It is a clear case of breach of agreement, and it would be interesting to learn what would be the views of the Air Ministry as to the action of the proprietor of a licensed private aerodrome who attempted to interpret his agreement as to charges for R.A.F. aeroplanes which landed upon his ground in a similar manner.

KILLING CIVIL AVIATION.

Though one knows, personally, that the operations of the Department of Civil Aviation are just pure natural foolishness, and are not inspired by any malicious intent, one cannot blame those who are less in touch with affairs for believing that it is the policy of the Department of Civil Aviation to kill all small firms who have the impudence to try and make a living out of aviation so that all civilian flying may pass into the hands of a few would-be monopolists who happen to be friends of the people in the Department. It has already been recorded, both editorially and in the advertisement columns of this paper, that the London and Provincial Aviation Co., Ltd., whose principal, Mr. Warren, is one of the pioneers of aviation in this country, have gone out of business, at any rate, until such time as Civil Aviation is controlled by people who know something about civility and aviation.

Considering all the good work that the firm has done during the war, it is a great pity that it should expire, or even suffer, from suspended animation, for nobody is better qualified than are Messrs. Warren and Smiles to turn out useful commercial aeroplanes at a reasonable price. One learns that they had actually in hand the designs for a five-seater touring machine with a 120 h.p. engine, which they intended to exhibit at the next Aero Show. This, however, will, of course, not be produced in view of the activities of the Civil Aviation Department.

Another small and enterprising firm which looks like being squeezed out of existence by the Department is the Cheltenham Aviation Co., Ltd., founded by Mr. Horace Wright and two other ex-R.A.F. officers who pooled their gratuities in the hopes of making a living out of the experience they gained in running aeroplanes during the war. It seems, however, that the mere war experience of practical aviators and engineers does not qualify them in the eyes of the stay-at-home officials of the Civil Aviation Department. The mere fact that these ex-R.A.F. officers were staking not only all they possessed in the way of cash but also were prepared to risk their lives in flying the machines in order to earn a living, does not seem to have weighed with the gentlemen of that institution which is becoming known as the "Fee-Snatching" Department.

Practically every other concern which has attempted to deal with the Department of Civil Aviation has nothing but complaints to make, and as this paper has already stated, it is quite time that the whole Department was overhauled from top to bottom.

THE AEROPLANE SITUATION IN THE U.S.A.

By G. W. Ketile.

From personal observation during a few weeks' visit to the United States, I am convinced that the Americans are thoroughly dissatisfied with their own progress in aeronautics. Whether in New York, Chicago, Philadelphia, Cleveland or Washington, I heard the same tale of woe.

The fact is their manufacturers came down very badly indeed over their war promises and supplies. The evidence is overwhelming; and though the average citizen says little he is very conscious of failure.

Here, the American believes in us. Doubting himself, he is convinced that the Britisher knows all about it. Being willing to trust us with his personal safety, he expects more inspiration and better supplies from England than from his own country. Our old reputation for thoroughness and conscientious workmanship, for initiative and skill, is doing us good service to-day.

There can be no question, again, that America wants aeroplanes—for commercial purposes and for pleasure. Remembering that in Cleveland, for example, one family in every five owns a motor-car, we may safely assume that the same spirit of restless enterprise—ever seeking after some new thing—will rapidly create the demand. For that continent, with her vast distances, is comparatively speaking, badly supplied with means of transit.

Her average roads do not reach at all a high standard of efficiency; there is very little railway development outside the great traffic systems. Yet her desires and her needs for the intercourse which prompts travel are rather exceptionally urgent.

Speed, too, is very imperative, and must be maintained over a number of miles scarcely contemplated in our little island. And gasolene is cheap. Wherefore, more and more, day by day, America is looking to the air.

Information as to the possibility of aeronautics is badly needed to-day in the States. Who is to build and establish her factories? Who is to supervise the work?

Since we English are leading in this matter, what have we really learnt from our five years' experience at war? Are we already applying that experience to peace purposes?

It is true that the whole question of air navigation laws, etc., though pressing, may not be decided for some months? But our cousins over the water are not likely to wait for the final result of deliberations affecting the interests of the whole world. They want practical programmes here and now—and they will find them, somewhere!



Three-quarter Front View of the "Westland Limousine" described on pages 597-598.

CIVIL AERIAL TRANSPORT NOTES.

GREAT BRITAIN.

Attention is drawn by the Air Ministry to the Secretary of State's order published in the "London Gazette" of Aug. 1st, which makes a small alteration in the method of marking aircraft.

Under the Regulations published on April 30th the marks of civil aircraft were to be underlined with a black line; the International Air Convention reserves this black line for one particular type of aircraft, i.e., the private or tourist aircraft as opposed to the commercial or State machines. The order published in the "London Gazette" of Aug. 8th thus brings the British Regulations into line with the International Convention in this respect.

The Big Purchase of Avros.

Mr. S. W. Copley, the managing director of Copley's Bank, 1, Queen Victoria Street, who purchased the 280 new Avro machines from the Aircraft Disposal Department, has also bought several other machines.

At present the project is in the air, but an aerodrome has been obtained near London. The machines, or some of them, will be used for passenger and cargo-carrying at a fixed and moderate mileage scale of payment.

An Aerial Police Force.

Major-Gen. the Right Hon. J. E. B. Seely, C.B., C.M.G., D.S.O., M.P., the Under Secretary of State for Air, has stated that it is not considered that the expense of maintaining an Air Police Force would be justified at present.

Free Flights.

The "Daily News" announce that they will give on Saturday, Aug. 16th, and on Monday, Aug. 18th, a total of 226 free flights. In addition to these, 20 free flights are announced for Nottingham on Aug. 13th.

Flights at the following places are to be given on Aug. 16th: Cricklewood, 100; Hastings and Southend, 20 each; Swansea, 16; Great Yarmouth and Eastbourne, 15 each; Sandown plus Ventnor and Torquay plus Paignton, 10 each.

On Aug. 18th seaplane flights will be given at Brighton from the end of the West Pier.

A Tax Collector Missing.

An Avro pilot recently conveyed passengers to a recognised Government aerodrome in Lancashire. He landed, and as no one came out to assist him or paid any attention to him he departed again without paying his 5s. landing fee.

Major McMinnies was under the impression that the charge of 5s. is made in return for services of taxying in with mechanics' assistance, etc., but when there is no one about and the machine only alights for a few moments this toll seems rather excessive.

Blackpool.

The five-seater Avros signified their arrival at Blackpool by setting up new records for the week ending Aug. 9th, nearly 500 passengers being flown in one day by three pilots. Thousands throng the beach all day long waiting for the day when flights will be 5s. each.

Brighton.

Eighty-five flights were made by Avro machines for the week ending Aug. 9th, and 212 passengers were taken up.

Cambridge.

The Cambridge School of Flying had a record day on Bank Holiday, Aug. 4th. Numbers of people turned up at the Hardwick Aerodrome to watch the flying, and many were taken up.

Lieut. Ortweiler piloted the only flyable Avro the whole day, and did many stunts, which the passengers enjoyed. In the afternoon, another pilot made a very short trip on one of the Caudron machines.

Conway.

It is hoped that when the Air Ministry's licence for the Morfa Ground, Conway, is granted, a special service will be inaugurated between Rhyl and Conway. The Morfa is an excellent centre for North Wales, Llandudno, Conway, and Colwyn Bay being within a few miles of the landing-ground.

Cowes.

Colonel Wingfield, a well-known member of the Royal Yacht Squadron, with three friends, flew from Cowes to Portsmouth on August 5th, in a Supermarine flying boat to witness the departure of the Prince of Wales to Canada.

A Supermarine flying boat attended the Cowes Regatta each day. Members of the R.Y.S. and other clubs were taken up and followed the yacht racing from the air.

Great Yarmouth.

Free flights were given by the "Daily Sketch," the "Illustrated Sunday Herald," and the "Evening Standard" at Burgh Castle on Aug. 3rd. Further flights were arranged to be given on Aug. 7th and 10th.

Hull.

Proposals for a new aerodrome at Hull have been discussed on the spot by a committee of the Hull Corporation and Lieut.-Col. Beatty of the Air Ministry. Lieut.-Col. Beatty stated the Scandinavian and Dutch traffic would probably come to Hull.

Isle of Man.

Capt. Pixton did very well for the week ending Aug. 9th in delivering his 3,000 copies of the "Daily News" daily to Douglas. The weather was not always kind, as on occasions he had to battle with 40 m.p.h. winds, but he got through to time despite them and a certain amount of mist. A standard Avro seaplane is used, but with a special compartment for papers instead of passengers.

Avros are reported to be as busy as ever at Douglas, "Round the Island" flights being the latest idea. Lieut. Moxon has an ideal spot for pegging his machines down as they are situated outside the Castle Mona Hotel, just off the promenade, where other but less up-to-date means of transport, such as cars and cabs, are also parked!

London.

Hendon.—Capt. Gathergood, with two passengers, in an Airco D.H.4.a machine, flew from Edinburgh to London on Aug. 5th. The flying time was 3¼ hours, and an average speed of 120 m.p.h. was made. The fastest express trains take over nine hours to do this journey.

Hounslow.—During the week ending Aug. 9th, 347 passengers were carried in Avro machines.

A five-seater Avro machine with Mr. H. R. Hastings (late R.A.F.) as pilot, and carrying two passengers and a mechanic, set out from Hounslow at about 5.30 p.m. on August 6th to fly to Camberley. The pilot was preparing to land near the Royal Military College when the machine dropped thirty feet onto the ground and crashed.

Mr. H. R. Hastings was killed. Major Phillips was seriously injured, and taken to the Royal Cambridge Hospital. The other passenger and the mechanic were uninjured.

Mr. Hastings was a highly skilled pilot who had done a great deal of flying. He was for some time instructing in flying in the R.A.F. at the Shoreham aerodrome. A short while ago he took Major Phillips on a flying trip from Hounslow to Swanage.

It is claimed that A. V. Roe and Co. have carried over 20,000 passengers in short and long distance flights, and that this was the first accident experienced in connection with passenger flights.

Margate.

Nearly 300 passengers were taken up in Avros at the Manston aerodrome during the week ending Aug. 9th. Among the passengers was the well-known jockey Duller. Miss Carrie Tubb flew to Herne Bay for a special engagement. A number of people arranged to fly to the Folkestone Races this week

Nottingham.

On Friday, Aug. 8th, Major McMinnies flew from Southport to Nottingham to see Sir Jesse Boot. Landing in a small field next to the Boots recreation ground, he transacted his business and was back at Southport again in thee same time that it would have taken to reach Nottingham by train. It is probable that a Boots flying week and aerial gymkhana and fête will take place at Nottingham during September.

Preston.

Preston Aerodrome will be opened very shortly for Avro flying, as the Air Ministry has granted a licence for it.

Rhyl.

Three Avro pilots have been kept busy during the week ending Aug. 9th, the Rhyl Council leading the way in flying, and rendering every possible assistance to the scheme.

St. Andrews, Fife.

The first day, Aug. 6th, of the four days' passenger flights in two Avro machines was a great success. The first passengers to be taken up from the sands were the Provost and the Town Clerk. The pilots were Capt. Simpson and Lieut. Doren.

Southport.

A dual-control machine for women pupils is expected shortly. The machine is a standard 100 h.p. mono Avro, and pupils will be taught by means of a telephone.

Last Saturday, Aug. 9th, flying continued till 10 p.m., and even when the pilots stopped in the moonlight there were a few more couples waiting to book.

Southsea.

Aeroplane flights over Southsea Common have not been very satisfactory financially. The Portsmouth Corporation Parks Committee have been advised to stop the flights as soon as possible.

Swansea.

During the holiday week crowds flocked to the Avro Aerodrome from extensive factory and mining districts of South Wales to get their first experience of flying. A large force of police was necessary to keep the waiting crowds off the aerodrome.

Aeroplanes were in great demand to carry passengers to the beautiful Gower coast for fishing or bathing. The local Commandant of the Boy Scouts flew for a parade to the sands of Port Eynon.

On Friday, Aug. 8th, in response to a letter from Llanwrtydd Wells, Capt. Dalton flew from Swansea to the grounds of the Abernant Lake Hotel. As a result of his visit passenger flights will be given daily at Llanwrtydd Wells. Many flights from the Wells have already been booked by visitors at other neighbouring towns.

A daily service was arranged to start on Monday, Aug. 11th, for the Wells, leaving Swansea at 11 a.m., and returning at 7 p.m. This route passes over the fine scenery of the Black Mountains.

643 passengers have been carried since July 26th without any mishap.

WESTON-SUPER-MARE.

At this town 232 passengers have been taken up in an Avro five-seater and an Avro three-seater during the week ending Aug. 9th.

Free flights have been given by arrangement with the "Bristol Times and Echo" and the "Daily News."

There are now two aviation companies established at Weston-super-Mare. On Aug. 1st a company had secured an aerodrome in the vicinity of Brean Down, across the River Axe. This company will cater for Burnham and Bridgwater, as well as Weston.

The sands aerodrome has proved very popular, crowds flock to that end of the sea-front which was only sparsely populated before. Tents are pitched near the enclosure, and family parties camp out in approved Bohemian fashion.

WEYMOUTH.

A seaplane piloted by Captain Alan Storey, late R.A.F., with a woman passenger, fell into the sea near Weymouth owing to the breaking of the airscrew. The machine was proceeding to Bournemouth. Both pilot and passenger were rescued.

CANADA.

Capt. Ernest Hoy, D.F.C., flew a Curtiss machine from Vancouver to Calgary *via* Crow's Nest Pass on Aug. 8th in 16 hrs. 48 mins. The distance is 745 miles. This is the first flight across the Rockies.

BELGIAN CONGO

The Belgian Congo aerial service is to be started on Jan. 1st, 1920. The route will be over the whole Upper Congo River, from Kinshasa (terminus of the railway from Matadi) to the Katanga. Seaplanes of a French type (Levy-le-Pen) will be used.

They will carry express mail and express parcels, and will fly in connection with the arrival and sailing of the mail liners of the Antwerp Compagnie Belge Maritime du Congo.

A special series of postage stamps is to be issued for the letters, etc. It is not yet decided whether passengers will be carried. Photographs will also be taken to be used for the drawing up of the hydrographical map of the Congo river and of its tributaries.

A Commission, formed by Col. van Crombrughe, Major Paulis and Commandant Jaumotte, is investigating matters connected with the scheme in Belgium. A party, headed by Engineer Allard, is to leave by the next Antwerp boat to choose the spots on which the sheds will be erected. The first aeroplane flights in Central Africa were given in 1913 at Elizabethville by the Belgian pilot Lescarts.

DENMARK.

The Danish Ministry of War has leased the military aviation ground near Copenhagen to two pilots. They propose starting a flying school there with German machines. The full course will not cost more than 3,000 kronen.

FRANCE.

The following flights will be attempted shortly by pilots who are in training at Villacoublay: Paris-Constantinople, Major Vuillemin and Capt. Leune; Paris-Cairo, Lieut. Dagneux; Paris-Fez, Lieut. Bonzac and Lieut. Patamhon; Paris-Rome, Lieut. de Romanet.

The Arc de Triomphe was flown through by a French aviator at 7.30 a.m. on Aug. 7th. His name is Charles Godefroy, and he had only been demobilised two days before. On an ordinary Nieuport, with an 120 h.p. Le Rhône engine, he descended in a spiral over the Place de l'Etoile and got in a direct line with the entrance of the Arc. He passed through the Arc at 90 m.p.h. and continued on to the Concorde.

The actual height of the Arc de Triomphe is some 90 ft., and its width is only 43 ft. The span of the machine varies in the various accounts from 22 to 27 ft.

Navarre was going to perform this feat soon after he was killed.

An enterprising Paris firm took a cinematograph film of the flight through the arch. The Prefect of Police has forbidden its exhibition until further notice.

GERMANY.

A large German aeroplane, belonging to a German aerial company and hired by the Ukrainian Government, crashed in the Raudten Forest, in Upper Silesia, on Aug. 5th.

The pilot and all the passengers, including M. Vitovsky, a former Ukrainian Minister, were killed. The machine also carried a great deal of money and important documents.

The flight began at Breslau and was to have continued to Podolein.

A German Government wireless message reported that it was shot down by Polish frontier troops.

The machine is reported to have had a span of 43 metres, five motors of 260 h.p. each, and a load capacity of 4,500 kilogrammes.

The Deutsche Luft Reederei has been founded by the A. E. G. Company, syndicated with the Zeppelin works. It has the assistance of the Hamburg-America Line in all matters relating to traffic, and has been established for commercial aviation to the exclusion of stunt flying. In the first three months of its existence 916 flights have been made without an accident. The total distance of those flights would encircle the world nine times. The average journey Berlin to Weimar has been made in just over two hours. In one day 1,300 lbs. of mail were taken from the Leipzig Fair. The "D. L. R." possesses 70 small and 20 large aeroplanes.

Since the opening of the seaside resort service the "D. L. R." has transported 44 persons and 8 tons of mail.

Three large aeroplanes left Berlin on July 19th for Swinemunde, each carrying eight passengers for the week-end trip.

On the same date a Berlin family hired a large private machine and flew to Rugen.

During the races at Harburg the "D. L. R." ran an air service from July 17-30th to connect with the postal service Berlin-Braunschweig-Hannover-Gelsenkirchen-Rhineland. The Harburg line connected at Braunschweig.

The Berlin Luftschiffbau G. m. b. H. have announced, regarding the New York to Hamburg aerial line, that no result has been achieved, although negotiations have been started. The company anticipates a regular trans-Atlantic Air Service for the summer of next year.

"Weser Zeitung," of July 24th, announces that the aerial line Berlin-Hannover-Gelsenkirchen which had been stopped for some time owing to the lack of raw material has again been started.

To connect the service by motor with Essen-Duisburg-Dortmund, etc., the various towns have promised to subsidise it. This will mean a tax of 2 pfennig per head on the local population. In Dortmund, for instance, the assistance given amounts to 6,000 marks.

It is rumoured that a new type of airship has been constructed in Germany which will make its first flight on about Aug. 16th from Berlin to Friedrichshafen *via* München. It will carry mails and 20 passengers exclusive of crew.

It is said to have a speed of 120 m.p.h., and that it will cover the distance within seven hours. A regular service will be started over this route, which eventually will be extended to Switzerland.

GERMAN TRADE NEWS.

The Danish correspondent of THE AEROPLANE writes:—

The well-known German naval expert and contributor to the German paper, "Berliner Tageblatt," Captain Persius, has issued a pamphlet entitled "Tirpitz, the Gravedigger of the German Navy," in which he shows the poor results of the airships, claiming the unreliability of the Zeppelins and the Maybach motor as the chief reason.

Against these statements the Zeppelin Airship Building Co. and the Maybach Motor Works in Friedrichshafen put large advertisements in the German technical papers, quoting first his remarks that technical imperfection was the reason for stopping the employment of the airships, as their military achievements in the war were very small, as they were often exposed to the enemy weapons owing to lacking manœuvring capacities, many cases being due to engine breakdowns. It is, however, published as a fact that one single report of "L.11" saved the whole German fleet from destruticon.

In the parallel articles on modern national aircraft, run by the German journal "Flugsport," various news is gradually revealed. Thus it is reported that the Hannoverische Waggonfabrik started by building Rumpler and Aviatik two-seaters, and Halberstadt scouts under licence. The firm engaged the pioneer designer Dorner, whose monoplane with front motor and propeller drive aft crashed in the fatal accident to its chief exponent. They are producing now the various Hannoveraner products.

The Aviatik works took over the Grade plant at the Bork aerodrome and produced Staaken giant aircraft after the end of 1916. It appears that the front motor installation has soon been abolished, the Aviatik specimen having a power plant amounting to 1,500 h.p. in the two interplane engine nacelles made up with two front ones of 230 h.p. and two rear 12-cyl. ones of 500 h.p. each.

Horrible conditions are reported at the aircraft stores in Adlershof, where 6,000 workmen are paid £37,500 a week without doing anything, as 500 men would suffice. It is alleged that mostly everyone steals when leaving after 4 o'clock, foremost the safety guards, 400 of which were to have been dismissed last February, though it has not been done yet. The result of the Bolshevik workmen management since the revolution amounts to £1,100,000 loss against £8,750 income.

HOLLAND.

According to the "Times" of Aug. 7th:—

Sir John Alcock, K.B.E., D.S.C., is selling seats in his aeroplane for passenger flights at the Amsterdam Exhibition to the highest bidders. The money thus received will be given to the poor of Amsterdam.

ITALY.

A flight from Varese to Barcelona, a 560-mile coastal trip, was made a few days ago by Petty Officer Zanetti with Signor Buzlo, the technical manager of the firm, on a Macchi 3 seaplane with an I.F. 150 h.p. engine. The M.9, with passenger accommodation, as seen at Taliedo, will shortly be following her, as Messrs. Macchi are out to show their wares to the Neutrals with cash to spare and some fear of future wars.

Among the eye-openers was a Caproni trip from Milan to Turin and back with two pilots and 15 passengers, in 2 hours; stated to be a world's record. The weight of passengers is not stated.

To a Socialist M.P., who lamented the waste of money on aviation when half Italy has no roads and no railways the new Premier replied deploring the threat of a general strike then being held over the Government's head, and stating that all arrangements were ready for guaranteeing communications and the transport of passengers by air if the threat were carried out. In fact, a large wine firm in Turin is advertising that their next consignment of wine "will arrive from Rome by dirigible if other means of transport are not available."

It was also stated in Parliament recently that of the 100,000 men employed in aeronautical factories in November last, there now remain fewer than 27,000. The orders for material in connection with the Air Forces amounted to 8 milliards of lire at that date. Which explains why some folk regret the collapse of the Central Powers.

Col. Berliri-Zoppi is now at the head of Aeronautics here—Civilian side—whilst Gabriele D'Annunzio has accepted the post of High Councillor to the Department with, apparently, acting powers. Col. Berliri-Zoppi announces that the Government will hold a show of Italian aeroplanes and parts at Pekin to back up the Mission being sent there.

It appears that the great Italian Aero demonstration by the Levant Squadron at Constantinople was very effective. Several C.As., including a big triplane and a small fleet of S.V.As. delighted the Turk by giving cool, comfortable trips. Some of the big Allies were slightly jealous, on dit! Count Sforza is at the head of the Mission.—T. S. H.

NORWAY.

According to the "Morgenblad" of Aug. 5th, a British expedition will leave Tromso in the next few days for Spitsbergen. The preparations for the expedition are being made with great secrecy.

Independently of the expedition a British aviator will fly shortly from Tromso to Spitsbergen.

SOUTH AMERICA.

Lieut. Antonio Locatelli, the Italian pilot, has recrossed the Andes and reached Buenos Aires after a direct flight from Santiago de Chile.

SWEDEN.

The Copenhagen correspondent of the "Times" states that a seaplane approached the coast at Smygehuk, the southernmost point of Sweden, on Aug. 10th. It dropped two parcels, which were picked up by a German couple who lived in the neighbourhood.

Coastguards seeing the incident pursued the Germans without success, but they were arrested at a railway station, searched, and the parcels were found on them. The parcels contained jewellery and shares worth a great deal of money, which belonged to the ex-King of Saxony.

The attempt is said to have been arranged by the Prince von Wied (pre-war ruler of Albania), and according to one version he was himself on the seaplane.

Reuter states that the ex-King of Saxony's attorney denies the report that the Prince von Wied attempted to take the securities of the ex-King to Sweden by aeroplane.

It was noted in THE AEROPLANE on July 30th that Major C. H. R. Johnston and Captain K. Saunders, late R.A.F., had started passenger flying in Sweden. They are doing school, passenger and exhibition flying on two Avros and a D.H.6. The Swedish public are at present very ignorant as to the possibilities of aviation. Germany is making strong efforts to establish a strong foothold for their machines in the country. Owing to the wooded nature of the country and the absence of any really good fields, Sweden is only suitable for machines with very slow landing speeds.

At present there are only three aerodromes of any importance, namely, Hägerstalund, near Stockholm, where Major Johnston and Captain Saunders are, Malmslett, which is the headquarters of the Swedish Air Force, and a civilian aerodrome at Landskrona, belonging to the Thulin people. The climatic conditions are good for aviation. The visibility on an average day is 100 miles. Rain and fog rarely give trouble. The surrounding country is ideal for seaplane work, as at 3,000 feet one is never out of gliding distance of water.

The Danish correspondent of THE AEROPLANE writes:—

It is pleasing to record from here that so far the longest flight to the Danish capital has been carried out by a Dane, Lieut. Krause Jensen, on voluntary French service, who made on a Bréguet (300 h.p. Renault) a non-stop flight from Villacoublay to Copenhagen, though his first intention was to continue to Stockholm, whither he flew next. Continuing to Christiania he had engine breakdown, as he had forgotten to open the cock for lubrication. He then went back to Paris to fetch a new motor, and, on his return, found so many metal parts stolen that he was unable to continue.

The large extended Danish telegraph firm, Great Northern Cable Co., expressed fears of the competition with aeroplanes and wireless, when discussing future prospects at the general meeting this year.

U.S.A.

The Post Office Department inaugurated a continuous air mail service between New York and Chicago on July 1st. The route is divided into three stages, the intermediate stations being Bellefonte, Pa., and Cleveland, O.

The Cleveland-Chicago stage has been in operation since May 15th, but the organisation of the other two stages was delayed on account of the difficult ground that the route follows, particularly between Bellefonte and New York, where there are only few natural landing grounds. The total distance is about 750 miles.

Letters from New York to Chicago will reach their destination in from eight to nine hours with the new through-going air mail service. Mail will be delivered on the Pacific coast 24 hours earlier than it was.

Most of the machines used are rebuilt D.H.4a biplanes with Liberty engines. They have a capacity for 400 lbs of mail

The New York terminal of the air mail service has been transferred from Belmont Park to Newark, N.J. This arrangement was made to avoid the fog which hangs over Long Island early in the morning, and also in view of the better train connections with New York.

What is claimed by the "Aerial Age Weekly" of America to be the largest post-war order for aircraft has been placed with the Curtiss Aeroplane and Motor Corporation of Buffalo.

The order consists of 225 aeroplanes and 200 engines. Of the machines 150 are the Curtiss Oriole type land machines and 75 are Curtiss "Sea Gulls." The engines are all of one type—namely, the new Curtiss 150 h.p. model, whose fuel consumption is estimated at one-tenth cent. per mile.

On Aug. 9th Mr. C. W. Webster started on a tour of South America, his intention being to demonstrate American-built machines. He takes with him several well-known American pilots, and the machines include the Curtiss Oriole, Sea Gull, and Hornet. The latter is a two-seater fighter.

The United Aircraft Engineering Corporation of New York, through its London agents, the Canadian and General Trust, Ltd., is buying from the Minister of Munitions Aircraft Disposal Department, 700 aircraft engines and a large number of aeroplanes. These are for export to Canada and the United States.

A QUESTIONABLE CLAUSE.

Major C. G. Turner, in the "Observer" of Aug. 3rd, writes:

"Ballooning does not appear likely to revive to any extent this year. There are general complaints of official discouragement. The Regulations for pilot's certificates contain one very questionable clause: It is that each of the test trips shall be of a minimum of two hours' duration.

"That is all very well for most Continental countries, but in England, Denmark, Sweden, Norway, Japan, and other countries of small land area, it is difficult. In England, during the spells—weeks long sometimes—of westerly winds, balloonists starting from London often find themselves compelled to land after little more than an hour, for fear of drifting over the Thames Estuary or the North Sea. The records of 'free' ballooning during the war give over many long periods an average of 80 or 90 minutes per trip. On occasion balloons had to descend before completing the minimum of one hour.

"Why that minimum should now be made two hours is not clear. Quite a lot of balloon management can be learned in an hour, and there is only one landing—the most important matter—in any case."

THE LOWEST HEIGHT RECORD.

An evening news-sheet last week published an account of "a new height record" of 22,000 feet. This is believed to be the lowest height record made in recent times.

AIRCRAFT FINANCE

CURRENT TOPICS.

Very Little Activity.

These are the dog days in the Stock Exchange, but instead of the customary humdrum stagnation, there has been some activity of the nervous sort arising out of the Labour unsettlement. Everything has been off-colour, including Aircraft securities.

Aircraft Manufacturing Notes.

Some of the holders of Aircraft Manufacturing 7 per Cent short term Notes appear to be growing nervous. They are standing about 96. The nervousness is due to the uncertainty natural to the change over from war to peace conditions. However, it must not be overlooked that these Notes are redeemable by five equal annual drawings over a period commencing Oct. 1st, 1921, at a premium of 15 per cent., or earlier, at the company's option, at a similar premium, on six months' notice.

Handley Page Recovering.

There has been a further recovery in Handley Page Participating Preference shares to 17s. The issue price of these, it will be remembered, was 21s. The recent fall was overdone, and it would not be surprising if the recovery made further progress.

An Ambitious Project.

It appears that about 280 Avro machines, the balance of the Government stock, has been bought by one individual who intends to "inaugurate express services from a centre near London where the machines will be always ready to take passengers or merchandise to almost anywhere."

This sounds impressive in itself. In an interview the purchaser did not give anything away as to his intention beyond that he seems to believe that no one has yet tackled Commercial Aviation projects as they ought to be tackled. Appositely, the early days of motors were referred to, and, somehow, similar pitfalls are to be avoided in this new venture. One has heard things like this before. Anyhow, the greater the experience the more intense the knowledge, and that is all for the good of aviators commercially and financially.

Waring and Gillow and Aircraft.

Nothing further has developed in connection with Whiteheaus, but one is particularly interested in Waring and Gillow. Although actually a store business, Waring and Gillow interests have been largely connected with Aircraft construction. The accounts now published cover the operations of three years, and not a word is mentioned about Aircraft.

Presumably, the investments held in subsidiary companies, which have increased very considerably, owing to the exigencies of Government contracts, may have some bearing on the Aircraft ventures. These investments in subsidiaries appear as an asset for £822,319, which is the valuation of the directors.

The results failed to inspire enthusiasm. Trading profits for the three years aggregated £1,217,542. After meeting three year's dividend on the preference shares, and writing off £42,500 for discount and underwriting commission, there remains £942,048 to be carried forward, subject to an estimated liability of £880,000 for Excess Profit Duties and income tax. This is a big lump.

Simplified Excursion Insurance.

A week or two ago attention was drawn to the simplicity of insurance for aerial trippers. The simplicity is even more marked in the new scheme of the Aviation Insurance Association. Bookng agents and the transportation companies themselves are provided with books of insurance certificates requiring only the passenger's name.

One schedule covers the payment of £500 in the event of death for a premium of 2s. 6d. If the passenger wants to cover £5,000 in the new scheme of the Aviation Insurance Association. premium in all. Accidental injury, involving payment of £500 in the event of loss of two limbs or both eyes, or one eye and one limb, or permanent total disablement, can be covered for another 2s. 6d., which premium insures the payment of £250 in the event of the loss of one limb or one eye, and, alternatively, covers the payment of £2 10s. per week for 26 weeks in the event of temporary total disablement.

These premiums of 2s. 6d. for accidental injury are limited to six multiples of each or any of the benefits specified. That is to say, six half-crowns cover six times the payment.

The foregoing are aerodrome flights. There is another schedule covering similar risks when the passenger is flying within the land limits of the United Kingdom, which embraces trips by seaplanes not further than five miles from land. Here the premium is 5s. for similar benefits.

One cannot help admiring the excellent manner in which these insurance facilities are being enlarged for the benefit of the Aircraft Industry. When the general public realise how freely such facilities are offered, Aviation will become more popular

Brazil Aerial Contracts.

It is announced that the President of Brazil has formally sanctioned the contracts with Messrs. Davidson, Fuller, Joas Varsco, and Handley Page, Ltd., for the establishment of aerial services between Brazil and other countries. No further details transpire.

NEW COMPANIES.

Aircraft Tubes and Pressings, Ltd.—Private company. Registered May 24th. Capital £15,000 in £1 shares. To enter into agreement (1) of sale and purchase between Millward and Hughes, Ltd., of first part; and (2) of service between W. W. Hughes of the first part, G. V. Stringer of the second part, and the Company of the third part, and to carry on the business of manufacturers of and directors in tubes, etc. The subscribers (each with one share) are:—W. W. Hughes, 85, Middleton Hall Road, King's Norton, Birmingham, managing director; G. V. Stringer, 26a, Eaton Terrace, S.W., managing director. Directors: W. W. Hughes, G. V. Stringer, A. Millward, 80, Middleton Hall Road, King's Norton and W. E. Warden, 214, Hagley Road, Birmingham. Solicitors:- Jeffery Parr, Hasell and Parr, 20, Temple Row, Birmingham.

E. N. V. Motors, Ltd.—Private company. Registered May 30th. Capital £100,000 in £1 shares. To take over the business of a motor manufacturer and engineer carried on at 4, Hythe Road, Hammersmith, as the E. N. V. Motor Co., by Brig.-General J. F. Laycock, D.S.O., to acquire the benefit of an agreement between the said J. F. Laycock and B. Oppenheimer, etc. Power is taken also to manufacture and deal in aircraft of all kinds. The subscribers (each with one share) are: H. S. Dennington, 117, Whitehall Court, S.W., merchant; A. E. Hukins, 31, Hartswood Road, Stamford Brook, Middlesex, engineer. The first directors are: H. S. Dennington, A. E. Hukins, and G. M. Oppenheimer. Qualification, £2,500. Solicitor: A. Tooth, 37, Lincoln's Inn Fields, W.C.

Aeronautical Intelligence Bureau, Ltd. Registered June 13th, as a company limited by guarantee, with not more than 150 members, each liable for £1 in the event of winding up, to unite for mutual advancement and protection certain persons, companies and firms carrying on business as manufacturers of and dealers in and agents for aeroplanes, airships, balloons and parts thereof, to obtain and distribute status information, to promote or oppose legislation, to collect debts, etc. The subscribers are:—R. H. Tetley (Palmer Tyre, Ltd.), 121, Shaftesbury Avenue, W.C.; F. M. Luther (Beardmore Aero Eng., Ltd.), 112, Great Portland Street, W.; J. Riendt (British Emaillite Co., Ltd., aero dope and varnish manufacturers), 30, Regent Street, S.W.; G. A. Mansfield (Motor and Aircraft Supplies Co., Ltd.), 125, Long Acre, W.C.; R. Delpech (Triplex Safety Gear Co., Ltd.), 1, Albemarle Street, W.; J. F. Inshaw (Auster, Ltd.), 133, Long Acre, W.C. (2); W. A. Jewell, 56, Shelley Avenue, Manor Park, E. (12). The first members of the council are to be nominated by the subscribers. Registered office: 30, Bedford Row, W.C.

Davidson Motor and Carriage Co., Ltd.—Private company. Registered July 7th. Capital £20,000 in £1 shares. (17,500 ordinary and 2,500 "B"). To adopt an agreement with the Davidson Aviation Co., Ltd., for the acquisition of certain garage premises, stock, plant and machinery, and to carry on business as garage proprietors, etc. The subscribers are:—P. L. Mott, 6, Cornwall Terrace, Regents Park, N.W., timber merchant, 300 "B"; S. Hoare, 17, Cornwall Terrace, Regents Park, N.W., solicitor, 300 "B"; T. Bain, 9, Ravenscourt Avenue, Hammersmith, W.5, joinery manufacturer, 300 "B"; G. H. Cude, 17, Colebrooke Avenue, W. Ealing, accountant, 150 "B"; N. Rawlins, Mansion Hotel, Richmond, motor engineer, 150 "B." Directors: P. L. Mott, S. Hoare, and T. Bain. Registered office: 16 and 18, Avonmore Road, West Kensington.

The WORLD of AERONAUTICS

NEWS OF THE WEEK FROM ALL QUARTERS

Honours for the Chief of the Air Staff.

In the list of monetary rewards granted by the Houses of Parliament at the King's will on August 6th last, Sir Hugh Trenchard was awarded a grant of £10,000, the only representative of the Royal Air Force to receive such a gift.

On the same day it was announced that among other distinguished officers receiving honours the King had been pleased to confer a baronetcy on Sir Hugh Trenchard.

All will join in congratulating Air Vice-Marshal Sir Hugh Trenchard on these well-earned honours, and one hopes that he will live long to enjoy the fruits of his labours and to continue his great work at the Air Ministry.

The Schneider Cup Race.

The list of entries for the Schneider Cup Competition at Bournemouth on Sept. 10th is now closed. There are only seven entries. Three are allowed from each country. The Aero Club of France has entered three machines, and the Aero Club of Italy one machine. Three British machines will fly out of the following four: Avro, Fairey, Sopwith, and Supermarine.

Big Developments.

Probably a good many people are surprised that the name of Col. John Porte, C.M.G., R.A.F., does not appear in the Permanent Commissions list recently published.

As a matter of fact Col. Porte was demobilised from the R.A.F. some months ago and is devoting his attention to commercial aviation. It is not yet possible to make any definite statements concerning his movements, but one is under the impression that he has in hand a scheme for the development of flying-boats of the very largest size and for their operation on a grand scale. Certainly nobody knows more about flying-boats than does Col. Porte, and one hopes to be able ere long to chronicle the complete success of his scheme.

Wireless Telephony.

The wireless telephony demonstration given on August 11th by Major-General Seely in a committee room of the Houses of Parliament was a great success.

General Seely stated that the Royal Air Force started experiments early in 1915, and by March, 1918 two squadrons in France had been fitted with the apparatus. The postal aeroplanes such as those flying between Kenley and France are now so fitted.

Communication has been made with an aeroplane 100 miles away and with an airship 165 miles distant. No evidence has been obtained to suggest that the Germans had developed wireless telephony.

Two specially powerful valves were arranged to amplify the signals, which came through a trumpet and were audible all over the room.

A gramophone was heard from Aperfield Court, some 20 miles away.

Communication was then established with aeroplanes sent up from Biggin Hill aerodrome. General Seely was informed that his voice carried very well. He asked the pilot and observer of one machine to dine with him at the House of Commons that evening, and asked that the invitation might be communicated to other aeroplanes in the air within 20 miles. Six officers availed themselves of the invitation.

An observer in another machine was constrained to sing into the telephone.

Directional wireless was demonstrated. A novel wireless telephone was also shown in which the transmitter is pressed against the neck of the speaker. There is a wire connection down the trouser leg. The wearer can speak to anyone within range.

Opportunities in the R.A.F.

One continues to receive many letters from young men who are anxious to obtain employment in the Aircraft Industry. To all one would repeat the advice to join the R.A.F. The new rates of pay compare very favourably with wages in civil life when the value of free rations and free uniform is taken into consideration.

Any young man who is ready to go through the workshops of a commercial firm—and no other is worth his salt—would do better at the present time to join the R.A.F. in which he will find every opportunity of acquiring knowledge of aircraft that he can turn to account when the Industry has developed.

The New Rank Titles in the R.A.F.

There would appear to be considerable dissatisfaction among officers of the Royal Air Force as to the new rank titles laid down on Aug. 4th for the commissioned ranks of their service.

It is easy to criticise and many objections can be outlined in regard to many of the new titles. For instance, all "air officers" will be termed "marshals" colloquially just as all general officers are loosely termed "general" in conversation. This practice will reduce in public estimation the standing of field-marshals, the highest rank attainable in the British Army.

Another criticism can be directed against the use in this list of the names of gradings as rank titles. The term "squadron leader" implies certain duties which will certainly not be common to all holders of the rank. In both the Army and the Navy all rank titles are generic terms in an order of precedence, and no hint is given of the duties to be performed by any rank save in certain cases where special titles are given in technical branches of these services.

But while it is easy to criticise, it is difficult to construct. Let each of those who dislike the new names by which they are to be known think of any possible alternatives which shall be different from those common in the Army and Navy and yet be free from that suggestion of absurdity which enhalos the titles of dignities in rustic friendly societies.

The old rank titles of the dead empires such as "dux" or "centurion" can hardly be revived for use by people who habitually travel to their hotel headquarters by tube or omnibus. There are, in fact, no titles which be both apt and dignified and at the same time distinct from those formerly in use in the three services. The new titles are bad, but they must be accepted in the lack of a better series.

Exclusive Misinformation.

The "Daily Mail" of August 11th announced that "air taxis for the Air Council is one of the latest innovations in Governmental services. An air council inspection squadron, with headquarters at Croydon, has just been formed." Inquiry at the publicity department of the Air Ministry, however, failed to confirm these statements. The truth appears to be that, as for many months past, a few machines—certainly not a squadron—are at the disposal of the Air Council and that there is nothing new to record.

Much innocent amusement has been caused by the exclusive misinformation given by this journal. It is said that:—

"Each member is permitted to state the class of machine he wishes to fly. There are specially equipped Bristol fighters with coupé seats and De H 10's with limousine cabin in the squadron. General Seely, it is said, wishes to fly every type ever used by the R.A.F. Recently he was supplied with a Bristol monoplane, an obsolete machine for service purposes. He now, it is stated, desires an old F.E.2B, one of the original bombers in the British service.

"Mr. Winston Churchill, although a qualified pilot, has more conservative tastes, and prefers a fool-proof school machine of the Avro type."

The last paragraph does not sound complimentary to Mr. Churchill, who doubtless will be as much amused by the news as everybody else.

Good Wishes.

Everybody concerned with aviation will regret very much to hear that Captain Geoffrey de Havilland is very seriously ill, and is not likely to be able to return to work for a considerable time.

Captain de Havilland first acquired fame as the designer of the original B.E. biplane, which was certainly the best machine of its period. Since then he has done very fine work as the designer of the famous "D. H." series of Airco machines.

His quiet and retiring nature prevented him from becoming a popular figure in aviation, but those who know him esteem him most highly, and all will wish him an early and complete recovery.

Mr. Burroughes' Move.

Mr. Hugh Burroughes, one of the original directors of the Aircraft Manufacturing Co., Ltd., and before that an important member of the staff of the Royal Aircraft Factory, has recently left the Aircraft Manufacturing Co. No official intimation has been given of Mr. Burroughes' future movements, but his experience and success as a business manager are sufficient guarantee that ere long news will be heard of him in some important connection.

The WORLD of AERONAUTICS (continued)

Benzol as Aeroplane Fuel.

An interesting test on a 110 h.p. Le Rhône Avro Scout has just been completed in Lancashire. The results closely follow what has already been found out in connection with motor-cars using this fuel.

Unity may be Weakness.

It is reported that co-operation between Great Britain, America, and France by the formation of an Allied aviation committee of the League of Nations is being advocated.

One is inclined to think that such co-operation would be more likely to hamper than to assist the development of aviation, as it is probable that the main idea would be to reach an agreement to limit the amount of money to be spent by the countries concerned upon service machines. Healthy competition for the future mastery of the air would, one thinks, produce better results than co-operation.

An Absurd Stunt.

An American pilot and photographer recently performed the absurd stunt of diving under the suspension bridge at Niagara Falls. Apparently they had a series of adventures, for owing to unexpected air currents they were unable to rise again as they wished, and had to pass under two more bridges. At the whirlpool the machine was still below the top of the gorge, and a vertical bank had to be made at the right-angled turn of the river, where the aviator narrowly missed hitting the cliffs.

A Flight by Man Power.

An interesting flight by man power is reported from Paris. It was made by the well-known French cyclist, Poulain, who, on August 11th, succeeded in flying twelve metres at a height of one metre. Poulain will attempt another flight on his aviette before officials of the Aero Club de France and will endeavour to win the Peugeot prize of 10,000 francs offered for the first flight of ten metres that is made entirely by man power.

A Basement Needed.

According to the Glasgow "Evening Citizen":—

"Details are to hand of the airship R.80, which has been designed for passenger service from Barrow to Rio de Janeiro. The vessel is of a capacity of 1,250,000 cubic feet, or rather more than half the size of the R.34. She is considered to be the most perfect known streamline shape of airship, while her hull is constructed of special light alloy, 'duralumin' girders.

"The R.80 possesses a cruising speed of 46 and a full-power speed of 60 miles per hour, and is 535 feet in length.

"The passengers' living yuarters are contained on the top of the hull, where are situated a large saloon fitted out lie a Pullman car, a roof garden, and a spelter deck, and cabins of sleeping berths.

"There is an observation car below the hull of the airship, which is connected with the living quarters by means osf a passenger lift through the middle of the ship."

Somebody seems to have been giving a severe tug to the leg of the writer, and the compositor has not been kind. The "passengers' living yuarters," the saloon "lie a Pullman car," the roof garden and spelter deck all reached by means "osf" a passenger lift, all sound almost too good to be true. If only the airship had a basement for the cold storage of American beef it should solve the problem of Commercial Aviation between Barrow and Rio de Janeiro.

A Surprising Affair.

One of the greatest of the troubles of aviators is the starting of the big engines now in vogue, and it is eminently satisfactory to know that this trouble seems to be overcome for ever by a simple little device known as the Herzmark Self-starter, an apparatus which only weighs a matter of 20 lbs. The most surprising thing about the apparatus is that though it only came to England a few weeks ago it has already attracted the attention of the highest aeronautical officials. A matter of a fortnight since Major-General J. E. B. Seely, C.B., C.M.G., D.S.O., Under-Secretary for Air, journeyed specially to Hendon to see it, and demonstrated its fool-proofness by himself causing it to operate successfully three times in succession on a Rolls-Royce engine in an F.K.26 type Bat commercial biplane.

THE LEPAERIAL TRAVEL BUREAU.

During the last two weeks there have been numerous enquiries for flights to Amsterdam, and the majority of the companies taking machines to the Exhibition were able to carry passengers on the machines they were showing. Owing, however, to the delay by the Air Ministry in licensing some of the machines and the short notice of definite dates, and times of starting, the publication of which are highly important if civilian flying is to be a success, there were few bookings.

Among the long-distance flights booked was a round trip, Hounslow-Cowes-Dover-Hounslow: one of the passengers landed at Dover to catch the Ostend boat.

Joy-rides are still popular, not the least b ing the "Over London" trip; the passengers, starting from either Hounslow or Northolt, are brought up over the West-End to the Tower Bridge and St. Paul's and back again, about 30 minutes in the air at a fare of £2 5s. per passenger.

It is now possible to 'phone or call at the Bureau in Piccadilly Circus and hire a taxi-plane to any part of Great Britain at a moment's notice.

The management of the Bureau extend a cordial invitation to all members of the Aircraft Industry to call and inspect the magnificently appointed offices in Piccadilly Circus and would be pleased if they would make use of the office for keeping business appointments—it is certainly one of the coolest spots in London.

For the Attention of the Postmaster-General.

One would like to tell the following facts to the British Postmaster-General, Mr. Illingworth, who recently made the statement that aeroplanes for mail-carrying were of "only 60 per cent. efficiency":—

A record of 99 per cent. was made by the Air Mail Service between Washington and New York for the month of June, covering a mileage of 11,118 and carrying 15,643 lbs. of mail.

On the Cleveland-Chicago division a perfect score of 100 per cent. was obtained. A total of 19,825 miles was run during the month of June on that division and a total of 19,603 lbs. of mail was carried. The average speed on that route for the month was 97.8 miles per hour. The best flying was performed on June 18th, when the round trip from Cleveland to Chicago and return was made in 6 hours and 14 minutes—an average of 104.4 miles an hour in each direction.

The operation of the Cleveland-Chicago route is without a parallel in the history of aviation. The route was started May 15th and has never missed a day—70 consecutive daily non-stop flights of 325 miles each were made without a forced landing. On the 71st trip a petrol connection sprung a leak, causing a forced landing on the emergency air mail landing field at Bryan, Ohio.

On July 4th there were on the mail route between Washington and New York, New York and Cleveland, and Cleveland and Chicago, 10 aeroplanes in flight. The shortest route was 215 miles from New York to Bellefonte, Pa., and the longest route was from Cleveland to Chicago or 325 miles. All 10 aeroplanes scored 100 per cent., arriving and leaving every station on time.

An Air for Airmen.

A weekly newspaper is offering a prize for the best marching air for the Royal Air Force. How to induce the R.A.F. to adopt it will be the next problem. One thinks that the Force will not altogether appreciate the possibly well-meant attentions of the popular press. Marches and songs that would please the populace would in all probability be scorned by the service.

One good result of the war was the death of the old-fashioned sloppy "patriotic" song. One remembers such examples as:—

Hit is ther Nyvy,
Ther British Nyvy,
That keeps our foes at bye.

Very naturally the men in the ranks prefer to march to the lilt of "Another little drink wouldn't do us any harm," or "When you look in her eyes." A march with jazz band effects might catch the fancy of the mob if it included imitations of the drone of a propeller, a Lewis gun, and an occasional crash, but the airman would doubtless prefer one of the old favourites that he sang during the war.

A Removal.

Major-General Sir W. S. Brancker has moved from 13, Little Grosvenor Street, to K.6, The Albany, Piccadilly, W. Telephone: Regent 982.

A Vacancy.

There is a vacancy on the staff of THE AEROPLANE for a competent shorthand-typist who is interested in aviation. Applications should be made by letter only in the first instance to 175, Piccadilly, W.1.

COMING EVENTS.

AUGUST.

Amsterdam Aircraft Exhibition.

Saturday, August 16th.—R.N.A.S. Officers (Hendon) Dinner at the Café Royal.

Thursday, August 21st.—R.A.F. Annual Athletic Meeting at Stamford Bridge.

Sunday, August 24th to Sunday, August 31st.—The "Avenir's" Tour de France Aérien is due to start.

Saturday, August 30th.—Hendon-Brighton-Hendon Air Race at Hendon Aerodrome.

SEPTEMBER.

Monday, September 1st.—Last day for presentation of British machines for the Schneider Cup Competition.

Wednesday, September 10th.—Schneider Cup Competition, Bournemouth.

Saturday, Sept. 20th.—Hendon-Manchester-Hendon Air Race at Hendon Aerodrome.

DATES TO BE ANNOUNCED LATER.

Hendon-Paris-Hendon Air Race.

The "Daily Express" £10,000 Prize Competitions.

AIRCRAFT IN PARLIAMENT

HOUSE OF LORDS.

Earl CURZON, in his speech of thanks to the Services on August 6th, made the following references to the Royal Air Force :—

Every British soldier and every Ally who has been fighting in this war, with the exception of those brave heroes of the air who defended us from aerial attack in this country, has been fighting throughout on foreign soil.

Among those whom this House will be asked to honour with a grant is General Trenchard, the embodiment of the fighting spirit of that glorious force which he led at different times both at home and in the field.

When we compare the tiny fleet of aircraft that flew across the Channel in the first weeks of the war, numbering only 1,000 officers and men and not more than 100 machines, with the vast fleet and the tens of thousands of men who crossed later, we have some measure of the advance which has been made in that great branch of the Service.

The history of the aerial combats in these years of fighting has been a series of epics. Whether we think of the amazing development of the machines or the resourcefulness and incredible audacity of the men, there is no more admirable page in the history of the war.

HOUSE OF COMMONS.

The following written answers were given on August 5th :—

CELLULOSE INQUIRY.

Mr. RAPER asked the Prime Minister when Lord Sumner's Report on the cellulose inquiry will be forthcoming as it was promised before the end of last month.

Mr. BONAR LAW : It is hoped that the Report would be in the hands of the Chancellor of the Exchequer in the course of a few days, and it is certain that it will be forthcoming before the House adjourns.

MISS VIOLET DOUGLAS-PENNANT—(SELECT COMMITTEE).

Mr. BONAR LAW, replying to Sir J Butcher, said that the expenses of the Select Committee would be chargeable to the Vote for House of Lords' Offices, which includes provision for witnesses attending the Committees and shorthand-writers.

* * *

The following written answers were given on August 4th :—

CIVIL AVIATION DEPARTMENT.

Mr. JOYNSON-HICKS asked the Under Secretary of State to the Air Ministry if he can make a statement as to the names, salaries, and working of General Sykes' staff in the Civil Aviation Department.

Major-Gen. SEELY : The following members of the staff of the Civil Aviation Department are being paid the civil rates shown :—

Major-Gen. Sir F. H. Sykes.—£2,000 plus £500 retired pay
Major-Gen. E. D. Swinton.—£1,800 less 10 per cent. deduction on account of pension.
Lieut.-Col. W. O. Raikes.—£1,000.
Mr. G. B. Cockburn.—£800.
Mr. J. M. Pearson.—£280 plus bonus.

Other gentlemen are serving in the Civil Aviation Department as officers, and these are in receipt of Staff rates of pay or pay and allowances of their rank. Letters offering civil appointments in those cases agreed by the Treasury have been sent.

Captain W. BENN asked the Under Secretary of State to the Air Ministry whether he can make a statement regarding the organisation of the Civil Aviation Department, especially the training and licensing of commercial pilots.

Major-Gen. SEELY : As regards the first part of the question, the organisation of the Department of Civil Aviation is proceeding on the general lines indicated in the Memorandum circulated amongst Members by me on April 30th last. Treasury sanction has been obtained for a certain proportion of the staff provisionally asked for by the Air Ministry. Since the date of the Memorandum referred to, all the meteorological services have become part of the Department of Civil Aviation. As regards the second part of the question, the Department of Civil Aviation does not undertake the training of pilots, but it licenses pilots possessing the qualifications prescribed in the Air Navigation Regulations.

AIR REGULATIONS (ENFORCEMENT)

Mr. JOYNSON-HICKS asked the Under Secretary of State to the Air Ministry whether he is making any arrangement in the nature of an air police force for ensuring obedience to the air Regulations.

Major- Gen. SEELY : Arrangements have been made in order to ensure, as far as possible, that breaches of the air regulations are reported to the Controller-General of Civil Aviation. It is not considered that the expense involved in maintaining an air police force would be justified at the present stage.

* * *

The following written answers were given on August 6th :—

CONSTRUCTION (TRANSFERENCE).

Captain W. BENN asked, separately, the Under Secretary of State to the Air Ministry and the First Lord of the Admiralty whether they could make a statement explaining the Government policy relating to the transference of the construction of lighter-than-air craft from the Admiralty to the Air Ministry; but neither could add anything further to previous answers given on July 31st.

WAR SERVICES—THANKS OF PARLIAMENT.

The PRIME MINISTER, in moving a vote of thanks to the Services on August 6th, made the following references to the Royal Air Force :—

I beg to move that the thanks of this House be accorded to the officers, non-commissioned officers and men of the Air Force for their brilliant daring and conspicuous services over sea and land

SUPPLY—GRANTS TO OFFICERS.

On August 6th a Motion was made and a Question proposed that a sum, not exceeding £585,000, be granted to His Majesty, to be issued to those officers who commanded and directed His forces by sea, on land, and in the air, in recognition of their eminent services during the late war, namely (among others) :—

Air :

Air Vice-Marshal Sir Hugh Trenchard ... ... £10 000.

The PRIME MINISTER in his speech said : As for Air Vice-Marshal Trenchard, he, by his energy and daring and drive and imagination and magnetism, which make for great leadership in war, made the Air Force become the powerful and formidable fighting machine that it was.

Mr. JOYNSON-HICKS : There is another name which should be mentioned in this list, whether it be in the form of a money reward or those other honours which have been announced in this morning's papers—I refer to General Sir Frederick Sykes, of the Royal Air Force. The Royal Air Force has been a great object in my life for years past, and I have gloried in its successes during the war.

The words which the Prime Minister spoke with regard to General Trenchard are none too high. We all know the magnificent work he has performed, and the inestimable service his spirit gave to the young men of the corps. They all swore by him, and when he gave an order they were always ready to go and carry it out. I am very pleased to see the Under Secretary for Air present this afternoon. He knows the very great services which General Sykes rendered at the time when General Trenchard resigned his post and General Sykes was appointed to take the command in the field, and the very good services which he performed.

I ask whoever is taking charge on behalf of the Government to mention these two names to the Prime Minister, and if they have been overlooked I ask that the matter may be reconsidered, and I feel by including them you will be doing honour not merely to those generals but to the whole community at large.

[As a matter of fact General Sykes was Chief of the Air Staff, and did *not* command in the field.—ED.]

* * *

The following written answers were given on August 7th :—

AERODROMES AND OFFICES (RELINQUISHMENT).

Captain W. BENN asked the Under Secretary of State to the Air Ministry what reductions have been made recently in the number of aerodromes in use and the hotels and offices occupied by the Ministry.

Major-Gen. SEELY : Between July 2nd and August 6th, 1919, one aerodrome, five seaplane stations, and thirteen landing-grounds have been notified to the Directorate of Lands as available for relinquishment or to be disposed of, making a total of fifty-two aerodromes, eleven seaplane stations, and 147 landing-grounds, so devised since November 11th, 1918. The Hotel Cecil, the only hotel now in the occupation of the Air Ministry, will be evacuated on August 13th, 1919. The offices at 5, John Street, Adelphi, will be evacuated on August 9th, 1919.

The following hotels and offices have been given up by the Air Ministry within the last five months :—

Cavendish Hotel, evacuated January 10th, 1919. 4-6, Adam Street, evacuated March 22nd, 1919. Adelphi Hotel, evacuated April 5th, 1919. 5 and 7, John Street, Adelphi, evacuated April 5th, 1919. Covent Garden Hotel, evacuated April 14th, 1919.

The number of hired premises in use by the Royal Air Force at the date of the Armistice was 2,143; by August 1st, 1919, 1,899 of these had been given up.

CIVILIAN AVIATION (CONDITIONS).

Sir HERBERT NIELD asked the President of the Board of Trade whether any licence or other permit is necessary to enable civilian-owned aircraft to be exercised and flown; whether any regulations have been made with regard to the conditions under which such flying is authorised, and what, if any, security is required or other provision made for the payment of or indemity against damage to life or injury to persons or property resulting from accidents caused by the fall of aircraft or from anything dropped from aircraft while in the course of flight; and whether there is any and what provision for the identification of such aircraft in cases where the injury is caused by anything so dropped.

Major-Gen. SEELY : The conditions governing civilian flying are laid down in the Air Navigation Regulations, 1919 (Statutory Rules and Orders, 1919, No. 525). These regulations provide, inter alia, that all aircraft must be registered and bear a registration mark, that aircraft carrying passengers for hire or reward must be certified airworthy, and that all pilots flying aircraft must be licensed. There is no special provision in the Regulations as to liability in respect of accidents. Conditions are imposed as to the display of the registration mark with a view to facilitating the identification of aircraft. Damage caused by aircraft is recoverable by ordinary process of law as in the case of damage caused by any other means.

* * *

The following written answer was given on Aug. 8th :—

ANTI-AIRCRAFT STATION, SHIPBOURNE.

Mr. BENNETT asked the Secretary of State for War if there is now any necessity for the anti-aircraft station at Shipbourne, Sevenoaks; and if he will give instructions for its early removal, inasmuch as the huts and gun prevent the villagers from using the village green for cricket and other accustomed sports.

Mr. CHURCHILL : Instructions are about to be issued for the abolition of the anti-aircraft station at Shipbourne.

* * *

The following is taken from the "Times" :—

On August 4th Mr. RAPER asked the Under Secretary to the Air Ministry what steps he proposed to take to punish all persons in or connected with the Air Force, no matter what their positions, found guilty of corrupt practice in connection with the Air Force contracts by the Select Committee on National Expenditure, and whether, in view of recent disclosures, he would now, without further delay, form a small committee of two or three Members of the House having real business experience, and two or three other experienced business men outside the House to supervise the placing and execution of all future Air Force contracts.

Major.-Gen. SEELY : Every possible step has already been taken and will be taken in future to bring to justice any person in, or connected with, the Air Force guilty of corrupt practices regarding Air Force contracts or in any other matter. I am not disposed to adopt the suggestion contained in the last part of the question. I intend to make a statement on the matter in the course of to-morrow's debate.

Mr. RAPER : Does the right hon. gentleman propose to take steps to prosecute those referred to in the report of the Select Committee?

Major-Gen. SEELY : Since I have been at the Air Ministry, wherever there has been any case of corruption I have at once given orders that a prosecution shall take place, if a prosecution can lie. I propose to continue that practice.

Mr. RAPER : Is it not a fact that, in connection with the instances mentioned in the report, the Government decided, for reasons of their own, not to institute proceedings?

Major-Gen. SEELY : No, sir. I presume my hon. friend is referring to two cases. One was the case referred to by Sir John Hunter, in which I gave instructions myself personally that a prosecution was to take place if a prosecution would lie. I gave these instructions precisely twice to Sir John Hunter, who was then acting under my directions. The Lord Advocate for Scotland decided that a prosecution would not lie. So far as the Air Ministry is concerned the facts are as I have stated, that wherever there has been the possibility of pro-

secution a prosecution has been ordered. The other was the case of Miss O'Sullivan, who made allegations of corruption. The very day these allegations were brought before the Select Committee, presided over by the right hon. baronet, the Member for the City of London, I ordered an inquiry to be held, which is now proceeding. If there is ground for prosecution—that is, of course, a legal matter—that prosecution will take place.

Mr. G. LAMBERT: May I ask the Leader of the House whether if, with Mr. Speaker's permission, this matter is raised to-morrow as to the prosecution of these officials in the Air Service, the Lord Advocate will be here to defend his somewhat inexplicable action?

Mr. BONAR LAW: I shall make inquiry, but I entirely agree with my right hon. friend that a discussion on that point would be very ineffective unless we hear the Lord Advocate's own explanation of what are his reasons.

Mr BILLING asked whether the officers named by Sir John Hunter were still in the employment of the Air Service, and, if so, what positions did they occupy.

Major-Gen. SEELY: I do not carry the facts in my mind, and I must have notice of the question as to the particular officers the hon. Member refers to. But I repeat that our policy has been throughout—mine especially—that wherever there could be any question of improper or corrupt dealings a prosecution is at once ordered.

Mr. BILLING asked whether, having regard to the fact that the only reason that these officers had not been prosecuted was owing to a technicality, the right hon. gentleman could see that if they occupied any position of trust they should be forthwith dismissed.

Major-Gen. SEELY: Certainly not. Are we to assume that a man is guilty before he is found to be so by a process of law? I cannot carry in my mind who all these people are, but in trying to do what is right in the interests of the State we must do right to the individual.

Replying to a question from Mr. BRIANT Major-Gen. SEELY said: The information I received from the Lord Advocate was that a prosecution would not succeed. When it was suggested to me that possibly it might bring into disrepute the representatives of either Sir John Hunter or any other officials, I said at once that that had nothing whatever to do with the case, but I confess I do not understand the particular point. The Lord Advocate is not present in the House, but no doubt it will be cleared up to-morrow. I say at once that such an idea never entered my head or the head of anyone responsible at the Air Ministry. All we want to do is to get at the truth.

Sir F. BANBURY: This matter was the subject of inquiry so long ago as March. No inquiry was granted until June, and then the inquiry was commenced, but was not finished, owing to the fact that Miss O'Sullivan had not signed her evidence, and no further steps were taken until it was made evident to the Air Ministry that inquiries were going on before the Select Committee, and it was then, and then only, on the 25th of last month, that an inquiry was instituted by the Air Ministry.

Major-Gen. SEELY: I have said again and again in this House that if in this matter, which affects what is called the "Douglas-Pennant case," any specific charge of corruption could be made, it would be at once inquired into. I have again and again asked for a specific statement. It was not given. The moment it was given in response to a question asked by the Select Committee, that very same day an inquiry was ordered.

Captain WEDGWOOD BENN: Who is the Secretary of State for Air, and why is he not here to answer these matters? Will he be here to-morrow?

Mr. BONAR LAW: He will certainly be here to-morrow, and I am quite sure my right hon. friend will be glad to have an opportunity of stating the policy of the Air Ministry in this matter.

Mr. STEWART: If there is any prosecution possible will it be under Scottish law or English law, and is the law of evidence the same in Scotland as in England?

No answer was given.

Mr. MacVEAGH: Will the right hon. gentleman, in the inquiry which he is now conducting, inquire into the conduct of the official who threatened to dismiss Miss O'Sullivan for making this report?

Major-Gen. SEELY: Yes, certainly.

Lord ROBERT CECIL rose, but the SPEAKER said that any further questions had better be left over for discussion to-morrow.

EXPENDITURE BY THE AIR MINISTRY.

"The Third Report from the Select Committee on National Expenditure" (No. 168, printed Aug. 7th, 1919) deals in the main with expenditure controlled by the Air Ministry. The inefficiency of various branches of that Ministry, well known to those behind the veil of official life, is revealed in some degree to the public in this paper. The two principal subjects dealt with by the Committee were the construction of aerodromes and the issuing of a contract for the supply of uniform to W.R.A.F. personnel.

In regard to the construction and laying out of aerodromes Sir John Hunter, K.B.E., lately Administrator of Works and Buildings, was examined. He stated that he had found much evidence of fraud in the carrying out of this work. '. . . He was of opinion [for instance] that no man who had been employed on the erection of aerodromes had earned the money he received." Speaking generally, he including the whole number employed—70,000 men—in this charge. At Renfrew he found evidence of conspiracy between a Government official and three of the contractors' men, and suspected that the contractor himself might also be involved. Four men were arrested and were held on bail for four months, "but the Crown authorities declined to prosecute and the men were freed from charge on June 7th." A civil action was being entered against the contractor concerned for about £50,000.

The Lord Advocate had refused to prosecute in the case above referred to because, he said, "There is no evidence at all that any of the accused applied to their own uses any of the money said to have been improperly obtained from the Ministry. This circumstance, though it does not in itself provide an answer to a charge of fraud, makes the insufficiency of evidence more formidable than would otherwise be the case. Further, a prosecution would reveal what appears to be inefficiency and absence of control on the part of the representatives of the Ministry on the spot."

Sir John Hunter, in a letter of protest to the Air Ministry in regard to the position adopted by the Lord Advocate, said:—

"I find it very difficult to understand how a criminal charge cannot be formulated and a conviction obtained, having regard to the admissions made, and in some cases signed by persons charged. It is admitted that the books or time-sheets were falsified by entering thereon the names of men said to be employed on the job, but who did not, in fact, exist. Wages were drawn regularly and charged to the Government as having been paid to these men. Where did that money go? The Lord Advocate says there is no evidence that any of the accused 'applied to their own uses any of the money said to have been improperly obtained from the Air Ministry.' But would not any jury on the facts above stated draw the obvious inference that the persons responsible for putting these 'dead men' on the books and drawing wages regularly for them from Government funds had, in fact, put the money in their own pockets? And is there not evidence that this was done with the connivance of the Clerk of Works?

"But I wish to carry the matter further and to point out that the position, if no prosecution is attempted, is in my opinion more serious for the Air Ministry than if a prosecution should be started and fail, and I wish to explain the position so that it may be put before the Lord Advocate. After a personal inquiry, on making the discovery of these irregularities, I informed the contractors that I would not authorise payment to them of commission in accordance with the terms of their contract, but would have the whole job measured up and pay them on such measurement on proper rates. Mr. Cowieson (the head of the firm of contractors), at an interview which I had with him and his law agent, agreed to this, and later agreed by letter. A firm of measurers were engaged by me, and their work is now practically complete, and it appears that already there is a sum of about £60,000 charged by the contractors to the job which cannot be accounted for."

Despite this protest the Lord Advocate still refused to prosecute and has not since altered his attitude in regard to the case.

Other references to dishonest practices were made by Sir John Hunter and his cross-examination was closed.

Miss O'Sullivan, Clothing Controller to the W.R.A.F., was examined as to the placing of contracts for W.R.A.F. uniform with a Manchester firm.

She said that a contract for 30,000 coat frocks and 30,000 overcoats was placed with this firm (Messrs. Cohen and Wilks), despite the fact a pattern uniform sent in by Messrs. Kenneth Durward had been selected by the Committee deciding these matters.

"11. She also stated that the deliveries of the article in question were dilatory and not up to sample, the garments being amongst other things badly cut.'

"12. By direction of Miss Douglas-Pennant, who was then Commandant of the W.R.A.F., the Clothing Controller went to Manchester and she stated that the coat frocks were being cut on the bias instead of on the straight; this course, if pursued, would have resulted in the saving to the contractor of about three-quarters of a yard on each garment. According to the contract, payment was to be made for 3 yards 24 inches of cloth on each garment."

Various officers were cross-examined as to the placing of this contract, and as to the removal of Miss O'Sullivan from the work of inspection. The evidence given by two officers and the lack of evidence given by a third, who did not obey the Committee's request to appear before it, was regarded as unsatisfactory.

"28. The Sub-Committee examined Major-General Sir H. Trenchard (Chief of the Air Staff) and are of opinion that he is doing all that is possible to cut down expenditure while having due regard to the efficiency of his Department."

The rest of the report deals with the Finance Department, which "is very satisfactorily conducted," and to motor vehicles.

Too much stress should not be laid on the scandals revealed in this report. Irregularities small or great are bound to occur in a Ministry improvised during a great war from personnel the majority of whom have had but little experience of Government work and who all too frequently lack that stability and proved honesty which are the pride of the regular military and civil services.

THE CASE OF MISS DOUGLAS-PENNANT.

The Committee of Inquiry, which has been formed by the House of Lords to inquire into the dismissal of Miss Douglas-Pennant from the W.R.A.F., will consist of five members. Lord Kintore, Chairman of Committees in the House of Lords, Lord Askwith, Lord Gainford, and Lord Denbigh are four of the members.

It was unofficially stated on Aug. 8th that the Government has intimated its desire to be represented on the Select Committee.

NAVAL & MILITARY AERONAUTICS

GREAT BRITAIN.

FROM THE COURT CIRCULAR.

BUCKINGHAM PALACE, August 6th.

The Prince Albert, attended by Major Louis Greig, was present at the Royal Air Force (South-Eastern Area) Athletic Sports at the Queen's Club, West Kensington, this afternoon, and afterwards handed the Prizes to the successful competitors

BUCKINGHAM PALACE, August 11th.

Air Vice-Marshal Sir Hugh Trenchard, Chief of the Air Staff, had the honour of being received by the King this morning.

NAVAL

Lieut. C. Lansdowne, R.A.F., and Lieut. Marshall, R.A.F., were out on a bombing expedition over the Bolshevik lines on the Dvina on July 14th, when their seaplane was damaged by machine-gun fire and forced to descend.

They destroyed the seaplane, and started to swim back to the British lines, but had barely covered a mile when a Bolshevist patrol appeared and forced them to surrender. They were taken to the enemy headquarters at Puchega, and are reported safe and well.

* * *

The Air Ministry issued the official story of Major Sitwell's flight on August 7th, most of this having already been noted in THE AEROPLANE. The following would appear to be fresh information :—

Strong head winds were met with during the flight from Copenhagen to Reval, and as petrol threatened to run short a course was set towards Stockholm. On the west side of Gotland, however, a following wind was picked up, and the flight was continued to Reval, which was reached at 6.15 p.m. on July 20th.

On July 21st the last stage of the journey was flown in much improved weather, and the total journey of over 1,100 miles from Felixstowe to Helsingfors was completed in sixteen flying hours.

A very warm reception was accorded to the British flying officers and crew by the Finns. The Cross of the White Rose of Finland was conferred upon Major Sitwell and Captain Bailey.

Facilities were accorded for inspection of the flying-boat and demonstration flights were given each day to prominent Finns and representatives of the Finnish Press. Among those taken up were: Herr Castren, the Premier; General Kivekas, Chief of Staff of the Finnish army; Herr Holsti, the Minister of Foreign Affairs; and the Ministers of Commerce, of Communications, and Aviation.

This flight is all the more interesting owing to the fact that the boat is three years old, having been built at Felixstowe during the late war.

The British inhabitants of Reval are stated to have been extremely pleased to receive newspapers which were merely two days old instead of nine.

* * *

The following has been received from the Danish correspondent of THE AEROPLANE :—

While the British flying-boats to carry out the Scandinavian circuit have long been expected, another F.5 N.90 turned up last Saturday, July 19th, establishing the first after-war non-stop flight between England and Denmark. Under the command of Major Sitwell, and with Captain Bailey as pilot, the flying-boat followed a course over Holland, Cuxhaven, and the Kiel channel, the Danish islands Lolland and Falster, and landed by the Naval Air Station at the Royal Dockyard in Copenhagen. She carried beside the two N.C.Os. a representative of the Foreign Office, as the flying-boat was on courier service to Finland. Having replenished the petrol tanks with 1,000 kg. fuel, F.5 N.90 started on Sunday, July 20th, duly arriving at Helsingfors *via* Reval.

* * *

The following has also been received from the Danish correspondent of THE AEROPLANE :—

The show flight to the Scandinavian capitals was started upon, F.5 N.4044 flying first from Felixstowe to Christiania, where it was to wait for a sister companion. It filled in the time with trips, the passengers including H.M. Queen Maud and Crown Prince Olav of Norway. On the next stage to Copenhagen a wire broke, so the craft landed at the Norwegian Air Station at Horten, stopping overnight, and, as the British Legation at Copenhagen was not informed, a fatal accident was feared, and Danish naval aircraft were preparing to go out to search in the Kattegat Sea, when the flying-boat turned up safely at noon, July 29th, at the Danish capital. N. 4044 is under command of Major Galpin, with Captain Scott as pilot, the crew including further one wireless operator and one mechanic. F.5 N.4044 will next proceed to Stockholm, returning to England *via* the Swedish Göta Canal and the Danish city Esbjerg. Demonstration flights are given in Copenhagen to various persons of the Press, the Army and Navy, and the mail service concerned with aviation.

* * *

On Aug. 3rd the British Naval flying-boat F.5/4044 (Major C. T. Galpin, D.S.O., R.A.F.), arrived at Stockholm from Copenhagen. Her arrival caused much excitement among the populace. On Aug. 5th the same boat left Gothenburg for Esbjerg on her return flight to England, having made a tour of Scandinavia. She arrived at Esbjerg at 8 a.m. on Aug. 6th, and left at noon for Felixstowe.

* * *

H.M.A. R.33 will very probably start to fly to India within the week. The route this ship will take was announced some little time ago.

* * *

The British Naval triplane flying-boat, known as the "Felixstowe Fury," was completely wrecked on Aug. 11th, whilst undergoing tests. Her crew at the time of accident was Wing Comdr. Fellowes, R.A.F. (in command), Squadron Leader E. R. Moon, R.A.F., and Flight Lieut. Scott, R.A.F. (pilots), Flying Officers Armitt and S. E. S. McLeod, R.A.F., Serjt.-Major Cockburn, R.A.F., and one Locker, whose rank is hitherto unstated. Flying Officer McLeod was drowned.

The boat had started from Felixstowe Aerodrome at 9.15 a.m. en route for Portsmouth, and taxied towards Landguard Point. Then she turned into the wind. She narrowly missed fouling one of the buoys in the harbour and made a sudden stop.

An endeavour was next made to clear the river boat "Norfolk," and it was then she took a couple of leaps out of the water and finally struck the water with her nose and one wing and sank, her tail sticking out. Flying Officer McLeod, who was strapped in, was drowned, and two others of the crew were injured. Later in the day motor launches towed the wreckage back to the aerodrome.

The accident took place within 500 yards of the aerodrome, and an eyewitness declared that the boat had only just lifted herself from the water when the mishap occurred. Another eyewitness said that she appeared to be too heavy, and side-slipped and dived into the water.

The inquest was held at Felixstowe the same afternoon on Flying Officer Samuel Evans Smith McLeod, R.A.F., aged 30, who was acting as wireless operator. It was stated the "Fury" left the slipways all right, but when about 15 ft. up she fell and submerged the crew.

Lieut. G. J. O. Mullane, R.A.F., stated that he witnessed the accident. The seaplane left the harbour and veered round to the wind, which was blowing due north. She was travelling about 40 miles an hour. She rose from the water twice to a height of about 15 ft., and on rebounding a second time the left wing dropped and caught the water, bringing her nose round to port. This caused her to dive. In witness's opinion, her hull was smashed and deceased was entangled in the wires.

Capt. Charles Langston Scott, R.A.F., who was on board, corroborated the last witness. The deceased had been a Felixstowe station six months. A verdict of accidental death was returned.

The "Felixstowe Fury" had five Rolls-Royce engines with a total of 1,800 horse-power. She was designed by Colonel J. C. Porte, C.M.G., R.A.F., and took two years to build. At the time of her construction she was the largest triplane in existence, and it was at first intended that she should cross the Atlantic. She was on her way to Portsmouth preparatory to flying to the Near East when the accident occurred.

MILITARY.

WAR OFFICE, August 2nd.

REGULAR FORCES ESTABLISHMENTS.—R.F.C.—Mil. Wing.—Flying Officers.—The appointment of Sec. Lt. M. McGall (5th R. Sc. Fus., T.F.) is antedated to April 15th, 1917.

The name of temp. Sec. Lt. William Armstrong is as now described, and not William Austin Armstrong as in "Gazette," April 18th, 1918.

Instr. in Gunnery.—Graded as an Equipment Officer, 1st Class.—Temp. Lt. A. W. Furbank, Gen. List, from an Asst. Instr. in Gunnery (graded as an Equipment Officer, 3rd Class), and to be temp. Capt. while so empld., March 30th, 1918.

Equipment Officer, 1st Class.—Temp. Capt T. A. Ross, R.E., from an Equipment Officer, 3rd Class, and to be temp. Capt. while so empld., Jan. 28th, 1918.

Overseas Forces.—Canada.—Quebec R.—The following temp. Lts. (actg. Capts.) cease to be secd. for duty with the Air Ministry, Dept. of Works and Bldgs., and relinquish the actg. rank of Capt.:—W. J. Leslie, A. M. Hudson, Aug. 2nd.

Western Ontario R.—Temp. Lt. (actg. Capt.) R. R. Pigott ceases to be secd. for duty with the Air Ministry, Dept. of Works and Bldgs., and relinquishes the actg. rank of Capt., Aug. 2nd.

Alberta R.—Temp. Lt. (actg. Capt.) B. Y. Jackson ceases to be secd. for duty with the Air Ministry, Dept. of Works and Bldgs, and relinquishes the actg. rank of Capt., Aug. 2nd.

Brit. Columbia R.—Temp. Capt. P. J. D. de Latour ceases to be secd. for duty with the Air Ministry, Dept. of Works and Bldgs., and retires in the British Isles, Aug. 2nd.

Nova Scotia R.—Temp. Lt E. J. Cronin ceases to be secd for duty with R.A.F., July 14th.

E. Ontario R.—Temp. Lt. N. G. Reynolds ceases to be secd for duty with R.A.F., July 14th.

2nd Centl. Ontario R.—Temp Lt. R. A. Adams ceases to be secd. for duty with R.A.F., July 14th.

Saskatchewan R.—Temp. Lt. J. H. Wensley ceases to be secd. for duty with R.A.F., July 20th.

Brit. Col. R.—Temp. Lt. R. H. Schroeder ceases to be secd. for duty with the C.A.F., and also relinquishes grading as Flying Officer, July 17th.

Can. Forestry Corps.—Temp. Lt. D. Neil ceases to be secd. for duty with the R.A.F., July 14th.

Territorial Force.—Royal Garrison Artillery.—Lts. to be Capts.:—Temp. Capt, (R.A.F.) R. W. A. de H. Haigh (Glam. R.G.A.), and to remain secd., Oct. 31st, 1918.

Infantry.—5th Bn. Somerset L.I.—Sec. Lt. S. D. Mason (R.A.F.) to be Adjt. and to be actg. Capt., with pay and allowances of Lt. whilst so empld., March 3rd.

War Office, August 5th.

Regular Forces.—Cavalry.—11th Hrs.—Lt. R. C. Williams (attd. R.A.F.) resigns his commn., Aug. 6th.

Infantry.—Yorks. L.I.—Capt and Bt. Maj. C. E. C. Rabagliati. M.C., A.F.C., resigns his comn., Aug. 6th.

War Office, Aug. 8th.

Regular Forces.—R.F.C.—Mil. Wing.—Flying Officer.—The name of temp. Sec. Lt H. A. Leppan is as now described, and not L. H. Angus, as in "Gazette," May 10th, 1918.

Gen. List.—The name of temp. Sec. Lt. Hilton Angus Leppan is as now described, and not Leppan Hulton Angus, as in "Gazette," Oct. 25th, 1917.

Memorandum.—Air Vice-Marshal Sir H. M. Trenchard, K.C.B., D.S.O., Chief of the Air Staff, to be Col. of the R. Scots Fus., July 15th.

War Office, August 9th.

Regular Forces—Establishments.—Cavalry.—15th Hrs.—Capt. and Bt. Col. Sir F. H. Sykes, K.C.B., C.M.G., is placed on retired list on appointment to a permanent commission in the R.A.F., April 12th.

War Office, August 11th.

A despatch dated June 28th from Field-Marshal Sir Edmund Allenby, Commander-in-Chief, the Egyptian Expeditionary Force, has been received by the Secretary of State for War. The despatch summarises the campaign in Syria and Palestine, and the following reference is made to the work of the Royal Air Force. "... the superiority established by the air force over the enemy was one of the great factors of the successes of my troops.

Official Communiqués.

The War Office issued the following statement on August 5th.

General Maynard reports that a successful raid was carried out on August 2nd by combined forces of land, sea, and air, with the object of striking a surprise blow at the enemy's lake flotilla on Lake Onega, and of capturing the port of Talvuiski, 40 miles south-east of Medvyejya Gora.

The operation proved entirely successful.

The India Office made the following announcement on Aug. 8th:—

The Government of India have informed the Secretary of State that peace with Afghanistan was signed at 11 a.m., Friday, Aug. 8th.

AIR FORCE.

Air Ministry, August 1st.

R.A.F.—The attention of the officers named in this "Gazette" is directed to the Air Ministry Weekly Order, now in course of issue, relating to the grant of permanent commns. and to the new rates and conditions of pay and other emoluments.

The following are granted permanent commns. in the R.A.F. in the ranks stated, August 1st:—

Lieutenants.

R. I. Hartley (T.); C. F. Chinery (T.); E. H. Rundle (T.); C. H. Potts (T.); H. H. S. Scott, D.S.M. (T.).

E. Whittlesea (T.); S. T. Littleton (T.); H. J. Brown (T.); P. Coyle (T.); J. Noonan, D.S.M. (T.); T. S. Jobling (T.); R. D. McE. Hart (T.); R. G. Gore (T.); A. P. White (T.); C. O. Towler (T.) C. E. Whinney (T.); H. W. St. John, D.F.C. (O.); W. A. Coryton (A.); A. G. Quinnell (Ad.); R. Pyne (A.); H. K. Goode, D.S.O., D.F.C. (A.); J. Clover (O.); H. E. King (A.); W. J. Millan (A.); E. S. B. Clarke (A.); G. S. Taylor (A.); C. S. Gray (A.); R. Menzies (A.); J. Bradbury (A.); D. A. Cox (O.); G. A. R. Muschamp (A.); H. G. McKechnie (T.); W. K. Rose (A. and S.); R. A. Whyte (A. and S.); A. E. Gooch (T.); F. A. Skoulding (T.); R. Jones, M.C. (A.); J. E. Kendrick, D.F.C. (O.); I. Whitford (A.); R. H. Haworth-Booth, D.F.C. (A.); J. A. G. Haslam, M.C., D.F.C. (O.); J. S. Harrison (O.); E. G. Gaff (A.); V. Croome (A.); F. G. Prince (A.); J. A. Elliott (T.); O. G. Gregson (A.); C. A. Horn (O.); J. Blackford (A.); J. W. Lissett (A.); W. E. Dipple (A. and S.); H. E. Falkner (O.); F. T. Eades (O.); G. M. Lawson, M.C. (O.); D. S. Robertson (A.); W. S. Allen (T.); B. F. Deane (O.).

J. V. Gascoyne, D.F.C. (A.); L. B. Duggan (A. and S.); J. Parsons (T.); H. J. Bradley (A. and S.); J. S. Nichol (O.); R. H. F. de V. S. Somerset (A. and S.); D. Wood (A.); G. W. Birkinshaw (A. and S.); E. Brewerton (A. and S.); G. McCormack (O.); G. P. H. Carter (A.); C. Walker (O.); K. L. Harris (A.); H. Dawes, M.B.E. (S.O.); S. C. Black (A.); R. J. Willson (O.); J. Cafferkey (A.); M. C. Trench (O.); F. K. Damant (A.); F. J. Smith, M.C., M.M. (O.); C. A. Spence (A.); E. B. Green, M.C. (O.); S. J. Smetham (S.); P. N. Melitus (O.); E. H. Searle (A. and S.); L. Smith (Ad.); A. G. Thackray (S.); C. S. Miller (O.); H. W. Pearson (A.); E. A. Blake (A.); B. A. Foord, M.C. (O.); W. H. Bowden (Ad.); A. G. Pearce (A.); J. C. Foden, A.F.C. (A.); C. B. Dick-Cleland (Ad.); L. H. I. Bell (A.); L. G. Maxton (A.); A. H. E. Lindop (O.); A. S. Thompson (A.); C. R. Fenton (Ad.); C. F. Falkenberg, D.F.C. (A.); R. W. Rayn (A.).

R.A.F.—The following temp. appointment is made at the Air Ministry:—Staff Officer, 1st Class (Air.).—Lt.-Col. A. S. Barratt, C.M.G., M.C., July 18th, vice Lt.-Col. G. F. Pretyman, D.S.O., O.B.E.

The following temp. appointments are made:—Brig.-Gen. (Staff).—Lt.-Col. C. S. Burnett, C.B.E., D.S.O., June 18th, and to be actg. Brig.-Gen. while so empld., vice Lt.-Col. (actg. Brig.-Gen.) P. L. W. Herbert, C.M.G.

Staff Officer, 1st Class.—(P.).—Lt.-Col. R. C. M. Pink, July 25th.
Staff Officer, 2nd Class—(T.).—Maj. W. R. Bruce, Feb. 22nd.
Staff Officer, 3rd Class.—(Q.).—Capt. G. L. Hunting, Feb. 25th
Staff Officer, 4th Class (Air).—1st Grade.—Lt. R. J. Slade, May 27th.

Flying Branch.—Lt.-Col. G. F. Pretyman, D.S.O., O.B.E., to be Lt.-Col. (A.), from (S.O.), July 18th

Maj. F. K. Haskins, D.S.C., to be graded for purposes of pay and allowances as Lt.-Col. while empld. as Lt.-Col. (A.), from May 1st to May 25th.

Maj. W. Pennefather to be Maj. (A'ship), from (S.O.), May 1st.

Capt. R. S. Smith to be graded for purposes of pay and allowances as Maj. while empld. as Maj. (K.B.), July 20th

H.R.H. Prince Albert, K.G., Personal A.D.C. to His Majesty the King, to be Capt. (A.), from (Ad.), July 31st.

Lt. P. D. Baker to be graded for purposes of pay and allowances as Capt. whilst empld. as Capt (A.), May 1st

Lts. (O.) to be Lts. (A.):—G. F. Fry, C. W. H. Moller, May 20th.

Lt. D. F. Fox to be Lt. (A.), from (S.O.), July 21st.

Sec. Lts. to be Lts.:—F. D. Kilby, Feb. 1st; A. G. Dickinson, June 7th.

Sec. Lt. G. R. Hunter to be Sec. Lt. (A.), from (O.), July 9th, 1918.

The following relinquish their commns on ceasing to be empld.:—Lt. S. B. Kington (Lt., W. Rid. R.), Feb. 4th; Lt. W. P. Harris (Lt., W. Ont. R.), March 10th; Lt. S. G. Harman (Lt., Welsh R.), May 6th; Sec. Lt. T. H. Barry (Lt., R.G.A.), May 23rd; Lt. R. A. P. Johns (Lt., Hussars), May 31st; Capt. C. L. Bath (Lt., temp. Capt., Can. M.G.C.), June 11th; Sec. Lt. (Hon. Lt.) W. P. A. Robinson (Lt., R.F.A.), June 21st; Lt.-Col. F. A. Wanklyn, M.C. (Maj., R.A.), June 24th; Lt. W. H. Kilby (Lt., Manitoba R.), July 9th; Lt. L. Dobson, M.C. (Lt., S. Staffs R.), July 11th; Lt. G. Fielden (Lt., Hussars), July 30th; Lt. W. R. Curtis is temporarily transferred to the unempld. list, May 22nd.

Transferred to unempld. list:—Lt. R. J. W. Palmer, Feb. 19th (substituted for notification in "Gazette," April 18th); Sec. Lt. J. G. Munro, March 10th; Sec. Lt. R. H. Mills, March 11th; Lt. E. J. P. Penney, March 28th; Sec. Lt. L. J. Weatherall, March 31st; Sec. Lt. S. N. K. Jones, April 1st; Lt. E. N. Mais, April 3rd; Lt. G. M. Hopkins, April 6th; Lt. E. M. Heron, April 9th; Sec. Lt. A. C. Hyde, April 10th; Sec. Lt. (Hon. Lt.) J. C. Howells, April 13th; Lt. H. H. Hall, Lt. G. S. Holloway, April 14th; Sec. Lt. (Hon. Lt.) S. F. Parker, April 15th; Maj. D. Joy, Sec. Lt. R. C. Holdom, April 16th; Sec. Lt. J. Houldgreaves, April 18th; Lt. W. R. McCluskey, Capt. (actg., Maj.) P. R. Meredith, April 19th; Sec. Lt. C. B. Barton, April 21st; Sec. Lt. W. T. Laurie, Lt. R. W. Murray, April 22nd; Lt. F. C. Hoult, April 23rd; Sec. Lt. N. S. Macleod, April 24th; Sec. Lt. S. Horsman, April 25th; Lt. P. K. Hobson, M.C., April 26th; Sec. Lt. R. K. Moore, Sec. Lt. A. G. Wyatt, April 30th; Capt. C. L. H. Hicks, Lt. R. C. Hume, Sec. Lt. J. C. R. Weeks, Sec. Lt. R. Williams, May 1st; Lt. E. C. Musson, May 2nd; Sec. Lt. A. E. Millar, May 3rd; Sec. Lt. H. A. Morley, May 6th; Lt. J. S. Wesson, May 7th; Sec. Lt. J. R. Barnett, Capt. F. W. Mardock, May 15th; Sec. Lt. W. L. Winter, Lt. L. G. Taylor, May 19th; Lt. R. L. Houlding, Sec. Lt. H. Morrow, Sec. Lt. H. A. Neate, Sec. Lt. H. C. Traver, Sec. Lt. F. H. H. White, Sec. Lt. J. Williams, May 20th; Lt. F. Taylor, May 21st; Sec. Lt. G. W. Wadison, May 22nd; Lt. W. L. Collins, Sec. Lt. E. B. Webster, May 24th; Lt. C. F. Weaver, May 25th; Lt. C. F. P. Haslegrave, Lt. J. W. Hogben, Sec. Lt. N. R. E. Mattingly, Lt. C. N. Wylam, May 28th; Sec. Lt. T. A. Hopkinson, Capt. A. M. West, May 29th; Sec. Lt. W. V. Thomas, Lt. G. V. Wheatley, Sec. Lt. A. Wren, Sec. Lt. J. T. R. Wynn, May 30th; Capt. N. Wallis, May 31st; Lt. M. Hyslop, June 1st; Lt. L. H. Weeden, June 2nd; Sec. Lt. A. G. B. Whittaker, June 6th; Lt. D. M. Hodgson, Lt. C. Malthouse, Sec. Lt. C. C. Hoey, June 7th; Sec. Lt. J. Redmond (King's L'pool R.), June 10th; Sec. Lt. A. V. Hansford, June 11th; Lt. D. Widderburn, June 13th; Lt. (Hon. Capt.) L. E. Barry (substituted for notification in "Gazette," April 29th); Lt. C. L. Grimwood, June 14th; Lt. W. J. P. Woodhouse, June 15th; Sec. Lt. C. B. Tod, June 16th, Lt. J. C. Ballard, June 18th; Lt. F. T. Woods, June 19th; Lt. B. F. Wates, Lt. J. D. F. West, June 20th; Sec. Lt. Wm. P. Watts, June 22nd; Lt. H. R. Davies, June 23rd; Lt. G. S. Wilkinson, June 25th; Sec. Lt. C. Walton, Sec. Lt. C. H. White, June 26th; Lt. A. Hyland, July 2nd; Sec. Lt. D. H. O. Edmunds, Sec. Lt. F. J. Walton, July 4th; Capt. C. W. Hyde, Sec. Lt. D. M. Fleming, July 5th; Lt. V. Dreschfield, Lt. G. M. Eilcart, Sec. Lt. A. E. Gammon, July 6th; Lt. G. Clapham, A.F.C., Lt. Wm. B. Cochran, Lt. A. W. Day, Lt. G. E. P. Elder, Capt. H. M. Ferreira, Lt. A. E. Horn, Lt. C. A. Mulligan, July 7th; Lt. F. G. Wells, July 8th; Lt. B. V. Chinery, Sec. Lt. H. P. Dalwood, July 9th; Lt. J. C. Davison, Sec. Lt. A. B. C. Emmett, Sec. Lt. S. O. Franks, Sec. Lt. E. Hazell, Lt. P. T. Hunt, July 10th; Sec. Lt. F. I. Atkins, Sec. Lt. J. B. Begin, Sec. Lt. L. J. Betts, Sec. Lt. G. W. Brown, Sec. Lt. J. W. Caines, Lt. N. E. Chandler, Capt. R. M. Clifford, Sec. Lt. A. Craig, Lt. D. McK. Darroch, Lt. J. D. Davidson, Sec. Lt. O. J. Demers, Capt. M. C. Duboc, Sec. Lt. S. E. Edwards, Sec. Lt. R. H. Ellis, Sec. Lt. G. P. Emery, Sec. Lt. H. L. Erb, Sec. Lt. A. W. Field, Sec. Lt. L. Galibert, Lt. J. G. Gillanders, Lt. R. J. Gilroy, Sec. Lt. A. V. Green, Sec. Lt. T. L. Jones, Sec. Lt. T. A. Lawrence, Sec. Lt. J. B. Little, Sec. Lt. F. M. Ramsay, Sec. Lt. A. V. Waters, Sec. Lt. J. R. Welsford, July 12th; Sec. Lt. S. G. Kiddie, July 13th; Lt. J. H. Crowe, Lt. P. M. Lindesay, Sec. Lt. J. E. Workman, July 14th; Maj. R. J. J. Hope-Vere, Sec. Lt. J. H. Moore, July 15th; Lt. W. T. Breach, Lt. R. C. B. Presland, July 17th; Sec. Lt. J. C. Gow, Lt. E. P. Holloway, Sec. Lt. F. G. Kilby, Lt. R. B. Loemore, D.S.O., July 18th; Lt. F. C. Craig, Sec. Lt. A. C. Whittle, July 19th; Sec. Lt. J. E. White, July 22nd; Lt. C. H. O. Strettell, July 23rd; Sec. Lt. N. H. Muir, July 24th; Sec. Lt. C. S. Harrison, Lt. H. O. MacDonald, Lt. E. R. W. Millar, Lt. C. F. R. Price-Hughes, July 25th; Lt. L. Mortimore, July 26th; Lt. W. J. Corney, Lt. F. Nightingale, Sec. Lt. M. E. Noyce, Sec. Lt. P. S. White, July 29th; Lt. G. M. Wrentmore, July 30th; Sec. Lt. C. A. Milner, Sec. Lt. H. S. Mills, Sec. Lt. C. N. Osborne, Sec. Lt. T. W. Osborne, Aug. 1st.

The following relinquish their commns. on account of ill-health and are permitted to retain their rank:—Capt. J. W. Somers (contracted on active service), July 21st; Lt. H. Fenton (contracted on active service), July 22nd; Lt. C. C. G. Girvan (caused by wounds), July 22nd; Lt. E. L. H. Macleod (caused by wounds), July 23rd; Lt. M. Andrews (contracted on active service), July 30th (substituted for notification in "Gazette," March 28th); Sec. Lt. F. T. Mollard, May 23rd (substituted for notification in "Gazette," May 9th); Sec. Lt. G. R. Newton-Bridle (contracted on active service), July 20th (substituted for notification in "Gazette," April 8th); Sec. Lt. S. C. Ridges, July 26th.

Sec. Lt. M. C. Burt relinquishes his commn. on account of ill-health, July 10th (substituted for notification in "Gazette," June 6th)

The initials of Lt. (actg. Capt.) E. C. Morris are as now described and not "E. E.," as stated in "Gazette," May 9th

The Christian names of Sec. Lt. Edmund Bernard Saunders are as now described, and not "Edward Bernard," as stated in "Gazette," Dec. 10th, 1918.

The surname of Sec. Lt. R. Kelley is as now described, and not "Kelly," as stated in "Gazette," June 24th.

The notification in "Gazette," March 28th, concerning Lt. J. A. Anderson (Brit. Col. R.) is cancelled.

The notification in "Gazette," April 4th, concerning Lt. I. A. Peers is cancelled.

The notification in "Gazette," April 8th, concerning Lt. (actg. Capt.) P. B. Pattisson is cancelled.

The notification in "Gazette," May 20th, concerning Lt. N. B. Arbuthnot is cancelled. The notification in "Gazette," May 27th, to stand.

The notification in "Gazette," May 27th, concerning Sec. Lt. (Hon. Lt.) W. Cooke is cancelled.

The notification in "Gazette," July 1st, concerning Lt. C. Miller is cancelled.

The notification in "Gazette," July 8th, concerning Sec. Lt. R. J. Palmer is cancelled.

ADMINISTRATIVE BRANCH.—Majs. to be Majs., from (S.O.) :—R. Honey, July 9th; H. E. Day, D.S.O., M.V.O., July 21st.

To be actg. Majs. whilst empld. as Majs. :—Capt. J. P. H. Hayes, Sec. Lt. (Hon. Capt.) C. Harvey, May 1st.

Capts. to be Capts. :—G. B. McClure, O.B.E., from (S.O.), July 6th; H. S. Edgar, from (T.), July 16th; A. W. Crombie, from (T.), July 21st.

Lt. E. P. Manson to be graded for purposes of pay and allowances as Capt. whilst empld. as Capt., from May 1st to July 1st.

Sec. Lt. (Hon. Lt.) A. G. Horlock to be Sec. Lt. (Hon. Lt.), from (O.), and to be actg. Lt. whilst empld. as Lt., from May 30th, 1918, to April 20th.

Sec. Lt. F. C. Matten to be Sec. Lt., from (T.), Jan. 1st.

P.F.O. S. S. Russell (late R.N.A.S.) is granted a temp. commn. as Sec. Lt., Sept. 7th, 1918.

The following are granted temp. commns. as Sec. Lts :—P. A. H. Anderson, July 28th; E. F. Elliott, July 30th

The following relinquish their commns. on ceasing to be empld. :—Capt. R. J. H. Purcell (Capt., K.R.R.C.), Feb. 27th; Sec. Lt. (Hon. Lt.) G. H. P. Whitfield (Lt., R. Irish Rifles), April 1st; Lt. P. L. Hogan (Lt., L'pool R.), May 28th; Sec. Lt. (Hon. Lt.) N. F. Penruddocke (Capt., R.A.S.C.), July 11th; Lt. P. H. Drake-Brockman (Lt., E. Surrey R.), July 15th.

Transferred to unempld. list :—Lt. F. A. Mildred, M.C., Feb. 19th; Lt. P. B. Pattison, Feb. 20th; Lt. W. R. Northbridge, March 5th; Capt. J. T. Pym, March 23rd; Sec. Lt. H. West, April 11th; Sec. Lt. H. L. Whitelaw, April 12th; Sec. Lt. C. V. Wheeler, April 15th; Sec. Lt. F. E. Wilford, April 16th; Sec. Lt. F. T. Wickwar, April 18th; Sec. Lt. A. E. DeGruchy, April 20th; Lt. A. Parrish, May 1st; Sec. Lt. W. E. Mayne, May 2nd; Lt. (Hon. Capt.) G. A. Hoghton, May 5th; Sec. Lt. A. G. Whittaker, May 14th; Sec. Lt. H. J. B. Sullivan, May 20th; Sec. Lt. B. T. Cato, May 21st (substituted for notification in "Gazette," May 16th); Sec. Lt. F. Harrison, May 24th; Sec. Lt. R. G. Lotter, May 29th; Sec. Lt. C. S. M. Weldon, June 9th; Sec. Lt. F. B. Morris, June 14th; Sec. Lt. A. K. Whiteman, June 25th (substituted for notification in "Gazette," July 15th); Sec. Lt. W. F. Mackenzie, June 26th, Capt. P. S. Hargreaves, July 6th, Sec. Lt. F. Hook, July 11th; Sec. Lt. H. Dove, July 12th; Sec. Lt. G. Weaver, July 13th; Capt. A. W. W. Pope, July 15th; Lt. E. K. James, July 18th; Sec. Lt. (Hon. Lt.) G. H. Heys, July 22nd.

The following Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank :—L. Curlewis, M.C. (caused by wounds), C. D. Taylor (contracted on active service), July 22nd.

Sec. Lt. H. C. Thomas relinquishes his commn. on account of ill-health, and is permitted to retain his rank, July 22nd.

Sec. Lt. S. V. Daley to take rank and precedence as if his appointment as Sec. Lt. bore date May 1st

The notification in "Gazette," June 6th, concerning Sec. Lt. F. B. Morris is cancelled.

The notification in "Gazette," June 17th, concerning Lt. R. T. Kelly is cancelled.

The notification in "Gazette," July 11th, concerning Lt. J. T. Wright (Lt., R.N.) is cancelled.

The notification in "Gazette," July 15th, concerning Capt. G. A. Brown is cancelled.

TECHNICAL BRANCH.—Maj. V. C. Richmond, O.B.E., to be actg. Lt.-Col. while empld. as Lt.-Col., Grade (A.), from Aug. 1st, 1918, to March 31st.

Capt. E. P. Smith to be actg. Maj. while empld. as Maj., Grade (A.), from Aug. 1st, 1918, to Feb. 27th.

Capts. to be graded for purposes of pay and allowances as Majs. while empld. as Majs., Grade (A) :—A. K. Kendal, W. W. Tullis, May 1st.

Capt. P. D. Robertson, A.M., to be Capt., Grade (A.), from (A.) April 17th.

To be actg. Capts. while empld. as Capts., Grade (B.) :—Sec. Lt. E. P. Dampier, from April 1st, 1918, to April 30th (substituted for notification in "Gazette," April 30th, 1918); Lt. A. B. Macintosh, from Jan., 27th to April 30th.

Lt. S. W. Davis to be graded for purposes of pay and allowances as Capt. while empld. as Capt., Grade (A.), May 1st.

Lt. A. S. Clark to be Lt., Grade (A.), from (A.), Dec. 31st, 1918.

Sec. Lt. M. Sheriff, D.C.M., to be Lt., Feb. 30th.

Sec. Lts. to be actg. Lts. while empld. as Lts., Grade (A.), from Aug. 1st, 1918, to March 31st :—C. Dollery, T. F. Emms.

Sec. Lt. (Hon. Lt.) L. A. Sturrock (Lt., I.A.R.O.) relinquishes his commn. on reversion to I.A.R.O., Aug. 1st.

The following relinquish their commns. on ceasing to be empld. :—Lt. C. B. Carr (Lt., Kent Cyclist Batt.), June 20th, 1918; Lt. T. S. Griffiths (Lt., R. Welsh Fus.), June 26th; Lt. C. H. Knight (Dorset R.), July 3rd; Sec. Lt. (Hon. Lt.) P. Anderson (Lt. (T./Capt.) A. and S. Highrs.), July 9th.

Transferred to unempld. list :—Capt. S. Watson, Feb. 3rd; Capt. F. J. Mussel-White, March 4th; Sec. Lt. (actg. Lt.) R. D. Whitt, March 16th; Lt. F. W. Webster, April 11th; Sec. Lt. (Hon. Lt.) (actg. Lt.) J. R. Jones, April 16th; Lt. W. R. Boag, Lt. F. J. Kayser, April 20th; Sec. Lt. A. W. Whistlecroft, May 8th; Capt. W. H. Mulville, May 15th; Sec. Lt. J. T. Williams, May 17th; Sec. Lt. G. Laughlin, May 20th (substituted for notification in "Gazette," May 23rd); Sec. Lt. J. H. Glew, May 26th; Sec. Lt. J. West, May 28th; Lt.-Col. F. R. G. Hoare, C.B.E., Lt. F. E. White, May 30th; Sec. Lt. (Hon. Lt.) C. W. Whitworth, May 31st; Capt. R. Whiddington, June 1st; Maj. C. W. C. Wheatley, June 3rd; Capt. H. C. Harris, June 5th; Lt. (Hon. Maj.) W. A. Webb, June 18th; Lt. J. E. Wight, June 24th; Capt. E. S. Davis, June 30th; Lt. D. W. Harvey, Capt. C. H. Waghorn, July 1st; Lt. W. L. Horwood, July 2nd; Capt. (actg. Maj.) D. R. Verey, July 6th; Sec. Lt. (Hon. Lt.) R. S. Haward, Sec. Lt. (Hon. Lt.) A. N. Pictor, July 8th; Sec. Lt. (Hon. Lt.) G. C. R. Hitchings, July 10th; Capt. W. A. Ogden, July 13th; Lt. F. D. Lugard, July 14th; Maj. C. H. Parkes, July 15th; Capt. W. T. Passmore, July 18th; Sec. Lt. (Hon. Lt.) C. W. Olliver, July 19th; Sec. Lt. A. K. Murray, July 22nd.

Lt. C. W. Ware relinquishes his commn. on account of ill-health, and is permitted to retain his rank, July 20th (substituted for notification in "Gazette," April 15th).

Sec. Lt. C. A. S. Brittenden relinquishes his commn. on account of ill-health, and is permitted to retain his rank, July 22nd.

The notification in "Gazette," July 18th, concerning Sec. Lt. (actg. Capt.) E. P. Dampier is cancelled.

The notification in "Gazette," May 23rd, concerning Sec. Lt. J. H. Glew is cancelled.

MEDICAL BRANCH.—Transferred to unempld. list :—Capt. J. L. Whatley, Feb. 29th, Capt. H. M. Holt, April 13th.

MEMORANDA.—The following are granted the actg. rank stated against their names :—Maj. A. H. C. Kearsey, D.S.O., to be actg. Lt.-Col.; Capt. H. I. Hanmer, D.F.C., to be actg. Maj.; Capt. A. H. S. Baker to be actg. Maj.; Capt. C. C. Treatt to be actg. Maj.; Lt. K. A. C. Creswell, M.B.E., to be actg. Capt., May 1st.

Lt. C. H. Tancred to be actg. Capt., May 27th.

The following Overseas Cadets are granted temp. commns. as Sec. Lts., with effect from Feb. 15th, and relinquish such commns. with permission to retain the rank, from the day following termination of the standardised voyage in the case of those claiming immediate repatriation, and from the day following demobilisation in England in all other cases :—184391 A. K. Askham, 184418 J. J. Anderson, 184282 C. J. Arnold, 183568 J. Baguley, 184205 L. Brown, 184298 A. Burl, 310817 J. M. Black, 310815 G. C. V. Buckley, 183878 N. Collett, 184398 J. J. Carlos, 184801 T. H. Cochrane, 184283 E. H. Cuss, 316782 J. E. Dealey, 184488 H. P. Ealey, 316545 E. W. Flower, 316587 H. Faram, 183272 E. W. Foot, 183847 E. A. Fothergill, 183726 W. W. Florence, 316592 A. C. Goble, 316772 A. G. P. Gibbs, 184420 W. B. Geipel, 183615 G. S. Green, 184286 G. T. Godwin, 184457 C. Harvey, 183677 J. G. Hawtin, 136536 A. C. Hepburn, 75712 S. N. Honeyman (substituted for notification in "Gazette," June 13th), 184624 O. G. F. Joubert, 184568 J. Johnson, 184244 J. C. Jones, 316600 R. S. Jameson, 183926 F. T. Kean, 137940 R. A. King, 184463 D. L. Lundie, 184753 R. H. Last, 316601 A. P. Ledeboer, 316551 J. B. McGill, 316550 F. C. McDonald, 184862 R. Mitchelmore, 184465 R. F. Morley, 179164 A. D. Morris, 316813 M. D. Macbeth, 316555 W. E. Norton, 316554 I. A. Nicolson, 183034 D. M. Nesbit, 316609 M. E. Pennington, 316110 C. M. Plowes, 181913 M. B. C. Pettengell, 184315 F. A. Pragnell, 316190 E. H. Reeves, 100031 B. Ridges, 316557 E. C. Ruddenklau, 316558 O. P. Stanford, 184818 R. S. Simpson, 184290 W. J. Stone, 136710 R. Turner, 316620 A. W. Turrell, 310559 C. R. Williamson, 182925 N. A. C. Williams.

The following Cadets are granted Hon. commns. as Sec. Lts. :—137729 L. F. Firth, 26023 G. W. Shawcross, Jan. 17th; 137070 R. H. Bromley, Jan. 21st; 309610 A. Horwood, Jan. 23rd; 140184 G. D. Ball, Jan. 27th; 15003 A. J. Balls, 12228 H. W. Bunning, S/90495 V. J. Dalby, Jan. 29th; 22233 A. E. Allen, 298668 A. P. Franklin, 315376 F. Gill, 178685 E. Hurley, 110718 R. D. O. Lewis, 032166 W. D. Watt, Jan. 30th; 650497 W. J. Maine, S/19139 I. R. Merrishaw, S/22856 G. Walls, Jan. 31st; 217805 A. S. Baldwin, Feb. 1st; 210062 C. E. Collier, 156347 H. W. Hatfield, 156922 H. N. Nixon, Feb. 3rd; 137096 E. A. Reavell, 53c069 J. Russell, Feb. 7th; 300500 P. A. Osbourne, 179269 W. Warren, Feb. 8th; 87075 E. S. Stead, Feb. 10th; 117044 W. G. Vaughan, Feb. 11th, 17948 E. T. Bailey, 137400 A. G. Honey, Feb. 15th; 137738 J. Hullah, 56234 R. Stephenson, 147089 R. Whitehead, Feb. 16th; 117856 A. Broadbent, 200606 M. Empswell, 254629 R. J. Morgan, 178874 E. W. Morris, 54576 T. L. McGowan, 38651 R. B. Tibbs, 175025 W. P. Wiltshire, 253280 E. Walker, 13759 N. Walker, Feb. 17th; 128637 G. Hamilton, 177597 G. R. Hunt, 106339 T. H. Mills, 128412 D. Nunn, 110316 N. J. White, Feb. 18th; 137184 G. N. Davies, Feb. 19th; 100040 N. L. Handley, 128869 C. Hulbert, 137607 E. G. Nance, 93097 A. Nuttall, 175021 W. H. Whitby, Feb. 20th; 66642 T. W. Pate, 137445 S. Pycock, 127549 H. C. R. Tuff, Feb. 21st; 137089 A. G. Alexander, 128283 R. O. Comnys, 128515 E. A. Dennis, 117976 H. W. Drinkwater, 70592 S. A. Eagles, 110190 L. Flexman, 301840 J. A. Harveyson, 0/156542 J. E. Jurdan 128327 A. D. Landin, 39357 J. L. H. Miller, 101468 W. S. Marston, 4829 H. E. Parminter, 12401 H. Sunderland, 176125 T. C. Sharwood, 137043 W. Woods, 30556 C. S. M. White, Feb. 22nd; 75335 B. Kennard, 26291 S. Makin, 248655 D. W. Service, Feb. 27th; 2/050601 S. Lockwood, 460809 F. S. Pullan, March 3rd; 97805 G. Calvert, March 4th; 100479 N. W. Lindsay, March 6th; 176406 W. S. Andrews, March 7th; 32244 H. Tucker, March 8th; 44915 P. Jones, March 13th; 190232 J. L. Taylor, March 14th; 110293 V. A. Blaker, 176108 R. L. Morgan, March 15th; 155448 F. Smith, March 17th; 729 A. Brown, 408485 A. Foote, March 20th; 137071 K. E. Buller, March 21st; 43290 A. F. Barrett, 128171 G. T. Bickle, 110871 H. G. Plumbridge, March 22nd; 15797 E. Algar, March 23rd; 95967 C. Dick, March 27th; 75235 N. O. Hudson, 137101 G. R. Reynolds, March 30th; 221510 L. V. Lincoln, March 31st, 1863 J. H. Morley, April 1st; 241096 J. Dick, April 2nd; 321172 E. A. Hinxman, 133649 J. Littlejohn, 175070 H. Mitchell, 128678 R. W. McKay, 23868 H. H. L. Potter, 214453 J. R. Palfrey, April 3rd; 514411 G. H. Davy, 137348 A. J. Farrington, 175762 C. M. Miller, 170578 C. J. Price, 175153 B. F. Simpson, April 5th; 313557 R. H. J. Affleck, 244928 J. W. Archer, 176152 E. Belt, 179474 J. D. Grey, 180135 S. Hillier, 176715 G. R. Hart, 18641 H. Proctor, 179286 C. Selbie, 178795 G. Walker, April 10th; MS/4039 J. E. Beare, April 12th; 158027 G. W. Clarke, 27156 H. C. Lupton, 19421 W. G. N. Pritchard, April 16th; 78790 J. F. Moss, April 24th; 767460 P. Bacon, 203287 T. H. Harvey, April 30th; 137026 J. A. Nicholson, 192746 J. A. Potts, 137447 C. Powell, May 1st; 95595 W. T. Ruse, May 3rd; 52472 M. D. Black, May 20th.

Maj.-Gen. Sir F. H. Sykes, K.C.B., C.M.G., retires on ret. pay, April 1st.

Capt. E. G. Knox (Aus. Flying Corps) relinquishes his temp. supplementary commn. on ceasing to be empld., July 23rd.

The following relinquish their commns. on ceasing to be empld. :—Lt.-Col. R. J. Armes, C.M.G. (Maj. (Bt.-Col.), N. Staffs. R.), May 25th; Maj. J. St. A. King (Maj., Indian Army), July 7th; Temp. Hon. Lt. H. R. Tidswell, July 31st.

Transferred to unempld. list :—Maj. G. P. Myers, from (S.O.), April 11th; Lt.-Col. R. H. Mulock, D.S.O., May 16th; Lt. H. Hooper, from (S.O.), June 11th; Capt. A. E. Illingworth, from (S.O.), July 7th.

REGULAR FORCES ESTABLISHMENTS.—ROYAL REGIMENT OF ARTILLERY.—R.H. and R.F.A.—The following resign their commns. :—Capt. A. Christie, C.M.G., D.S.O. (temp. Lt.-Col., R.A.F.), Lt. D. D'E. Strickland, Aug. 2nd

AIR MINISTRY, August 5th.

R.A.F.—PERMANENT OFFICERS.—PROMOTIONS.—To be Air Commodores.—A. V. Vyvyan, C.B., D.S.O., P. W. Game, C.B., D.S.O., O. Swann, C.B., C.B.E., F. R. Scarlett, C.B., D.S.O., Aug. 1st; C. L. Lambe, C.B., C.M.G., D.S.O., J. M. Steel, C.M.G., C.B.E., C. A. H. Longcroft, C.M.G., D.S.O., A.F.C., T. I. Webb-Bowen, C.B., C.M.G., L. E. O. Charlton, C.B., C.M.G., D.S.O., D. le G. Pitcher, C.M.G., D.S.O., Aug. 5th.

To be Group Capts. :—C. R. Samson, R. H. Clark-Hall, T. C. R. Higgins, A. M. Longmore, I. M. Bonham-Carter, O.B.E., Aug. 5th.

The following appointments are made :—Directors.—P. W. Game, C.B., D.S.O., C. L. Lambe, C.B., C.M.G., D.S.O., R. M. Groves, C.B., D.S.O., A.F.C., August 1st.

Dep. Dir., 1st Class :—F. C. Halahan, C.M.G., D.S.O., M.V.O., Aug. 1st.

Dep. Dirs., 2nd Class :—I. M. Bonham-Carter, O.B.E., and to be Dep. Dir., 1st Class, Aug. 5th; E. R. Ludlow-Hewitt, C.M.G., D.S.O., M.C., C. L. N. Newall, C.M.G., A.M., C. L. Courtney, C.B.E., D.S.O., Aug. 1st.

The following temp. appointments are made at the Air Ministry :—Staff Officer, 2nd Class (T.) :—Capt. T. G. Skeats, Aug. 1st.

Staff Officer, 3rd Class (T.) :—Sec. Lt. C. Y. Mitchell, Aug. 1st, vice Capt. T. G. Skeats.

The following temp. appointments are made :—Staff Officer, 1st Class (Air) :—Lt.-Col. G. M. Griffith, Mar. 31st.

Staff Officer, 2nd Class (P.) :—Maj. R. C. Lane, July 31st

Staff Officer 3rd Class (P):—Capt. H. R. Kavanagh, July 8th, vice Capt. L. A. K. Butt, Capt. A. J. W. Barnby, O.B.E., July 31st, from S.O.2.

FLYING BRANCH.—Lt.-Col. (actg. Brig.-Gen.) P. L. W. Herbert, C.M.G., to be Lt.-Col (A.), from (S.O.), and relinquishes actg. rank of Brig.-Gen., June 18th.

Lt.-Col. L. W. B. Rees, V.C., M.C., A.F.C., to be Lt.-Col. (A.), from (S.O.) July 25th.

Maj. R. B. B. Colmore, O.B.E., to be Maj. (A.), from (S.O.) May 12th.

Capt. E. C. Emmett, M.C., D.F.C., to be actg. Maj. whilst empld. as Maj. (A.), May 1st.

Capt. K. B. S. Greig to be graded for purposes of pay and allowances as Maj. whilst employed as Maj. (K.B.), May 1st.

Capt. F. Workman, M.C., to be Capt. (A.), from (T.) April 23rd.

Capt. A. J. H. MacColl to be graded for purposes of pay and allowances as Capt. whilst employed as Capt. (A'ship), March 5th.

Lt. J. P. Morkham to be actg. Capt. whilst employed as Capt. (A.) Nov. 25th, 1918.

Sec. Lt. H. E. Crane is antedated in his appointment as Sec. Lt. (A. and S.), May 11th, 1918.

The following relinquish their commissions on ceasing to be employed:—Sec. Lt. W. R. Gray (Sec. Lt., Shrops. L.I.), Aug. 9th, 1918; Lt. (Hon. Capt.) A. B. Fairclough, M.C. (Capt., Can. M.G.C.), Capt. J. H. Scandrett (Capt., Can. Fd. Art.), April 14th; Sec. Lt. (Hon. Capt.) H. E. Paquin (Capt., Quebec R.), April 19th; Sec. Lt. (Hon. Lt.) H. McA. Peacock (Capt., R.F.), April 23rd; Lt. (Hon. Capt.) G. W. Taylor (Lt., R. Can. Dragoons), April 27th; Sec. Lt. C. R. Fraser (Lt., Can. Engrs.), May 15th; Lt. W. A. Scott (Lt., Can. Forestry Corps), May 31st; Sec. Lt. L. C. L. Cook (Sec. Lt., R.A.S.C.), June 7th; Lt. A. Grundy (Lt., Brit. Columbia R.), June 27th; Sec. Lt. E. H. D. Fowler (Lt., Midd'x R.), Lt. R. C. D. Oliver (Sec Lt., R. Berks R.), July 1st; Sec. Lt. (Hon. Lt.), A. C. Lobley (Lt., E. Ont. R.), July 7th; Sec. Lt. (Hon. Lt.) P. R. Cook (Lt., R.F.A.), July 8th; Capt. W. A. C. Heyman (Lt., Hussars), July 24th; Capt. F. R. Alford, M.C. (Capt., Can. M.G.C.), July 27th.

Transferred to the unemployed list:—Lt. E. Plowman, Jan. 23rd; Lt. H. T. W. Manwaring, Jan. 30th; Capt. C. G. Bronson, Feb. 17th; Sec. Lt. G. H. Price, Feb. 22nd; Sec. Lt. R. D. Nicholls, March 7th; Sec. Lt. L. C. Spaven, March 25th; Lt. (actg. Capt.) R. G. Malcolm, Lt. J. A. Stretton, Lt. W. D. Stroud (R.F.A.), April 1st; Capt. (actg. Maj.) F. D. Till, April 3rd; Sec. Lt. G. J. Mortimer, April 4th; Sec. Lt. H. S. Izzett, Lt. J. L. Jewkes, April 8th; Sec. Lt. I. H. Jenkins, Sec. Lt. G. W. Shepherd, April 10th; Lt. B. R. Jillings, Sec. Lt. W. E. Johns, Lt. S. M. Johnson, Lt. S. G. E. I. Knox, Lt. H. F. N. Paull, April 11th; Lt. W. R. Healey, Lt. C. de B. Pequegnat, April 13th; Lt. O. J. F. Jones-Lloyd, April 14th; Lt. W. R. Eastman, Sec. Lt. E. V. Hunter, Sec. Lt. W. V. Tomlinson, April 15th; Sec Lt. A. H. Burns, Sec. Lt. C. R. Jenkins, Sec. Lt. E. T. Jones, April 16th; Sec. Lt. F. H. Joynes, April 17th; Lt. A. B. Hughes, Lt. H. J. Loughlin, April 18th; Lt. E. S. Duggan, Lt. P. G. du Vai, Lt. N. K. Johnson, Lt. (Hon. Capt.) L. G. Loudoun, Sec. Lt. C. H. G. Pryor, April 19th; Lt. J. D. Reid, Sec. Lt. C. C. Stubbs, April 20th; Sec. Lt. W. A. Crich, Sec. Lt., F. J. Hunt, D.F.C., April 22nd; Lt. R. M. W. Louden, April 23rd; Lt. L. W. Hudson, Lt. P. C. Jenner, April 24th; Sec. Lt. A. W. Steward, April 25th; Capt. A. O. Jones, April 26th; Sec. Lt. (Hon. Lt.) F. M. Loly, D.F.C., April 28th; Lt. C. G. Jenyns, Sec. Lt. W. G. Lowcock, May 7th; Sec. Lt. E. Roberts, May 8th; Capt. (Hon. Maj.) A. M. Miller, D.S.O., May 9th; Sec. Lt. N. A. D. Cowan (substituted for the notification in the "Gazette" of May 20th); Sec. Lt. G. W. Lazenby (substituted for the notification in "Gazette," May 23rd), May 20th; Sec. Lt. A. D. Loughborough, May 25th; Lt. A. G. Loton, May 28th; Lt. D. H. Jones, May 29th; Lt. F. D. Hobbs, May 30th; Sec. Lt. R. Jurgans, June 2nd; Sec. Lt. H. J. Smith, June 3rd; Sec. Lt. C. H. Jehan, Lt. C. F. Lodge, June 5th; Lt. W. P. Lester-Jones, June 6th; Sec. Lt. H. P. E. Jones, June 7th; Maj. C. H. R. Johnstone, June 9th; Sec. Lt. D. H. Jones, June 10th; Sec. Lt. H. A. Halliday, June 12th; Lt. A. W. Davison, Sec. Lt. J. K. Loud, Lt. C. R. Richards, M.C., Sec. Lt. J. Spooner, June 13th; Sec. Lt. (Hon. Lt.) W. Dougall, Sec. Lt. C. H. Senegal, June 14th; Capt. G. E. W. Hitchcock, June 20th; Lt. G. K. Deaker, June 23rd; Lt. A. Lomax, M.C., June 30th; Lt. A. M. Lomas, Sec. Lt. S. P. Tarrant, July 3rd; Sec. Lt. L. E. T. Burley, July 6th; Sec. Lt. E. V. L. Keating, July 7th; Capt. F. M. Kitto, M.C., July 8th; Lt. J. H. T. Carr, Lt. H. B. Davies, July 9th; Sec. Lt. J. A. L. Rogers, Sec. Lt. C. R. Stewart, July 10th; Lt. C. S. Stonehouse, July 11th; Lt. Le G. Cunningham, Lt. C. S. Dickinson, Sec. Lt. J. H. Douglas, Sec. Lt. S. W. Keston, Lt. J. Reekie, Sec. Lt. W. E. Rose, Lt. G. F. Sanderson, Sec. Lt. H. W. Scarnell, Sec. Lt. K. M. Skene, Lt. G. C. W. Sutcliffe, Sec. Lt. F. S. Tear, Sec. Lt. H. Thomas, Lt. J. W. Thompson, Sec. Lt. P. A. Timmons, Lt. R. C. Tyler, July 12th; Sec. Lt. W. H. A. Tedder, July 13th; Sec. Lt. J. W. Radcliffe, July 14th; Sec. Lt. J. C. Fraser, Sec. Lt. (Hon. Lt.) J. F. Scott, Sec. Lt. H. S. Spencer, Sec. Lt. E. J. Whitwell, July 15th; Lt. D. M. Deighton, July 16th; Lt. J. K. Arnold, Sec. Lt. G. A. Munro, July 17th; Sec. Lt. J. E. Sewell, July 21st; Lt. A. F. McGlasban, M.C., Capt. L. G. Sieveking, D.S.C., July 22nd; Capt. D'A. F. Hilton, M.C., July 23rd; Sec. Lt. W. Dowling, July 24th; Sec. Lt. A. P. Booth, Sec. Lt. T. J. Leighs, Lt. C. G. Ross, D.F.C., Sec. Lt. N. D. Spranger, Sec. Lt. H. Toms, Sec. Lt. G. B. Treadwell, D.F.C., July 25th; Sec. Lt. F. N. Quy, Capt. S. W. Taylor, M.C. (substituted for the notification in the "Gazette" of April 25th), Aug. 1st; Maj. B. C. McEwen, M.C., Sec. Lt. J. H. C. Norgarb, Lt. G. A. Penny, Aug. 2nd; Lt. O. E. McConnell, Aug. 3rd.

The following Capts. relinquish their commissions on account of ill-health, and are permitted to retain their rank:—C. Lawrence, R. E. Spear (contracted on active service), July 25th.

The following Lts. relinquish their commissions on account of ill-health, and are permitted to retain their rank:—S. F. Napper, June 15th (substituted for the notification in the "Gazette" of June 27th); W. G. Kewley (contracted on active service), July 5th.

Lt. L. F. Short (K.O.Y.L., T.F.) resigns his commission on account of ill-health caused by wounds, July 23rd.

Sec. Lt. R. C. Williams (Sec. Lt. Hussars) resigns his commission, and is permitted to retain his rank, Aug. 6th.

The initials of Sec. Lt. D. E. Waight (Northumberland Fus.) are as now described, and not "W. G.," as stated in the "Gazette" of May 20th.

The initials of Sec. Lt. C. A. Muir are as now described, and not "J. A.," as stated in "Gazette," June 3rd.

The initials of Lt. W. Partridge are as now described, and not "N." as stated in "Gazette," June 27th.

The notification in "Gazette," Dec. 31st, 1918, concerning Sec. Lt. H. Brooks is cancelled.

The notifications in "Gazette," April 4th, concerning the following officers are cancelled:—Sec. Lt. J. Collins (Rifle Bde.), Sec. Lt. J. F. J. Peters.

The notification in "Gazette," April 29th, concerning Lt. R. Milner is cancelled.

The notifications in "Gazette," June 27th, concerning the following officers are cancelled:—Capt. F. W. I. V. Fraser, O.B.E., M.C.; Lt. W. H. S. Towell, Sec. Lt. (Hon. Lt.) L. S. Dell.

The notification in "Gazette," July 4th, concerning Lt. N. D. Lovemore is cancelled.

The notification in "Gazette," July 15th, concerning 475312 G. C. Boyer is cancelled.

The notifications in "Gazette," July 29th, concerning the undermentioned officers are cancelled:—Lt.-Col. F. C. Shelmerdine, Lt. J. E. G. Mosby.

The Christian names of Sec. Lt. Edward Harry Sansom are as now described, and not "Edward Parry Sansom" as stated in "Gazette," Sept. 10th, 1918.

The notification in "Gazette," Oct. 25th, 1918, concerning 475312 G. Boyer is cancelled.

ADMINISTRATIVE BRANCH.—Capt. N. A. Daniell to be graded for purposes of pay and allowances of Maj. whilst empld as Maj., May 1st.

Capts. to be Capts.:—A. Ridley, from (S.O.), June 2nd; J. W. Carter, from (T.), July 28th.

Lts. to be actg. Capts. whilst empld. as Capts.:—H. B. Dakin, May 1st; R. J. L. Gerard, July 22nd.

Lts. to be graded for purposes of pay and allowances as Capts. whilst empld. as Capts.:—I. Morgan, Jan. 12th; (Hon. Capt.) R. A. Shepheard-Walwyn, May 1st.

Lt. (actg. Capt.) I. Morgan to be Lt., from (K.B.), and to retain the actg. rank of Capt. (without pay and allowances of that rank) whilst empld. as Capt., Nov. 17th, 1918.

Lts. to be Lts.:—H. V. Lewis, from (A.), July 9th; L. E. M. Gillman, from (S.O.), Aug. 1st.

G. D'A. W. Oliver (Lt., Wilts. R.) is granted a temp. commn. as Lt., July 20th, 1918.

Sec. Lts. to be Lts.:—(Hon. Capt.) C. S. Burdon, April 2nd, 1918; J. H. Thompson, Dec. 21st, 1918.

Sec. Lt. F. C. Matten to be actg. Lt. whilst empld. as Lt. from Jan. 1st to April 30th.

Sec. Lt. J. Pughe-Jones to be Sec. Lt., from (A.), Feb. 3rd (substituted for notification in "Gazette," Feb. 4th).

The following relinquish their commns. on ceasing to be empld.:—Sec. Lt. (Hon. Lt.) L. S. Dell (Lt., R.F.A.), May 14th; Lt. W. H. S. Towell (T./Pmr. Sub-Lt., R.N.), June 6th.

Transferred to unempld. list:—Sec. Lt. J. F. J. Peters, Feb. 23rd; Sec. Lt. (actg. Lt.) J. G. Macksey, March 3rd; Sec. Lt. H. C. Dereham, Lt. J. C. O'Reilly-King, Sec. Lt. H. Partington, March 6th; Sec. Lt. H. J. Foster, March 7th; Lt. (actg. Capt.) S. H. Preston, March 12th; Lt. R. Milner, March 21st; Sec. Lt. (actg. Capt.) F. Kooney, April 4th; Sec. Lt. W. M. Sinclair, April 9th; Sec. Lt. W. Rawson, April 10th; Sec. Lt. J. A. W. Smith, April 15th; Sec. Lt. J. G. Thompson, April 20th; Lt. T. U. Jones, May 8th; Sec. Lt. F. Jevons, May 22nd; Sec. Lt. J. E. Holden, May 30th; Sec. Lt. A. F. Judd, May 31st; Sec. Lt. J. Pughe-Jones, June 3rd; Lt. S. N. Jones, June 10th; Sec. Lt. E. S. Robson, June 17th; Sec. Lt. P. C. Jones, June 27th; Capt. S. H. M. Donaldson, July 3rd; Lt. H. G. Bellamy, July 5th; Lt. B. W. Knuckley, July 6th; Capt. E. C. Blight, July 8th; Lt. A. E. Biggs, July 11th; Sec. Lt. J. R. Quinn, Lt. (Hon. Capt.) S. Snow, July 12th; Lt. G. D. Robin, July 13th; Lt. A. Reardon (Essex R., T.F.), July 14th; Lt. E. E. Stock, M.C., July 18th; Sec. Lt. G. E. Secker, July 19th; Lt. T. M. Jones, Lt. R. H. Wallace, July 22nd; Sec. Lt. (Hon. Capt.) H. Milman, Sec. Lt. W. F. Staniland, July 24th; Sec. Lt. A. Williams, July 26th; Lt. N. Nuttall, July 29th; Lt. W. A. B. Probart, Aug. 20th; Lt. V. J. Holland, Aug. 4th.

Lt. J. J. Coleman relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, July 25th.

Sec. Lt. H. V. A. Salter relinquishes his commn. on account of ill-health and is permitted to retain his rank, July 25th.

The notification in "Gazette," July 1st, concerning Lt. H. W. Sidley is cancelled.

The notification in "Gazette," July 29th, concerning Maj. R. B. B. Colmore, O.B.E., is cancelled.

The notification in "Gazette," Nov. 5th, 1918, concerning Sec. Lt. H. G. G. Rawlings is cancelled.

TECHNICAL BRANCH.—Capt. E. R. Williams to be actg. Maj. while empld. as Maj., Grade (A.), May 1st.

Capts. to be graded for purposes of pay and allowances as Majs. whilst empld. as Majs., Grade (A.):—T. Temple, April 1st; F. Workman, M.C., from (A.), May 1st.

Capt. E. R. Whitehouse to be Capt., Grade (A.), from (Ad.), April 11th.

Capts. to be Capts., Grade (B.):—F. Workman, M.C., from (A.), May 9th, 1918; A. J. Woodhouse, from (S.O.), May 10th.

Lts. to be actg. Capts. whilst empld. as Capts., Grade (A.):—L. E. Yeomans, Sept. 19th, 1918, T. G. S. Babb, from March 8th to April 30th; F. Burke, May 1st.

Lt. J. W. Gardner to be Lt., Grade (A.), from (Ad.), May 19th.

Lt. H. W. Sidley to be Lt., Grade (B.), from (S.O.), May 23rd.

Lts. to be graded for purposes of pay and allowances as Lts. whilst empld. as Lts., Grade (A.):—(Hon. Capt.) J. K. Cassidy, from Aug. 22nd, 1918, to Jan. 10th; T. G. S. Babb, from Feb. 24th to March 7th; J. V. Yates, March 8th.

Sec. Lt. H. G. G. Rawlings (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt., Grade (B.), Nov. 1st, 1918.

The following relinquish their commns. on ceasing to be empld.:—Sec. Lt. H. A. Cole (Sub-Lt., R.N.V.R.), June 17th; Sec. Lt. (Hon. Capt.) W. W. Reilly (Capt., Connaught Rangers), July 29th.

Transferred to unempld. list:—Capt. O. C. Morison, Sec. Lt. (actg. Capt.) T. Stevenson, March 8th; Sec. Lt. M. L. Metcalfe, April 2nd; Lt. T. B. Jones, April 3rd; Lt. D. Gordon, April 8th; Sec. Lt. C. Jones, April 9th; Lt. E. O. Johnson, April 15th; Lt. (actg. Capt.) F. R. H. Logan, April 30th; Capt. M. G. Jones, May 1st; Sec. Lt. (Hon. Capt.) F. R. Loder, Sec. Lt. I. N. Poyntz, May 9th, Lt. W. H. Hodson, May 30th; Sec. Lt. T. P. Jenkins, June 15th; Capt. E. A. Jackson, June 18th, Lt. D. Low, June 30th; Lt. E. E. Beaumont, July 6th; Sec. Lt. S. Reynolds, July 7th; Capt. J. M. Beddall, Sec. Lt. J. P. Standfast, July 12th; Sec. Lt. E. B. Kent, Sec. Lt. J. J. Thomas, July 15th; Lt. H. Pollard, July 16th; Lt. H. A. Dunningham, Sec. Lt. A. E. Elmes, Capt. J. D. Rennie, July 18th; Lt. H. N. Attwell, July 19th; Lt. J. Shields, July 24th; Sec. Lt. H. R. C. Van de Velde, July 26th; Lt. A. A. Morris, July 29th.

Maj. C. L. Hope relinquishes his commn. on account of ill-health, and is permitted to retain his rank, July 25th.

The rank of Sec. Lt. (actg. Lt.) A. Morison is as now described and not Sec. Lt. as in "Gazette," Jan. 24th.

The notification in "Gazette," July 8th, concerning Sec. Lt. H. G. G. Rawlings is cancelled.

The notification in "Gazette," April 25th, concerning Lt. D. Gordon is cancelled.

MEDICAL BRANCH.—Maj. A. Fairley (Surg.-Lt.-Comm., R.N.) relinquishes his commn. on ceasing to be empld., July 19th.

Transferred to unempld. list:—Lt. A. J. Swanton, Feb. 28th; Capt. J. Freeman, April 15th; Capt. C. C. O'Malley, May 11th; Capt. (Hon. Maj.) D. Wilson, July 14th; Lt.-Col. T. Philp, July 13th; Capt. A. Sutcliffe, July 16th.

MEMORANDA.—Lt.-Col. B. C. Fellows, C.M.G. (Bt. Maj., Remount Service) (ret. Ind. Army), is granted the hon. rank of Brig.-Gen., March 19th.

Sec. Lts. to be Hon. Capts.:—(Hon. Lt.) R. Blackith, Oct. 7th, 1918; F. J. Smith, Jan. 14th; W. Blake, May 20th.

The following Overseas Cadets are granted temp. commns. as Sec. Lts., with effect from Feb. 25th, and relinquish such commn., with permission to retain the rank from the day following termination of the standardised voyage in the case of those claiming immediate repatriation, and from the day following demobilisation in England in all other cases :—102854 T. A. Bailey, 50682 M. H. Bracey, 84003 M. C. Burns, 153545 W. E. C Jones, 183121 E. Kilroe, 500156 H. P. McDonald, 132522 S. W. Shaw, 154001 J. M. H. Sinline, 302521 H. C. Vandereen.

The following Cadets are granted hon. commns. as Sec. Lts. :—10623 E. Fitzsimmons, Jan. 9th; 175129 J. V. Houlton, Jan. 10th; 175234 A. C. G. Burt, 137188 H. H. Dyus, Jan 11th; D. W. Warren, Jan. 12th; 50016 A. R. Johnston, 97422 E. Shaw, 137042 J. F. Wright, Jan. 16th; 183042 T. H. Marshall, 75629 T. H Spink, Jan. 17th; 117001 J. S. Barbour, Jan. 18th; 66912 J. P. Crawford, 175195 J. A Jemmett, Jan. 20th; 110960 L. A. Rowe, 65769 J. A. Turner, Jan. 22nd; 300050 C K Sim, Jan. 23rd; 766962 F. Bradley, W. Eastwood, M2/104595 C B. Harris, 767662 W. Nadin, 100146 H. Richardson, 766600 P. Rolinson, Jan. 24th; 176112 A. F. Ehrhardt, 100123 J. McArthur, Jan. 25th; 100003 R. C. Bell, 175745 W. G. Henshaw, 95342 W. Mottram, 110749 R. A. D. Saunders, 110610 F. A. Strong, Jan. 27th; 176070 J. H. Barwell, 137134 H. I. Browning, 175577 E. E. Caffyn, 176653 H. E. Dallon, 137398 S. E. Hart, 117967 A. P. A. Rose, Jan. 28th; 128534 J. H. Jones, Jan. 30th; 50895 J. S. Cummins, 128100 G. L. B. Dufferin, 175190 R. A Heppell, Feb. 1st; 238802 J. Brooks, 175801 A. G. Burford, 100139 T. Clarkson, 128952 N. Dewey, 176178 J. H. Fenn, 176795 W. D. Jack, M2/204756 G. S. Lewis, 767386 S. H. Long, 8687 H. Woollin, Feb. 3rd; 70700 G. R. Barker, 110516 N. P. Bertie, 128509 P. R. Burton, 128958 A. Davison, 137588 J. Oliver, 175666 T. A. M. Roberts, Feb. 4th; 205119 P. R. Hedges, Feb. 5th; 205532 F C. Jones, 117034 D. Ramsey, Feb. 6th; 128570 H. B Cochran, 20668 F. W. Harte, 17338 W. E. Slater, Feb. 7th; 175078 T. D Batt, W. E H. Caddy, 32633 C. J. Colling, 67080 W. E. Durre, 117419 C. F. Marsh, 176110 F. A. L. Roberts, Feb. 8th; 2490 S. Bever, 117095 F. H. Johnson, 130702 F. R. Pitts, 220301 J. B. Taylor, Feb. 10th; 176054 W. H Driscoll, Feb 11th; 46784 A P T. Ireland, Feb. 12th; 10 000 F. H Brisby, Feb 14th; 17922 N. A Rhys, Feb. 15th; 89033 P. G. Bannister, 117166 R. Carr, 62496 H. R. Cooke, 128095 R. St. C. Edwards, 128846 S. Farrer, 23570 A. A. Gill, 128683 C. D. Howells, 345547 E Jones, 4355 J. H. Loomes, 10028 C. Newbould, 110582 C. Rowbotham, 137717 A. H. Warren, 97212 J. W. Warrington, Feb. 17th; 17427 L. J. Brake, 14027 W. Tranter, 110752 B A. Walkley, Feb. 18th; 90076 V. Byrne, 6980 J. L. Connor, 40668 G S. Dobson, 137728 R. G. Foden, 110508 W. J. Keates; 110449 W. H Loveland, 110887 G. M. Rhodes, 281105 S. C. Smethurst, 137113 H. C. Steele, 128925 T. H. E. D. Turner, Feb. 20th; 26532 E. O. M. Allen, 175730 W. J. Borrowman, 58537 J. Boyack, 302206 G. D. Clegg, 117252 V. C. Crowe, 137528 H. E. Dexter, 117147 L. C. Dixon, 28658 R. A. B. Jaffray, 117463 K. J. Key, 117272 T. N. Sumpter, 20943 L. F. B. Thompson, 137052 R. H Winnsor, 110773 F. W. Wrench, Feb. 21st; W/1827 K. W. Andrew, M2/018550 N. L. H. Burchell, 100830 F. H. Booth, 341585 H. Bridgeman, 20564 T. D. F. Byass, M2/082826 R. E. Clegg, 137695 D. E. Fox, 137356 W. J. Gadwell, 10/10466 W H. Hatt, 555046 A. Haynes, 175525 W. A. Heighton, 36853 H. C. Ireland, 128561 J. Jones, 355557 F. Linfield, 35082 R. J. Lloyd, DM2/106607 H Ord-Smith, 205406 E. Palmer, 156395 W. J. Pulley, 59127 E. L. Read, 117545 J. W. G. Snook, 117279 H. F. Taylor, 137045 R. G. Wright, Feb. 22nd; 117608 R. A. Jones, 137108 L. Slater, M2/209309 H. E Walker, Feb. 24th; 304179 N. S. Gaylard, March 9th; 3325 G. M. Fitzgerald, 300626 P. T. Mercer, 5/97250 E. S. Smith, March 10th; 128394 C. Kenney, 128402 C. V. Mann, March 11th; 50099 T. W. Barker, 100349 J. H S. Smith, March 13th; 085012 D. N. Braid, 241163 A. E. Forsyth, 901570 R A. J. Mullarkey, 110140 F. N. Martin, March 14th; 117554 C. Belgrove, 25220 S. G. Barnes, 128574 H. Cahill, 57713 A. C. V. Meads, March 15th; 24142 F. Booth, 2208 T. E. Lightfoot, 5/96533 A. L. B. Lacamp, March 17th; 203670 H. G Pounds, March 19th; 95394 E. Carrington, 137001 J. A Goodwin, 31035 N. Ion, March 20th; 175799 J. R. Beard, 36708 W A. Shorten, 137459 G. E. Shaw, March 21st; 58656 C. L. Allingham, 137722 E C. Barnard, 137156 F. P. Bramwell, 137190 G. R. C. Dunhill, 37728 R G. Roberts, 128543 H. C. Simpson, 10/90434 D. L. H. Williams, 137053 W. E. Wilson, March 22nd; 128308 B. G. Savage, March 27th, 175358 A. W. Buck, March 28th; 779 E. F. Gill, March 29th; 175124 H. Hartley, April 3rd, 137087 J. E. Day, April 4th; 1377363 S. G. Hooper, 85610 A. P A. Tilley, April 8th; 128969 W. D. A. Emery, April 9th; R. S. Ross, April 14th; 40220 H. S. Ball, April 17th; G. Moss, April 26th; 348029 I. Vedmore, May 6th; 175318 F. T. Hill, May 20th

The following gentlemen are granted hon. commns. as Sec. Lts. :—A. G. Bethel, W. A. Dunhill, H. M. Lane, G Mitchell, G. F. Mullin, H. L. Overton, B. S Ryrie, J W. Shand, E. Roberts, Aug. 5th.

Capt. F. W. L. V. Fraser, O.B.E., M.C (Capt., Seaforth Highrs.) relinquishes his commn. on ceasing to be empld., June 12th.

Transferred to unempld. list :—Lt. J. W Jones, from (S.O.), Feb. 16th; Maj. E. Hogg, from (S.O.), May 1st; Lt. F. Jewell, from (S.O.), June 1st; Lt.-Col. F. C Shelmerdine, O.B.E., from (S.O.), July 9th.

The following Capts. (actg. Majs.) relinquish their commns on account of ill-health, and are permitted to retain their rank of Maj. :—A. E. Hawker, Feb. 5th (substituted for notification in "Gazette," Feb. 4th); P. le G. Gribble, from (S.O.), April 19th (substituted for notification in "Gazette," July 15th).

Lt. W. E. Rubens (Essex R., T.F.) relinquishes his commn on account of ill-health contracted on active service, July 1st.

AIR MINISTRY, August 8th.

R.A.F.—PERMANENT OFFICERS.—PROMOTIONS.—To be Air Commodores.—R. M. Groves, C.B., D.S.O., A.F.C., E A. D. Masterman, C.M.G., C.B.E., A.F.C., Aug. 8th.

To be Group Capts.—P. L. W. Herbert, C.M.G., J. G. Hearson, C.B., D.S.O., E. R. Ludlow-Hewitt, C.M.G., D.S.O., M.C., U. J. D. Bourke, C.M.G., C. L. N. Newall, C.M.G., A.M., A. E. Borton, C.M.G., D.S.O., A.F.C., Aug. 8th.

The following appointments are made :—Deputy-Directors, 1st Class.—Group Capt E. R. Ludlow-Hewitt, C.M.G., D.S.O., M.C., Group Capt. C. L. N. Newall, C.M.G., A.M., Aug 8th

The following temp. appointments are made :—Staff Officer, 2nd Class.—Maj. J. Gaskell-Blackburn, July 1st, from (S.O.), 1.

Staff Officer, 3rd Class.—Sec. Lt. (Hon. Lt.) L. Miller, Jan. 13th.

Air Attaché.—Lt.-Col. R. A. Cooper, D.S.O., May 1st, vice Lt.-Col. C. H. Meares.

FLYING BRANCH.—Capt. J. H. Green to be graded for purposes of pay and allowances as Capt. while empld. as Capt. (A.), May 1st.

Capt. J. H. Green to be graded for purposes of pay and allowances as Lt. while empld. as Lt. (A.), Sept. 27th, 1918.

Sec. Lt. F. C. Rayson to be Lt., May 28th.

Sec. Lt. S. C. Paice (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt. (A.), May 1st (since killed) (substituted for notification in "Gazette," June 3rd).

H. C. Harris is granted a temp. commn. as Sec. Lt. "O," Nov. 4th, 1918.

Lt. E. H. P. Jolley (Sec. Lt. (temp. Lt.) I.A.R.O.) relinquishes his commn. on reversion to I.A.R.O., Aug. 7th.

The following relinquish their commns. on ceasing to be empld. :—Lt. V. S. Bennett (Lt. (actg. Capt.), R Newfoundland R.), July 3rd; Lt. S. B. Nelson (Lt., E. Ont. R.), July 23rd; Lt. W. G. Jewitt (Lt., E. Ont. R.), July 24th; Lt.-Col. E. B. Gordon, C.M.G., D.S.O. (Maj. and Bt. Lt.-Col., North'd Fus.), July 26th, Lt. A. Rose, M.M. (Lt.; Alberta R.), July 29th; Sec. Lt. (Hon. Lt.) A. H. Bill (Lt., Sask. R.), July 30th; Capt. S H. Long, D.S.O., M.C. (Lt., D.L.I.), July 31st; Maj. A. V. Holt, D.S.O. (Capt., R. Highrs.), Aug. 4th.

Transferred to the unempld. list :—Lt. F. L. McCreary, M.C., Jan. 28th; Sec. Lt. R. Sheppard, Feb 7th; Sec. Lt. A. Hill, Dec. 18th; Sec. Lt. C. W. Powell, Feb. 21st, Lt. F. R Pearce, March 7th; Lt. T. Thomson, March 15th; Sec. Lt. (Hon. Lt.) K. J. Hunt, April 9th; Lt. T. M. Jones, April 10th; Sec Lt. B. W. Jackson, Lt. S. Jolley, M.C., April 11th; Lt. O. W. Jones, April 15th; Sec Lt. H. J. L. Jones, April 14th; Sec. Lt. F. Stuart-Jones, April 15th; Sec Lt. W. A. F. Jackson, Sec. Lt. E. L. James, Sec. Lt. H. L. Jones, Sec. Lt. D.A. H. Jones, April 17th; Sec. Lt. A. Hirschberg, April 18th, Lt. R J. T. Wray, April 20th; Capt. W. S. F. Johnson, Lt. (actg. Capt.) S. G. Wingfield, April 22nd, Sec. Lt. E. C. F. D. Jacquier, April 26th; Lt. R. W. Cross, Sec. Lt. (Hon. Lt.) F. H. Johnston, May 1st; Capt. A. F. E. Jacob, D.S.O., May 2nd; Sec. Lt. J. A. Stewart, May 9th; Sec. Lt. J. B. Pearson, May 10th; Lt. J. H. James, May 14th; Capt. H. H. Booth, Sec. Lt. C. Turner, May 17th; Sec. Lt. C. N. James, Lt. S. A. Mowat, May 20th; Lt. A. C. D. Anderson, May 27th; Lt. J. T. Johnson, June 3rd; Sec. Lt. J. G. Angus, R.F.A., T.F.; Lt. F. C. Wood, June 4th; Sec. Lt. C. C. Jenkins, July 3rd, Sec. Lt. R. J Joubert, July 4th; Sec. Lt. F. W. Seed, July 5th; Sec. Lt. R. C Van der Ben, M.C., D.F.C., July 7th, Sec. Lt (Hon. Lt.) E. C. Crosse, July 9th; Lt. J. E. Robbins, Sec. Lt. J. Ramage, Lt. J. L. Rowe, Sec. Lt. J. R. Stephens, Sec. Lt. D. N. Taylor, July 10th; Lt. W. G. Stewart, July 11th; Sec. Lt. W. L. E. Carroll, Sec. Lt. W. Riley, Sec. Lt. R. B. Robinson, Sec. Lt. E. W. Roosch, Sec. Lt J W Rowlay, Sec. Lt. L. I. Sangster, Sec. Lt. A. B. Taylor, Sec. Lt. B. H. Travis, July 12th; Sec. Lt. C. Stubbs, July 13th; Capt. C. W. Scott, D.F.C., July 15th; ec. Lt. L. M Pickwick, July 16th; Sec. Lt. F. G. Watson, July 18th; Lt. L. G. Macklin, July 19th; Lt. H. F. Birchal, July 20th; Lt. H. H. Blackwell, Lt. R. K Morris, M.C., July 21st; Sec. Lt. E. A. Thompson, July 22nd; Sec Lt. P E Olley, Lt. W. A. Pritt, July 24th; Sec. Lt. J. J. Marks, Sec Lt. L. E Russell, July 25th; Lt. Y. E. S. Kirkpatrick, Sec. Lt. (Hon Lt.) T. A. Tindle, July 27th; Sec. Lt. G. W. Minto, July 28th; Lt. W. E. Neville, Sec Lt. J. W Sumpson, July 29th; Sec. Lt. R. C. Knowles, July 31st; Lt. F. H. Humphreys, Sec. Lt J. P. Mills, Aug. 1st; Sec Lt D P. Pogson, D.F.C., Aug. 2nd; Sec. Lt. G. D. Hsley, Sec Lt L. Jacobs, Sec Lt. G. Leslie, Sec. Lt. L. L. Locke, Lt. J W. S Mellish, Sec. Lt. B. B. Nelson, Sec Lt G. B Nisbet, Sec. Lt. M. G. S. Parker, Sec. Lt R. A. K. Wisner, Aug. 7th.

Lt.-Col. C. E. C. Rabaghau, M.C. (Capt., Bt. Maj., R.O.Y.F.) resigns his commn. and is permitted to retain his rank, Aug. 4th.

The following Capts. relinquish their commns on account of ill-health and are permitted to retain their rank :—W. D. M Bell, M.C. (contracted on active service), April 11th, 1918; J. A. Hutchison, May 20th (substituted for notification in "Gazette," Jan 24th).

The following Lts. relinquish their commns on account of ill-health and are permitted to retain their rank :—F. N. Grimwade, April 15th, 1918 (substituted for notification in "Gazette," Sept 9th, 1918 : R. Coop (caused by wounds), June 6th.

Lt. S. Carlin, M.C., D.F.C., D.C.M. (R.F., T.F.), relinquishes his commn. on account of ill-health contracted on active service, Aug. 7th.

Lt. W. L. C. White to take rank and precedence as from appointment as Lt. bore date Oct. 1st, 1918.

The initials of Lt. F. P O Mann are as now described, and not "P O." as stated in "Gazette," June 17th.

The notification in "Gazette," March 21st, concerning Sec Lt. W. S Vipond (Lt., Canadians) is cancelled.

The notification in "Gazette," April 4th, concerning Lt. S. D. Morrison (Nova Scotia R.) is cancelled

The notification in "Gazette," July 15th, concerning Capt. C. H. Morton (Brit. Col. R.) is cancelled.

ADMINISTRATIVE BRANCH.—Sec. Lt. (Hon Lt.) E. Mowell, D.C.M., to be actg. Capt. while empld. as Capt., May 1st.

Lt. H. Harker to be Lt., from (A.), July 25th.

F. R. C. Davidson (Lt., Montgomery Yeo., T.F.) is granted a temp. commn. as Lt., Aug. 1st, 1918, with seny. from April 1st, 1918.

The following relinquish their commns on ceasing to be empld. :—Capt. (Hon. Maj.) H. R. P. Kemmis (Capt. Bt. Maj., R.F.A.), June 30th; Lt. J. E. H. Bibby, June 30th.

Transferred to unempld. list :—Sec. Lt. W. Price, March 21st; Sec. Lt. G. W. Arnold, April 20th; Sec. Lt. P. E. Jackman, April 30th; Lt. R. N. Preece, May 9th; Sec. Lt. C. H. Rice, May 29th; Sec. Lt. A N. Jackman, May 31st; Lt. C. G. Raphael (Lond. R., T.F.), June 21st; Sec. Lt. J. T. White, June 30th; Sec Lt. J. Symington, Sec Lt. C. I. Sawyer-Thomas, July 10th; Sec. Lt. J. E. Belford, July 15th; Capt. P. Masker, July 25th; Lt. H. C. House, July 25th, Lt. W. T Bassett, Sec. Lt. R. L. Philip, July 30th; Lt. R. G. Taggart, Capt. O. Williams, Aug. 1st; Lt G. A Kinmont, Lt. A. N Nesbitt, Sec Lt. P G Pollard, Aug. 7th.

Sec. Lt. I. MacK. Lockhead relinquishes his commn. on account of ill-health, and is permitted to retain his rank, July 20th.

The rank of Lt. H. A. Maynard is as now described, and not as Capt., as stated in "Gazette," June 15th

The notification in "Gazette," June 17th, concerning Lt. L. H. Hillier is cancelled.

The notification in "Gazette," June 22nd, concerning Lt. (Hon. Capt.) T. E. Gentles is cancelled.

TECHNICAL BRANCH.—Maj. S. S. Nevill, O.B.E., to be actg. Lt. Col. whilst empld. as Lt.-Col., Grade (A.), May 1st.

Lt. C. H. Boyle to be actg. Capt. whilst empld. as Capt., Grade B., May 29th.

Lt. L. H. Hillier to be Lt. (Grade (A.), from (A.), Sept 23rd, 1918.

Sec. Lt. J. Penrose to be Lt., without pay and allowances of that rank, Jan. 15th.

Sec. Lt. (Hon. Lt.) (actg. Capt.) F. McGuffie to be Sec. Lt. Hon. Lt., Grade (B.), and to relinquish the actg. rank of Capt., from S.O. March 5th (substituted for notification in "Gazette," July 29th)

Transferred to unempld. list :—Lt. J. L. Smith, M.C., Jan. 27th; Lt. (actg. Capt.) W. F. Mytton, March 11th; Sec. Lt. (Hon. Lt.) A. K. H. Maitland, March 15th; Maj. J. W. K. Allsop, Sec. Lt. (actg. Lt.) H Wilson, April 11th; Lt. D. J. A. O'Brien, April 17th; Sec. Lt. R A. Stoker, April 20th; Lt. S. Lynn, June 11th; Capt. G. E. Quincey, June 27th; Lt. E. O. Jones, Sec. Lt. C. C. V. Roebuck, July 1st; Lt. R. G. Whitcombe, July 21st; Lt. J. A. Armstrong, July 24th; Lt. C. B. Loweth, July 27th; Lt. E. Mull, Aug. 1st

Maj. E. J. Parker, M.C., to take rank and prec. as if his appointment as Maj. bore date Oct. 1st, 1918

Sec. Lt. J. P. Clark resigns his commn., Aug. 9th.

The surname of Lt. H. W. K. Jennings is as now described, and not "Jellings" as stated in "Gazette," June 3rd.

The rank of Lt. E. P. Proud is as now described, and not as stated in "Gazette," April 4th.

The notification in "Gazette," April 4th, concerning Lt. W. F. Mytton is cancelled.

The notification in "Gazette," July 1st, concerning Lt. J Hooper is cancelled. The notification in "Gazette," July 11th to stand

MEDICAL BRANCH.—Lt.-Col. H. E. South (Fleet Surgeon, R.N.) relinquishes his commn. on ceasing to be empld., May 19th.

Transferred to unempld. list :—Capt. T H. James, June 22nd; Capt. (actg. Maj.) C. J. G. Taylor, Aug. 1st

RECRUITING IN THE ROYAL AIR FORCE.

It is now desired that in order to complete existing establishments in the Royal Air Force, an additional 15,000 skilled men should be enlisted within the next three months. The men selected will be of good character who will help to make the Royal Air Force the great Service it is intended to be in the future.

There are many reasons why men skilled in aeronautical trades should consider seriously the desirability of joining the Royal Air Force.

The pay offered is equal, if not superior, to that offered in civil life. The permanence of employment is assured with the certainty of an adequate pension to those who remain the allotted time in the Service. Food, clothing and medical attendance, expensive in civil life, cost nothing to those in the R.A.F.

The prospects of employment under present conditions in civil aviation are not good, and it is likely that many good men may, from lack of aeronautical work, drift into other trades totally unconnected with the Industry in which their interest lies.

Civil aeronautics will improve rapidly, and, in the course of a few years, there will be many opportunities of obtaining good positions in the Aircraft Industry for those who have used their time in the Royal Air Force to the best advantage.

THE BRITISH WAR MEDAL.

The Air Ministry made the following announcement on Aug. 10th :—

A preliminary issue of two inches of the riband will be made to all Air Force personnel who are entitled to the British War Medal, on the understanding that such issue does not confirm the title of the recipient to the subsequent award of the medal.

In view of the numbers entitled to participate in the issue, some considerable time must necessarily elapse before the issue is completed. Every effort is, however, being made to accomplish this as soon as possible.

Officers demobilised or invalided should make application to the Secretary, Air Ministry, stating full particulars of their services.

Discharged and demobilised airmen should apply to the Officer i/c Records, R.A.F., Blandford, as follows :—

(a) Those resident in Great Britain, Ireland, Channel Islands and Isle of Man, on the special R.A.F. post-card (F.S. Form 758) obtainable at any post-office.

The Army post-card (Army Form W 5100 A) will not be accepted, neither will any other form of application.

(b) Those resident abroad, by an ordinary letter giving full particulars regarding official number, rank, unit in which last served, and the address to which the riband should be sent.

Discharged and demobilised members of the W.R.A.F. should apply by letter giving full particulars of their service, to the Officer i/c W.R.A.F. Records, 15, St. George's Square, S.W.1.

Members of women's formations who have been employed under a direct contract of service with the R.A.F. Medical Service should apply to the Secretary (D.M.S.) Air Ministry.

Officers and men of the R.N.A.S. who were discharged prior to April 1st, 1918, and those who did not transfer to the R.A.F., will be dealt with in an Admiralty announcement which will be published in due course.

A FINANCIAL APPOINTMENT.

It is announced by the Air Ministry that the Marquess of Londonderry, Finance Member of the Air Council, has appointed Mr. E. F. Cliff to be his Private Secretary, vice Capt. Lord E. A. Grosvenor, R.A.F., with effect from July 22nd, 1919.

THE PIGEON SERVICE R.A.F.

The Air Ministry has recently issued an official handbook on the work of the pigeon service during the war. The handbook, which is entitled "The Pigeon Service Manual," is obtainable from any bookseller, and is a comprehensive book on pigeons.

Attention is once more drawn to the fact that owing to the use of messenger pigeons by the Royal Air Force it is exceedingly thoughtless—to say the least of it—of persons to shoot pigeons, and in the future, when commercial aircraft also use these birds, it will be still more so. The R.A.F. has no intention of disposing of its pigeons.

EVACUATIONS.

The Hotel Cecil, the only hotel now occupied by the Air Ministry, will be relinquished during the week. The offices at 5, John Street, Adelphi, were relinquished on Aug. 9th. Out of the 2,143 hired premises occupied by the Air Ministry at the Armistice 1,899 had been given up by Aug. 1st.

Major-General Seely states that between July 2nd and Aug. 6th this year one aerodrome, five seaplane stations, and 13 landing grounds have been given up, making a total of 52 aerodromes, 11 seaplane stations, and 147 landing grounds surrendered since the Armistice.

RUSSIA.

OFFICIAL COMMUNIQUÉS (BOLSHEVIK).

UNDATED.—In the Gulf of Finland, enemy aeroplanes dropped bombs on the Fortress of Kronstadt.

AUG. 9th.—Eastern Front.—Enemy aeroplanes have dropped 100 bombs on the town of Cherny-Yar.

PERSONAL NOTICES.

MILITARY.

MARRIAGES.

BELL-IRVING—PYBUS.—On Aug. 5th, at Vancouver, B.C., Major Allan Duncan Bell-Irving, M.C., Croix de Guerre, Gordon Highlanders and R.A.F., was married to Mary E. Keith Falconer, daughter of Commander H. Pybus, R.N.R., and Mrs. Pybus, Vancouver, B.C.

MATHER—WHITLOCK.—On Aug. 2nd, at St. Martin-in-the-Fields, Harry Mather, late Lieut., R.F.C., eldest son of Walter Mather, Esq., Brierfield, was married to Chôtee, elder daughter of Lieut.-Col. G. F. A. Whitlock, C.B.E., R.E., 30, Winn Road, Southampton, by the Rev. H. T. Matthews.

MAUDUIT—BROOKSBANK.—On Aug. 7th, at St. Andrew's, Middleton-on-the-Wolds, Capt. R. F. S. Mauduit, M.C., late R.F.C., son of Lieut.-Col. Mauduit, was married to Irene Helen Brooksbank, daughter of the late Capt. A. H. Brooksbank and Mrs. A. H. Brooksbank, of Middleton-on-the-Wolds, by the Right Rev. the Bishop of Hull, assisted by Canon Blakeney and the Rev. E. T. Wilson, Rector.

SPENCER—PATTMAN.—On Aug. 6th, at All Saints', Scarborough, Lieut. Lionel R. V. Spencer, Aust. F.C., son of Mr. R. Spencer, of the Old White Hart Hotel, Melbourne, was married to Dorothy Cecelia, eldest daughter of Mr. G. T. Pattman, the eminent organist, and Mrs. Pattman, by the Lord Bishop of Aberdeen, assisted by the Rev. W. F. Ramsden.

ENGAGEMENT.

SHIRLEY—PARNALL.—The marriage arranged between Capt. J. L. Shirley, M.C., late 34th Squadron, R.F.C., and Miss Kathleen Parnall, of Rugby, will take place at the Parish Church, Rugby, at 12.30 p.m. on Tuesday, Sept. 16th.

AIR FORCE.

DEATHS.

HALL-SMITH.—Lieut. Phil Hall-Smith, R.A.F., who died on Aug. 1st as the result of aeroplane accident at Leuchars Aerodrome, Fife, was 30 years of age.

LUPINSKY.—A verdict of "Accidental Death" was returned at Doncaster on July 28th in an inquest on the body of Lieut. Lupinsky, a Russian flying officer, who was struck by an airscrew and killed on the Doncaster Aerodrome on July 26th, when preparing to return to Tadcaster.

ROBERTS AND IRELAND.—On July 31st, Sec. Lieut. W. A. Roberts, R.A.F., of Shirebrook, Derbyshire, the pilot, and Sec. Lieut. Edward Ireland, R.A.F., of Liverpool, the passenger, were killed at Cranwell Aerodrome, Lincolnshire, while flying a Bristol Fighter (250 h.p. engine, type unknown).

At half-past two o'clock they ascended for a flight to Liverpool, taking off against a slight head wind. When about 200 feet up the pilot banked at a steep angle, and before the machine could recover it side-slipped, crashed to the ground, and burst into flames.

The squad of men who had assisted in preparing the flight immediately went to the assistance of the aviators, but it was found impossible to extricate them. The machine was a complete wreck, and the death of the two occupants must have been instantaneous.

TONKS.—Capt. Adrian James Boswell Tonks, D.F.C. and Bar, R.A.F., who died on July 14th at Raselfin Hospital, Alexandria, from injuries in a flying accident, was the youngest son of Mr. and Mrs. Arthur George Tonks, 31, Addison Mansions, Kensington, W.14.

BIRTH.

BOOTH.—On July 18th, at Heathfield, Shortlands, to Winnie (née Cowen), widow of Sec. Lt. Sydney Edwin Booth, R.A.F., a daughter—Audrey Sydney.

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AUGUST 20, 1919.

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ON THE HARMSWORTH PRESS AND THE R.A.F. VOTE.

Naturally none of us who is concerned with aeronautics sets much store by the opinions of Lord Rothermere, whose operations as our first Air Minister gave all of us a pretty fair measure both of his incapacity as the chief of a Government department and of the curious methods by which he conducts official business. Unfortunately, however, Lord Rothermere either directs or influences a good many newspapers, which by reason of their big circulation carry influence among the bulk of the unintelligent population.

One recalls that caustic remark of the *Morning Post* some years ago, when it referred to the period before the war "when Lord Northcliffe started the *Daily Mail* for people who could not think, and Lord Rothermere started the *Daily Mirror* for people who could not read." The people who cannot think or cannot read hold the majority of votes in this country, and consequently when Lord Northcliffe and/or Lord Rothermere set forth on a campaign—no matter how wrong-headed—there is grave danger of their unintelligent or illiterate followers enabling them by sheer weight of numbers to do great harm to the King's Services.

A Campaign of Misrepresentation.

At present it is believed that Lord Northcliffe is out of the country, therefore it seems fair to attribute to Lord Rothermere the campaign against the present Chiefs of the Royal Air Force which began in the *Times* on Aug. 15th and continued in the *Sunday Pictorial* of Aug. 17th. It would appear that the Harmsworth Press is starting another of its attempts to wreck a man or an institution on whom or on which the public weal depends.

The former paper protested against the sum of £25,000,000 per annum being voted for the R.A.F., and pointed out that this was only £4,000,000 less than the pre-war Army vote. To any moderately intelligent person this would appear as a complete *non sequitur*, in that the R.A.F. after the war bears no relation whatever to the Army before the war—especially in view of the fact that the Harmsworth Press was the most vigorous, at the time when the R.A.F. was being formed, in arguing that the Air Force must be quite independent from the Army and was in fact much more important. Indeed, one might quite easily quote the Harmsworth Press in favour of an argument that the R.A.F. Vote should be bigger than those of the Navy and Army combined.

Furthermore, the *Times* protested against Mr. Churchill's budgeting for his Departments on the assumption that £25,000,000 to-day is only worth what £12,000,000 was worth before the war, and suggested that Government Departments should base their finances on the pre-war value of money. One can scarcely imagine the *Times* of the late Mr. Delane publishing such a futile argument or displaying such lamentable ignorance of history, but it is scarcely worth while arguing with the Harmsworth Press of to-day on any subject requiring education either in history or economics. One may, however, inquire whether the *Times, Mail, Sunday Pictorial, Daily Mirror,* etc., operate on pre-war prices? If so, why do we pay a penny for a ha'penny *Mail* and threepence for a penny *Times*?

Lord Rothermere's Attack.

Lord Rothermere's personal part in the attack began in the *Sunday Pictorial* of Aug. 17th, in an article under his own signature. He stated therein that it was possible to maintain an Air Force of 20,000 men on a vote of £10,000,000 per annum, which would provide 25 squadrons each of 20 aeroplanes of the most modern type, "and there would be plenty of money left to build up a fine auxiliary service, similar to the R.N.V.R., from the many civilian airmen and mechanics."

In that one short paragraph Lord Rothermere exposes his lamentable ignorance of aviation, aircraft, finance, foreign policy, the British Empire, and the English language. One would willingly give a few years of one's life for the privilege of dealing faithfully with Lord Rothermere's statement in those numerous papers which are read by the uneducated majority of the King's subjects. As it is, one can only do so briefly in this paper, where one is preaching to the converted. Still, a few points may be useful to one's readers when they are drawn into argument with the ignorant.

How the Money Goes.

Firstly, 25 squadrons of 20 aeroplanes apiece means 500 aeroplanes. These entail 500 more in reserve. Which means 1,000 aeroplanes. At the moderate price of £5,000 apiece (to include big bombers and flying boats at £20,000 or £30,000 each as well as school machines at £1,500) that means £5,000,000 out of Lord Rothermere's ten millions.

Secondly, 25 active-service squadrons have to serve—both for sea and land, remember—all our Naval and Military stations abroad as well as at home. How would Lord Rothermere distribute 25 squadrons between India, Burmah, Hong-Kong, Mesopotamia, Syria, Egypt, Aden, Malta, Gibraltar, British East Africa, British Central Africa, Somaliland, the Soudan, West Africa, Nigeria, and a few other odd places where British troops are permanently stationed, and where, consequently, there must be detachments of the R.A.F.?

Also when he has distributed his 25 squadrons—apparently at the rate of about two machines per military station abroad—what is he going to do about air stations at home, and about R.A.F. detachments with the Fleet?

Cost of Upkeep.

At a very moderate estimate of post-bellum prices and rates of pay his 20,000 men are going to cost him £300 apiece for pay, and food, and uniforms and lodging, so that is another £6,000,000 out of the ten millions. Thus Lord Rothermere has already spent a million over and above his estimate before he has even begun on such things as administrative expenses, armament, petrol and

oil, transport, travelling, shipping, maintenance of aerodromes, or the pay and allowances of officers.

From this one may form some estimate of Lord Rothermere's capacity for managing any ordinary business, let alone one of the King's Armed Services on which the welfare of the Realm depends. One can only be thankful that his term of office as Air Minister was so short. Heaven knows, his Fleet Street methods did enough harm at the Air Ministry as it was, but only now does one realise how lamentable it would have been if he had remained in office.

That Resignation.

His resignation apparently saved the R.A.F. in the Field from utter disaster. When Lord Rothermere resigned his retirement was ascribed officially to an attack of bronchitis. A cynical official remarked at the time, "Bronchitis is sometimes caused by cold feet and exposure." Certainly no exposure could be so complete as that which Lord Rothermere has made of his own ideals and methods in that one brief paragraph in the *Sunday Pictorial*.

Peace and Retrenchment are excellent companions after a great and expensive war. But Folly and Meanness combined in time of peace—a peace in which over 20 wars are still raging—can only mean the ruin of the British Empire just when it is most necessary to maintain our prestige as a Great Power.

Underlying Motives.

In politics no weapon is too dirty for use, and it seems that all these attacks on the administration and organisation of the R.A.F. are part of the political game. Whether the attack is on Mr. Churchill in his dual capacity as War and Air Minister is not quite clear, but one thing does seem quite clear—namely, that Lord Rothermere is determined to undermine the position of Sir Hugh Trenchard, Chief of the Air Staff.

It will be remembered that Lord Rothermere's methods caused the resignation of General Trenchard early in 1918, but that Sir Hugh's public reputation and the esteem in which he was held by the personnel of the R.A.F. was greatly enhanced by the storm raised by his resignation, and that ultimately that same storm forced Lord Rothermere to resign. There seems, then, only too much reason for the popular impression that this present attack on the R.A.F. is influenced by a desire on the part of Lord Rothermere to "get his own back."

Perhaps this impression is unjust to Lord Rothermere, but it is evident that if the Air Force Vote is cut down owing to these attacks to a point at which it is impossible to organise an adequate and efficient nucleus Air Force—for it can be nothing more, even on £25,000,000 per annum—the Chief of the Air Staff and all those officers who are so loyally supporting his efforts must of necessity resign in order to save their reputations and to avoid being associated with what must obviously be a disastrous failure. If they go, the whole R.A.F. will fall to pieces, for nothing but the personal loyalty of the better-class officers to Sir Hugh Trenchard and his Staff is holding the Force together to-day. Then the Navy and the Army will have to start again from the beginning to build up their own air services, and the remains of the R.A.F. will become a mere mockery, and a very real waste of money.

An Unfortunate Connection.

The *Times* attack is accompanied by an unfortunate chain of circumstances which have given rise to another impression which should be removed as soon as possible. One mentions no names, because one has a high regard for the officers concerned, and though they will be recognised at once by those "in the know" it seems unnecessary to give their names to those who are outside.

The *Times* is advised on technical aeronautical matters by a distinguished officer who did much good organising work during the war, and was at one time closely associated with Lord Rothermere. His success in the R.F.C. was largely due to the high quality of the work which he did on the staff of a General Officer who was responsible for a very great share of the victory of the R.F.C., and later of the R.A.F. in the Field. It is somewhat natural, therefore, that those who only know so much should assume that the attack in the *Times* is influenced by a desire to further the interests of that General Officer.

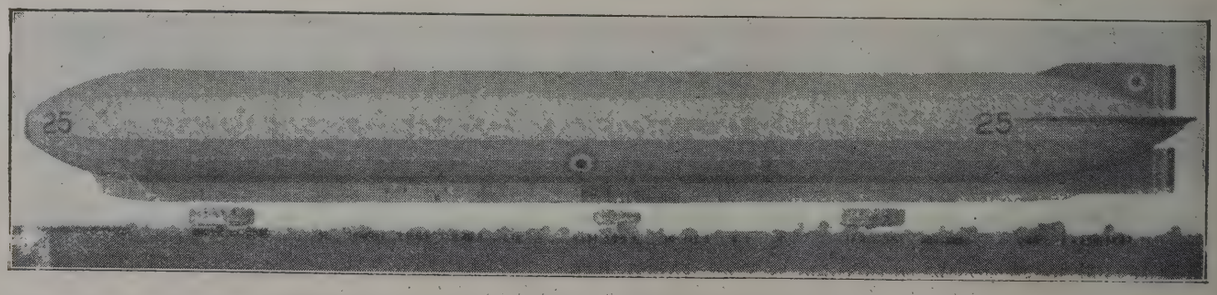
Knowing something of the loyalty of both these officers to the present Chief of the Air Staff in the old days, one personally refuses to believe that either of them would be a party to any attack which would make the task of organising the post-bellum R.A.F. more difficult than it is. But it would be well for both if it were made quite clear that the officer who has turned journalist disagrees entirely with the policy of decreasing the R.A.F. Vote in obedience either to political agitation or to personal influence inspired by individual animosity.

The position is one of very great difficulty, but there are times when a man has to sacrifice material benefits for the sake of his loyalty or of his personal honour. And this appears to be one of them. Otherwise people who are only partly cognisant of the facts are bound to impute to internal intrigue some of the responsibility for these latest attacks.

A Plea for Loyalty.

Those who wish well to the R.A.F. and its great chief can fight political agitators and personal attacks by outsiders (in whatever sense one cares to interpret the word), but a house divided against itself cannot stand. And if the R.A.F. is to exist as a separate Third Service it can only weather the present storm if all within it are loyal to the existing administration.

Personally, one still believes that for purely tactical uses the Navy and the Army should have their own Air Services and their own lines of supply of aircraft. But one realises that a separate Air Force is desirable for purely aerial operations. One believes that if this Empire is to retain its position in the world it must hold the Command of the Air as it held the Command of the Sea. And such Command can only be held by an adequate, an efficient, and a loyal Air Force. Let all those who have their King and Country at heart work together for that end.—C. G. G.



R25—A sister ship of R23, R21 and R26—of the external girder keel type.

ON AIRSHIPS.

Frankly one knows very little about airships. The work of editing this number of THE AEROPLANE has taught one far more about the design, construction, and operation of airships, and about the types of ships now in being, than one knew before. One hopes therefore that the readers of this paper, who are mostly concerned with aeroplanes, will find the contents of this present issue as informative as have the editorial staff. The thanks of the readers and the staff alike are due to the various airship firms which have contributed so much valuable information and so many interesting illustrations for the benefit of the world at large, and one hopes that the resultant publicity will help materially in making better known the claims of the airship on the attention of those who hope to develop aerial transport and travel.

THE ONE DRAWBACK.

There can be no disputing the fact that for long-distance non-stop journeys the airship has great advantages over the aeroplane. Personally one is not enamoured of the idea of hanging below or sitting on top of a mass of highly inflammable gas for several days at a time, especially when that mass of gas is driven by engines of a highly explosive character. Nevertheless the records of airships in the war go to prove that the double risk of fire from the engines and fire from the envelope is much less than might be imagined.

If and when helium gas can be produced on a commercial basis, and the common petrol engine has been superseded either by a heavy-oil Diesel-type engine or by an ammonia turbine, then the airship will be the ideal vehicle in which to travel. Long before the war the Zeppelins proved that an airship can be wrecked either in a forest or on bare rocks without harm to passengers or crew. The only genuine danger in airships is the danger of fire. When once that danger is abolished the airship will be the safest vehicle in the world.

THE TASK OF THE SCIENTIST.

Therefore one advocates most strongly that those eminent scientists who are investigating and experimenting with airships should devote far more attention to these subjects than to the improvement of existing engines or to the production of fabrics which are impermeable to hydrogen. It will be better to abolish the causes of fire than merely to try to prevent its occurrence.

Till that has been done the airship will never be a commercial success. As soon as it has been done there will be no difficulty whatever in finding all the capital needed for the establishment of airship lines all over the world. When the non-inflammable airship has been produced airships will soon become as common as steamships, or even commoner, for they will cover the earth as well as the sea.

BLIMP-YACHTING.

The big airships will naturally be the property of the various States, or of big transport lines, for their cost will be too great for even a millionaire, but the small ships, of the S.S. Class, commonly known as "Blimps," and even the larger ships of the N.S., or the Italian M. Class, may very well appeal to the private owner who in these days keeps a yacht. In fact it is surprising that no well-to-do person has yet acquired a private airship, considering that they can be bought so cheaply from the Disposal Board.

Not long ago an eminent airship officer proposed quite seriously to try and form a "Blimp-yacht Club." His idea was that a number of fairly wealthy men should join together and buy one of the disused R.A.F. airship stations, such for example as Polegate—which is easily reached by road or rail from London. There they would keep a number of small ships and spend their week-ends "yachting" over the South Downs.

The prospect is distinctly alluring, for the small airship can do things which the aeroplane can not. The downland of England or the mountains of Scotland or Wales are about as interesting as the Fen Country when seen from a height at which it is safe for an aeroplane to fly over them. The airship, on the other hand, can paddle about just over the tree-tops, or along the middle of valleys, so that views can be seen from it which are unobtainable in any other way.

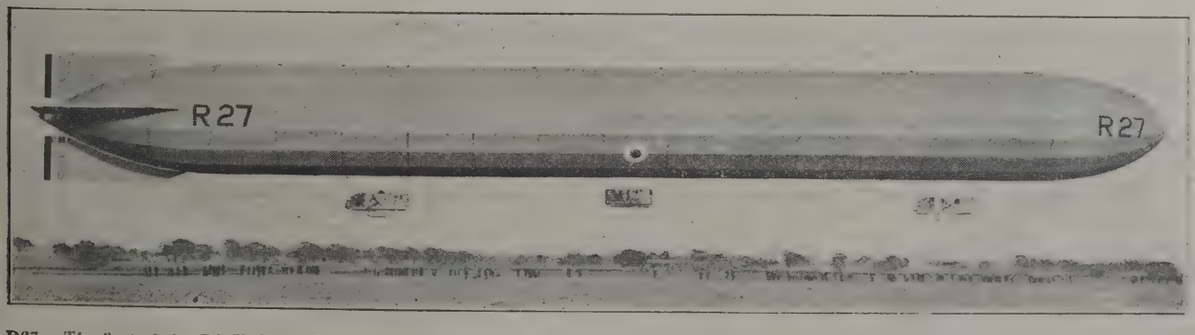
Even if an aeroplane pilot foolishly takes the risk of flying so low he must tear along at 60 miles an hour or more, whereas an airship can remain stationary over one point if so desired. Consequently as a pure pleasure vehicle the small airship combines all the pleasures of yachting and motoring without the discomforts of either.

As in the case of the big ships the only danger is fire. This danger must be overcome before Blimp-yachting can become popular, but even as things are, there is no doubt that a Blimp-yacht Club might be made a genuine success if taken in hand by energetic people.

In fact one believes that if a well-run business firm took the matter in hand and bought a number of disused Blimps, it could make a commercial success of a kind of combined Blimp-yacht Club and a "joy-ride" concern. Many thousands of those who have tried aeroplane joy-riding as a sport would try Blimp-yachting as a novel experience, and would find that actually it is a more pleasurable form of amusement than aeroplane flying, though obviously very inferior as a means of quick communication.

A CLEAR FUTURE.

Admittedly airships are still in their infancy, though certainly a 600 ft. infant which travels to America and back is a fairly healthy affair. There are many developments to take place before we travel by airship in the same casual way as we travel by sea-ship. But those developments are plainly to be seen ahead, so the future of the airship does not depend on unknown factors, but simply on the energy, enterprise, and faith in aeronautics of those who are to-day responsible for airship development.—C. G. G.



R27.—The first of the R23X Class, British rigid ships without extenal keel. The centre car has been replaced by "wing" cars containing one engine apiece.

THE GOVERNMENT AEROPLANE COMPETITION.

The announcement made by Major-General J. E. B. Seely, C.B., C.M.G., D.S.O., Under-Secretary of State for Air, that the Department of Civil Aviation proposes to offer prizes to the aggregate amount of £64,000 for aeroplanes suitable for commercial purposes, with a special eye to the development of safe and comfortable machines, will naturally arouse some interest. Unfortunately no details of the proposed competition are vouchsafed, and it is impossible to judge of the results likely to be produced.

£64,000 is a useful little sum. Wisely expended in the form of rewards for good work, it may produce a very appreciable effect on the development of commercial aviation in this country; but by itself it will not keep the British aircraft manufacturers going for long. At best it can only be an encouragement.

Many of the readers of THE AEROPLANE will remember the Military Aeroplane Trials of 1912, upon which both British and foreign aircraft constructors spent much time, money, and trouble in the belief that a good showing there would secure substantial orders from the British Government.

In the result the late Mr. S. F. Cody reaped a well-merited, if inadequate, reward for his patience and perseverance, and the remaining competitors were the worse by approximately the cost of competing.

If the Department of Civil Aeronautics is to follow in the footsteps of its military predecessor of 1912, and if British aircraft manufacturers are to be treated in the same shabby way as they then were, one can expect no good to come of the competition.

If, on the other hand, the conditions are so drawn up as adequately to encourage the development of types of aircraft which shall really be valuable for commercial purposes, and if there is really an undertaking that the Department of Civil Aviation will take proper steps to assist competitors in securing some real reward in the shape of orders, the competition deserves every support.

It does not seem probable that the Air Ministry can itself give orders for commercial aircraft, but it may influence other people. It is surely not possible that Major-General Seely has succeeded in awakening the Postmaster-General, but he may do so by sufficient assiduity.

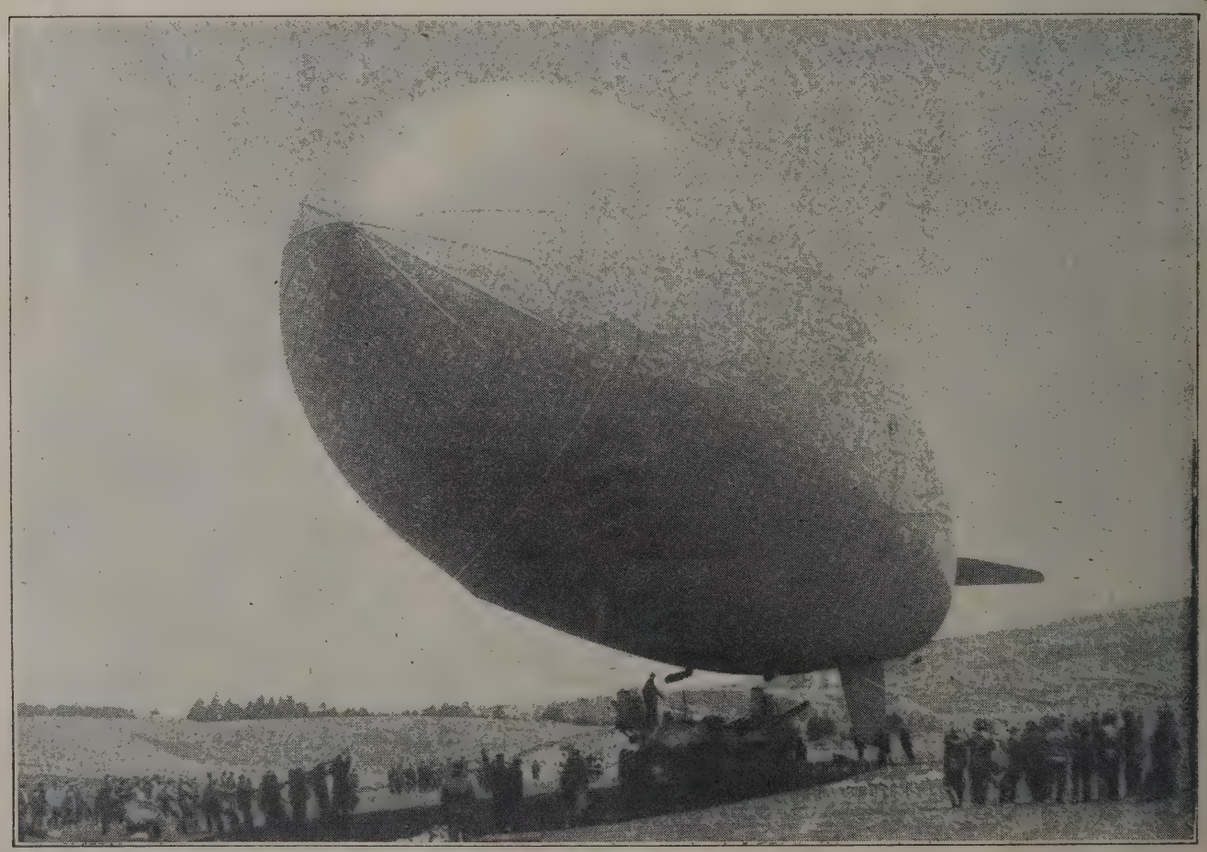
ANOTHER HONOUR.

All will rejoice at the further honour conferred on the Royal Air Force by the promotion of Sir Hugh Trenchard, Bart., K.C.B., D.S.O., to the rank of Air-Marshal. This promotion gives Sir Hugh equivalent rank to a Lieut.-General in the Army, and raises the R.A.F. to the dignity of an Army Corps of the Army.

The only fly in the ointment is the fear lest the present ill-advised campaign for economy—which appears to be degenerating into a war of personal interests—should leave the Air-Marshal without an Air Force to marshal, for if the Air Force Vote is to be reduced below £25,000,000 the Air Force is likely to become an organisation like unto the armies of Central American States, consisting of many Generals and a few sentries.

THE ABANDONMENT OF AIRSHIPS.

It is alleged that the whole airship construction programme is to be abandoned and that the existing airship stations and airships will carry on as best they can with "nucleus crews." This would be quite in accord with the best Lloyd-Georgian methods. As there is not likely to be any demand for airships in war during the lifetime of most members of the present Government, abolish airships and let posterity build its own. As a famous politician of the past is reported to have said:—"Damn posterity! What has posterity done for us?"



THE U.S. AIRSHIP SERVICE.—A "C" Class ship on the ground. The method of attaching the head-rope is noteworthy.

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AIRSHIPS IN THE WAR—AND THE FUTURE.

By PETER GEOFFREYS.

Before the war it was not unusual to regard the airship as something in the nature of an extravagantly impracticable mammoth, possessing a large and costly appetite, a delicate constitution and negligible utility. It was also thought that the airship, like the mammoth would meet an early termination of its existence as the inevitable consequence of misevolution. Nevertheless the airship is still with us.

THE NAVAL ASPECT.

In the naval side of the war to which the activities of airships have been generally confined, the results produced by airships in their proper sphere, have not only justified their existence, but have earned for them an established place in naval strategy, with possibilities for future development wider and very much more easily realisable than those in prospect for heavier-than-air machines.

Unhappily, during the war, the enemy enjoyed the advantage of preponderating strength in rigid airships capable of extended action with a fleet at sea, and hostilities ended just too soon to allow British effort to take effect.

For three years Germany was able to maintain almost unhindered aerial reconnaissance with Zeppelins over the North Sea, excluding coastal patrols. Lord Jellicoe in his book has indicated the extent to which this advantage might have assisted a more offensively inclined enemy.

In certain circumstances, Lord Jellicoe pointed out, a rigid airship may have the value of two cruisers. This comparison, one might add, refers to the highly developed modern cruiser in relation to the present type of rigid airship, which has scarcely passed from its teething stage.

IN THE ATLANTIC?

Naval warfare of the future, it may reasonably be supposed, will be subject to modification. The capital ship must always be a decisive factor, but it is probably correct to prophesy that the duties of the smaller fry of seacraft will be increasingly usurped by aircraft; primarily by rigid airships by virtue of their superior air endurance.

The rate of development, as regards airships, may be partially dependent upon a rather indeterminable factor—non-inflammable gas. According to official announcements in the United States, helium gas is already being produced in fairly large quantities in Texas. Whether supplies will be available for British airships, and whether other sources for its production, as yet unknown, may be discovered are questions for the future. Newspaper reports suggest that helium has been recently found in Canada.

The future of non-rigid airships in war is less easy to predict. The non-rigid type appears to have little value for any other naval or military purposes than submarine hunting, in military operations against semi-civilised tribes and to a limited extent for training the personnel of rigids. As it is possible that submarine warfare may in future be banned by the League of Nations, the most important of these functions may cease to exist. In any case, non-rigids can be built by one country as fast as another can turn out submarines. Possibly the development of a satisfactory system of towing non-rigids from seacraft might create a new and important function for small airships.

In peacetime, Service non-rigid airships may, it is proposed, be employed in connection with colonial photographic surveys, for which purpose they are very well suited. The field for activity in this direction is enormous. India alone among the Dominions and Crown Colonies has as yet received exact topographical survey, and incidentally, of the whole land surface of the world only about one-sixth has been exactly surveyed.

BRITISH NON-RIGID DEVELOPMENT.

British progress in airship design has proceeded in two parallel lines, allied but virtually independent, in the development of the non-rigid and rigid types.

To those associated with the non-rigid school the more credit is due, for as a result of their work, conducted without contemporary assistance or influence, the British non-rigid is the finest for its size in the world, superior in many respects to the Italian semi-rigid vessels of considerably longer pedigree.

It has often been said, apropos of locomotive design, that when an English engineer sets out to improve his engine he contrives to take something off it, whereas the Frenchman devises something new to put on. The same principle has applied to airship design. Simplicity is the chief characteristic of the British types, while refined complexity marks the majority of Continental models.

The requirements of the anti-submarine patrol have demanded from our airships high speed, reliability and endurance, with which is included comfort for the crew; height has been an unimportant factor. There are the qualities which distinguish British non-rigids and generally speaking will respond to the needs of commercial air transport.

As the Admiralty has announced its intention of selling a number of non-rigid airships, one presumes that it is permissible to mention that during the war a new and highly satisfactory method has been developed for protecting the outer surface of non-rigid airship envelopes.

This process is applied in conjunction with the rubber proofing, and consists of depositing a mixture of rubber and aluminium powder on to the fabric in a thin layer, by means of a form of rotary printing machine. Most of the non-rigid envelopes are made of this aluminium-faced fabric, which, whilst combining the good qualities of impermeability and durability, requires no dope.

IMPORTED LUXURIES.

Whilst it is true that the lead of twelve years which Germany had gained with rigid airships has to-day been reduced to two, this achievement cannot be attributed to originality on the part of our rigid airship designers.

Extraordinary progress has nevertheless been made in constructional technique and in minor detail design, despite the limitations



IN AMBUSH: An S.S. "Twin" and two S.S. "Zero" Airships berthed in a mooring-out station.

THE LONDON & PROVINCIAL AVIATION CO.,
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Having closed our business we have the following

AIRCRAFT FOR DISPOSAL.

1919 MODELS.

1 50 H.P. GNOME L. & P. 2-SEATER DUAL CONTROL FUSELAGE BIPLANE, in new condition, complete with spare engine (just overhauled and tested) and propellor.

PRICE £285

1 Similar Lot.

1 50 H.P. GNOME L. & P. 2-SEATER DUAL CONTROL FUSELAGE BIPLANE, just been completely overhauled and re-covered, complete with spare engine (just overhauled and tested) and propellor. PRICE £275

These machines have a factor of safety of 8, and are of the best construction throughout. All have been looped and spun on their tests. Speed on level 60-65 m.p.h. Landing speed 32 m.p.h. On a solo height test one of these machines reached a height of 9,000 feet in 45 minutes.

SPARES.

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We also have a number of CAUDRON type training machines in good condition for sale.

imposed by war conditions, and it is probable, therefore, that R33 and R34, launched since the Armistice, are superior to their prototype, the L33 brought down at Little Wigborough.

The previous British efforts, R9, R23, R23X and R31 classes, were not remarkable for any particular virtues. On the other hand, only one instance is to be recorded of an utter failure, and that was the result of defective material and the lack of time available for preliminary tests, rather than faulty conception. The plywood airship, R31, is that to which one refers.

Even though the early rigid airships failed to fulfil many hopeful expectations, they satisfactorily served the purpose for which they were rightly intended—that of training the multi-graded personnel in readiness for airships capable of Fleet work.

Altogether eleven rigid airships had been completed or were nearing completion at the close of the war. At the time of writing, May, 1919, it is freely reported that a new class of rigid airship has been laid down which will have a volume approaching 3,000,000 cubic ft. of gas. From comparative data, such an airship might be presumed to develop a speed of about 70 miles an hour, with an endurance of upwards of 8 days. With the German constructors reduced to a state of impotency, this new airship will be the largest existent.

War Records.

Figures relating to the work of the Airship Service have already appeared in the Press, and one's excuse for repeating them here is that they may be readily available for reference.

A sum total of 2,245,800 miles has been flown on service during the war, representing an air endurance of 87,700 hours; the bulk of this flying has been carried out over the sea, with a total loss of life from all causes of 16 officers and 32 men.

At the beginning of the war, seven airships, two only of which could be regarded as effective, were in commission. One airship station was in working order and another in an unfinished condition, excluding a few privately-owned sheds. The airship constructing industry in this country was to all intents and purposes non-existent.

On October 31st, 1918, 103 airships of all types were in operation, a chain of airship base stations and mooring-out stations had been created around the coasts of England and part of Scotland, and an almost continuous patrol was maintained over the War Channels from the Scillies to Scapa Flow. The British airship industry was in 1919 the most powerful of its kind in the world. Whether it remains so is a matter for Parliament and the Treasury to decide.

Allied Activity.

Italy.—Considering first the work of Italy, as befits the most insistent of our allies, it is interesting to observe that in Europe the Italians stand alone in maintaining a military airship service. Moreover, the Italian airship represents a striking power of considerable value against a neighbour ill-equipped with heavier-than-air machines. In addition to the military airships, a certain number of vessels are operated by the Italian Navy.

During the war numerous raids were carried out by Italian airships on Pola, Trieste, St. Marco Docks, and various points of importance behind the Austrian lines. Further, it is reported that the bombing operations of the airships during the big Italian retreat in 1917 contributed materially to the success of the withdrawal.

In design the Italians have adhered to the semi-rigid system, which has been brought to a high pitch of perfection in the M type.

The conditions underlying design in Italy are fundamentally different to those in this country. Height has been the primary object in view, owing to the necessity for evading hostile gunfire. Endurance has been a secondary consideration, because the raiding flights performed were seldom or never of long duration. That speed has been neglected is evident from the bulky unfaired cars and the multiplicity and length of rigging cables of most Italian craft. In Italy the winds are considerably less in average force than in Britain, and therefore a relatively high rate of speed has not been essential.

The Italian designers have sacrified all other qualities in order to increase the maximum ceiling of their vessels, and in this object they have been enormously assisted by the superabundance of skilled labour at their disposal, which has permitted extreme structural lightness to be obtained and, incidentally, truly Latin excellence of craftsmanship.

Contrary to popular belief, the Forlanini and Usuelli types have not been very extensively employed, although the Forlanini, at least, has well kept pace with contemporary progress.

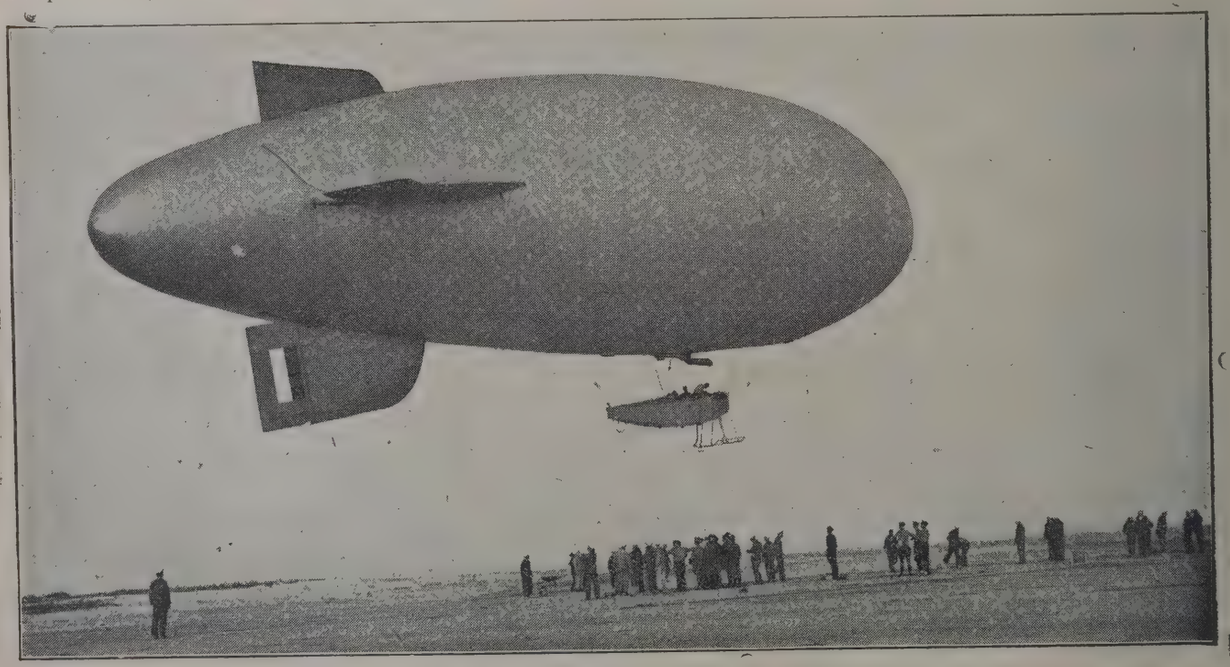
France.—French interest in the airship appears to have languished since the war proved the vulnerability of lighter-than-air craft in modern conditions of warfare on land against a well-armed enemy.

A useful type of non-rigid airship has been evolved with which to operate against enemy submarines around French ports, but the necessity for energetic measures has been less urgent, and comparably the progress of development has been less rapid than in this country.

United States.—The Americans can be congratulated on acquiring, amongst other valuable information imported into the United States during the past two years, the knowledge which has enabled them to produce helium and has given them the means of applying it with the best effect in practice.

It is presumably permissible to mention that numerous Americans have undergone training at Airship Stations in this country and in France, returning to the United States with complete information as to the manner in which years of experience direct that airship services should be conducted. Moreover, both British and French airships have been purchased and conveyed to America, where designers have had the opportunity of gleaning the latest ideas from Old World construction.

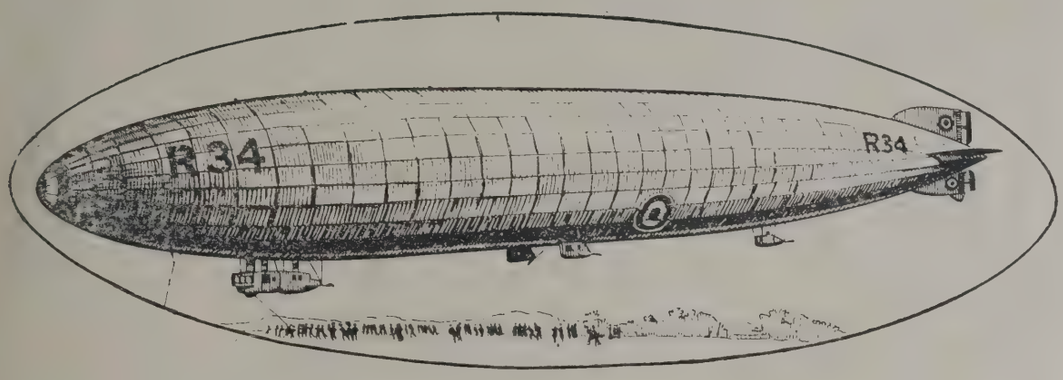
The American building programme, as disclosed to the Senate with the introduction of the Naval Estimates on Nov. 28th last year, provided for the construction of three large rigid airships, in addition to a host of non-rigid vessels. Possibly this scheme has since been modified, but there is reason to believe that America, in pursuance of her Naval policy, and enjoying at present an important advantage as the sole producer of helium



AN AMERICAN NON-RIGID.—A "B" Class Airship fitted with cruciform fins.

"R.34"

THE FIRST AIRSHIP TO CROSS THE ATLANTIC MAKING THE ROUND TRIP INSIDE 11 DAYS.



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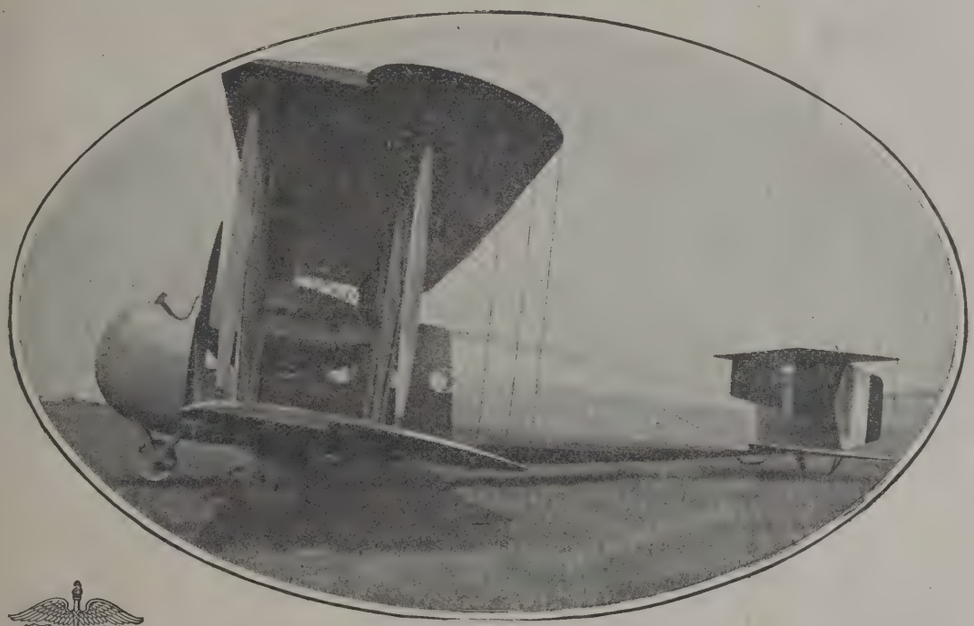
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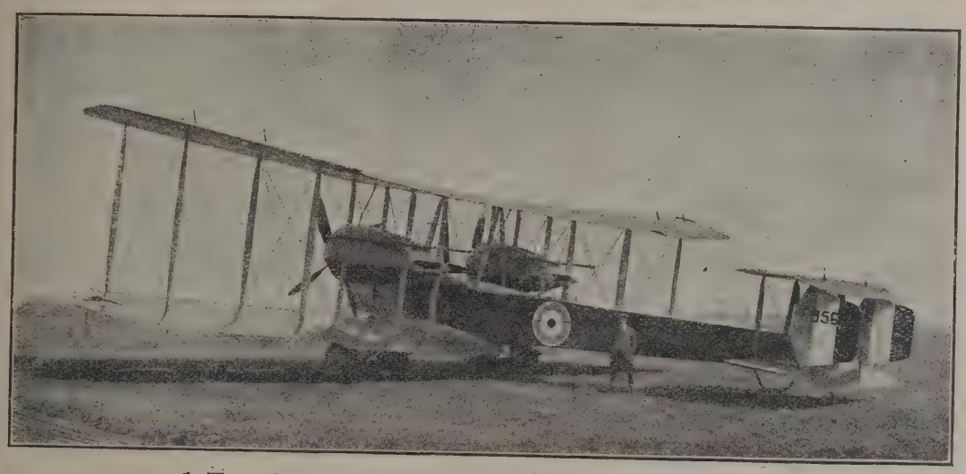
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gas, will make a strong bid for supremacy with airships, both in peace and war.

THE SPIRITUAL HOME OF THE RIGID.

It is scarcely necessary to recount the work of the German airships in the war, beyond emphasising the importance of their activities as sea scouts. The development of the Zeppelin, however, is an interesting and little known subject.

Strange as it may seem when comparing the performance of the pre-war types with that of the latest airship of the L70 class, Zeppelin development has made apparently not more than four distinct advances since 1914, and only two of these have been accompanied by a material change in dimensions.

In 1916, the serial numbers of the "L" airships broke off abruptly at L24. This was not, as might have been supposed, an indication that the Germans intended to cease construction, for before long appeared the first vessel of a new and enlarged type with a capacity of two million cubic ft. This airship had a considerably improved form (closely similar in silhouette to the Schütte-Lanz) and six 240 h.p. Maybach engines, producing a maximum speed of 60-62 m.p.h.

Following upon this achievement, the German designers proceeded diligently to elevate and to improve the new model. Elevation was the principal object in order to enable the ships to rise above the range of anti-aircraft gunfire. As a result, the next type, commencing at the beginning of 1917 with L40, came to be known as the "height-climbing" class—this is the type illustrated in the photograph elsewhere.

Broadly speaking, the dimensions, capacity and general arrangement of L40 were identical with those of L30. The hull structure was considerably lightened, smaller fish-form gondolas were fitted, and five engines were installed instead of the six in L30, involving the deletion of the "wing" propellers driven from the after car. These modifications not only raised the ceiling of the class to about 20,000 ft., but actually resulted in an increase in speed.

Next, towards the end of 1917, came the "long range" class of Zeppelin, probably beginning with L57. It may be remembered that L57 was the airship with which an attempt was made to fly from Transylvania to East Africa with medical stores. The "long range" class was slightly larger than its predecessors, containing approximately 2,200,000 cubic ft. of gas when full. Probably five 500 h.p. Maybach engines were installed.

Retiring once more to refine the new breed, the Zeppelin designers delivered the highly efficient L70, a ship more or less of the same tonnage as the L57, but equipped with seven 300 h.p. Maybach engines. This airship was reported to be capable of a full speed of more than 77 miles per hour and of a static rise to 21,000 ft.

From the beginning, the system of development has been thoroughly characteristic of the Teutonic mind. Each advance has been the result of laborious experiment. In fact, it may be said that each airship produced has been experimental.

This principle of step by step progression has been particularly noticeable in the design of the hull structure. Airships belonging to each separate class and built to the same general specification have rarely been identical in detail composition. Generally, the aim has been to lighten each successive ship to the uttermost degree, until indeed a point has been reached where a breakage in the air has necessitated restrengthening, and weight has again had to be added. As a means of rapidly attaining maximum practical efficiency, irrespective of other considerations, the system has much to commend it.

AIRSHIPS IN COMMERCE.

In the light of present knowledge, the question of the employment of aircraft in commercial or postal undertakings, as distinct from advertisement and ornamental displays and pleasure flying, is an uncertain one.

After the first rather hysterical manifestation of enthusiasm for air transport, there has appeared a realisation of the many difficulties which must be faced in developing commercial aeronautics.

So far as aeroplanes are concerned, it is generally considered that long distance communication over land constitutes the most fruitful field for activity, but even so it appears that the time is not yet ripe for extensive development. The use of seaplanes and flying-boats for overwater traffic is equally dependent upon advances being made, although less affected by competition from existing methods of transport than is the case with aeroplanes operating over land.

The position was summed up in a lecture, in May of this year, to the Liverpool Chamber of Commerce by Major-General Sir Fredk. Sykes, Controller-General of Civil Aviation, when he said, "There seems to be what I can only describe as a gap in front of us. We can mentally pick up the probable future curve of progress some little way ahead. But there is some very important missing link somewhere."

Turning to airships, General Sykes continued, "It is possible that the airship may help us to advance in many directions whilst the 'gap' is being bridged. At all events, both the heavier- and lighter-than-air types of aircraft have their appropriate places in aviation."

For long-distance flying over wide expanses of sea or land unsuitable for aeroplane traffic, the airship has many definite advantages, and this is certainly its appropriate function. Moreover, there are many arguments in favour of employing airships for journeys such as, for example, London to India and Australia, which are frequently considered to be the prerogatives of aeroplanes.

The large rigid airship, capable of flights of 2,000-3,000 miles carrying a commercial load, could lay a direct course, avoiding high mountains, of course, to any destination, without regard to the suitability of the intervening terrain for landing and refuelling purposes. India could be reached with one stop at Cairo. A prolongation of the flight, via Singapore, would take the vessel to Australia in one nearly straight line throughout the journey. Compare this with the suggested aeroplane route to the East, which involves the formation of scores of repair and re-fuelling depots, intermediate landing grounds and emergency alighting grounds in all sorts of inaccessible places, constituting the links of a deviously winding chain across three continents.

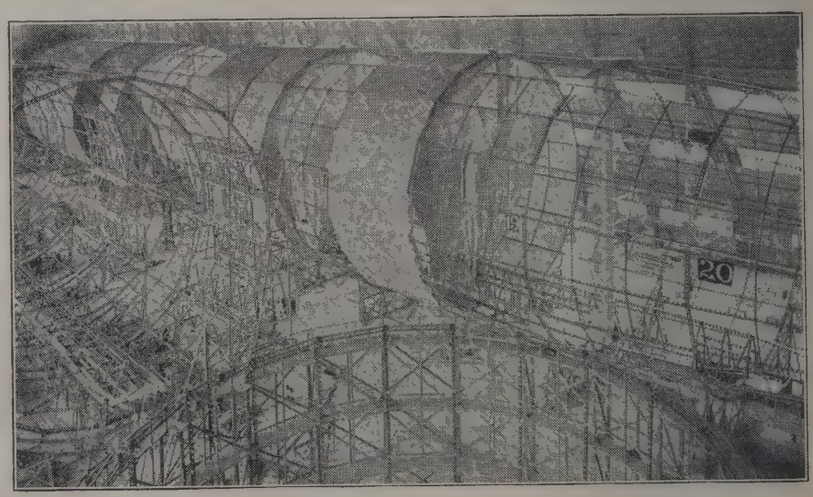
Considering the question of speed, the fastest type of aeroplane at all likely to be useful for load carrying would attain a maximum speed of 125 m.p.h. The Handley-Page machines are limited to approximately 95 m.p.h. It is customary service practice when estimating average ground speed to deduct at least 25 p.c. from the maximum air speed of a machine on account of adverse winds. Also, fully 10 p.c. can further be deducted for the time lost at stopping places. This allows a halt of 30 min. every 400 miles—certainly a reasonable amount. Therefore, 80 m.p.h. is probably the maximum speed now attainable with aeroplane transport.

On the other hand, the commercial airship would be designed to have a full speed of 80 m.p.h. and a cruising speed of 60 m.p.h. at half power. Her course would be direct, and in the aggregate the time for a long journey would not be so very much greater.

It would be ridiculous to pretend that the airship can never be so fast as the aeroplane, but the loads carried in comparison with the unit cost of machine, unit cost of man power engaged and unit cost of horse-power used, would be less, and this factor has a most important bearing on the question. It should be noted that the assumed costs referred to above are dependent upon the provision and use of a practical scheme of mooring rigid airships in the open; a certain development in the near future.

In connection with General Sykes' views as to the probable lines of future progress, it is important to remember certain basic laws which govern the development of airships and aeroplanes, and will exert an ever-growing influence on their future relations.

With airships we are on the threshold of great advances



SHORT BROS.' WORKS AT BEDFORD.—Showing R31 in the background, and the Frame of R32 in the foreground

CONTRACTORS TO THE ADMIRALTY AND AIR MINISTRY.

Short Brothers

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are the oldest Aeroplane and Seaplane Manufacturers in the British Isles, and are the designers of the Short Folding-Wing Device (patent) for Aeroplanes and Seaplanes.



MORE Short Seaplanes were built and used during the war than the total number of all other British Seaplanes.

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R32 is the latest product of our Airship works. Our experience of Airship construction goes back to 1909, when we successfully designed and built the Gasbags, Outer Cover and Valves for the "Mayfly." We will design and build to any requirements.

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Every increase in the size of rigid airships is accompanied by a very much greater proportionate increase in efficiency. Although a rigid airship of ten million cubic ft. capacity would have five times the gross lift and more than five times the useful lift of the present two million cubic ft. vessel, the dimensions of the larger airship would be only 70 p.c. greater, and the horse-power required to obtain the same speed only about three times greater. Accordingly, its prime cost would be less in proportion to unit lift, and its running costs would be less still in proportion to its load-carrying ability, or with the same running costs its speed would be greater as compared with the smaller airship of to-day. With aeroplanes, design upon present lines is nearing what appears to be a limit, and increase in size results in no automatic increase in efficiency. The proportion of horse-power required is nearly constant for all sizes, and structurally the weight of the aeroplane tends to become proportionately greater with increased dimensions, incurring a reduction of efficiency.

What is perhaps of greater interest in regard to commercial aeronautics is the fact that the airship will always retain the characteristic of safety, derived from its independence of engine power for support in the air, whereas the heavier-than-air flying machine will always be subject to risk from engine breakdown. Stress is often laid upon the risk of fire present in airships. One can only repeat the official statement that during the whole period of the war, in the course of some two and a half million miles of flying, only one airship was destroyed by the accidental outbreak of fire in the air. This was on the occasion of the trial trip of an experimental vessel, and the responsible cause was ascertained and eliminated.

Airship Mooring.

In view of the fact that the solution of the problem of mooring airships safely in the open will have more importance than any other development in increasing the utility of airships, the accompanying photograph is particularly interesting.

It depicts a small non-rigid airship anchored experimentally above the ground, by means of a "three-wire" mooring gear, during a period of severe weather in which the wind force reached 52 miles per hour. Attached to the wind scoop and trailing leeward is a fabric hose used for conveying air to the ballonets from an air blower on the ground, to maintain envelope pressure.

In the course of another experiment, made with a mooring mast instead of cables, a similar airship was exposed for an unbroken period of six weeks, during this time riding safely at her moorings through all weathers.

Experiments with small non-rigid airships, however, no matter what measure of success may be achieved, cannot in themselves be regarded as evidence that the same methods of mooring will be equally effective when applied to large rigid airships such as would be required for long-distance commercial flying.

The difficulties experienced in mooring rigid airships are more complicated. Not least among them is that of maintaining without large changes the buoyancy of the moored vessel, and with this is involved the problem of counteracting the effects of rapid rises in gas temperature due to the sun.

That the mooring of rigid airships is mechanically practicable was demonstrated so long ago as 1911 with the British rigid airship No. 1 ("Mayfly"), which was moored to a mast for many hours in Cavendish Dock, Barrow, and withstood, without mishap, winds attaining speeds of 36-45 miles per hour. Subsequent events proved the airship to be structurally weak, so emphasising, if emphasis is required, the soundness of the scheme employed for mooring.

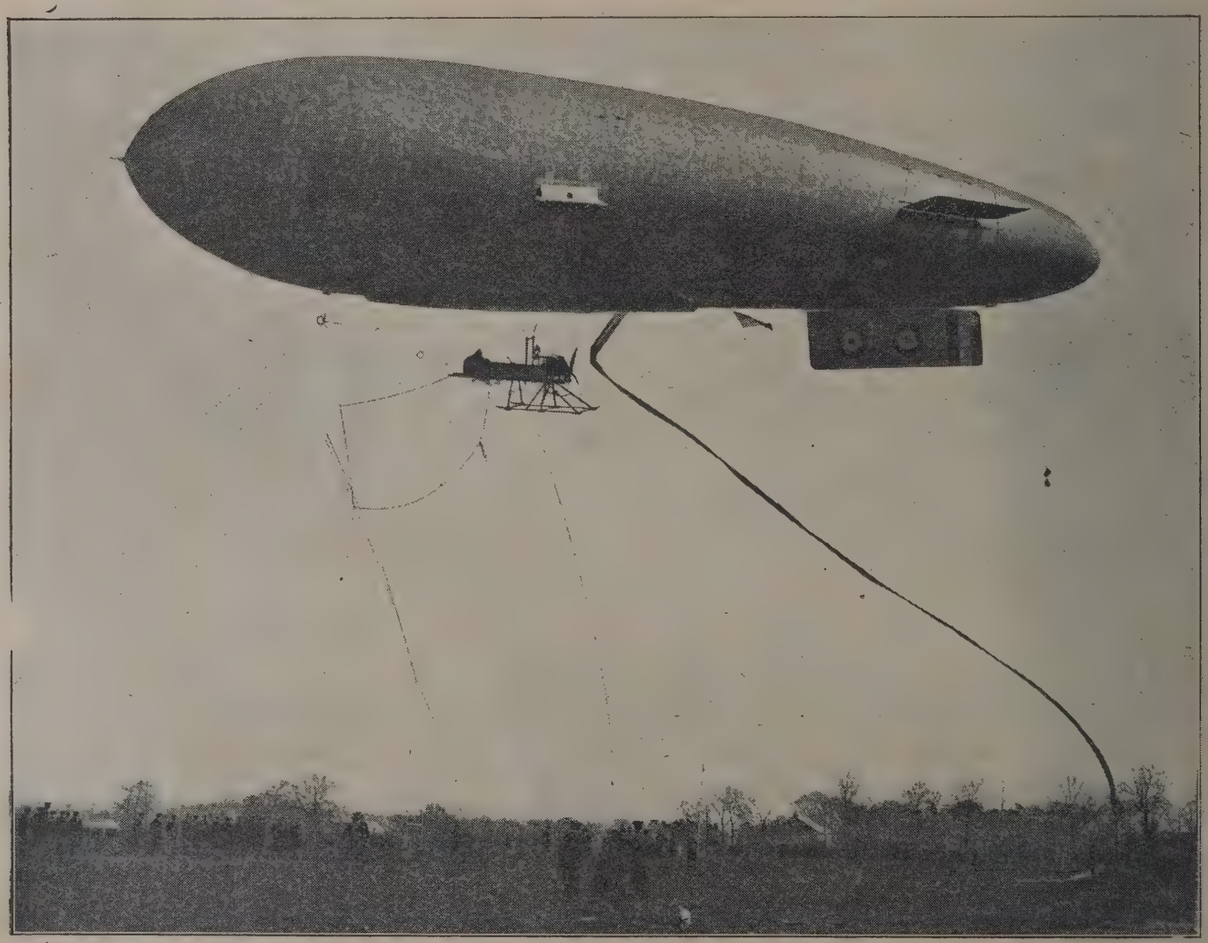
SALE OF AIRSHIPS.

Negotiations are not yet completed regarding the purchase of the complete non-rigid airships which the Admiralty offered for sale up to Aug. 12th.

AERODROMES FOR SALE.

The Disposal Board of the Ministry of Munitions at Charing Cross Buildings has several aerodromes in various parts of the country for sale. These include a seaplane station in the Shetland Isles which covers 12½ acres, and the Gullane aerodrome in Haddingtonshire, the area of which is 318 acres.

Information can be obtained from the Disposal Board at the address mentioned above.



AIRSHIP MOORING.—A small non-rigid airship anchored experimentally by means of a three-wire mooring gear.



The First Airship to cross the Atlantic—The Naval Airship R.34—was equipped with Sunbeam-Coatalen engines fitted with

B.T.H. MAGNETOS

B.T.H. Magnetos were used on the aeroplanes which won the first and second prizes in the Aerial Derby.

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B.T.H. Magnetos have a high reputation amongst pilots for endurance and reliability, and are all-British in design and workmanship.

The British Thomson-Houston Co., Ltd.,
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Member of the British Ignition Apparatus Association.

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NEW "AVRO AEROPLANES"

DELIVERY FROM GOVERNMENT AERODROME,
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A LIMITED NUMBER TO BE SOLD AT HALF MAKERS' COST.

Apply :
COPLEY'S LIMITED,
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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

AIRSHIPS OF THE WORLD.

I.—BRITISH NON-RIGID AIRSHIPS.



A British Airship of the S.S. Zero Class. Note the petrol tank and parachute case on the side of the envelope.

Owing to the recent war and the continued existence of the Defence of the Realm Act and the Official Secrets Act, it is impossible to give full details concerning all types of airships in use.

The accompanying illustrations and particulars give a general idea of modern British airships, all of which have been from time to time exhibited to the populace of London and of other large towns, so it is unlikely that any undesirable person will derive from the illustrations any information which should not be known.

The details given concerning each airship are only such as can be published without doing a disservice to the King's Armed Forces.

THE S.S. P. CLASS.

An airship of small size, now used for training purposes, representing an intermediate stage of development between the original Blimp type S.S. and the more refined Zero type.

The nacelle is reminiscent of that of a pusher aeroplane, but considerably larger. The air pipe from the air ballonets is arranged to collect the slipstream from the airscrew, which is mounted at the rear of the nacelle, behind the engine. The landing skid underneath the nacelle is noteworthy.

Control is effected by a rudder and two elevators placed behind the stabilising fins.

Petrol is carried in cylindrical tanks, suspended in fabric slings, one on either side of the envelope.

THE S.S. "ZERO" CLASS.

The S.S. "Zero" followed the S.S., S.S.—M.F., and S.S.P in the genealogical sequence of the Submarine Scout class of non-rigid airships. The type was standardised for production and considerable numbers were built and put in commission during 1917 and 1918 for patrol duties.

The envelope is made of two-ply rubber-proofed fabric. The suspensory cables of the car are attached with stuck-on "Eta" patches, so called because they were first used on the military airship "Eta" in 1913.

To maintain pressure in the envelope and compensate for loss of gas volume, air is blown into two internal ballonets. When full, the ballonets contain a volume of air equivalent to about one-third of the total capacity of the envelope, which in normal conditions is sufficient to permit of a rise to about 8,000 ft. A sloping air scoop interposed in the propeller slip stream keeps the ballonets inflated at the required pressure.

Directional control is effected by a rudder placed behind the vertical fin and by a pair of elevators placed behind the horizontal fins.

A strongly-built boat-shaped car, having an engine mounted upon a gantry at the after end, is the chief distinguishing feature of the S.S. "Zero" airship. Foremost in the car is the compartment for the W./T. operator. Next is the pilot's cockpit. A wheel bearing on a transverse bar actuates the elevators and foot steering pedals operate the rudder. Within easy reach of the pilot's hand are the controls for the gas and air valves, controls for the "crabpot" valves in the air ducts and the tricing line with which the airscoop is raised out of the propeller slip stream. Arranged in front of the pilot are the necessary aerostatic and navigational instruments.

Behind the pilot's seat is a separate compartment for the engineer. A starting handle for the engine with chain and sprocket gear is so adapted that it may be utilised to rotate a hand blower for maintaining pressure in the envelope in the event of engine defect and consequent failure of the air supply from the propeller slip stream.

The S.S. "Zero" is normally capable of a flight of 12 hours' duration at full speed, and 24 hours at half-power (three-quarter speed). Two flights were made during the War of over 50 hours' duration with full war equipment.

CHARACTERISTICS.

Capacity	70,000 cu. ft.
Length	143 ft.
Width (overall)	32 ft.
Height (overall)	46 ft.
Engine	Rolls-Royce "Hawk," 75-h.p.
Gross lift	2.2 tons
Disposable lift	0.33 tons
Full speed	42 kts. (48.37 m.p.h.)
Cruising speed	30 kts. (34.5 m.p.h.)
Crew	3
Cost (war price)	£5,000

THE S.S. "TWIN" CLASS.

An airship produced during 1918, incorporating improvements suggested by experience with the S.S. "Zero" type.

No attempt has been made to depart from the simple characteristic principles of the preceding S.S. airships, either as regards th eenvelope design, "Eta" patch suspension, or air pressure system. In the "Twin," however, the ballonets are duplicated and dual air ducts and scoops are fitted—a feature by which it may be readily recognised.

The car contains accommodation for a crew of five, and two engines are installed in outrigger bearers on either side.

The S.S. "Twin" has a full speed of 50 kts. (57.5 m.p.h.) with petrol capacity for 12 hours at this speed. At the cruising speed of 37 kts. (42.5 m.p.h.), the endurance is estimated to be 30 hours.

CHARACTERISTICS.

Capacity	100,000 cu. ft.
Length	165 ft.
Width	35 ft. 6 in.
Height	49 ft.
Engines	Two, 75 h.p. Rolls-Royce "Hawk."
Gross lift	3.12 tons.
Disposable lift	1.00 ton.
Full speed	50 kts. (57.5 m.p.h.).
Cruising speed	37 kts. (42.6 m.p.h.).
Crew	4
Cost (war price)	£8,200

"COASTAL" CLASS.

A medium-sized airship of the Astra-Torres type, with an envelope of trefoil section. The suspensory rigging is attached along the lines of intersection of the top and side lobes and passes through the bottom of the envelope to the car.

The air bollonets are inflated by the propeller slipstream through the large metal pipe to the rear of the car. In addition, an auxiliary power-driven air blower is installed in the car.

The vessel is driven by two large four-bladed airscrews driven by independent engines, which are placed respectively at the bow and at the stern of the car.

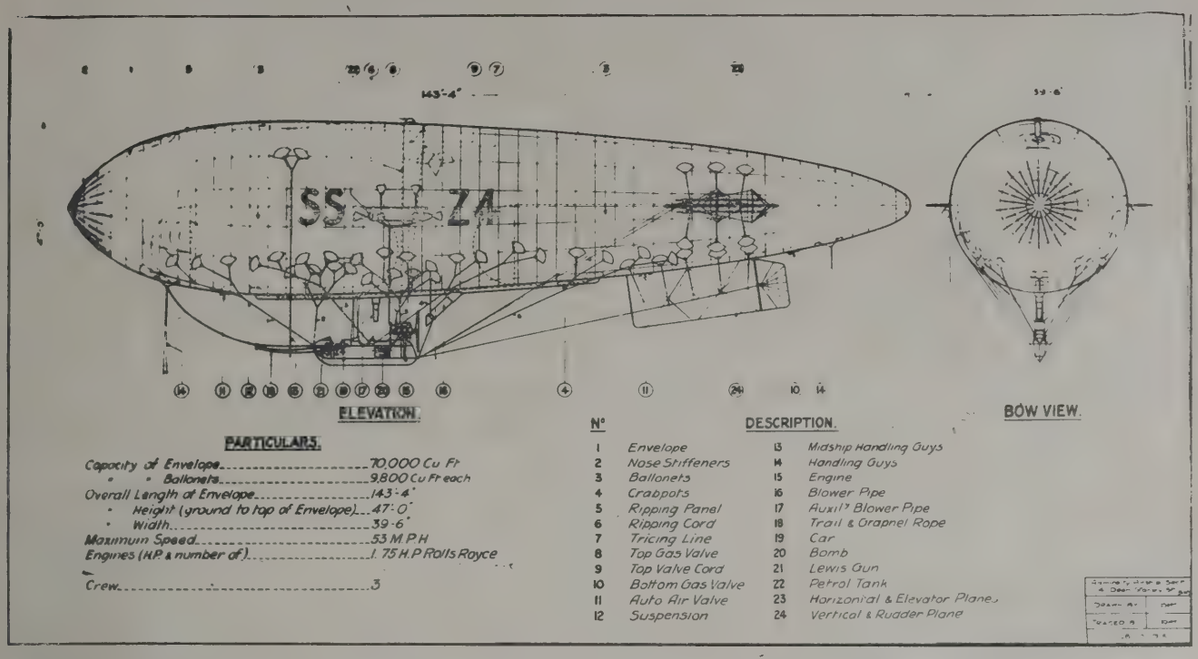
The controls are the ordinary arrangement of fins, rudder, and elevators. A machine-gun platform is placed on top of the envelope.



An Airship of the S.S. Twin Class landing. Later models are equipped with a circular section car of ply-wood construction.



View looking aft above the navigating car of an N.S. Class airship, showing the arrangement of the two 260 h.p. Fiat engines and interposed Engineers' cabin.



General arrangement diagram of the British S.S. "Zero" class of airship, showing clearly the arrangement of the rigging.

CHARACTERISTICS.

Capacity	170,000 cu. ft.
Length	196 ft.
Width (overall)	39 ft. 6 in.
Height (overall)	52 ft.
Engine and h.p.	2—150 h.p. Sunbeam
Gross lift	4.94 tons.
Disposable lift	1.6 tons.
Speed (full)	52 m.p.h.
Crew	5.

THE C. STAR CLASS.

In accordance with a custom of Naval terminology, the designation "C. Star" indicates a modification of the "C." i.e., the Coastal type of airship. Airships of this class were intended primarily for convoy escort duty over greater distances than could be undertaken by the S.S. Zero craft.

The envelope is rigged on the Astra-Torres tri-lobe principle, and is practically a replica on a smaller scale of the N.S., which made its advent at an earlier date.

The capacity of the C. Star is 210,000 cubic feet, as compared with the 170,000 cubic feet of the Coastal, producing an increase in lifting power of approximately one ton and a quarter.

The car remains substantially the same as the Coastal car, but is fitted with engines of a different type. A Berliet of 110 h.p. is installed in the forward mounting, where the efficiency of the propeller is impaired by the large car in its wake, and a 260 h.p. Fiat is placed in the mounting aft. Both these engines are designed on the lines of the Mercédès, and are remarkably reliable.

No gun-platform is fitted on the top of the envelope, as in the Coastal.

In order to assist in distributing the weights evenly along the envelope and to reduce the tensions in the car suspensory cables —some of which are acutely inclined forward and aft—the petrol is carried in tanks suspended inside the gasbag.

The equipment of a C. Star airship includes W/T. installation, emergency power-driven air blower, floatation bags, and a collapsible lifeboat, to be inflated with air, as well as the usual airship grapnel, drogue, and signalling appliances.

CHARACTERISTICS.

Capacity	210,000 cu. ft.
Length	218 ft.
Width (overall)	49 ft. 3 in.
Height (overall)	57 ft. 6 in.
Engines	One 110 h.p. Berliet forward, one 260 h.p. Fiat aft.
Gross lift	6.46 tons.
Disposable lift	1.8 tons.
Full speed	50 kts. (57.5 m.p.h.).
Cruising speed	35 kts. (40.3 m.p.h.).
Crew	5.
Cost (war price)	£12,750.

THE N.S. CLASS.

The "North Sea" type airship, which was designed for long range reconnaissance, perpetuates the "Astra-Torres" principle in a vessel of considerable size. It is most readily recognised from the "C. Star" type by the large enclosed car and the arrangement of the twin engines behind the car, and placed side by side. Conspicuous also are the large twin air pipes which scoop the slipstream from the airscrews to the air ballonets, along big air ducts running fore and aft.

The vessel has no landing carriage, but floats are provided for alighting on the water if necessary. The control planes are of conventional type.

Petrol is carried inside the envelope in cylindrical tanks suspended at intervals from the internal rigging girdles at the top "ridges" of the envelope. This method of suspension results in more equitable load distribution, relieving the envelope of the stresses that would be set up were the weight of petrol concentrated in the car, and so reducing the liability of the envelope to lose its longitudinal alignment at low pressure. As petrol is consumed from various tanks, air may be blown into contiguous ballonets to trim the ship.

In the latest model of the N.S. airship, the car has the same height from end to end to give head room.

An engineer's cabin is situated in the space between the engines at the rear. Sleeping bunks and means of heating food by the engine exhaust are provided.

Many notable duration flights have been performed in the course of patrol duties by N.S. airships, including a non-rigid endurance record of 101 hours, 50 minutes.

CHARACTERISTICS.

Capacity	360,000 cu. ft.
Length	262 ft.
Width (overall)	56 ft. 9 in.
Height (overall)	69 ft. 3 in.
Engines and h.p.	Two 260 h.p. Fiat
Gross lift	10.85 tons.
Disposable lift	3.8 tons.
Full speed	50 kts. (57.5 m.p.h.)
Cruising speed (½-power)	37 kts. (42.6 m.p.h.).
Crew (two watches)	10.

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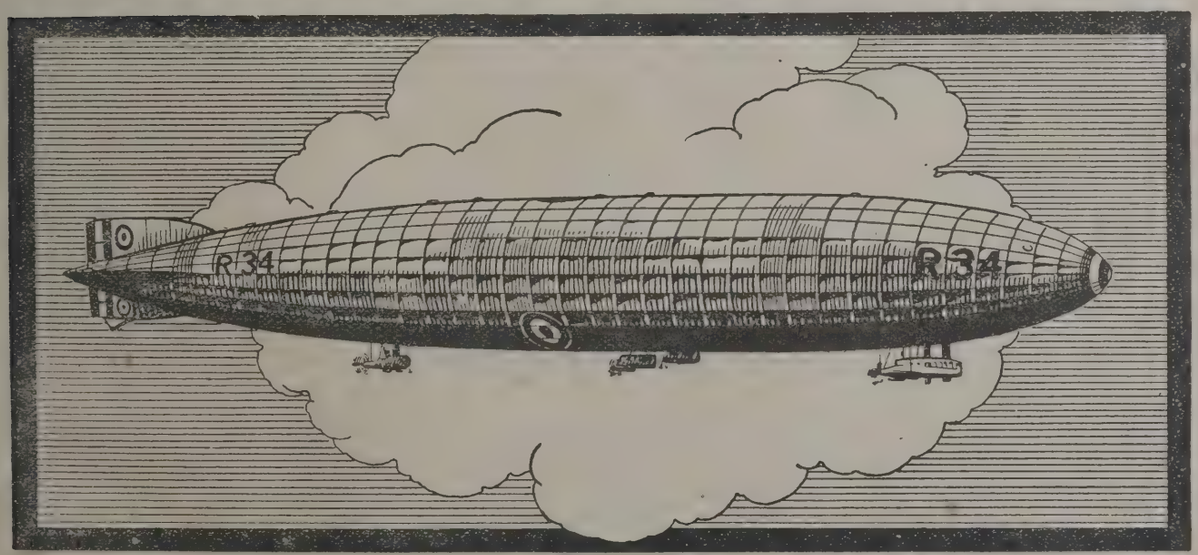
especially magnificently"

(Major Pritchard in the "Daily Express")

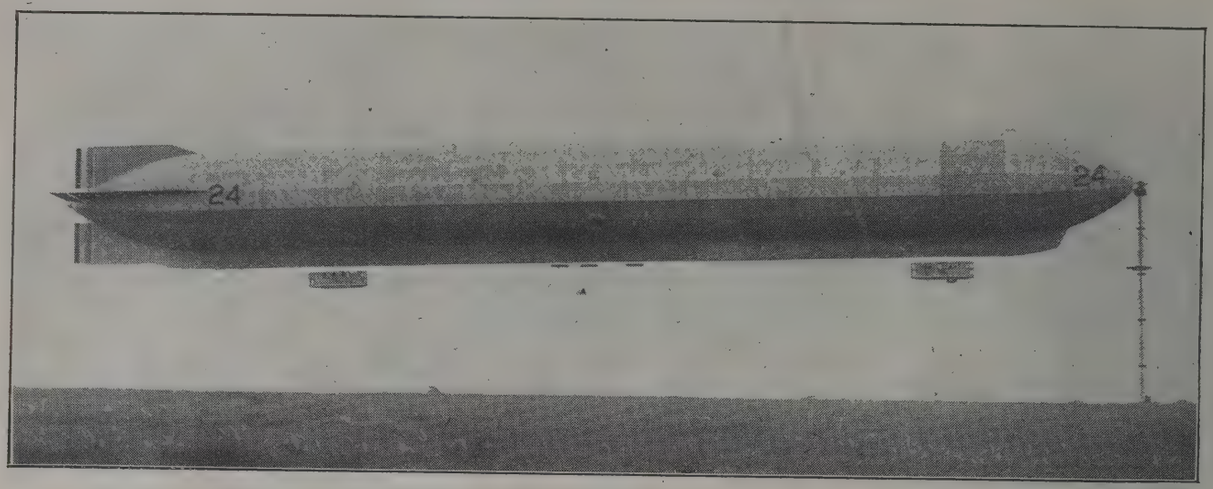
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II.—BRITISH RIGID AIRSHIPS.



R24—one of the early British rigids—moored out to a mast during recent mooring tests.

THE RIGID 23 CLASS (R23—R26).

R23, designed and constructed by Messrs. Vickers, Ltd., was put into commission in 1916 as a training airship.

R24 (built by Wm. Beardmore and Company), R25 (built by Armstrong, Whitworth, Ltd.), and R26 (Vickers Ltd.), followed in 1917, and were also utilised for training and experimental purposes.

The hull, composed of Vickers type duralumin lattice girders, is divided by transverse frames into 18 gas compartments, the gasbags containing a total of 942,000 cubic feet of gas when full.

A V-section keel, built of duralumin and steel tubes, extends under the hull from near the bows to join the lower vertical fin at the tail. A portion of the forward half of the keel is widened to form a cabin, in which the W/T cabinet and quarters for the crew are located.

Each gasbag is fitted with one automatic gas valve discharging to one side and a top manœuvring valve actuated from the control cabin.

The outer cover is of doped linen.

As originally produced, the forward and aft gondolas were each partitioned into two compartments, a control cabin, and an engine room. The main control position was in the leading gondola. Each of these gondolas was equipped with a 250 h.p. Rolls-Royce engine, driving a pair of 4-bladed swivelling propellers through suitable gearing.

Subsequently the after gondola was removed and its place taken by a light power-car containing an engine with direct transmission to a single 2-bladed propeller.

The car suspended amidships accommodates two engines, also of the Rolls-Royce 250 h.p. type, each coupled through bevel gearing to a 4-bladed propeller on either side of the car. Swivelling gear is not provided for these propellers.

Above the bows of the airship is a gun platform, which is reached by a climbing shaft passing between gasbags two and three.

Cruciform stabilising fins are fitted, and balanced rudders and elevators of high aspect ratio.

Judging from the standard of the more modern rigid airships, the performance of the R23 Class is poor. The best flight which has been accomplished is one of slightly over 50 hours. The value of the class has been principally manifested in the experience afforded to those concerned with its construction and operation.

CHARACTERISTICS.

Capacity	942,000 cu. ft.
Length	535 ft.
Diameter	53 ft.
B.H.P.	1,000.
Gross lift	23.6 tons.
Disposable lift	5.8 tons.
Maximum speed	45.2 kts. (52 m.p.h.).
Cruising speed	35 kts. (40 m.p.h.).

THE R23X CLASS.

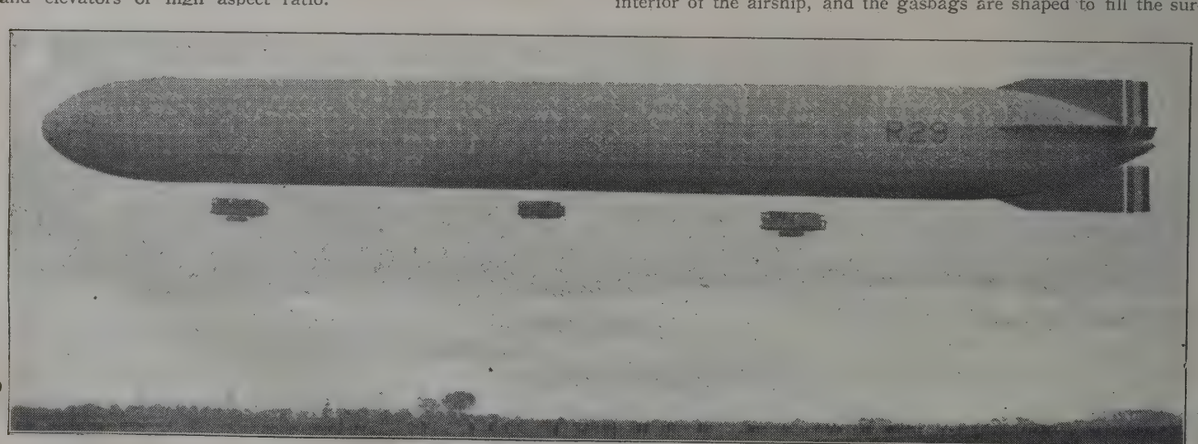
This class comprised two airships, R27 and 29, constructed in 1917-18 to Admiralty design by Messrs. Wm. Beardmore and Co. (R27) and Messrs. Armstrong, Whitworth and Co. (R29). It was originally intended to build four airships of this type, but as a result of the acquisition of L33, R28 and R30 were cancelled.

In many essentials the R23 X class airships are similar to R23. The dimensions are nearly the same, and the only obvious point of difference is the omission of the keel.

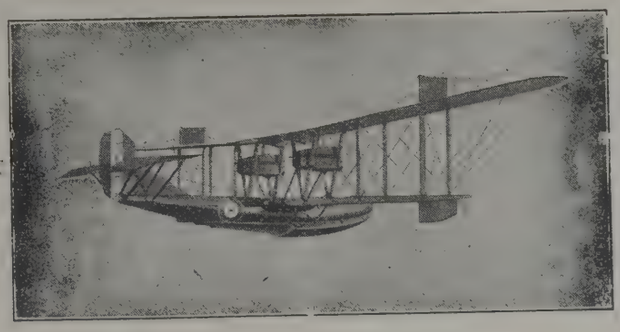
It should be understood that the function of the keel in rigid airships is primarily that of distributing the weights of petrol, oil and water-ballast between the transverse bulkheads of the hull, and, as a rule, it contributes little more than 5 per cent. to the total strength of the hull structure.

In the R23 X class, these weights are concentrated at the bulkheads, where they are suspended from the radial wiring which maintains the polygonal shape of the hull. A keel is therefore unnecessary, and a considerable saving of weight is secured.

To enable the crew to pass from one gondola to another, a ∩ shaped corridor of light tubular construction is carried through the interior of the airship, and the gasbags are shaped to fill the sur-



R29, sister ship of R27, of the keelless R23X Class.



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rounding space. In all other details, these airships follow closely the lines of R23. The gondolas and power plant are arranged similarly to those of R23 as first designed, with swivelling gear for the forward and aft propellers.

CHARACTERISTICS.

Capacity	990,600 cu. ft.
Length	539 ft.
Diameter	53 ft.
B.H.P.	1,000
Engines	Four Rolls-Royce "Eagle," Mark III, 250 h.p.
Gross lift	30.1 tons
Disposable lift	8.5 tons.
Maximum speed	48 kts. (55 m.p.h.).
Cruising speed	37 kts. (42.75 m.p.h.)

THE R31 CLASS.

R31 and R32 were constructed by Messrs. Short Bros, at Bedford, to designs based upon "Schütte-Lanz" principles furnished by the Admiralty. Owing to the effects of dampness on the plywood used in the construction of R31 this airship has been condemned.

It is to be noticed that the construction of the hull bears no resemblance to that of the pre-war "Schütte-Lanz" trellis system, and is analagous to the Zeppelin arrangement, which was adopted for the later S.L. ships.

Each of the principal girders in R31 consisted of three plywood sides, lightened with slots at regular intervals, which were glued to spruce angle-members more or less of V section. The triangular girder thus formed was strengthened internally by plywood diaphragms. This method of construction was used for all varieties of girders, including square and rectangular sections.

Casein cement, known as Kaltleim, was adopted as an adhesive.

The gasbags, 25 in number, were made of rubber-proofed cotton fabric, lined with goldbeaters' skin.

A keel corridor extended from end to end inside the bottom of the hull, serving to support and distribute the weights of petrol, water ballast, etc.

The control car under the bows of the airship was divided into three compartments; forward the navigating cabin, next the wireless room, and aft the officers' sleeping quarters.

As initially tested, R31 had six boat-built power gondolas, arranged in pairs. Subsequently, however, one of the rear gondolas was removed and the remaining one slung parallel with the centre line.

Each gondola contained a 250-h.p. Rolls-Royce engine, driving through clutch transmission a two-bladed propeller. Reversing gears were fitted to those amidships.

CHARACTERISTICS.

Capacity	1,553,000 ft.
Length	615 ft.
Diameter	65.5 ft.
Engines and h.p.	5—250-h.p. Rolls-Royce (1,250)
Gross lift	47.1 tons
Disposable lift	16.4 tons
Maximum speed	65 m.p.h.
Cruising speed	46 m.p.h.
Crew	21

THE R33 CLASS.

Two airships of this class, completed in 1919, were constructed by Messrs. Armstrong, Whitworth & Co. (R33) and Messrs. Beardmore & Co. (R34). The designs were prepared by the Admiralty from data acquired from the wreck of Zeppelin L33, brought down at Little Wigborough in 1916.

The hull, streamlined over the greater part of its length, has the sectional shape of a 25-sided polygon, and is composed of 20 main circumferential girder frames and 25 longitudinal girders, one at each corner of the polygon. An auxiliary circumferential frame is interposed between each pair of main frames, and the whole is braced diagonally by high tensile steel wire. There are 19 gas chambers.

At each bulkhead, radial wires of steel wire rope are connected centrally to an axial plate, and a jackstay runs from plate to plate, bracing the bulkheads together longitudinally.

Along the inside of the bottom of the hull is a keel-corridor, formed of A-shaped girder frames. As well as accommodating the petrol, water ballast, and bombs, the keel provides means for the crew to pass from one gondola to another, for which purpose a walking-way girder is interposed between the two lower longitudinals of the hull.

A top gun platform is situated above the third main frame, near the bows, and at the after end of the airship a lightly built prolongation of the corridor gives access to a gun-pit at the extremity of the stern.

The tail fins and control surfaces are cruciform in arrangement and constructed of duralumin girders, covered with doped linen.

The gasbags are shaped to fill as completely as possible the interior of the hull, surrounding the sides of the corridor when full. They are made of a single thickness of rubber-proofed cotton fabric lined with goldbeater's skin; finished weight not more than 160 grams per square metre. An automatic gas release valve is fitted to each bag, discharging near the bottom through exhaust shafts running to the top of the airship between each alternate pair of gasbags. Certain bags are also furnished with hand-controlled manœuvring valves.

The outer cover is made of doped linen, tightly stretched between each pair of main circumferential frames.

The forward gondola, although apparently homogeneous, is built in two parts separated by a small gap. In the leading section are the controls and wireless cabinet, and in the section behind is an engine coupled through a clutch to a propeller at the rear.

Approximately amidships, two small "wing" gondolas are attached to the hull side by side, each one housing an engine. Reversing gears, for use in braking the airship whilst landing, are fitted between the engines and propellers in these cars.

The sternmost gondola accommodates two engines, geared to drive one large propeller. In this respect, the R33 Class airships are similar to the German L40, and differ from L33 by the omission of the shaft-driven "wing" propellers and one of the three engines installed in the after gondola of that ship.

CHARACTERISTICS.

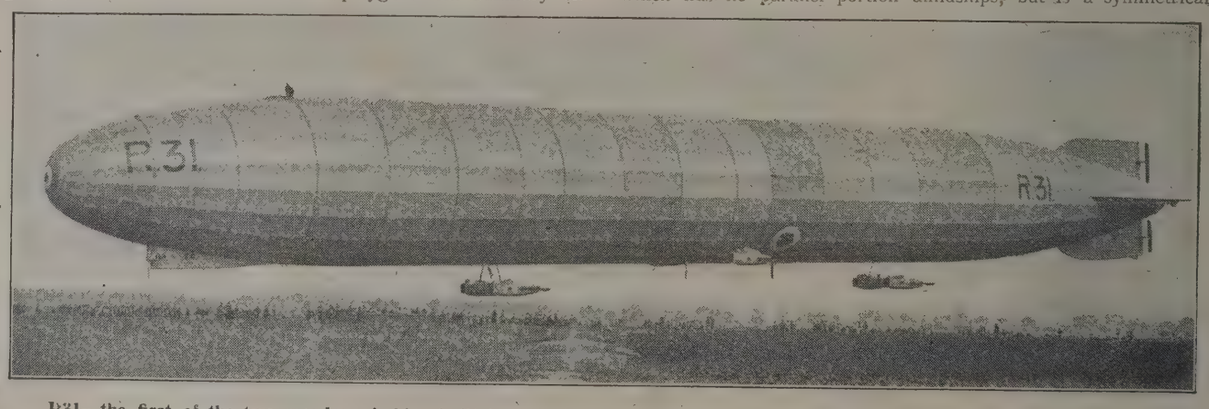
Capacity	1,950,000 cu. ft.
Length	643 ft.
Maximum diameter	78.75 ft.
Engines and h.p.	5—250 h.p. Sunbeam "Maori" (1,250).
Gross lift	59.2 tons.
Disposable lift	30 tons.
Maximum speed	62 m.p.h.
Cruising speed	45 m.p.h.
Crew	22.

THE R80.

A rigid airship designed and put into construction in November, 1917, by Messrs. Vickers, Ltd., at Barrow. It is to be completed during the latter half of 1919, and, unless employed for commercial demonstrations, will probably be taken over by the Admiralty.

Compared with contemporary rigid airships it is small in size, having a gas capacity of 1,250,000 cubic feet. It is, however, designed on up-to-date lines, and may be expected to prove highly efficient within the limitations imposed by its small dimensions.

An advance upon other rigid airships is the shape of the hull, which has no parallel portion amidships, but is a symmetrical



R31—the first of the two wooden airships built by Short Bros—with the original twin-power cars aft, which have since been replaced by a single car.



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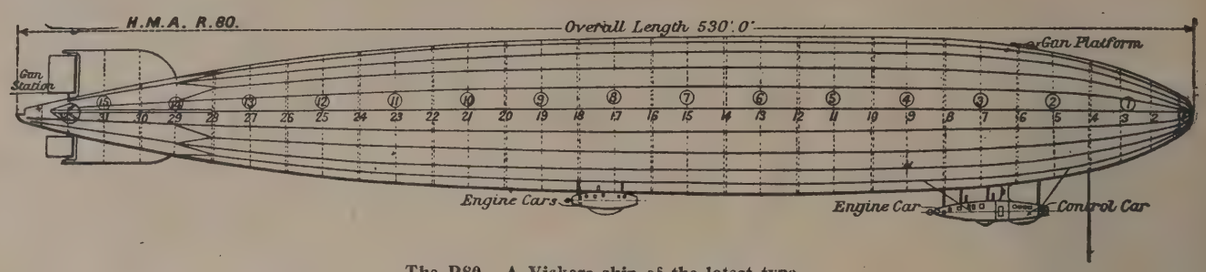
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The R80. A Vickers ship of the latest type.

streamline form throughout its length. The construction and general arrangement of the hull, including the internal keel-corridor, conforms generally with the recognised principles of rigid airship design, but incorporates several minor improvements in detail devised by Messrs. Vickers. Patent bow mooring attachments are fitted.

The gasbags are 15 in number. Cruciform tail fins and balanced elevators and rudders are fitted and two gun positions, one above the bows and one in tip of the stern, these features are reminiscent of the practice in R33.

A point of recognition is the arrangement of the gondolas, of which there are three—one large gondola forward and a pair of "wing" power cars approximately amidships. The fore gondola is composed of two sections, flexibly connected, the leading section containing all the controls for the airship and the W/T cabinet.

Four 240 h.p. Wolseley-Maybach engines provide propulsive power, two engines being installed en echelon in the after section of the forward gondola, and one each in the twin "wing" cars. A propeller is mounted at the rear of each gondola, and the transmission is such that the forward propeller can be driven by either of its two engines separately or both together, whilst the "wing" car propellers may be reversed.

It is stated that R80 will have a full speed of over 60 miles per hour, and be capable of crossing the Atlantic. The endurance at cruising speed of 45 m.p.h., with a maximum load of fuel, will presumably be about 75 hours.

CHARACTERISTICS.

Length	535 ft.
Diameter (overall)	70 ft.
Capacity	1,250,000 cu. ft.
Engines and h.p.	Four 240 h.p. Maybach
Gross lift	36.5 tons.
Disposable lift (estimated)	15 tons.
Full speed (normal)	60 m.p.h.
Cruising speed	45 m.p.h.
Crew	20.

R35—R40 (PROJECTED).

Beyond a statement in the House of Commons to the effect that six rigid airships of improved types are being built to the order of the Admiralty, little official information has been vouchsafed as to the size and capabilities of the new vessels.

From reports which have appeared in the newspapers, however, it is to be deduced that two airships, R36 and R37, are being built of practically the same type as the R33, each with a capacity of about 2,000,000 cu. ft., and three larger vessels.

Since no mention is made of a possible R35, it appears that this number has not been allocated, or has been cancelled. Thus, the total of six airships presumably comprises R80, R36 and 37, and a new class R38, 39, and 40.

The "R38 Class" is referred to in the official "Notes on Airships for Commercial Purposes," in which it is stated that the capacity will be 2,720,000 cu. ft. and that the cruising endurance at 45 miles per hour is estimated to be 211 hours, or 34 hours greater than the German L70.

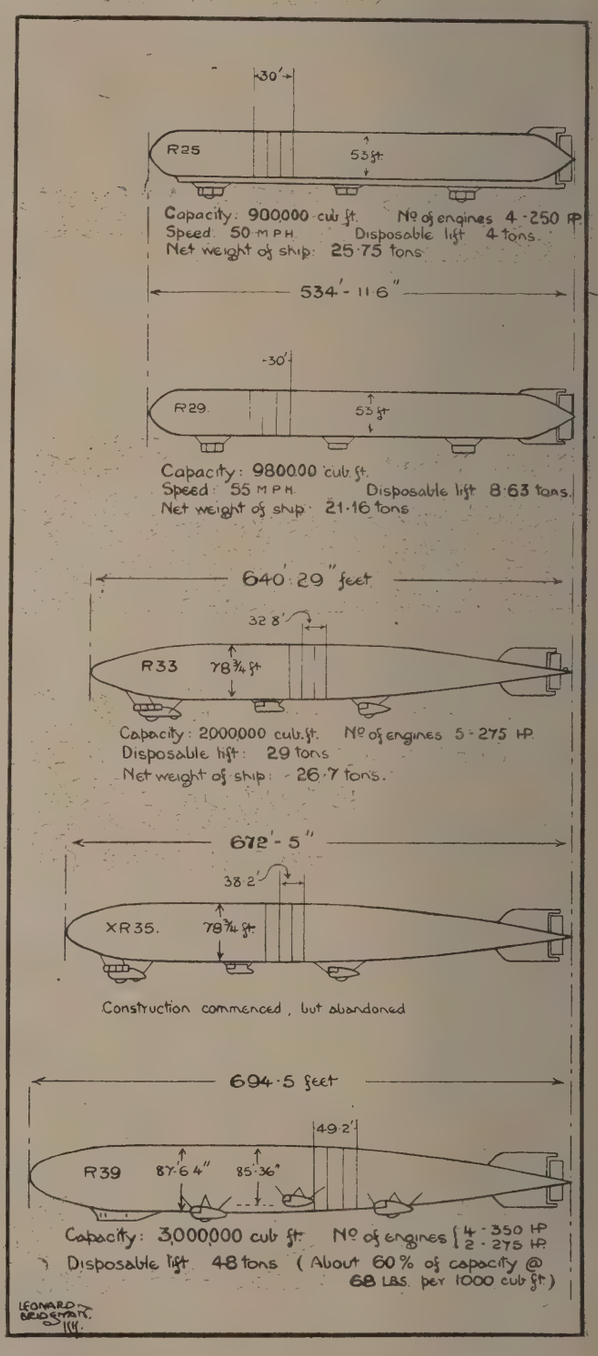
Some figures relating to the dimensions and lifting capacity of these new airships have been published in the Press, and these, supplemented or checked by obvious calculations, furnish the following details:—

CHARACTERISTICS (R38 CLASS).

Length	695 ft.
Diameter (overall)	87.6
Capacity	2,720,000 cu. ft.
Engines and h.p.	Four 350 h.p. Sunbeam "Cossack" Two 275 h.p. Sunbeam "Maori"
Gross lift	82 tons
Disposable lift (estimated)	50 tons
Speed, full (estimated)	70 m.p.h.
Crew (estimated)	30

In connection with the specifications given above the attached diagram, reproduced by courtesy of Sir W. G. Armstrong, Whitworth and Co., Ltd., and representing to a uniform scale the airships so far built by that firm, gives a graphic idea of the evolution of British-built rigids in the last two years.

(Continued on page 750.)



Are Motorists Lazy?

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and that is, I think, the experience of most road users, but all the same, I confess to a feeling that in wanting to do so much for the motorist in roadside repairs and tyre changing, the A.A. is quite unconsciously helping to make motorists the laziest people on the road."

The above paragraph, taken from a motoring article in a London daily paper, though acknowledging the efficiency of the Automobile Association's Road Service does not do justice to its comprehensive character.

The khaki-clad A.A. patrol also gives reliable road information, warns members of bad road conditions and indicates alternate routes, renders first aid to man and machine, recovers property dropped on the road, procures replacements, and generally assists member in road difficulties.

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In addition the A.A. supplies members with special routes to any part of the country and provides Free Legal Defence in any police court in the United Kingdom to answer charges under the Motor Car Act or D.O.R.A.

Whether the above privileges tend to make motorists lazy is a debatable point, but there is no denying the fact that they are of great benefit to and much appreciated by members of the Automobile Association.

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THE WEEKLY COMMENTARY.

The present number of "Aeronautical Engineering" is entirely devoted to articles dealing with the design, construction, and use of airships.

An article contributed by the airship department of Vickers, Ltd., deals with the prospects of airships for long-distance commercial transport. This contribution gives detailed estimates of the cost of long-distance airship passenger and mail services, together with technical details as to the type of ship suggested.

A description of the war productions of Vickers' Aircraft Department is also given.

By courtesy of Sir W. G. Armstrong, Whitworth & Co., Ltd., a description of the methods which have been adopted in the assembly and erection of large rigid airships at their Selby works is given. Some idea of the magnitude of the task and the difficulties overcome by British airship builders may be gained therefrom.

Sir Wm. Beardmore & Co., Ltd., have supplied a description of the actual process of building the trans-Atlantic airship R.34.

Short Bros., Bedford, have supplied a description of H.M.A. R.32, a rigid airship built entirely of wood, and also a description of a novel airship of their design.

Airships, Ltd., describe the uses of non-rigid airships.

An article by Major P. L. Teed gives a summary of the methods employed to compute the lift of hydrogen used in airships under varying conditions of purity, temperature, and pressure.

AIR TRANSPORT SERVICES.

A DISSERTATION ON THE POSSIBILITIES OF AIRSHIPS IN COMMERCIAL AERONAUTICS.

[The following paper has been produced by the Airship Department of Vickers, Ltd., of Barrow-in-Furness.—Ed.]

SECTION I.

SUMMARY OF THE MOST IMPORTANT CONCLUSIONS.

The outstanding and peculiar advantage of the airship for air transport is its capacity for making non-stop voyages of long duration. On account of inherent limitations, the aeroplane will probably never—unless some radically new principle of design is discovered—be capable of carrying a passenger load for greater non-stop distances than 2,000 miles, and for economical operation will probably never be used for non-stop flights of more than 1,000 miles; whereas, on the other hand, the only limit to the non-stop length of flight that can be made by an airship is determined by the size of ship, and 10,000 miles is quite practicable.

An airship of the size described in this paper, of a capacity of 3,500,000 cubic feet, which could be built immediately and be housed in existing sheds, can carry 15 tons of passengers, mails, etc., for an air distance of 4,300 miles, at a speed of 60 m.p.h., and it would be quite a practicable proposition to build a rigid airship to carry 50 tons of passengers and freight for a non-stop voyage of 10,000 miles, at a speed of 80 m.p.h. It therefore may be definitely accepted that for voyages on which it is necessary to make a non-stop flight between points more than 2,000 miles distant the airship is the only means of aerial transport possible, and it may also be safely stated that the airship will always be the most economical means of transport for non-stop voyages of more than 1,500 miles. It therefore is inevitable that the airship will hold the field for long-distance cross-oceanic air voyages.

COST OF OPERATION.

As a basis for comparative figures, the direct non-stop passenger voyage from London to New York (a minimum distance of 3,000 miles) has been considered, and an analysis made of the cost of operating a service of two crossings in each direction per week, giving a carrying capacity of 30 tons of passengers, mails, etc., in each direction. Details of this cost analysis are given in Section V.

The results may be summarised as follows:—Capital required, £2,600,000. Allowing 10 per cent. on capital, and a high rate of depreciation and insurance, etc., the cost of operation would be as follows:—Carrying passengers from London to New York, £48 per head, which is equivalent to 4d. per passenger mile. The rate for mails, etc., would be 3d. per ounce. The time taken for the journey would be two-and-a-half days from London to New York by the southerly route, and two days from New York to London by the direct route.

It is impossible to run an aeroplane service direct from London to New York, but with the largest and most efficient machines at present considered practicable, it would be possible to run a London to New York service with the intermediate stops in Ireland and Newfoundland for replenishment of fuel, etc.

An analysis of the cost of running an aeroplane service on this basis is given in Section XII, from which it will be seen that to give the same service as the airships proposed, the capital required would be £3,850,000, and the cost of operation on the same basis as the airships would be: Passenger rate, from London to New York £115, which is at the rate of ninepence per passenger mile. Mails at the rate of 7½d. per ounce.

The time taken, allowing for stops in Ireland and Newfoundland, would be two days.

It is therefore seen that for a regular and established service, the cost of Atlantic transport by airship is less than half of that by aeroplane, and the time taken practically the same.

It must, however, be pointed out that if the airship stopped at the intermediate points as necessary for the aeroplane, a considerably greater amount of passenger load could be carried, and the relative cost by airship would be further decreased.

With the development of airship transport to the most distant centres of the world, it is conceivable that no important city will be further from London than 10 days' journey, and the following table gives the times that would be taken to reach several important cities when airship ocean routes are in operation:—

TIMES FROM LONDON IN DAYS.—To New York, 2-2½; San Francisco, 4½; Cairo, 1½; Colombo, 4½; Perth, 7; Nairobi, 3½; Capetown, 5½; Rio de Janeiro, 4.

As the maximum distance of direct flight between intermediate stations required to get to any of these centres is not more than 3,500 miles, it would be practicable to run these services with the size of airship described in this paper, and the cost of operation for a regular service would be approximately as for the Atlantic service, i.e., passengers at the rate of 4d. per mile, and mails at the rate of 3d. per ounce, and with the development of large airships carrying greater loads, the cost of operation would be even more economical.

It is probable, in view of the immense benefits that would be conferred on civilisation by the great saving in the time required

for travelling, that the various Governments will be prepared to subsidise the development and operation of the airship services in their initial stages until a fully operated service could be established.

Incidentally, the commercial use of airships for passenger flights was demonstrated in Germany before the war, when the Hamburg-America Steamship Company ran a series of passenger airships for purely pleasure purposes at a profit, and carried 17,000 passengers without a single accident or mishap.

From the description of the type of airship proposed in Section VII, it is apparent that every reasonable provision can be made for comfort of the passengers, and suitable sleeping accommodation provided for the long journeys.

For the operation of airship services, aerodromes are only required at the terminal stations, and landing places with mooring-out towers need only be provided 3,500 miles or more apart.

The necessary amount of work in constructing the stations and preparing for the operation of an airship service is relatively small, whereas a long distance aeroplane service is only practicable if aerodromes can be provided every 1,000 miles, and for safety it would be necessary to have suitable landing grounds for use in case of forced landings no further apart than 100 miles.

The preparation and cost of all these aerodromes and landing grounds would represent a large amount of preparatory work required to be done before long distance aeroplane service could be put into practicable operation.

The problem of landing and housing the airship in stormy weather has now been solved by the use of the mooring mast or tower to which the airship is moored by the nose, and able to ride out in any weather clear of the ground. Arrangements are also provided whereby the airship can easily be moored to, or released from, the tower in any wind up to 60 miles per hour without difficulty. The passengers can get into or out of the ship by means of a lift in the tower. There consequently will be no need to put the airship into a shed except for periodic overhaul and refit.

SECTION II.

GENERAL REMARKS.

Although no claim is made that airships will seriously compete with ordinary transport services at present satisfactorily served by railway and ocean liners, there is no doubt that a sufficient number of passengers would be prepared to pay relatively higher rates for the great saving in time taken for long distance journeys, particularly for long sea journeys, and also to get a direct and fast service to important centres which are not at present served direct by railway systems or ocean transport.

The demand would mainly be for passenger traffic to serve the requirements of business men who require to get from centre to centre in the shortest possible time, and also for the carriage of express mail matter.

Other services on which large airships would be particularly useful would be:—

For carrying freight of high intrinsic value, such as transporting valuable ores and other commodities of high intrinsic commercial value from places otherwise inaccessible, or not provided with other means of direct transport.

In making preliminary exploration of large virgin tracts of country for the purpose of constructing railway tracks, etc., a great amount of laborious exploration work would be eliminated.

There are also great possibilities of obtaining a profitable return by running airships for pleasure trips from seaside or other resorts in the summer months, where an almost unlimited number of people would pay a good price for airship cruises.

A particular instance for which it is thought such services could be profitably run would be at Blackpool, where pleasure cruises could be run to the Isle of Man, or to the Lake District.

There might also be a limited demand from private owners for a small non-rigid airship, to carry two or three passengers, which could be run at much the same cost as a small yacht.

It is probable that in order to meet the requirements of these various purposes for which airships conceivably will be utilised airships will be designed of three classes, viz.:—

First, the airship of moderate size and high speed, for carrying express mails and passengers.

Secondly, the passenger liner for passenger traffic, of a large size, and high speed.

Thirdly, large airships of comparatively slow speed and large carrying capacity, for general transport.

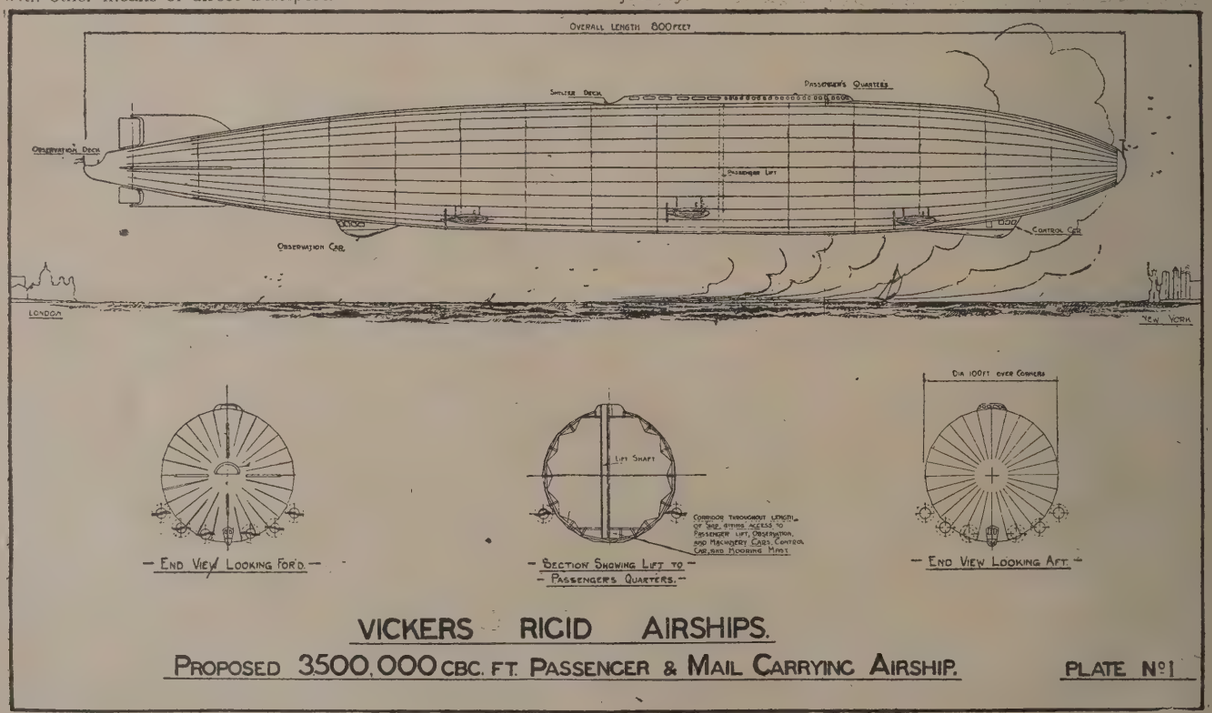
The small non-rigid airship will hold the field for use for private purposes.

The rigid airship is as yet only at the beginning of its development, particularly as regards size and carrying capacity. The airship of 3½ million cubic feet capacity—the size proposed in this paper—for immediate use on the fast passenger services, which would have a maximum speed of 75 m.p.h., and would carry a useful load of passengers of 15 tons, for a distance of 4,800 miles, could be built immediately and could be housed in sheds at present available. As, however, the lift and speed efficiency of a rigid airship increases rapidly with increase of size, it will be advantageous to use the largest airships that can be economically operated, and a rigid airship able to carry 50 tons of passengers and freight for 10,000 miles, at a speed of 80 m.p.h., is quite feasible, and the design and construction of such an airship could be undertaken immediately it would be justified by developments in the demand for air transport.

Passenger cruises on a commercial scale were operated in Germany for about four years before the war by the Hamburg-America Steamship Company, and it is understood that companies have been formed in Germany for Zeppelin airship services from Berlin to Constantinople, and notices have recently appeared in the Press that the German Zeppelin Company is now actually building airships for the Berlin-New York service and other routes.

Notices have also recently appeared in the Press to the effect that the Spanish Government have decided to make inquiries into the possibilities of running trans-Atlantic services from Spain to the United States of America.

It is conceivable that by the development of aerial transport no important city will be further from London than 10 days' journey.



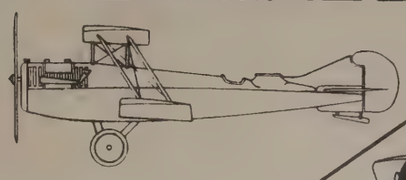
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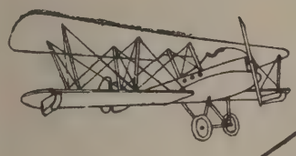
VICKERS RIGID AIRSHIPS.

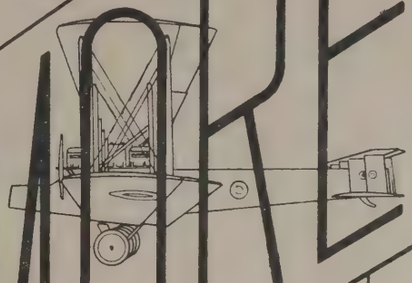
PROPOSED 3500,000 CBC. FT. PASSENGER & MAIL CARRYING AIRSHIP. PLATE No. I

AEROPLANES AIRSHIPS AERO-ENGINES

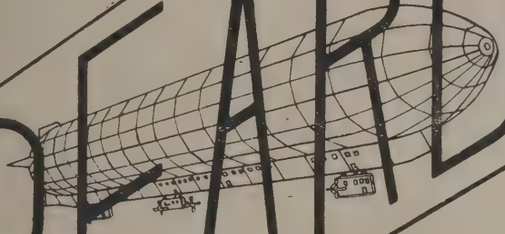
PASSENGER
POSTAL
GOODS CARRIAGE
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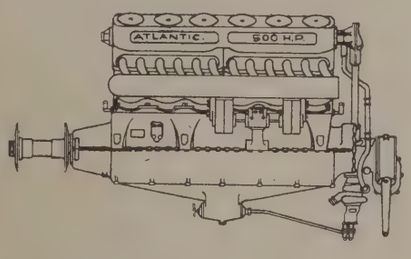


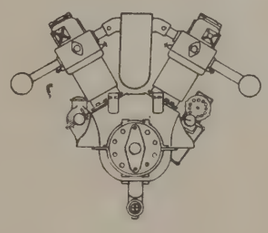


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SECTION III.

Proposed Services and Routes.

The advantages of airship transport will be most apparent for long ocean journeys, and it is believed that the best route for the first service would be between London and New York, as this is the route on which there is the greatest demand for a saving in the duration of voyage, and a large amount of passenger traffic would be immediately available once the advantages of the service were demonstrated.

London to New York.—This is dealt with in detail in Section IV.

After the establishment of the Atlantic service, other services on which airship transport would effect great economies in time would be the following:—

London to India and Australia.—London to Cairo, 2,050 miles; Cairo to Colombo (*via* Aden), 3,400 miles; Colombo to Perth (Australia), 3,150 miles.

At an average speed of 60 m.p.h., and with a stop of 12 hours at each station for re-fuelling, etc., the times taken would be the following:—London to Cairo, 34 hours, or 1½ days; London to Colombo, 34 plus 12 plus 58 hours equal 104 hours equal 4⅓ days; London to Perth, 104 plus 12 plus 52 hours equal 168 hours equal 7 days.

By train and mail steamer the journey to Ceylon at present takes 15 days, and to Australia takes over 30 days.

Cairo to Capetown.—Cairo to British East Africa (Nairobi), 2,100 miles equals 35 hours; British East Africa (Nairobi) to Capetown, 2,200 miles equals 37 hours. Total time from Cairo to Capetown, allowing stop for twelve hours at Nairobi equals 84 hours, or 3½ days; or from London to Capetown, 5⅓ days.

Further than the saving in time in the actual journey, there is the saving by using an airship service in the elimination of the time taken for trans-shipping and waiting at the various ports, etc., where the aerodromes could be situated quite close to the terminal stations.

Owing to the variation in weather conditions, there would be, of course, some latitude in the time of arrival at the destination, but in those cases where there is a saving of several days in the total journey the variation of a few hours in the time of arrival would not be of much account.

Size of Airship Required for the Above Services.—It will be noted that the maximum distance of voyage required for any of the services stated above is 3,500 miles, which at a speed of 60 m.p.h. would require a ship able to fly at this speed for a minimum of 60 hours, and in order to allow for loss of time on the way, owing to adverse weather or other reasons, it is considered that an airship able to do 80 hours' flight at a speed of 60 m.p.h. would meet all the conditions.

It is proposed that the airship should have a full speed at maximum power of 75 m.p.h., but she would generally only fly at reduced power, giving a speed of 60 m.p.h., the additional power being held in reserve to enable the additional speed to be utilised for getting through storm areas or going against adverse winds.

SECTION IV.

Proposed London to New York Service.

1. Specification of Proposed Airship (see Plate I.):—
(A complete specification is given in Section VII.).

The main particulars to be as follows:—

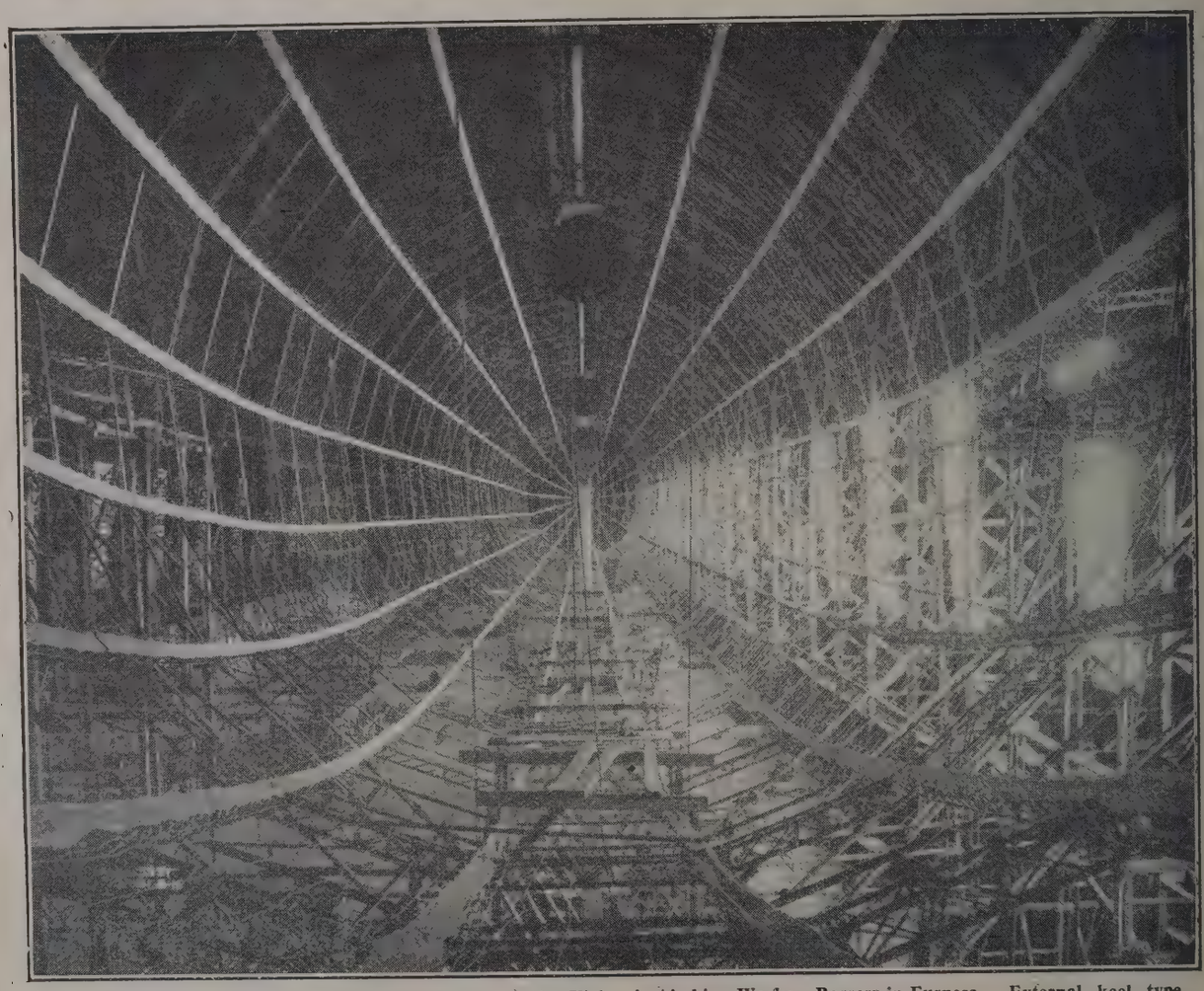
Gross gas capacity	3,500,000 cubic feet
Normal total lifting power	105 tons
Disposable lift	68 tons

(The "disposable lift" is that available for fuel and oil, stores, crew, passengers, and mails.)

Total engine power	3,500 b.h.p.
Speed at full power	75 m.p.h.
Normal flying speed with 2,000 b.h.p.	60 m.p.h.
Consumption of petrol	0.5 lbs. per b.h.p./hour
Consumption of oil	0.03 lbs. per b.h.p./hour

2. Proposed Crossing Routes.

Prevailing wind on the direct route (London to New York) is almost always from west to east, which would of course always favour the east-bound journey, but is unfavourable to the west-bound journey.



View inside the skeleton of a rigid Airship at the Vickers' Airship Works, Barrow-in-Furness. External keel type.

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It is proposed, therefore, that the crossing eastward from New York to London should be made by the more direct route, and thus take advantage of the westerly winds; the distance direct by this route is 3,000 miles.

By making the west-bound journey by a southerly route, via the coast of Portugal, Azores, and on 35° N. parallel of latitude across the Atlantic, and then to New York, the voyage is made in a region where the prevailing westerly winds of the higher latitudes are absent, and only light winds are encountered, which are generally of a favourable direction.

The distance by this route, however, is about 3,600 miles, but with a ship speed of 60 m.p.h. it would be quicker to make the west-bound journey by the direct route if the westerly wind did not exceed 10 m.p.h. If the wind were greater than this, it would be quicker to go west by the southerly route *via* Azores. For information regarding prevailing winds, reference should be made to Section V.

As a basis for the times taken, the journey from London to New York via Azores is taken.

Although the speed of the airship at maximum power is 75 m.p.h., the crossing normally would be made at a speed of 60 m.p.h., which only requires 2,000 h.p. and is thus much more economical in fuel. The full speed, however, can be used whenever the ship has to voyage through any storm areas against strong head winds. By the southerly route, the time taken for the journey of 3,600 miles at a speed of 60 m.p.h. is 60 hours, but to allow for delays owing to adverse weather allowance is made for the airship always carrying 80 hours' fuel at 60 m.p.h.

The distances and normal times for the journey would therefore be as follows:—London to New York, *via* Portugal and the Azores, 3,600 miles; time taken, 60 hours, or 2½ days. New York to London by the direct route, 3,000 miles; time taken, 50 hours, or just over two days.

3. Service:—

It is proposed to have four airships for use on the cross-Atlantic service.

Two airships would only be in service at a time, and the other two standing by, so that each airship could lay up alternate weeks for overhaul and refit, etc.

As the time of journey etween London and New York will vary between 50 to 60 hours, each airship will therefore easily make two crossings or one double journey per week, thus giving a service with two airships of two "sailings" each way per week. The average time-table might therefore be as follows:—

Leave London.	Arrive New York.
Monday, a.m.	Wednesday, p.m.
Thursday, a.m.	Saturday, p.m.
Leave New York.	**Arrive London.**
Monday, p.m.	Thursday, a.m.
Thursday, p.m.	Sunday, a.m.

From available weather records, it is considered that crossings would be practicable on at least 300 days in the year, or 82 per cent. of the total days, so that it is probable that a total of 200 crossings in the year could be maintained.

It is probable that until weather conditions have been further studied, so that advantage can be taken of the best possible routes, that a regular service of two crossings each way per week could probably only be maintained at first in the months of May to September, and that the crossings in October to April would probably be irregular, the actual day of sailing being dependent on the weather conditions.

4. Crew Required:—

Two watches would be carried, who would take duty in eight-hour shifts, and both watches on duty when leaving or landing.

Each watch: Navigating officer, steersman, elevator man, four engineers, signalman for w.t. (eight men), also two stewards, commanding officer; total crew, 19 men.

Four crews would be in service between the airships, so that each crew would only make two crossings per week.

Weight of crew at 160 lbs. per man; personal effects at 20 lbs. per man; food at 10 lbs. per man per crossing; total weight, 190 lbs. per man. Total weight for crew, 190 × 19 = 3,600 lbs.

5. Passengers and Mails Carried:—

Weight per passenger:—Weight of man at 170 lbs., personal effects at 50 lbs. per man; food, etc., for journey at 15 lbs. per man; total, 235 lbs. per man.

Distribution of disposable weight for journey:—Crew and effects, 19 men at 190 lbs., 1.5 ton; fuel and oil for 80 hours at 60 m.p.h., 38 tons; starting ballast for 2,000 ft., 6.5 tons; emergency ballast, 5 tons; available for passengers and mails, 15 tons; total, 68 tons.

Fifteen tons would carry 140 passengers and effects, or 10 tons mails and 50 passengers.

SECTION V.

Estimated Cost of Running the Proposed Atlantic Service, London-New York.

The cost of running the service would be that necessary to cover the following charges, viz.:—(1) Interest on capital required, (2) allowances for depreciation, (3) insurance premiums, (4) operating expenses, (5) repairs and maintenance. Dealing with these items in detail:—

1. Capital Charges:—	Amount.
Four airships of 3,500,000 cubic feet capacity at £400,000 each	£1,600,000
Two double airship sheds at £300,000 each	600,000
Land for two sheds and aerodromes at £30,000 each	60,000
Workshops, gas plants, and equipment	150,000
Working capital, including spare parts, stores, etc.	170,000
Wireless equipment	10,000
Miscellaneous accessories	10,000
Total capital required	£2,600,000
Annual charge, interest at 10 per cent.	£260,000

2. Depreciation:—

(a) Airships.—Useful life, say 3 years. Obsolete value, say £20,000 per ship. Total depreciation per ship equals £380,000 in 3 years. Average total depreciation per annum for 4 airships for 3 years equals £507,000.

(b) Airship Sheds.—Useful life, say 30 years. Obsolete value in 30 years, 10 per cent. Total annual charges equal £18,000.

(c) Workshops and Plant.—Depreciation at 5 per cent. per annum equals £3,500.

(d) Land for Sheds and Aerodromes.—Value would probably increase owing to use as airship station, but is assumed as remaining constant.

Total annual charge for depreciation, £530,000.

3. Insurance Premiums:—

(a) On airship value at 10 per cent. per annum, average per year for 3 years	£110,000
(b) On sheds and plant at 2 per cent. per annum	13,500
Total annual insurance charges	£123,500

4. Annual Establishment Expenses:—

(a) Salaries of officers and crew:	
4 airship commanders	£4,000
8 airship officers	6,000
Total number crew hands equals 64	16,000
	£26,000



Girls at the Vickers Works making up Airship girders.



B.T.H. Magnetos

all-British in design and workmanship, were used **on the first Airship to cross the Atlantic, the R. 34,** on the aeroplanes which secured the British altitude record, and the first and second prize-winners of the Victory Aerial Derby at Hendon.

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(b) Salaries of establishment:	
(i) Management and staff	£5,000
(ii) Workshop hands, storekeepers, etc., 50 at each shed (total 100)	£20,000
	£25,000
Total annual establishment expenses	£51,000
5. Repairs and Maintenance :—	
(a) Sheds and plant—annual charge, say	£5,000
(b) Repairs and overhaul of airships	£20,000
Total charge	£25,000
Totals of Annual Charges :—	
1. Interest on capital	£260,000
2. Depreciation	530,000
3. Insurance	123,500
4. Establishment expenses	51,000
5. Repairs and maintenance	25,000
Total annual charges	£990,500
Say	£1,000,000

Cost Chargeable per Crossing :—

The amount chargeable per trip comprises :—(1) Proportion of annual charges, (2) cost of fuel and oil per trip, (3) cost of hydrogen used per trip, and (4) cost of food for crew and passengers.

Taking the number of crossings per year as 200, London-New York :—

1. Proportion of annual charges per crossing	£5,000
2. Petrol for trip, 30 tons at £25 per ton (1s. 6d. per gallon)	750
3. Oil per trip, 2 tons at £40 per ton (2s. 6d. per gallon)...	80
4. Hydrogen used, 750,000 cub. ft. at 10s. per 1,000 cub. ft.	375
5. Cost of food per trip for crew of 19, and 100 passengers...	400
Total charge per crossing, London-New York...	£6,605

This is at the rate of 38s. per ship mile flown.

Carrying passengers, the rate would be :—London-New York, £48 per head, which is equivalent to 4d. per mile per passenger.

Rate for mails would be :—London-New York, £425 per ton, or 3d. per ounce.

It will be seen from the above that the direct running cost is 25 per cent. and the overhead charges 75 per cent. of the total cost.

SECTION VI.

Financial and Working Arrangements, and Government Subsidy.

It is considered probable that proposals for Government support for the establishment of airship services would be favourably considered, as the constant use of airships for commercial work would be the best possible means of developing and improving the design, as suggested by the constant experience obtained in service.

It would offer a means of keeping in constant training officers and crews who would be available for Naval service.

The type of airships used for passenger and mail transport could also be very well adapted for use in the Naval services should occasion require.

From the analysis of working cost in Section V, it may be justifiably be expected that airship services, when fully established and patronised, will be able to show a good working profit. It would probably require considerable financial support before the service will be so established as to ensure full support from passenger and mail traffic when it would be able to be run on a paying basis.

To establish and work trans-oceanic airship lines, it would be desirable to form a joint syndicate with a shipping company (e.g., the Cunard Line), who would undertake the organisation of the operation of the service and the necessary publicity; Vickers, Ltd., to build the necessary airships and provide the necessary technical staff and facilities for maintenance.

The Government subsidy to the airship companies would probably be on the following terms :—

1. Loan of airship sheds and flying grounds by the Government, free of charge, until the experimental stage is passed and the company is in a position to obtain the necessary capital for providing the requisite sheds and landing grounds for new services.

2. The loan of Naval airship crews and handling parties, until the service was established as a paying concern, and until officers and crews could be trained by the airship company.

3. The Government to pay a substantial subsidy for the conveyance of express mails.

4. It is also possible that the Government would be prepared to share or undertake all the financial risk of the insurance of the airships until the security of the service was so established as to warrant underwriters giving reasonable rates.

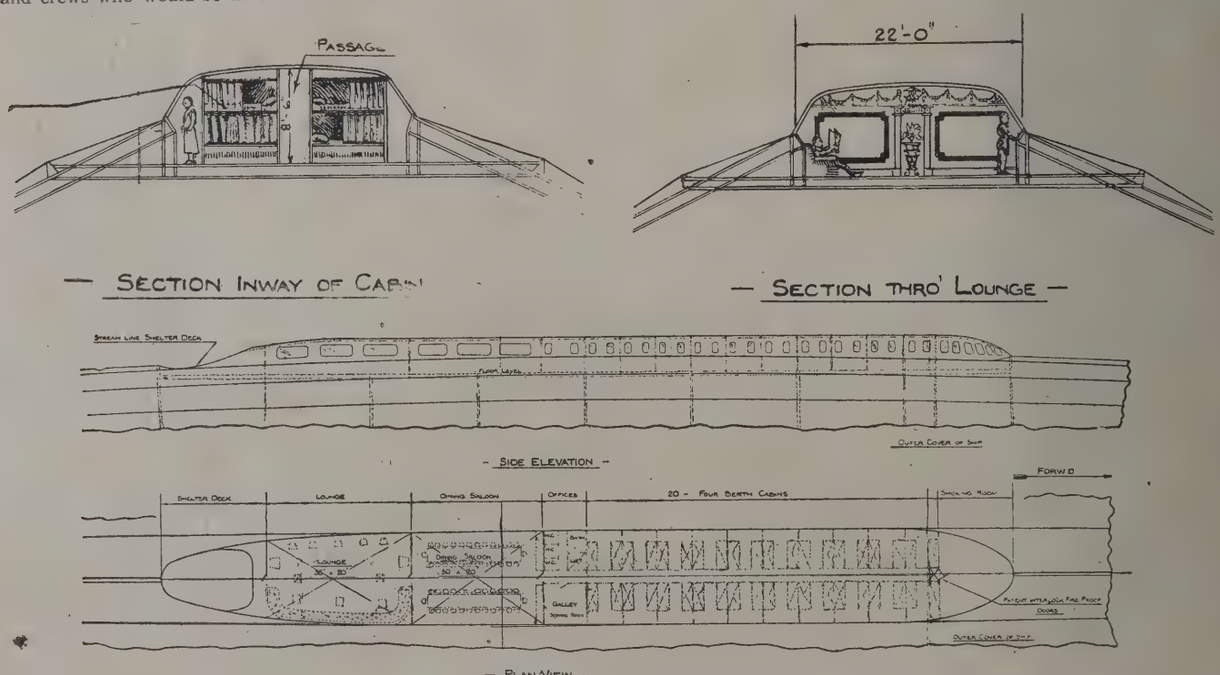
It is understood that the German Airship Passenger Company, which was run by the Hamburg-America Steamship Company, was subsidised by the German Government to the extent of being provided with crews and handling parties of the Army and Navy Airship Services under training.

SECTION VII.

General Specifications of Proposed Airship for Transport Services.

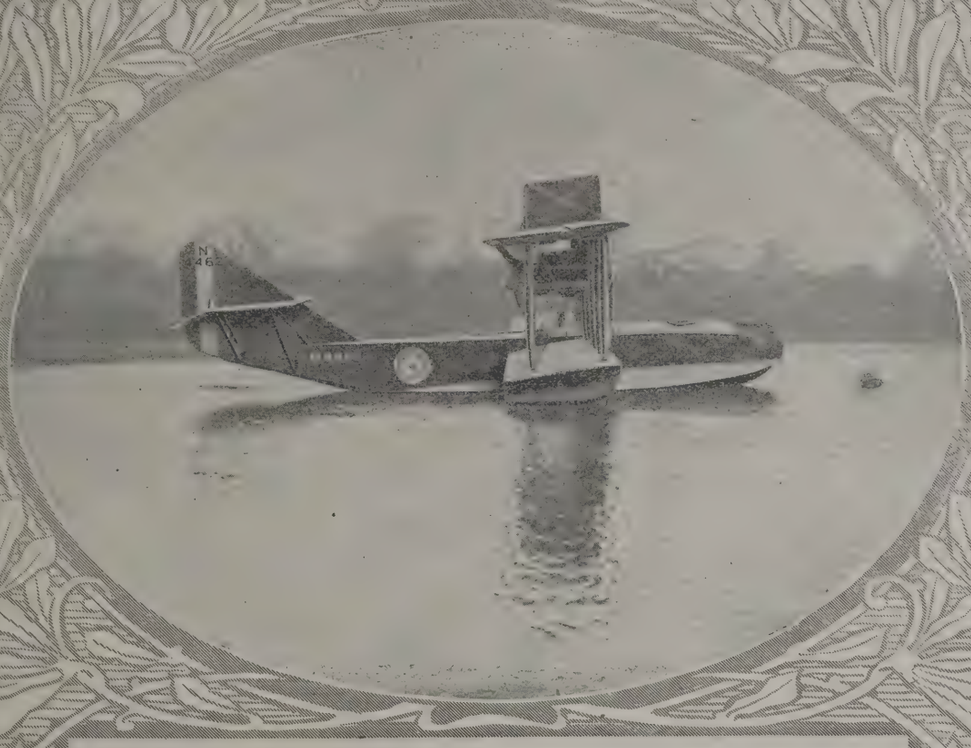
General particulars :—

Gross gas capacity	3,500,000 cubic feet
Overall length	800 feet
Maximum diameter and overall width	100 feet
Overall height	105 feet
Total lift (at 68 lbs. per 1,000 cubic feet)	105 tons
Disposable lift	68 tons
Total maximum power of engines	3,500 B.H.P
Cruising power	2,000 B.H.P.
Speed at full power	75 m.p.h
Speed at cruising power	60 m.p.h
Endurance at cruising power—when carrying 15 tons of passengers and freight	80 hours, equals 4,800 miles



Diagrams of the Passenger accommodation of the Vickers proposed Trans-Atlantic Airships.

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90 hours, equals 5,400 miles

Note.—The "Disposable Lift" is the lift available for fuel and oil, stores, crew and passengers, mails, and freight, etc.

The particulars and performance stated are based on present design, and the actual performance of ships of 2,000,000 cubic feet capacity now in service. It is considered that the figures given are conservative and that actually the increased size of ship would enable greater structural efficiency and consequently greater disposable lift available than that specified.

Special Features:

Passenger accommodation—

Living Saloon.—The main living accommodation would be in a saloon fitted along the top of the airship, provided with tables and chairs in the style of a Pullman car, which would enable the passengers to be comfortably accommodated during the day time. Part of this saloon would be fire-proofed to allow of being used as a smoke room. An open shelter deck would also be provided at the aft end to enable the passengers to take the air.

The saloons would be provided with windows giving the passengers an all-round outlook.

A passenger lift would be provided for communication between the passengers' quarters and the lower part of the ship.

Observation car.—An observation car, fitted below the hull towards the aft end of the airship, would also enable passengers to observe the land and sea immediately below the ship.

Sleeping quarters.—Sleeping accommodation in the form of berths would be provided in small cabins fitted on top of the airship forward of the living saloons.

Cooking.—A mess kitchen would be provided fitted with electrical cooking apparatus. Meals would be served in the saloon.

Heating.—The saloons and sleeping quarters would be heated by electric radiators.

Height equilibrium:—

On long day and night flights the greatest problem is the maintenance of the airship at a constant height, and avoiding the loss of gas consequent on expansion due to the ship rising as she loses weight by consumption of engine fuel. Also, owing to the great variation in temperature between day and night, the ship becomes heavy due to the lower temperature at night, and light due to the higher day temperature, and thus would require a discharge of weight (ballast) at nightfall, and discharge of gas in the morning to keep the ship in equilibrium. To obviate discharge of gas, and the necessity of starting with a large weight of ballast, it is proposed to adopt the following means:—

1. Using hydrogen as fuel.—Arrangements may be made to run a proportion of the engines on gas fuel, so the gas can be consumed at such a rate that the loss of lift equals the loss of weight of fuel consumed by the other engines, thus economically using gas which otherwise would be lost through the discharge of the gas-valves. For details of this scheme, see the appendix to this section, from which it will be seen that hydrogen as fuel is only approximately twice the cost of petrol.

2. Water recovery from exhaust gases.—Apparatus could be provided to condense the water of combustion from the exhaust gases of the engines. Experiments which have been carried out have demonstrated that it is practicable to recover water of slightly greater weight than the petrol fuel consumed, thus avoiding any variation in lift due to petrol consumption.

3. Water ballast from the sea.—Apparatus could be provided to enable water ballast to be picked up periodically from the sea by means of a pump suspended from a flexible hose, or by bringing the airship down on to the water's surface and taking water direct into tanks in the gondolas through sea-valves.

4. Dynamic lift. If the airship is flown with a slight upwards or downwards inclination, a considerable lifting or weight effect is obtained, but this, however, entails a reduction in the flying speed of the ship.

General Specification.

Hull Structure.—The shape of the hull to be of the most perfect streamline form within the limitations of constructional requirements.

An internal keel corridor, running along the bottom of the hull, to be provided, in which all petrol and oil tanks and water ballast would be carried.

Outer Covering.—The outer cover would be made of special weather-proof fabric to give the longest possible life when subjected to the weather effects on continuous voyages. Also, to be as efficient as possible in insulating the gas from change of temperature, and so avoid great variations in the lift.

Gasbags.—The gas capacity would be divided up into gasbags made of suitable rubber-proofed cotton fabric, lined with goldbeater's skins. Gasbags will be fitted to automatic relief valves and hand control manœuvring valves.

Control and Navigating Compartment.—A control and navigating compartment to be built on to the hull towards the forward end of the airship, which would contain all main controls, the navigating instruments, and also the wireless telegraphy installation cabin.

This compartment should be so arranged with windows as to have a clear view in every direction.

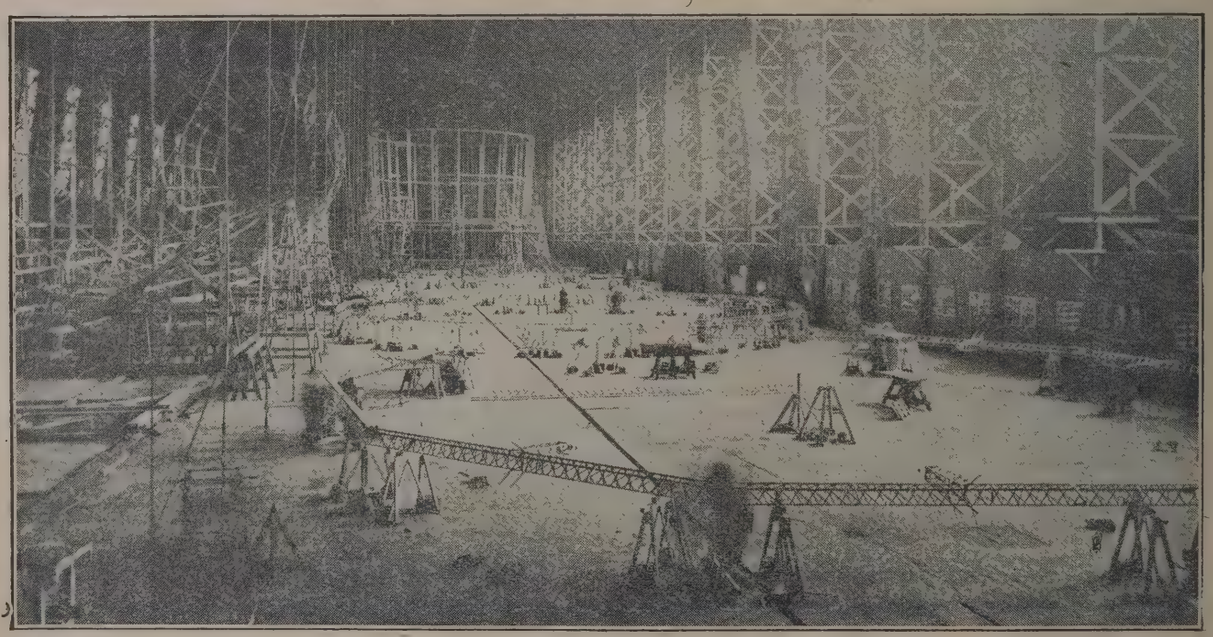
Machinery Cars.—Six machinery cars would be fitted, each containing one engine installation, with a direct-driven propeller fitted at the aft end. Two of these cars to be suspended on each side of the hull, suitably arranged so as to give ample ground clearance for the propellers.

The two other cars to be situated underneath the hull, and fitted with landing gear and floats.

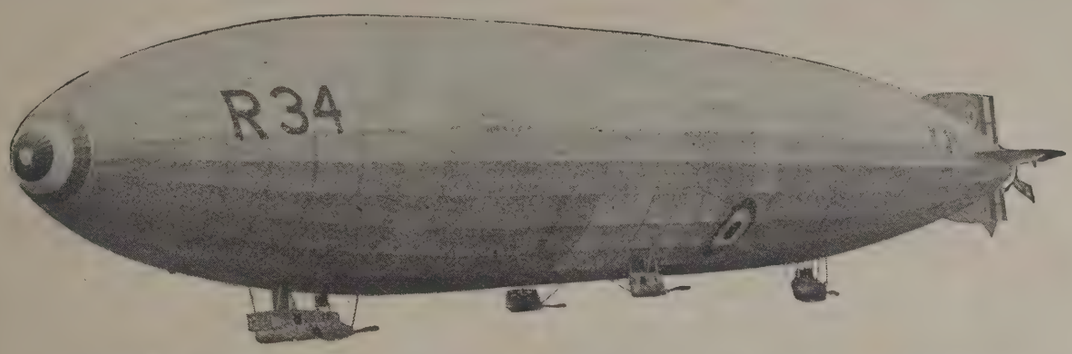
Machinery Arrangements:—

Six engines, of a nominal 600 b.h.p. each, to be fitted, making a maximum total power of 3,500 b.h.p. The engines to be designed to develop their maximum full power when flying at a height of 5,000 feet.

Engine Starting.—Starting to be by the Maybach charging pump system, or, alternatively, the engine to be arranged to start on the hydrogen fuel.



AT THE VICKERS WORKS:—Transverse frame rings for rigid Airships being assembled. In the background may be seen a section of the hull being erected in a vertical position, and on the left a completed section on the assembling cradles.

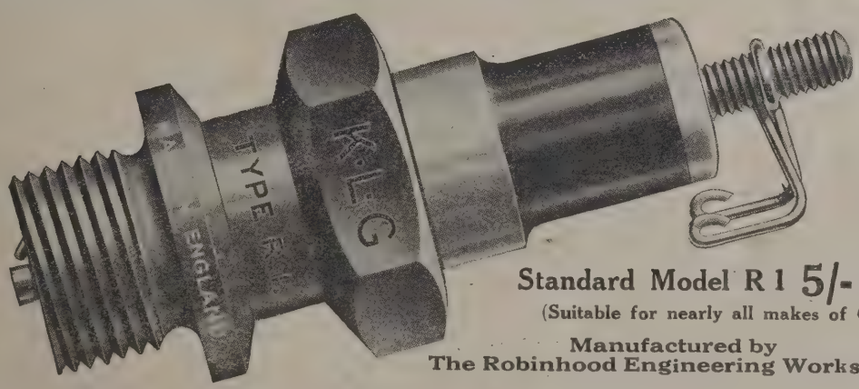


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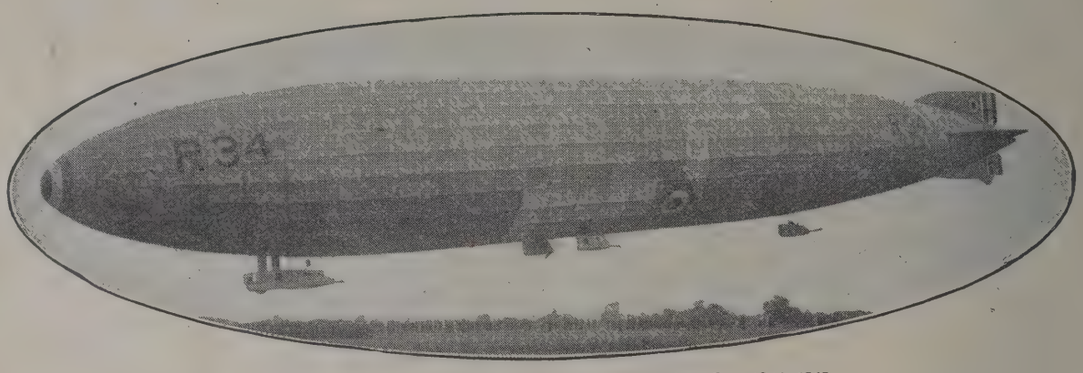
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Reversing Gear.—The transmission gear in two of the wing cars only, to be fitted with reversing gear to enable the airship to be driven astern.

Cooling System.—The radiators of the engine-cooling system to be fitted in slides to enable them to be completely drawn into the cars when the engines are not running, to ensure their being kept sufficiently warm and prevent freezing.

Silencer.—The engines to be fitted with special exhaust silencers in order to reduce the exhaust noise to a minimum, and special consideration is also to be given in the design of the transmission gear, etc., to obviate as far as possible all objectionable noise.

Engine Fuel.—All engines to be designed for running on petrol fuel, but to be fitted with arrangements to enable them to be run alternatively on hydrogen gas

Controls and Communications.—All the following controls of improved type would be fitted, to be operated from the forward control compartment :—

(i) Controls to the rudders and elevator planes for the steering control.

(ii) Gas-valve Controls.—Control gear to be fitted to enable the gas discharge valves on a selected number of gasbags to be operated from the control compartment.

(iii) Ballast Discharge Control.—Controls would be fitted to enable all the emergency water ballast discharge to be controlled from the forward compartment, all other water ballast to be discharged by local control.

(iv) Engine-room Telegraphs.—Engine-room telegraphs, preferably of the electrical type, would be fitted for communication from the forward compartment to the machinery cars.

(v) Telephones.—Telephone communication would be provided between all stations on the ship.

Heating Arrangements.—The living quarters and the control compartment would be heated by electric radiators.

In the machinery cars arrangements would be made to utilise the exhaust heat for keeping the cars at the necessary temperature.

Landing Gear.—Inflated buffer landing bags of a special type would be fitted underneath the forward control compartment, and underneath the two aft machinery cars, which would enable the airship to alight either on land or on the surface of the sea.

Mooring and Handling Gear.—Hauling-down ropes, mooring ropes, and sea anchor gear would be provided as necessary in connection with the mechanical handling and mooring-out arrangements.

The airship would be provided with bow mooring gear to enable her to be moored out to the mooring tower.

Special means of mechanically handling the airship when landing, and for taking her into the shed, would be provided on the landing grounds, and the necessary attachments in connection with this provided on the ship. These arrangements would be of such a nature as to reduce the number of hands required during these operations to the personnel usefully employed at the shed establishment.

For full description of proposed methods of handling and mooring the airship, see Section VIII.

Electrical Installation.—Electrical power would be provided by dynamos driven off the main engines to provide current for electric lighting of the saloons and cars, and also to provide the electrical heating in the saloon cabin and sleeping quarters.

Wireless Telegraphy.—A powerful wireless telegraphy installation would be fitted in the wireless cabin in the forward control compartment, and would have a range for sending and receiving of at least 5,000 miles.

SECTION VIII.

Aerodromes, Sheds, and Equipment.

At the terminal point of each airship route it would be necessary to make provision for the following :—

1. An aerodrome of about one mile square.
2. A double airship shed capable of housing two of the airships.
3. A mooring-out tower, with bow mooring gear
4. Mechanical handling gear for transferring the airship from the mooring tower to the shed.
5. Hydrogen generating plant and storage.
6. Repair workshops and stores.
7. Meteorological office and wireless telegraphy installation.
8. Electrical night signalling and lighting arrangements for the aerodrome.
9. Offices, etc.

Aerodrome.—The aerodromes should be within direct communication and a short distance from the city served by the airship service, and, if possible, would be advantageously situated near to a chemical works where hydrogen could be obtained as a by-product.

The ground would require to be flat, and preferably on a site remote from hills and other topographical features likely to cause air disturbances

Sheds.—The double sheds required to house the size of airships specified would require to have two berths each with a minimum size of 850 ft. long, 150 ft. wide, and 115 ft. high, with opening doors.

The sheds would be provided with hydrogen-filling mains and with gear for slinging the airships from the roof when deflated for overhaul.

Special arrangements would be made to enable rapid replenishing of the ships with gas, fuel, and water ballast

Mooring-out arrangements (see below).—A mooring-out station would be provided at each aerodrome, consisting of a fixed mooring tower about 150 ft. in height, with a revolving head to which the airship would be rigidly attached by the nose and would ride clear of the ground in all weathers, and be able to turn round in accordance with the direction of the wind. This tower would be provided with a hauling-in winch and rope to haul the ship up to the mooring point.

Means would be provided at this mooring tower to enable the airship to be supplied with hydrogen, fuel, and water ballast whilst moored out.

A lift from the ground to the top of the tower would enable passengers to embark and disembark whilst the airship was riding at the mooring, and would also serve to convey mails, freight, stores, etc., to the ship.

The airship would be moored to this mast and ride out during even the worst weather, and would only require to be taken into the shed when lying up and for overhaul and repairs, etc.

A diagrammatic sketch showing the scheme of mooring the ship to the mooring mast is shown in the figure below.

Mechanical Handling Gear.—Mechanical handling gear, consisting of trolleys running on guide rails from the mooring tower to the shed, with electrically-driven gear, would enable the ship

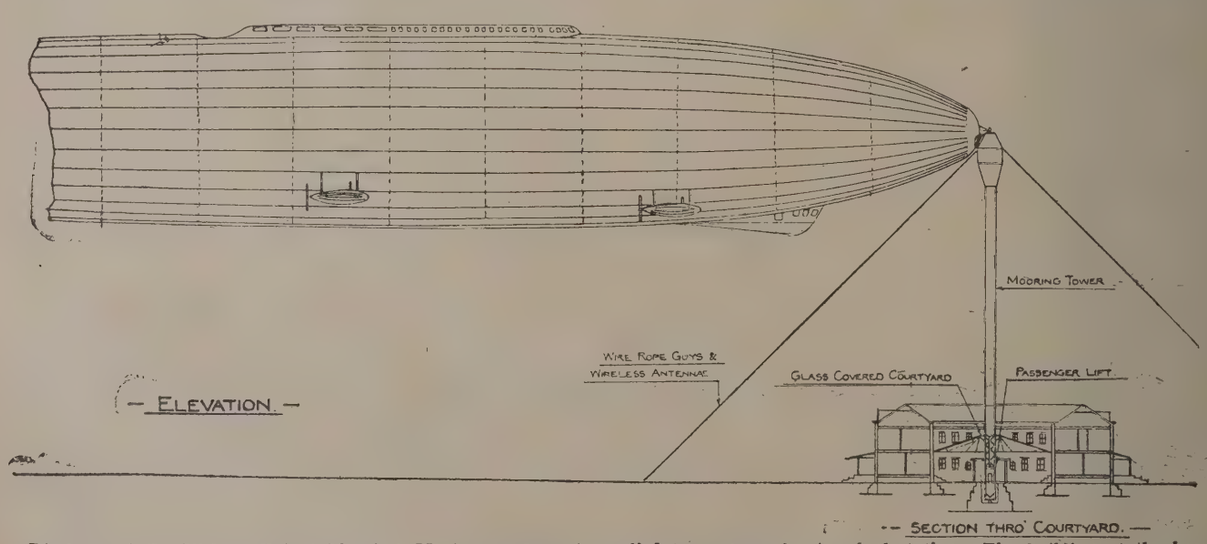


Diagram of the Vickers Patent Mooring Mast arrangement applied to a passenger terminal station. The building at the base of the mast is the Station Hotel.



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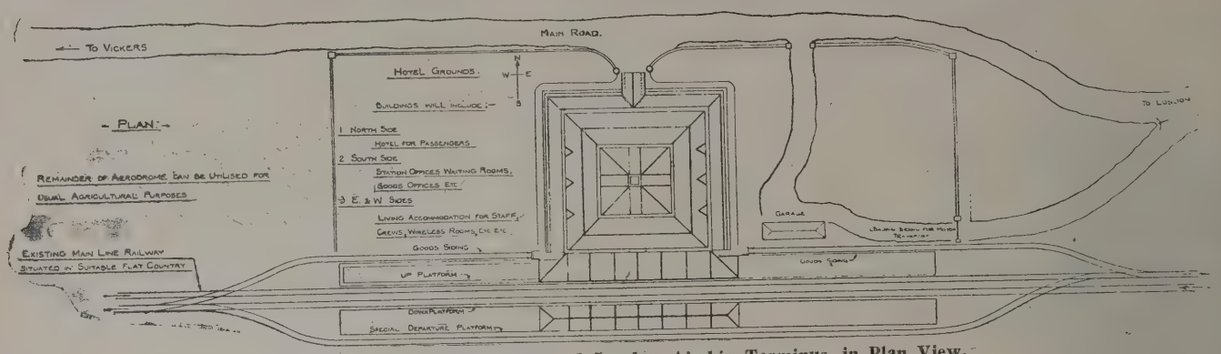


Diagram of the Vickers proposed London Airship Terminus in Plan View.

to be safely moved from the mooring tower to the shed with a minimum of man power.

Hydrogen Generating Plant and Storage.—If no industrial supply of hydrogen were conveniently situated, it would be necessary to provide each aerodrome with hydrogen generating plant, with a production of, say, 50,000 cubic feet per hour, and gasometer storage would require to be provided with a capacity of about 500,000 cubic feet.

Workshops and Stores.—Workshops would be provided at the shed as necessary to carry out all overhauls and repairs to the airships, and stores would require to be provided to store spare gear and other materials required.

Meteorological Office and Wireless Installation.—Each aerodrome would be provided with a meteorological office or station to issue weather reports for the guidance of airship navigators and to issue navigating instructions to them whilst on voyage by means of the wireless installation. The latter would require to have a range of at least 5,000 miles.

Electrical Night Signals and Lighting Arrangements.—Each aerodrome would be provided with suitable electric light sky signals to indicate the position of the landing ground to incoming ships at night, and the aerodrome would require to be provided with landing lights to indicate the position of the mooring tower and to give sufficient light to enable the ship to be moored.

SECTION IX.

The Weather as Affecting Airship Service.

The elements of weather that have influence on airship travel are wind, rain, hail, snow, and fog.

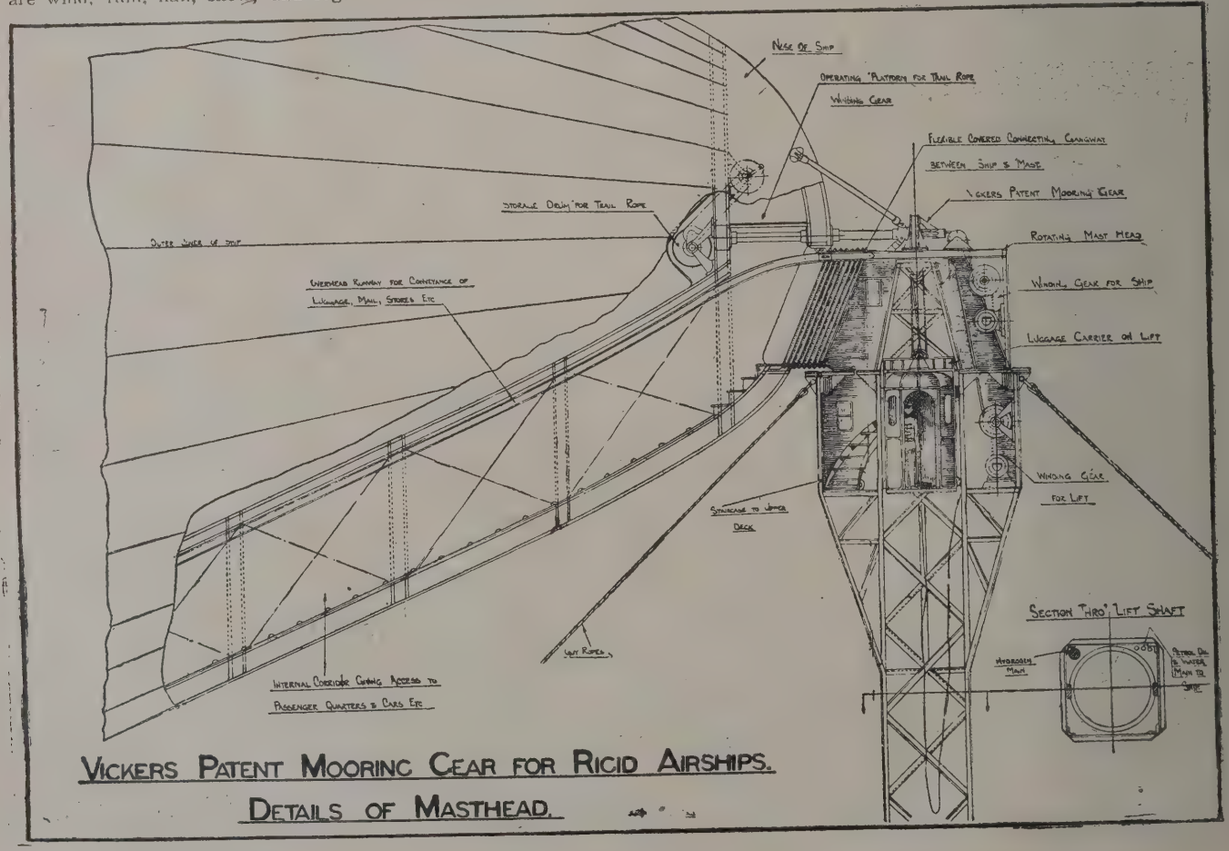
It is not likely that rain, hail, snow, and fog will of themselves have much influence on airship flying. With suitable rainproof, non-absorbent outer covering, the absorption of water, and the consequent increase of weight, are avoided. Hail and snow will not adhere to the ship's surface when in flight owing to the high speed through the air, and in any case, as the precipitation height is not usually more than 8,000 feet, they can be entirely avoided by flying above this height.

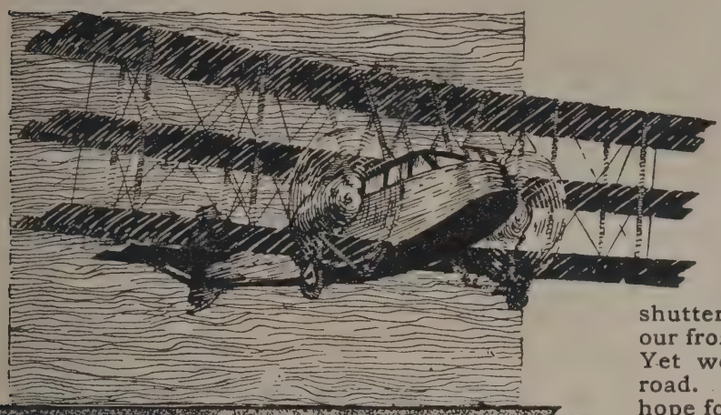
Fog might give trouble in landing, but in flight the airship would be above the fog, and not be affected by it. In landing, suitable means would be taken to mark the landing place by means of captive balloons or kites, and strong searchlights could be used on the ground. At night the balloons would carry electric lights with connection from the ground.

Rain, hail, snow, and fog are also generally local in their occurrence, and could, in any case, generally be avoided by a short deviation from route. Cross-Atlantic records indicate that on the main steamship routes fog sufficient to impede navigation does not occur on more than 12 days in the year.

Wind.—The only important factor that need be taken into consideration is wind, but in most cases unduly strong winds can be avoided by flying at a higher level or sailing on a different course, so as to avoid the storm area.

As is well known, there are at sea level, between certain clearly defined latitudes, prevailing winds of constant direction, of which advantage can be taken by suitably laying out the course and route to be followed. Again, at the higher levels, there is at most latitudes a constant drift, of which advantage may be taken even if the winds at sea level are unfavourable.





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Passengers outside chilled to the marrow. Passengers inside petulantly declaiming the frowsy stuffiness of life generally. One and all heartily sick of the whole business.

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The following general facts, which have been established from meteorological records all over the world, have a great bearing on airship possibilities—viz., (1) heavy storms, which are usually of a cyclonic nature, are known rarely to cover an area of more than 200 miles diameter; (2) the rate of progression of a cyclonic area is considerably less than the speed of the air movement in the area.

It is therefore obvious from the above that an airship would get clear of a cyclonic area by a deviation from her route of not more than 100 miles, and once clear of the disturbed area would have no difficulty in getting and keeping away from it.

Prevailing Winds at Sea Level in the North Atlantic.—The prevailing winds north of the Equator may be clearly divided into two regions:—

1. Between that part of the West Coast of Africa between latitudes 30° N. and 15° N., and the American coast from Florida to the Amazon.

In this region the winds at the African coast blow from N.E. by N., and gradually become more easterly across the Atlantic, until at the American coast they are practically N.E. at the Amazon, and practically E. at the Mexican Gulf.

These winds are the trade winds of the old navigators, and are remarkable for their steadiness and persistency, both as regards direction and speed.

The speed of these winds averages 10 to 15 miles per hour, and varies little from season to season.

These winds are favourable for flying from east to west.

2. Between the coast of the United States from Florida and as far north as Newfoundland to Europe, from the North Coast of Spain to the North of Scotland.

In this region at the American coast the prevailing winds blow from almost due W. in the winter months, veering S.W. in the summer months, and gradually change in crossing the Atlantic to S.W. on the European coast in winter and almost due W. in summer.

These winds are more variable than the trade winds, but are persistently westerly. Their speed is, however, more variable.

The yearly average of the speed of these winds is 15 miles per hour, but they occasionally blow up to 40 miles per hour, and heavy gales are not unknown in the winter months, but these are usually of a local character.

Records kept on the main Atlantic steamship routes indicate that, on the average, general winds of 40 m.p.h. and over do not occur on more than 20 days per annum, and the total time of duration not more than 300 hours in all.

Practically all the storms of 40 m.p.h. and over occur N. of latitude 45° N.—that is, the latitude Bordeaux-Nova Scotia; and 60 per cent. of the total number of storms in the winter months (November, December, and January), only less than 10 per cent. in the summer months (May to August).

Prevailing Winds at Higher Levels.—Although, as stated above, precise information is available of the sea-level prevailing and periodic winds at various latitudes, very little co-ordinated work appears to have been done in charting the prevailing and seasonal winds in the higher levels of the atmosphere. A great deal of work has been done in various localities in U.S.A., England, and Germany, but very little is known of the winds at the higher levels over the great ocean tracts.

There is no doubt a great necessity for international research on the predictions of weather conditions in the higher atmosphere, to enable advantage to be taken of these higher currents, if Atlantic flying is to become as common as Channel flying.

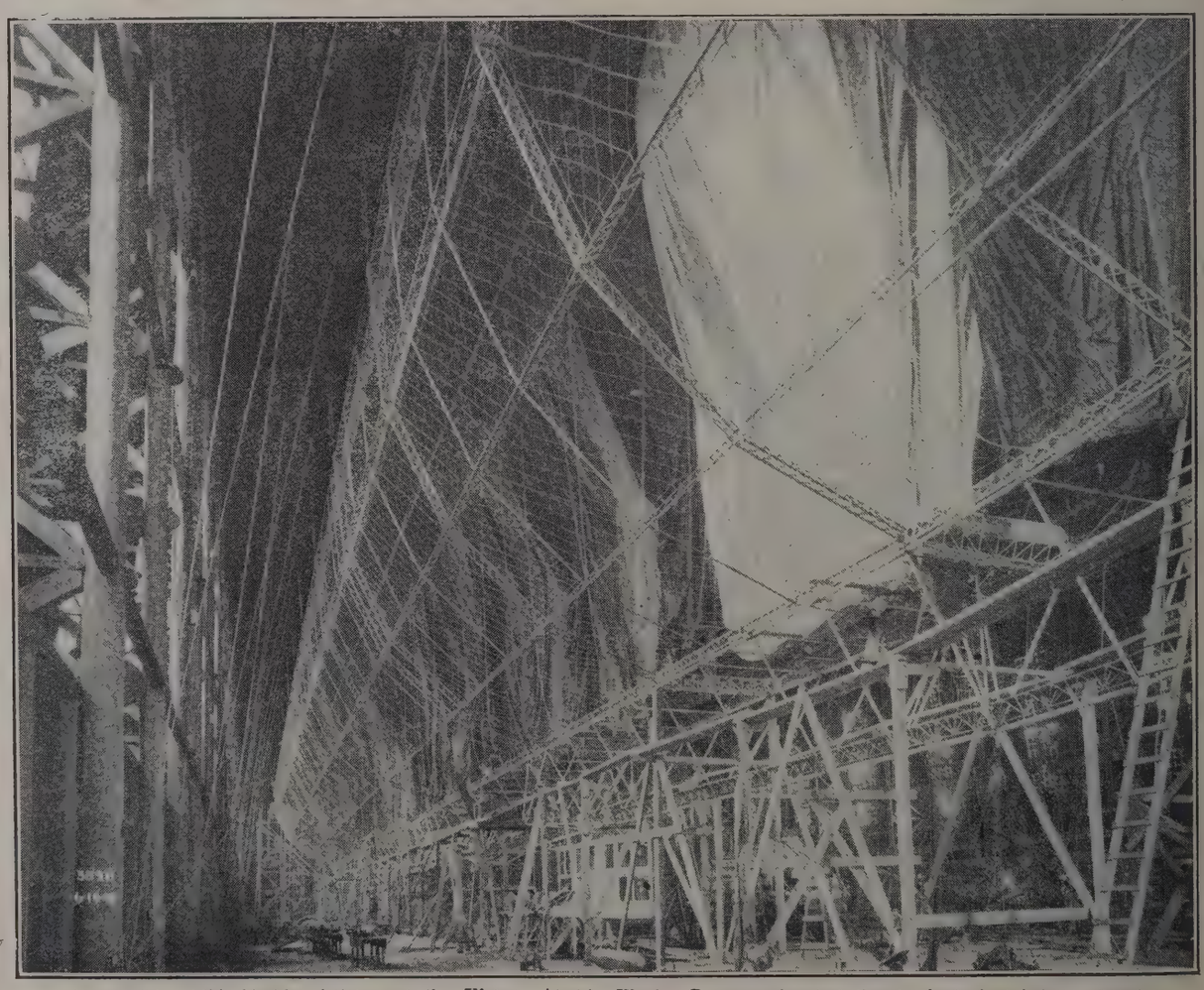
At high altitudes, constant winds of from 30 to 40 m.p.h. are common, and if the prevailing directions of these are known to airship navigators the duration of the journey could be considerably shortened, even by taking an indirect route, if advantage can be taken of these air currents.

It is, however, undesirable to fly at great heights owing to the low temperature, but with suitable provision for heating there is no reason why flying at 10,000 feet should not be common.

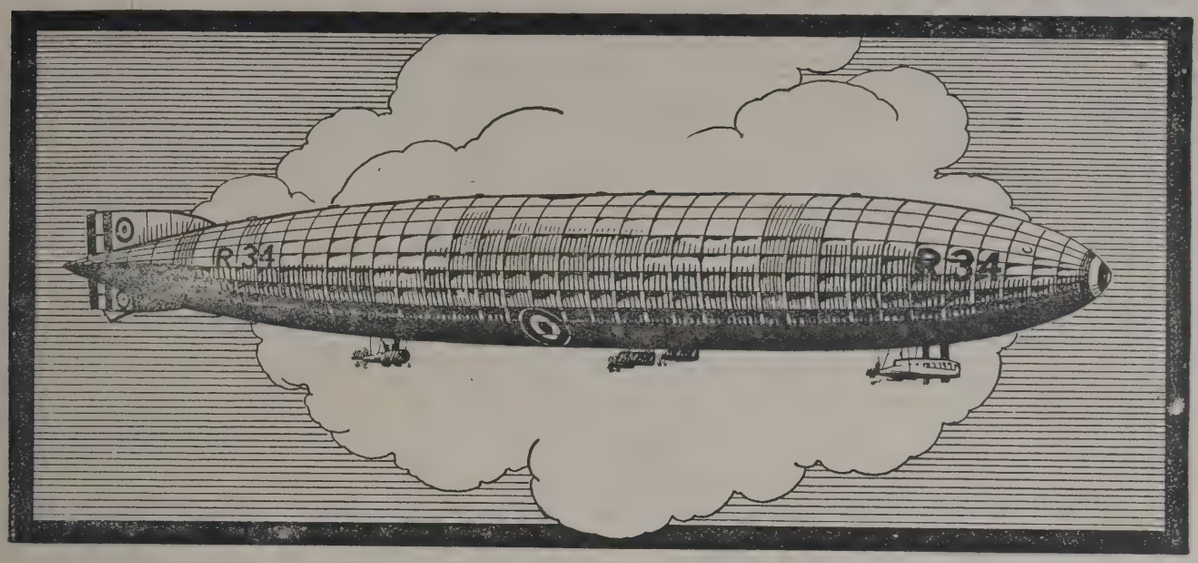
SECTION X.

Airship Navigation.

The navigation of airships is similar in principle to that of steamships, but is made more difficult by much greater drift to be allowed for.



A complete rigid Airship skeleton at the Vickers Airship Works, Barrow, showing the gas-bags just being inflated.



SUNBEAM-COATALEN AIRCRAFT ENGINES

are fitted to H.M.A. R.34

The wonderful achievement of R.34 in making the double journey across the Atlantic affords ample proof of the efficiency of Sunbeam-Coatalen Aircraft engines and machinery. This was no single flight of a few hours' duration, but a voyage of 183 hours. Never before have any aircraft engines had to withstand such continuous strain.

Having twice crossed the Atlantic, made numerous patrols and trials, and journeyed from end to end of Germany, R.34 has travelled a distance roughly equal to 15,000 miles or 300 hours' actual flying —every performance on SUNBEAM-COATALEN Aircraft Engines.

The SUNBEAM MOTOR CAR Co., Ltd.,
Contractors to War Office, Admiralty and Air Ministry,
WOLVERHAMPTON, ENGLAND.

The actual course of a ship being the resultant of its own forward speed and that of the motion of the air in which it is borne, it is impossible for the navigator to plot his true course relative to the earth unless he is aware of the motion of the air.

When navigating over land he is able to determine the drift of his ship by observation of a suitable fixed point on the earth's surface and adjust his compass course accordingly to give the desired true course.

Over sea, of course, no fixed point is available, so if the motion of the wind is not known, the course must be periodically corrected by astronomical observation, and determination of his charted position.

A reliable and effective method of navigation is, however, available with the wireless installation.

If the ship is in communication with two stations, they can determine the direction of the transmitted waves and signal to the ship its bearings, from which the position can be laid off on the ship's chart and the new departure determined.

It is known that this method of direction was used by the German Naval Zeppelin airships.

SECTION XI.

Comparison of Airships and Aeroplanes for Long-Distance Transport.

Endurance.—The airship of 3,500,000 cubic feet capacity, specified in this paper for immediate use for trans-Atlantic transport, has an endurance of 80 hours at an air speed of 60 m.p.h., and can carry 15 tons of passengers and mails for an air distance of 4,800 miles at that speed. Also, it would be quite a practicable proposition with present systems of design and materials of construction to build a rigid airship to carry 50 tons of passengers and freight for 10,000 miles, at a speed of 80 m.p.h., as soon as developments in the demand for aerial transport justify the construction of the size of airship necessary.

With a 40-ton all-metal aeroplane—which represents about the maximum size and most efficient weight-carrying type that could at present be constructed and handled—the maximum non-stop endurance of this machine would not be greater than 25 hours, carrying a load of passengers and mails of about three tons, at an air speed of 85 m.p.h.—i.e., having a maximum air distance of 2,100 miles; and unless some radical new method of design is discovered, it is considered theoretically impossible to produce a machine on the present methods of construction, even with light metal structure throughout, to give an effective range of more than 2,000 miles, and then only with a relatively very small passenger load-carrying capacity.

The advantage of the airship in these respects is due to the following characteristics. In the case of the airship the percentage of useful lift increases with the size of ship and the rate to power ratio decreases.

In the case of the aeroplane the percentage of useful lift and the weight to power ratio increases but slightly with increase of size.

It therefore may be definitely accepted that for voyages on which it is necessary to make a non-stop flight between points more than 2,000 miles distant the airship is far more economical, and, further, is the only means of aerial transport practicable.

On the other hand, if flying over land, with landing grounds provided at intervals of not more than 1,000 miles, the aeroplane can of course travel for indefinite distances, coming down at each landing ground for replenishment of fuel and oil.

It therefore appears inevitable that the airship will hold the field for long-distance cross-oceanic voyages and the aeroplane will be used for routes which may be flown in stages of a maximum distance apart of about 1,000 miles continuous flight.

Carrying this delimitation further, it may be concluded that the airship may be used to deal with express traffic at present dealt with by trans-oceanic liners, and the aeroplane will deal with local traffic and express traffic at present dealt with by railway trains and cross-Channel steamers.

Comfort of Travel.—With the large space available on a large rigid airship, it is quite easy to provide comfortable living and sleeping accommodation for the passengers, as described in the specification of the airship in Section VII.

It is obvious that in the restricted space available on an aeroplane it is impossible to provide the same comfort and convenience for the passengers as can be provided in the large airship.

Further, on the airship, there is plenty of room for the passengers to move about and take exercise by walking along the length of the inside keel or inside the top saloon of the airship, and the preparation and eating of adequate meals in comfort is easily provided for, but in an aeroplane the passengers will be restricted to a very confined space.

A great advantage in comfort in travelling on an airship is attained by the comparative silence and lack of vibration due to the ship's machinery, and it is probable that in the saloon at the top of the vessel, which is remote from the engines and propellers, there will be absolute silence. On an aeroplane, on the other hand, the passengers have unavoidably to be accommodated close to the engines and propellers, and the noise will be a very serious objection.

Safety.—An aeroplane is entirely dependent on the proper working of the engines for its sustentation in the air, and should any of the engines break down, the result would be a forced landing on the water, with the consequent possibility of total loss on a rough sea.

In the case of an airship the only result of the breaking-down of any of the motors is the reduction in the speed, and as a speed of 0.8 full speed can still be maintained with even half of the motors out of action, there is no possibility of the airship being lost owing to possible failure of the engines alone. The only result would be that the arrival of the airship would be somewhat delayed owing to the reduction in speed.

It may further be stated that with reduced power, petrol consumption per mile run is considerably reduced, and the airship would then have an even greater reserve of endurance.

It may further be noted that on an airship the machinery can be so arranged as to be perfectly accessible for repairs or replacements of the engines whilst en route, and as the ship can be driven by the other engines no stoppage need be incurred for this purpose.

Speed.—The large type of aeroplane which will be necessary to carry an economical load for long distances will not have a speed greater than 85 to 90 m.p.h., and if it is taken into account that for long journeys an aeroplane requires to stop at a number of intermediate landing grounds for replenishment, it is apparent that the advantage of the aeroplane speed of 85 m.p.h. over the airship speed of 60 m.p.h. will not be very apparent, if any at all, and any slight advantage which there may be in this respect will disappear when the large type of airship is used, which can easily have a cruising speed of 75 to 80 m.p.h.

For the airship service, London to New York direct, the time is 50 hours; and with the aeroplane service, London-Ireland-Newfoundland-New York, the time taken is at least 46 hours, and it is probable that in service the times would be about the same.

Cost of Service.—As a basis of comparison of cost of operation of comparative trans-Atlantic services by airship and aeroplane, it has been assumed that there will be a constant average traffic of 30 tons total load of passengers, mails, or freight required to be transported each direction per week, and that both services are run to meet this demand.

The estimate of the cost of airship service is given in Section V and aeroplane service in Section XII. The results may be compared as follows:—

	Airship Service.	Aeroplane Service.
Capital required	£2,600,000 ...	£3,850,000
Passenger rate:—		
London-New York	£48 ...	£115
Rate per passenger mile...	4d. ...	9d.
Mails per ounce:—		
London-New York	3d. ...	7½d.

SECTION XII.

Comparative Aeroplane Trans-Atlantic Service.

Route.—There is not an aeroplane in existence capable of flying direct the 3,000 miles between London and New York, even when loaded only with the necessary pilots and crew, and 2,000 miles continuous flight represents the maximum that can be done by any existing aeroplane with crew only.

It is also very improbable that a machine of even 50 tons total load, of the most efficient type with the lightest possible metal structure, will be able to fly more than 2,500 air miles with even a small number of passengers and freight.

It therefore must be recognised that safe direct trans-oceanic commercial flying between points more than 2,000 miles apart by aeroplane is an impossibility, unless some entirely radical new principle of design is evolved.

In order to make the Atlantic crossing by aeroplane it will therefore be necessary to take a route allowing of intermediate landing-places for replenishment of fuel, etc., with the consequent delays and necessity of additional aerodromes and equipment.

The alternative routes are:—

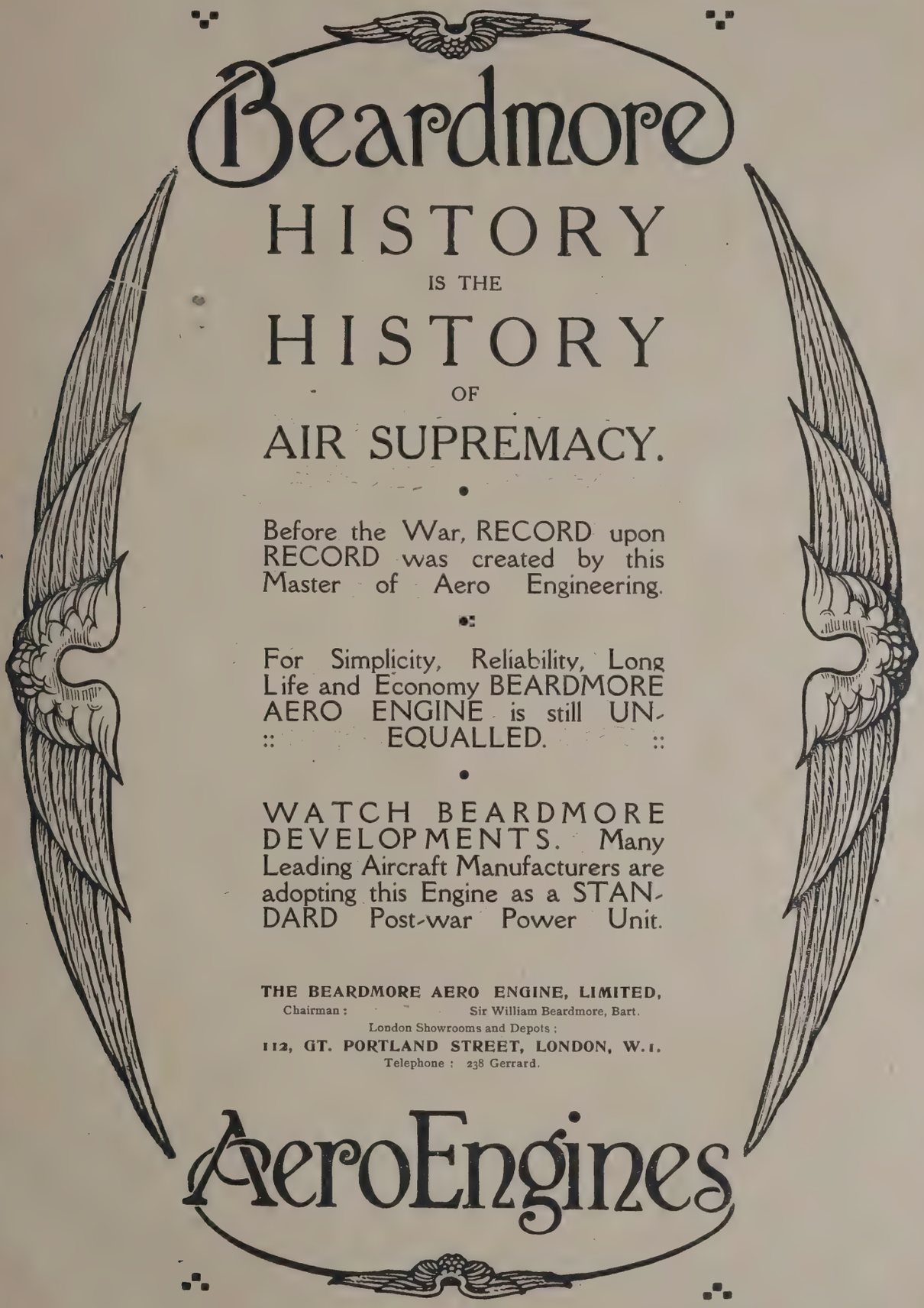
1. London-Ireland-Newfoundland-New York, the longest distance being 1,800 miles between Ireland and Newfoundland, and the total distance = 3,200 miles.

2. London-Azores-Newfoundland-New York. The longest distance is 1,300 miles between the Azores and Newfoundland, and the total distance = 3,600 miles.

It would be possible to fly by the second route with the largest and most efficient aeroplanes now in service, but only with a very small number of passengers

In order to compare the aeroplane with the airship proposed for cross-Atlantic service, we shall consider a large machine which represents the limit of possible developments in size and efficiency at present considered attainable.

There are obvious disadvantages in using the London-Azores-Newfoundland route for regular commercial service. It would



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be difficult to navigate an aeroplane in stormy weather and at night to ensure landing on the relatively small Azore islands, and there would be great danger of the reserve petrol being consumed before being able to strike the islands, and being forced to alight on the sea. There are also objections to having to make two landings during the voyage owing to the loss of time in landing and getting away again, but with an aeroplane this is unavoidable. It is therefore considered that the only practical route for regular use is the London-Ireland-Newfoundland route, and we shall therefore, for comparison with the airship, consider a machine large enough to carry a commercial load on this route :—

Minimum direct distance .....1,800 miles
To give a safety reserve of 25 per cent., the machine must carry fuel and oil for .....2,250 miles

This would allow of flying against an average head wind of 15 m.p.h. for the whole distance.

Particulars of Machine required :—

Total load .....40 tons (90,000 lbs.)
Useful lift (fuel, oil, passengers, etc.) .....20 tons (45,000 lbs.)
Maximum b.h.p. .....4,000 b.h.p.
Maximum speed flying at 5,000 ft. .....85 m.p.h.
Fuel consumption .....0.45 lbs. per b.h.p./hour
Oil consumption .....0.03 lbs. per b.h.p./hour

Assuming that the power is reduced, and engines cut out so as to maintain a constant load/power ratio, as weight is reduced by consumption of fuel, the weight of fuel and oil required for 2,250 miles (26.5 hours at 85 m.p.h.) .....39,000 lbs.
This leaves for passengers and crew .....6,000 lbs.

Crew Required.—Three pilots, three engineers, taking watches of four hours on and eight hours off; one steward; total crew, seven men.

Weight at 160 lbs. per man, personal effects at 20 lbs. per man, food at 10 lbs. per man; total, $190 \times 7 = 1,330$ lbs. This leaves for passengers, mails, etc., 4,670 lbs. = 2.1 tons.

Passenger weight at 170 lbs. per man, personal baggage at 50 lbs. per man, food, etc., at 15 lbs. per man; total 235 lbs. per man. Number of passengers that can be carried, 20.

Service :—

Time taken for crossing :—

London-Ireland .....300 miles = 3½ hours
Ireland-Newfoundland .....1,800 miles = 21½ hours
Newfoundland-New York .....1,100 miles = 13 hours
Total time in air .....38 hours

Allowing two hours at the Ireland Station and six hours at Newfoundland for landing, refilling, and getting away, the total time for the journey would be forty-six hours.

It would therefore, allowing time for overhaul, etc., be possible for a machine to make two crossings per week.

Thus, to give the same service as the airship service proposed, i.e., 30 tons of passengers and mails each way per week, 14 aeroplanes continually in service would be required; and allowing for 100 per cent. spare machines stand-by for repairs, and overhaul, total number of machines required—28.

Cost of running the service :—

The cost of running the service would be that necessary to cover the following charges, viz. : (1) Interest on capital required; (2) Allowances for depreciation; (3) Insurance premiums; (4) Operating expenses; (5) Repairs and maintenance.

1. Capital charges :—

28 aeroplanes at £120,000 each	£3,350,000
28 aeroplane sheds at £10,000 each	280,000
Land for 4 aerodromes	100,000
Workships and equipments	20,000
Spare parts, etc.	100,000
Wireless equipment	10,000
	£3,860,000
Total capital required	£3,860,000
Annual charge at 10 per cent. interest	£386,000

2. Depreciation :—

(a) Aeroplanes.—Useful life say 3 years as for airships; Obsolete value, say £6,000 per machine; Average total depreciation per annum for 28 machines, equal £1,050,000.

(b) Aeroplane sheds.—Life say 20 years; Scrap value in 20 years—10 per cent. Total annual charge—£12,200.

(c) Workshops and plant.—Depreciation at 3 per cent. per annum—£600.

(d) Land for sheds and aerodromes.—Would not decrease in value.

Total annual charge for depreciation—£1,062,800.

3. Insurance premiums :—

(a) On aeroplane value at 10 per cent. per annum—£225,000.
(b) On sheds and plant at 2 per cent. per annum—£5,400.
Total insurance charges—£230,400.

4. Annual establishment expenses :—

(a) Salaries of 36 pilots at £600 per annum—£21,600; Salaries of 36 engineers at £400 per annum—£14,400; Salaries of 12 stewards at £300 per annum—£3,600.
(b) Salaries of establishment :—
(i) Management and staff—£5,000.
(ii) Workshop hands and storekeepers, etc., at 100 off.—£20,000.
Total annual establishment expenses—£64,600.

5. Repairs and maintenance :—

(a) Sheds and plant, annual charge, say—£5,000.
(b) Repairs and overhaul to machines—£10,000. Total £15,000.

Totals of annual charges :—

1. Interest on capital—£386,000.
2. Depreciation—£1,062,800.
3. Insurance—£230,400.
4. Establishment expenses—£64,600.
5. Repairs and maintenance—£15,000. Total £1,758,800.

Cost chargeable per crossing :—

1. Proportion of annual charges.
2. Cost of fuel and oil per crossing.
3. Cost of Food, etc.

As aeroplanes may be taken as being practically independent of weather it is assumed that the service of twenty-four crossings per week is maintained for fifty weeks in the year, that is, a total of 1,200 crossings :—

1. Proportion of annual charges per crossing—£1,450
2. Petrol used per trip, 28 tons at £25 per ton—£700.
3. Oil per trip, 2 tons at £40 per ton—£80.
4. Cost of food per trip for twenty passengers and crew of seven—£100. Total £2,330.

It will be seen from the above that the direct running cost is 38 per cent., and the overhead charges 62 per cent. of the total cost.

Carrying 20 passengers, the rate would be for London-New York, £115 per head, which is equivalent to 8.75d. per mile per passenger.

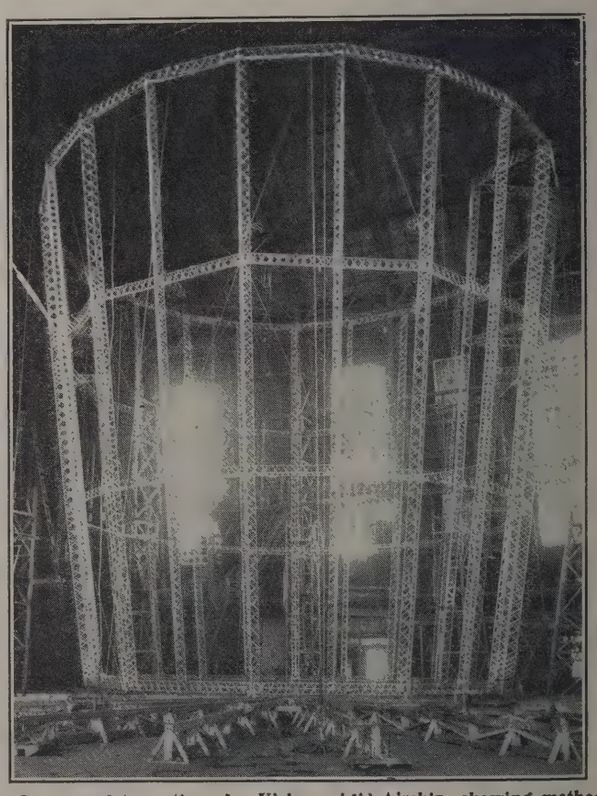
The rate for mails would be £1,100 per ton, London to New York, or 7½d. per ounce.

SECTION XIII.

PRE-WAR GERMAN AIRSHIP SERVICES.

It is little appreciated in this country to what an extent the rigid airship was utilised in Germany for passenger flights and services before the war. The experience and resources which enabled the Germans to develop the Zeppelin for Naval work and raiding were gained by constant use of airships in civil flying.

Der Deutsche Luftfahrt Actien Geselschaft, D.E.L.A.G. (The German Air Travel Company), was formed in 1910, and was mainly financed and managed by the Hamburg-America Line, the H.A.P.A.G. This concern ran regular passenger excursions and



One complete section of a Vickers rigid Airship, showing method of vertical erection.

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FIRST ONCE MORE!

The following telegram speaks for itself:—

"We have completed our non-stop flight from London to Madrid in 7¾ hours, due in great part to the perfect running of your engine, for which accept our hearty congratulations."

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Approximately
900 MILES
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FIRST in Aerial Derby—open to all comers.

FIRST to make direct non-stop and fastest flight from London to Madrid

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to a limited extent regular town to town services during the years 1910 to 1914.

The following figures for number of trips and mileage are taken from the annual report of this company, issued in 1912. The total number of flights in 1912 was 400. The total flights from commencement in 1910 up to time of report in 1912, are as follows :—

Name of Ship.	No. of Flights.	Hours.	Mileage.	Number of Persons Carried.
"Schwaben"	230	499	28,468	4.622
"Victoria Luise" ...	285	663	36,600	3,953
"Hansa"	188	418	22,960	4,007
"Sachsen"	58	133	7,820	1,335
Others				
Totals	826	1,853	102,675	17,221

From the above it will be seen that in this period 826 flights had been made, and 17,221 passengers carried without any mishap. The "Sachsen" only went into commission early in 1912, hence only is shown a small number of trips.

These airships had spacious passenger cabins, holding thirty passengers, fitted up in a most luxurious style, with inlaid mahogany panelling, carpeted floors, and comfortable armchairs; in general shape and style similar to a Pullman car, with large windows from which the passengers could look at the ever-changing scenery, and were served with lunch or tea as required from a buffet.

Owing to the novelty, the company mainly confined its enterprise to short distance pleasure excursions of two to three hours, at the rate of 100 marks (or £5), including lunch. These airships carried thirty passengers at a time, in addition to the crew of eight. The attraction was so great that places had to be booked days ahead. At the same time periodic trips were run from Berlin to Leipzig-Dresden-Munich, as will be seen from the route map which was issued with the company's prospectus.

Sheds and aerodromes were built by the D.E.L.A.G. at Potsdam, Leipzig, Dresden, and Munich, etc.

The company was able to make a profit, and also received a subsidy from the Government for the use of the airships for training the army and navy airship crews.

There is no doubt that the Germans are preparing and organising for an extensive scheme of air travel, and some time ago mention was made in the Press of a company formed for an airship line from Berlin to Constantinople, stopping at Munich and Vienna.

THE WAR WORK OF THE VICKERS' AIRSHIP DEPARTMENT.

During the war and subsequently the Airship Department of Vickers, Ltd., have produced :—

Three rigid airships for Naval service.
One airship to their own design, now nearly complete.
A large proportion of the component parts for four other rigids built at other stations.
Three large non-rigid ships.
Twenty-six kite-balloons.
Two hundred and fifty gasbags for rigid airships.
Seven outer covers for rigid airships.
Thirteen envelopes for non-rigid ships.
Six spherical balloons.

In addition Vickers, Ltd., were the first firm in Britain to build a rigid airship and with any experience of the design of such structures, and they placed the whole of their experience at the disposal of those other firms which undertook such work.

The present Airship Department was formed in April, 1913, when Vickers, Ltd., were requested by the British Admiralty to put forward proposals for an experimental rigid airship to be of the same size and general type as the types of Zeppelin airships then in service in Germany; and for three non-rigid airships of the "Parseval" type.

At this time, no design data for rigid airships was available, the only information in our hands being a few general exterior photographs of some of the D.E.L.A.G. passenger Zeppelin airships.

Vickers' representatives visited such of the German airship sheds as were accessible, and picked up such particulars as could be obtained from casual inspection of the exterior of these ships.

It is difficult, when so much knowledge is now available, to realise the magnitude of the problems required to be solved in this initial work. No particulars of weights or of the detail design of the ship components being available, it was necessary to make tentative designs of all parts of the ship in order to obtain approximate data on which the final design could be based. Even the general principle of construction of the hull framework of the German airships was not known, and many different systems were investigated before the final design was determined.

By the end of 1913 a final design was submitted to the British Admiralty, which, with minor modifications, was approved and a contract arranged with Vickers, Ltd., for building an airship at Barrow-in-Furness. This airship was subsequently numbered "R.9" and was the first rigid airship to be delivered to the Naval Service.

The work of construction was commenced at Barrow at the beginning of 1914, when workshops were equipped at Cavendish Dock for the structural work, and half of the old airship shed there partitioned off for the fabric work on the gasbags and outer covers, etc.

Experimental work was started on the building of hull girders, but great difficulties were experienced in the manufacture of the thin and light "Duralumin" sections required. At first it was found practically impossible to produce straight angles and channels, and it was only after a long time, and at great expense, that these difficulties were overcome, and the manufacture of girders was enabled to proceed.

In March, 1915, instructions were received from the British Admiralty that the construction was to be suspended, as it was then thought that the war would be over in a few months, and the Walney building shed was commandeered by the Royal Naval Air Service for a flying station.

After the remarkably effective work done by the German Zeppelin airships with their fleet at Jutland and elsewhere, it was decided by the British Admiralty that R.9 should be completed, and to put in hand further rigid airships of improved type.

The resumption of the construction was greatly impeded owing to a considerable quantity of the previously completed steel wires and other materials having deteriorated during storage and having to be replaced.

The designs of R.9 were at this time completed, and all the difficult manufacturing problems solved, and it only remained to carry on the completion of the airship.

R.9 eventually left Barrow on April 4, 1917, after carrying out very successful flight trials over Morecambe Bay. From that date until the present time this airship has been stationed on the East Coast of England, and in the words of the Admiralty "has proved to be not only invaluable for the training of officers and men, but also in assisting to carry out the patrol of the East Coast."

23 CLASS RIGID AIRSHIPS.

At the latter end of 1915 it was decided by the Admiralty to build rigid airships of an improved R.9 type, and in order to develop resources for an airship construction the Admiralty decided that Beardmore and Co. and Sir W. G. Armstrong, Whitworth and Co. should also take up this work, and accordingly orders for vessels were placed with Vickers, Ltd., and them.

The whole of the designs and working drawings were prepared by Vickers, Ltd., and circulated to the other builders.

When these airships were commenced, Vickers placed all the experience and the knowledge derived from their costly and difficult initial experimental work entirely at the disposal of the two competitive firms starting in this industry. Their representatives made many visits to the Vickers works, and all knowledge and experience of design and construction was freely imparted to them, and thus rendered it possible for them to commence manufacture immediately. Also, much of the design thus circulated to those other firms was fully covered by patents which were freely used without any consideration to Vickers, Ltd.

Further, in order to assist the other firms to get ahead with their work, Vickers undertook to supply them with all the bracing pieces, stampings, and forgings required for the hulls of their first ships, and also, in the case of Armstrongs, supplied them with all valves, controls, tank fittings, and other mechanical gear complete, ready for the ship, together with all gasbags, outer covers, and other fabric work, and also assisted the other builders by supplying materials and instructing them in the manufacture.

The airships of this 23 Class, built to Vickers' design, have since commission been engaged on sea patrol work, and have taken a prominent part in the patrol of the North Sea and in convoying shipping. The two airships of this class, Nos. R.23 and R.26, built at Barrow, were delivered in October, 1917, and March, 1918, respectively. These airships have frequently been seen over London, and R.26 took part in the surrender of the German submarines at Harwich. This shape made a record flight of 41 hours.

33 CLASS AIRSHIPS.

These airships are of about 2,000,000 cu. ft. capacity, and orders were placed with Vickers, Ltd., Armstrongs, and Beardmores, in November, 1916. The latter two firms, having large enough sheds, were in a position to proceed immediately, but, the Walney shed not being large enough, Vickers, Ltd., were not able to start erection until the new shed at Flookburgh, near Barrow, could be completed.

In September, 1917, the work on Flookburgh site was stopped on account of the acute shortage of steel at that time, and arrangements were made for the erection of this ship to be taken over by Short Brothers, of Bedford.

In order to give all possible assistance to Short Brothers in facilitating the construction of this ship, all the material that

had been prepared was handed over to them, and Vickers, Ltd., undertook to drill for them all the channels required for the hull structure, and supply all the finished bracing pieces required. They also arranged to make the gas valves and other finished components. The drilled channels and bracing pieces supplied enabled them to proceed immediately with the assembly of girders, and greatly expedited the work of construction.

VICKERS' NEW DESIGN OF RIGID AIRSHIP, R.80.

R.37 having been transferred to Short Bros., Vickers, Ltd., were without further work to proceed with on the completion of R.26, and, as Flookburgh shed and aerodrome were stopped, they were restricted to a size of airship that could be built in Walney shed.

Designs were prepared for an airship of the largest possible size that could be built there. Embodied in this design were all the best features obtained from the German 35 Class, and also the improvements suggested by the experience of the airships of R.9 and R.23 Classes in service.

As the firm were given a free hand in the design, without unnecessary restrictions as to strength, such as were imposed in 23 Class vessels, they have produced a design which for its size is considerably more efficient than any other rigid airships in both weight and general design.

An order for one ship to this design was placed in November, 1917, and it is expected that this airship will be ready for trials very soon. In a new design, the rate of building of the first ship is entirely determined by the rate at which the drawing-office can produce the working drawings and the material ordered. If a second airship were ordered, it could be produced in considerably less time, as all the material could be ordered at once and all the work put in hand.

THREE PARSEVAL NON-RIGID AIRSHIPS NOS. 5, 6, 7L.

No. 5 was built entirely in Germany, and was in the hands of the Germans at the outbreak of war.

Nos. 6 and 7 were built at Barrow, and after the outbreak of war a large number of alterations in design were made as a result of active-service experience with other ships. This caused considerable delays in completion.

No. 6 was taken over by the Admiralty in June, 1917.

No. 7 was taken over by the Admiralty in September, 1917.

OTHER AIRSHIP WORK.

S.S. TYPE AIRSHIPS.—Four of the small submarine-spotting airships for coast patrol were made for the Admiralty, and delivered at the beginning of 1916.

KITE BALLOONS.—Some of the earliest kite balloons made in England were made at Barrow, and a subsequent contract was obtained for 26.

AIRSHIP WORK PRODUCED AT DOUGLAS FACTORY.

Early in 1916, when the demands for gasbags, etc., for war purposes were greater than could be met with at Barrow, Vickers, Ltd., organised a factory at Douglas, Isle of Man, for the carrying out of this work. This factory has produced the bulk of the Government requirements for rigid airships, in addition to a large quantity of non-rigid envelopes and balloon work, and includes 250 gasbags for rigid airships, 7 complete outer covers for rigid airships and numerous spares, one 360,000 cu. ft. Parseval envelope and rigging, six 360,000 cu. ft. North Sea type envelopes, six 70,000 cu. ft. A.P. envelopes, six spherical balloons; quantities of target balloons, flotation bags for aeroplanes, ballast bags, suspension fittings, and other details for envelopes assembled elsewhere.

"IOCO" PROOFING FACTORY, GLASGOW.

Before the war, practically all the proofed balloon fabric used in England came from Germany, and when the large airship programme was initiated by the British Government early in 1915 the supplies of prooted fabric were difficult to obtain.

In conjunction with the "Ioco" Proofing Company, Vickers, Ltd., installed plant and commenced the proofing of airship fabrics.

After the initial difficulties were overcome, this factory was so successful that it developed into one of the chief, if not the leading, manufacturers of this class of material.

Its production at the date of the Armistice was 50,000 yards of completed fabric per week.

AIRSHIP ENGINES.

In the year 1913 Vickers, Ltd., obtained the exclusive manufacturing rights for the British Empire of the German Maybach engine.

Engines to the Wolseley-Maybach design of 180 b.h.p. were manufactured at the Wolseley Company's works at Birmingham, and fitted to rigid airship R.9 and the Parseval airships Nos. 6 and 7.

Wolseley-Maybach engines of 240 b.h.p. are now being manufactured at the Wolseley Company's works for fitting in rigid airship R 80.

This engine has shown itself in service as being pre-eminently suitable for airship work, owing to its consistent reliability and low fuel consumption.

AIRSHIP SHEDS.

At the end of 1915, when it was decided to carry on with airship construction, as Vickers, Ltd., had the old Walney shed available, it was decided that new sheds should be built first of all for Armstrongs, Beardmores, and Short Brothers, before building a larger shed for Vickers, Ltd.

It was not until October, 1916, when the new sheds for the other firms were completed, that the British Admiralty decided that a new large shed should be built for Vickers on a site selected at Flookburgh, near Barrow-in-Furness.

Work on the site and foundation were subsequently put in hand, but in September, 1917, owing to shortage of steel, the Admiralty stopped all work on the shed. This has temporarily placed the company at a disadvantage for future work, as the trend of airship development is towards greatly increased size.

They are, however, now making arrangements, and a large shed will be built as soon as it is necessitated by the development of commercial airships.

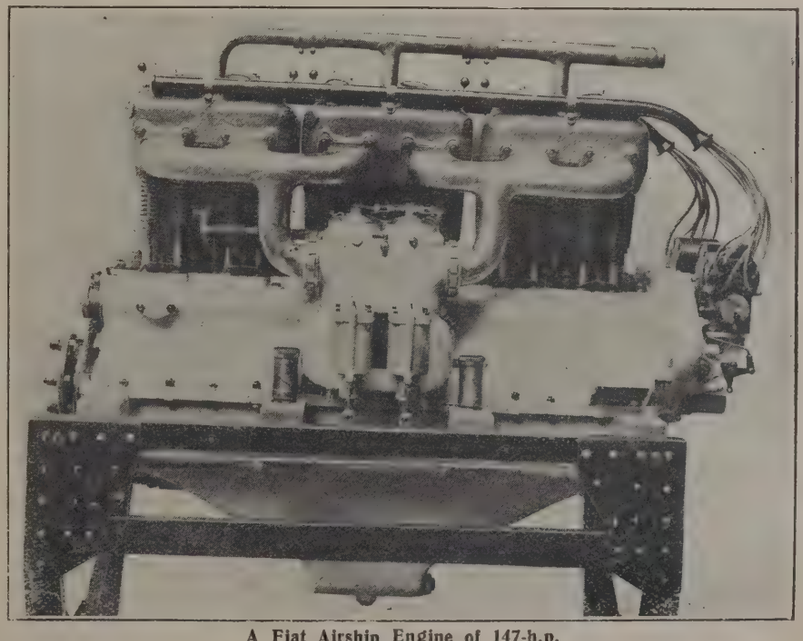
FIAT AIRSHIP ENGINES.

The requirements of an airship engine are quite different from those of a heavier-than-air machine. With the latter, as at present constructed, at any rate, it is impossible to carry out repairs while in the air. The airship, on the other hand, can remain aloft without its engines working, which allows of quite extensive repairs.

It is precisely because adjustments and repairs are looked upon as possible of execution that the Fiat airship engines built during the war for the Forlanini dirigibles are a distinct departure from the aeroplane types designed by this company.

This engine is a six-cylinder type having four valves per cylinder on opposite sides. The cylinders are cast in pairs, and are fitted with steel liners. Their bore is 125 m.m., and the stroke 190 m.m. The horse-power is 147.

Everything has been thought out with a view to ease of control and quick repair. The valves are not enclosed and can be changed readily. There are two oil pumps, mounted on the extremities of the camshafts. The magnetos are at the opposite end of the engine, driven from a short cross shaft, but having their distributors and contact breakers outwards for greater accessibility.



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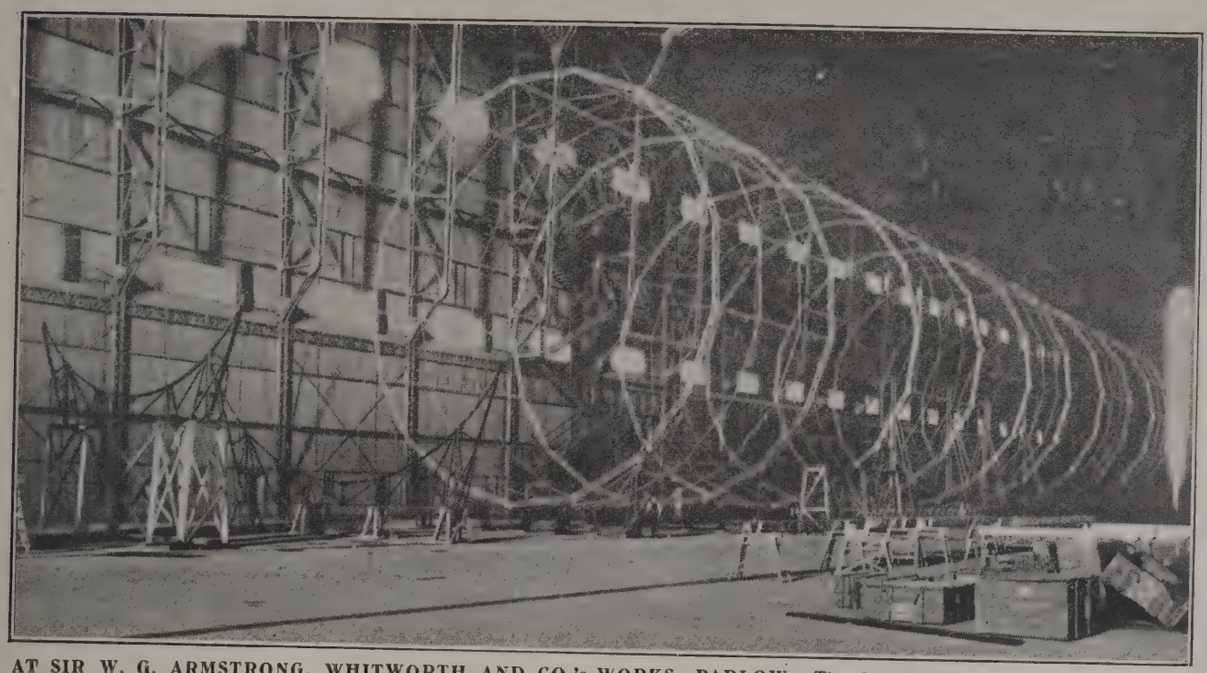
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AT SIR W. G. ARMSTRONG, WHITWORTH AND CO.'s WORKS, BARLOW.—The framework of R.25 in position on the erecting cradles.

A considerable time prior to the outbreak of war, Sir W. G. Armstrong Whitworth and Co., Ltd., the well-known armament firm of Newcastle-on-Tyne took up the question of rigid airship construction and purchased a site at Barlow, near Selby, in Yorkshire, upon which to erect special airship works.

The works comprise a large erection shed built of corrugated iron and steel, the interior dimensions of which are 150 ft. wide by 711 ft. long by 125 ft. in height, also large workshops of brick and steel, the principal buildings being about 560 ft. long by 90 ft. wide by 25 ft. high and 260 ft. long by 101 ft. wide by 45 ft. high. There are also separate buildings for offices, canteens, etc.

The building of the works commenced in January, 1916, and by July 1st of that year were so far advanced that airship erection commenced.

The first airship put in hand was R25. This ship was 535 ft. long by 53 ft. in diameter and had a gas capacity of 900,000 cubic feet. She was fitted with four 250-h.p. Rolls-Royce engines.

The lattice-work duralumin girders, and machinery and control cars, were made by the firm at their girder and car works, Newcastle-on-Tyne, the labour employed being mostly women.

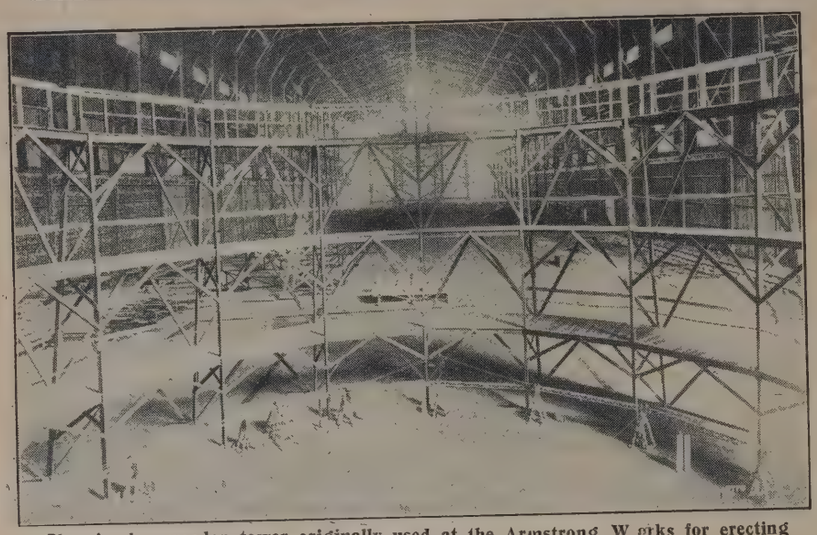
The assembling of the frames and all ship erection was done at Barlow, the method of constructing the hull in the early stages being the same as already adopted by Vickers, Limited, who very kindly supplied information on the subject and facilities for the inspection of their works at Barrow-in-Furness.

The method consisted of building up in a wooden jig or tower complete sections of the hull. These sections, which consisted of two transverse frames connected together by longitudinal girders and wired up, were then hoisted out of the tower and placed vertically on iron cradles fixed on the floor of the shed to receive them.

The cradles were furnished with a curved track to correspond with the circumference of the sections, and the latter were fitted with rollers which rested upon this track. The cradles were carefully spaced apart so that when the full number of sections were



AT SIR W. G. ARMSTRONG, WHITWORTH AND CO.'s WORKS.—Girls assembling girders for rigid Airships.



The circular wooden tower originally used at the Armstrong W orks for erecting Sections of Airships.

placed in position upon them a space equivalent to the length of the section was left between any two sections.

Therefore, to compiete the hull, it was only necessary to link up the sections by longitudinal girders, rivet up their joints and insert the necessary wires which are used to stiffen up the hull.

The various parts which are used to make up the hull construction are finally secured in place by riveting. This process is done by female labour, presses being used wherever possible, the remainder being done by hand.

To enable every portion of the hull structure to be reached, the latter was rotated bodily upon the cradles to any position desired, by means of pulleys and suitable tackle.

When the entire hull had been completed and riveted up, each bay on the inner side was covered with strong cord netting of about 9-in. mesh, forming a lining throughout the ship to give additional support to the gas bags.

In the case of R25 a keel triangular in cross-section and constructed of steel tubes was attached externally to the lower portion of the hull, and to place this keel in position it was found necessary to raise the hull bodily from the cradle; an extremely delicate operation in view of the fact that the keel lends considerable strength to the structure, and without it the hull was quite incapable of withstanding even its own weight unless equally supported at many points.

This difficulty was overcome at Barlow by attaching a sufficient number of counter-balance weights to the structure by means of ropes passing through pulley blocks in the roof of the shed until the hull was almost entirely supported, and then raising the structure by several rope tackles operated simultaneously from one point.

By this means the hull was successfully raised 24 feet in four minutes without a stop and without distorting the framework in the slightest degree. This height gave ample room for fitting on the keel and also the three cars which are slung below the keel.

Whilst this work was being done the structure received additional support from light scaffolding from the ground.

The fins, rudders and elevators were then placed in position, gas bags inserted and the outer envelope put on. The latter is made up in panels which are laced tightly together in place, the lacing joints being afterwards sealed up by doping on strips of fabric.

As this work proceeds the bags are gradually further inflated with hydrogen until the ship finally begins to lift from the supports and slings. Instruments and accessories are put in, machinery finished off and tested under power, the ship being secured in the shed for this and other tests by suitable means until finally the work is completed and the ship ready for flight.

R25 was completed in October, 1917, and was the second British rigid airship to be handed over to the Navy (R9 being the first and R23 being the third. Both of these were constructed by Vickers Ltd. R23 was delivered to the Admiralty only one day after R25).

Shortly after beginning work on R25 it became evident to the staff at Barlow that the method of erection adopted left much to be desired, particularly from a mass production point of view.

The time lost in completing sections before the final assembling of any considerable portion of the hull could be commenced was very great.

Further the wooden towers required to be altered continually to suit tapering portions of the hull, which would be a great obstacle in building streamline ships. Most important of all, it was found that the sections tended to alter slightly in shape when being lifted, necessitating the greatest care being used when linking one or more sections together to keep the structure true and to prevent unequal strains being set up on the girders and wires.

It was felt that these difficulties would enormously increase in building larger ships, and to overcome them a new method was devised. The towers were abolished and the circular transverse ribs or frames were constructed on horizontal radial jigs.

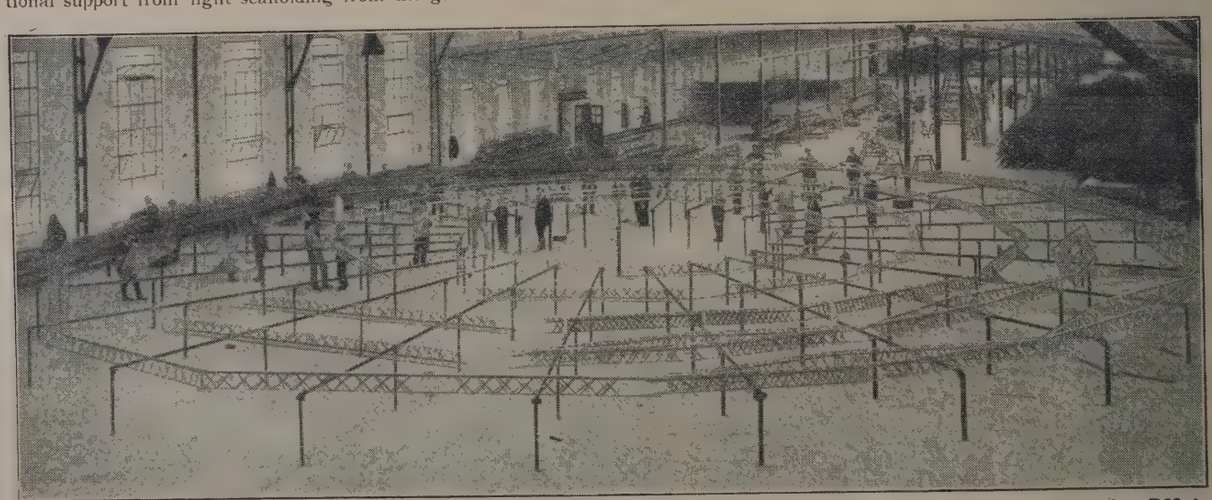
The frames were then slung into a vertical position and placed on the cradles; in that condition they were merely enormous hoops or rings. To stiffen up these frames to make slinging them possible, as they were extremely fragile and flexible, a pole about 4 inches in diameter and 14 feet long was placed vertically in the centre and wires were attached from the top end of the pole on either side to each of the main joints of the frame and carefully tautened, thus making it resemble a large wire wheel. They were then lifted without difficulty.

When each frame was placed in position on the cradles it was immediately connected up to the next frame by longitudinal girders, the intermediate girders placed in position, and the whole temporarily secured by bolts. After this the lower portion of the structure was riveted up and the wiring gang followed along and permanently wired up the hull.

Upon the whole lower portion of the hull being completed the structure was rotated upon the cradles to enable the remainder to be riveted and finished off.

This method was tried in building R29, the next Barlow ship. The photograph showing R25's outer cover being fitted shows eight weeks' progress on the hull of R29 by the new method of erection.

So successful was this scheme of erection that it was adopted



The radial jig for erecting frame rings of rigid Airships, devised by Armstrong, Whitworth and Co. Frames for R39 in course of assembly.

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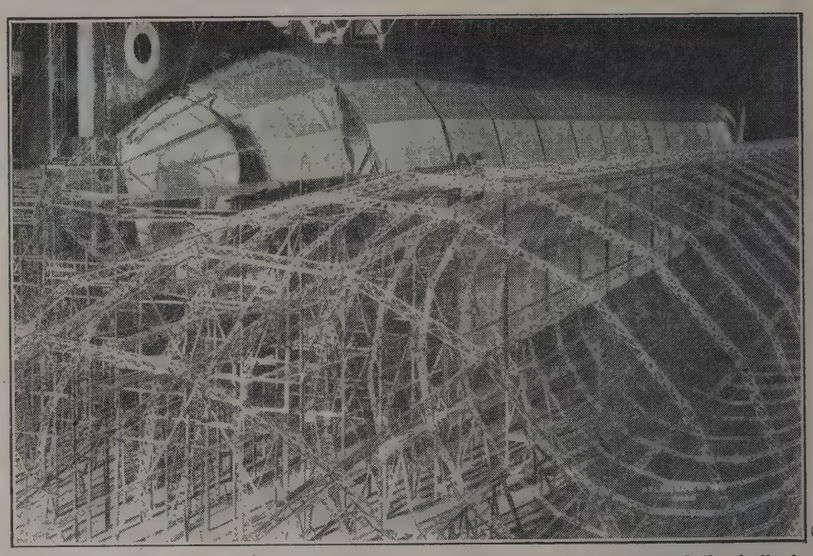
STAG LANE, EDGWARE.

in subsequent Barlow ships, R33 and R39, and was also adopted by Beardmore and Company in building R34, and in part by other firms.

When information on the construction of German ships became available it was found that they also had in use a scheme somewhat similar and had abandoned the use of towers.

R29 was completed by Armstrong, Whitworth and Company, in May, 1918. She was the same length and diameter as R25, but small variations in shape and to her internal arrangements gave an increased gas capacity of 980,000 cubic feet. By discarding the external keel and fitting a triangular internal keel of duralumin girders and by several other improvements in design a disposable lift of 8.63 tons was obtained.

This increase of 3½ tons in lift over the R23 class ships made this ship the first British rigid to be really capable of use against the enemy. She had an armament equipment of eight 120-lb. bombs and numerous machine-guns. On four occasions she was in action against submarines, one of which was believed to have escaped, one was damaged and became a prey to a British destroyer, one struck a mine and was sunk whilst the action was progressing, and the fourth was sunk by a direct hit from a bomb from the ship.



The outer cover of R25 being fitted to the frame. In the foreground the hull of R29 is in course of erection.

The hull of R29 having an internal keel it was unnecessary to lift it from the cradles before completion. The final lifting to enable the cars to be placed in position was done by inflating the gas bags. R29 was similar in machinery and car equipment to R25.

R33 was the next ship to be constructed at Barlow by Armstrong Whitworth and Co., Ltd.

It has been freely stated that this ship was entirely copied from L.Z.33 which was brought down almost intact near Colchester, a statement which is not quite correct. British designers naturally availed themselves of the opportunity to study the German design and obtained much valuable information, incorporating in subsequent ships features of the German ship which were found superior to our own, but the greater portion of R33 was of British design.

In any case it should be pointed out that whilst this information undoubtedly assisted our designers it was of very little value to constructors in overcoming difficulties of erection.

R33 has a total length of 640 ft., maximum diameter of 78 ft. 9 ins., and a gas capacity of 2,000,000 cubic feet, giving a disposable load of 29½ tons.

The hull is divided by radially wired main frames into separate compartments into each of which a large gas bag is closely fitted.

There are four cars, the forward one being divided into three compartments, the front compartment being reserved for navigating officers, the centre one for the wireless gear, and the after portion for a 250-h.p. Sunbeam engine.

Two wing machinery cars, each containing a 250-h.p. Sunbeam engine, are fitted abreast of each other, one on the starboard and one on the port side, amidship along the hull and about 30 feet apart.

The after car contains two 250-h.p. Sunbeam engines driving through gearing one large propeller. Either one or both engines can be used simultaneously. In addition duplicate steering and elevating gear is fitted in this car for use in emergency

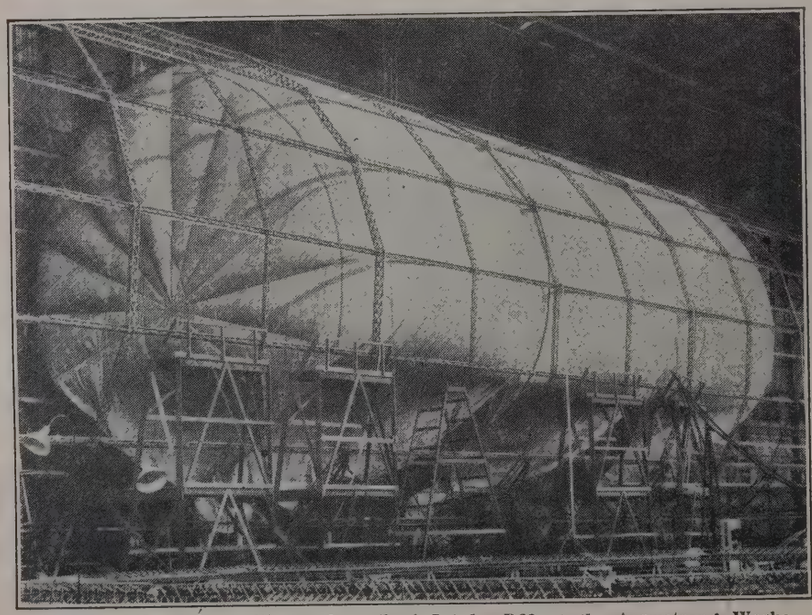
The hull has an internal keel or corridor constructed of duralumin girders and running the whole length of the ship.

This corridor provides space for housing the petrol tanks, which have a total capacity of 20 tons, also the water ballast bags, and space for the crew when off duty.

Access to the various parts of the ship is obtained by a walking-way passing through the corridor, ladders from it give access to the cars, and a tabular shaft with wire rope ladder suspended inside leads to the gun platform and top of the ship.

R33 was successfully put through her first flight trials on March 6th, 1919.

During the completion of the construction of R33 a ship of similar design, viz., R35, was put in hand. This ship was of the same type exactly, but having an increased length of 672 ft. Upon completion of the girders, and before actual hull erection commenced, it was decided to suspend operations on it and proceed with the building of a much larger type, the R39, the design of which is purely British. Work is being pushed rapidly forward in order to get this ship into commission at the earliest possible moment.



Three gas-bags in position and partly inflated. R29 at the Armstrong Works.

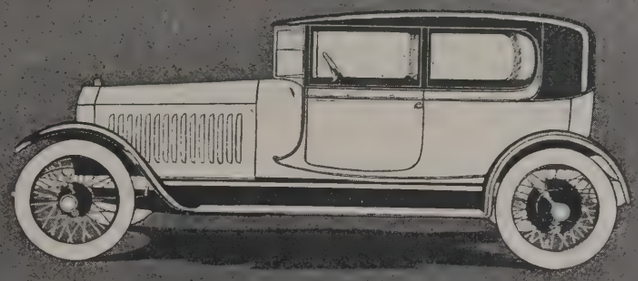
She will be one-third larger than the 33 class ships, and will have a gas capacity of 3,000,000 cubic ft. The total length is 694.5 ft. and maximum diameter 85 ft. Six power cars are provided, each with one engine. Four of the engines will be of 350-h.p. each, and two will be of 275-h.p.

In addition there will be one control car attached immediately under the forward portion of the hull of the ship. The interior will be similar to the R33 class, though greatly improved, so far as general arrangements are concerned.

The airships and aeroplane departments of Sir W. G. Armstrong, Whitworth and Co., Ltd., have been conducted entirely separate from each other, each branch having its own management and staff, although both are jointly controlled by Capt. I. F. Fairbairn-Crawford, R.E., general manager of the aircraft department, who has been connected with aviation from its commencement in England.

Owing to the fact that there were few—if any—trained airship engineers and practically no reliable information on the subject at the time when the work was started in 1916, the utmost care and

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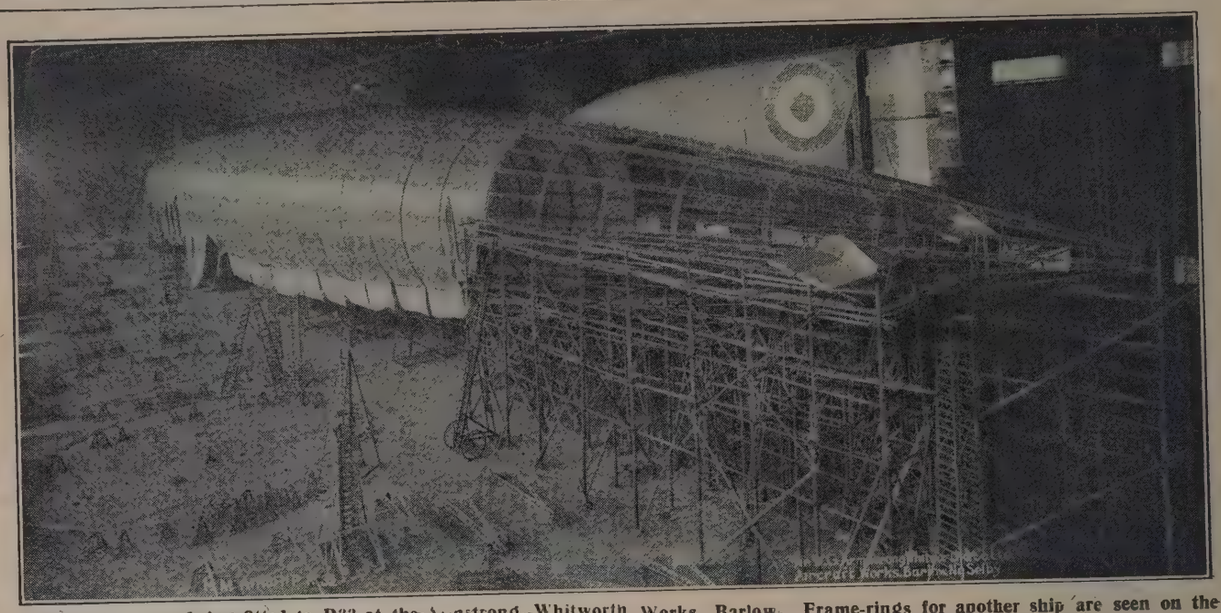


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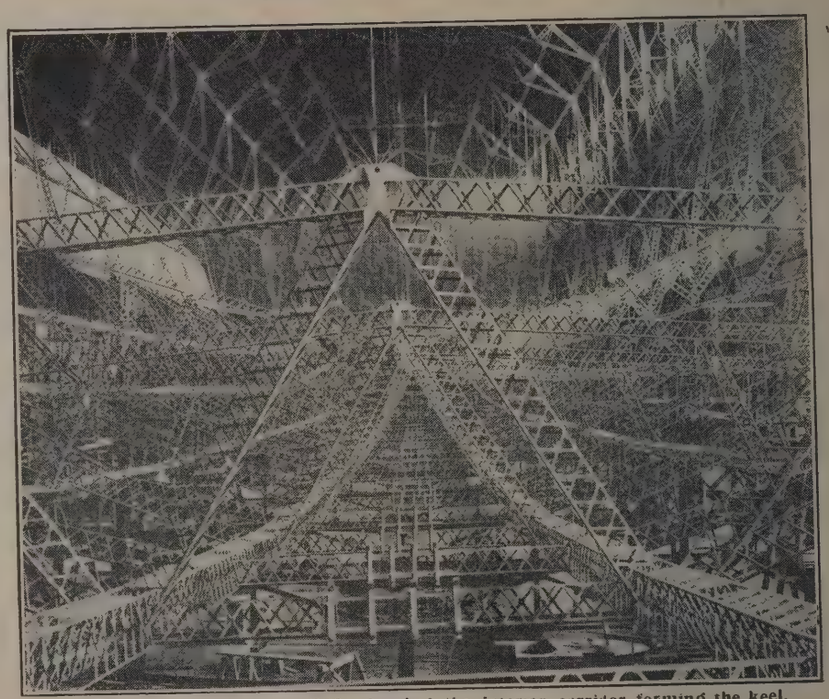
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The outer cover being fitted to R33 at the Armstrong-Whitworth Works, Barlow. Frame-rings for another ship are seen on the left of the picture.

thought had to be used to overcome the thousand-and-one difficulties which were to be met with in the building and handling of large rigids.

Special tools had to be designed and appliances for lifting and handling the ships devised, and workpeople had to be trained in everything relating to this new class of work. These difficulties have been successfully overcome, and to-day the Barlow works have a trained staff capable of carrying out every process in connection with airships, from and including making the hull, cars, fabric work, gas bags, etc., to manufacturing the hydrogen gas and handling the ship when going in or out of the shed.



View of the skeleton of R39, showing the interior corridor forming the keel.

AIRSHIP v. AEROPLANE.

It is now fairly generally accepted by those who are reasonably well informed that in the development of commercial aviation both the airship and the aeroplane will play their part, each in its own sphere of action, and that the one will supplement the other rather than attempt to compete with it.

In the present state of the development of aircraft it can safely be said that for carrying large cargoes for long distances without stops at speeds up to about 70 miles per hour the airship cannot be rivalled by the aeroplane either in cost or in reliability.

On the other hand, for relatively small cargoes, to be carried at considerably greater speeds, and particularly where landings can be made at reasonably frequent intervals, the aeroplane need not fear the competition of the airship.

It would not be altogether safe to assume that these conditions will always hold, however.

The design of large rigid airships is—so far as the structure itself is concerned—a very complex problem. Apart from the purely structural difficulties, however, the airship is a relatively simple affair with definite limits to the possibility of improvement.

The weight of a cubic foot of air under given conditions of temperature, pressure, and humidity is unalterable—and fixes the total lift which can possibly be obtained from a ship of any given volume. It is highly improbable that any fluid less dense than hydrogen will ever be found, and even if it were, there can be but little gain.

The problem of securing that form of hull which will give the minimum air resistance for a given displacement is—as aerodynamic problems go—a simple one.

Thus apart from propulsion, the problem of improving upon the present type of airship is mainly one of structure design to secure the necessary strength for the minimum of weight.

Improvements in propulsive machinery would have as great an effect upon the development of the aeroplane as they would upon that of the airship.

The aeroplane is as susceptible as is the airship to improvement in structural design.

The aerodynamical problems involved in aeroplane design are much more complex than those presented by the airship, and the prospects of really important improvements in efficiency are very much greater.

Thus, over and above the possible beneficial effects of the discovery of better structural materials, the better use of the materials, of improvements in the power plant, and of the methods of propulsion employed which are likely to affect both the aeroplane and the airship to about an equal extent, there is a distinct probability that in the aeroplane it may be possible to increase very considerably the total weight which can be carried at any given speed, per h.p. of power plant installed.

There is very little possibility of any equivalent improvement in the aerodynamic design of airships, and although it is reasonable to expect the airship to increase in size, and in its ratio of disposable lift to gross lift in the future, it is also to be expected that the aeroplane will develop at an even more rapid rate, and will gradually encroach upon what is now regarded as the airship's special sphere of usefulness.

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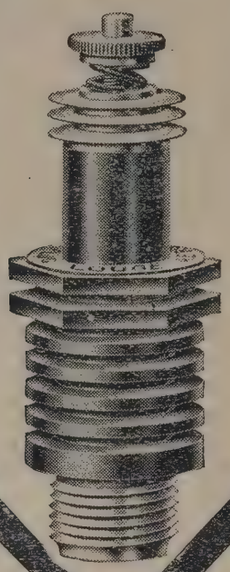
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THE CONSTRUCTION OF R.34.

Contributed by Wm. Beardmore & Co., Ltd.

Following the successful flight across the Atlantic by a British aeroplane with British engines and piloted by a Britisher, the notable achievement of H.M.A. "R34" in performing the double journey to New York and back is very gratifying in that it is also "All British."

Now that the war has been brought to a successful termination, it is possible to publish some particulars of this most interesting ship. She was built, equipped, and tried in Scotland by Wm. Beardmore and Co., Ltd., of Parkhead and Dalmuir, at their new airship works at Inchinnan in Renfrewshire. The direction of all the work carried out at the new shops and erecting shed took place from the naval construction works at Dalmuir.

During the very early days of the war this firm undertook the construction of aeroplanes and seaplanes for the Admiralty, and erected and equipped up-to-date shops suitable for the work.

When the Admiralty began their programme of airship building, Beardmore's were amongst the first firms to undertake the construction of large rigid airships.

R34 is the latest product of their works, and has been consistently successful in all her trials and long flights.

The land taken over at Inchinnan as a flying ground for airships extends to over 360 acres, and the sheds and buildings now cover nearly 8½ acres.

The actual construction of airships was started there about July, 1916, and two ships of moderate size were completed and tried out before R34 was put in hand.

R34 and her sister-ship R33 are the two largest ships yet built in Britain. The overall length of the airship is 645 ft., and the greatest diameter 78 ft. 9 ins. There are in all 18 gas bags, with a total capacity of 2,000,000 cubic feet. This is equal to a gross lifting power of 60 tons under standard conditions, and the lift which is useful, apart from that required for hull and other constructional items in this ship, is practically 30 tons. Every care was taken during the design and construction of the ship to keep down weight in every part, and the result has proved that this has been thoroughly successful without in any way detracting from the necessary strength.

The section of the ship takes the form of a polygon with 13 sides, and is built up of main transverse frames, rigidly wired, placed every 10 metres in her length, with intermediate transverse frames of lighter construction placed between them. The whole is bound up by longitudinal girders, the main members placed at the 13 angles in the main transverses. Intermediate longitudinals are also fitted, thus giving the ship finally the appearance of being a polygon with 25 sides. It is over this that the outer cover, or fairing, of fabric is stretched. The gas bags are placed inside each of the bays formed between main transverses and are attached in no way to the structure of the ship, but impart their lifting power wholly to the ship by their pressure on the underside of the upper portion of frames. The main transverse frames are built on special jigs on the ground and, after being completely riveted up and wired, are lifted by means of specially designed king-posts on to the building cradles. At every joint a trolley is fitted having large flanged wheels, so that the structure can be rotated in drums to facilitate the work of fitting the longitudinal girders.

After the hull framework is completely riveted up, the fore and aft and diagonal bracing wires are put into position and tensioned to the desired tautness.

The whole structure is then ready to lift for attaching the gondolas. In the case of R34 all the fins, rudders and elevators were attached to her after end before she was lifted. The ship is actually lifted into the new position by her own gas bags.

The gas bags, which are also produced at Beardmore's own works, are composed of a very fine quality of single ply cotton fabric with rubber on the inner surface. The inner surface is completely covered with goldbeaters skins laid on with rubber solution, and the whole is then varnished over.

By careful workmanship and the use of only the very best materials, very great impermeability to gas has been obtained with a remarkably low weight.

As it is impossible, of course, to arrange that an airship be always maintained upon a perfectly level keel, and also to meet the possibility of any gas bag becoming partly deflated, arrangements have been made to lessen the excessive pressures which might be set up during such conditions. A central wire is run from end to end of the ship along the longitudinal axis, tying together the transverse bracing wires to assist in this work.

The outer cover is composed of very light linen fabric to which has been applied weather-resisting dopes before the material is made up into the necessary shape. After the cover has been fitted to the ship and laced up to take as much of the slackness out of it as possible, it is again doped with a view to ensuring it being absolutely taut and rainproof.

Five cars are fitted to the ship, one of which is used for navigation, whilst all the others contain engines. The navigation car and No. 1 engine car are placed close together and give the appearance whilst the ship is in the air of one long car.

The forward control or navigation car has a covered means of access to the hull of the ship, the others have open ladders.

The ship is fitted with 5 Sunbeam-Maori engines, each of 250 h.p. Two engines are in the after car geared together to drive a single airscrew 19 ft. in diameter. The other engines, one in the forward engine car and one in each wing car, drive airscrews 16 ft. in diameter.

The after car is arranged to act as an ancillary control car, if necessary, and is fitted with a second set of controls and instruments.

The ship is fitted with an internal keel or corridor of triangular shape, which stretches from end to end. There is a walking way running all through it, and this forms the means of communication between all the various parts of the ship. On the side of the corridor on special box-shaped girders running fore and aft, there are suspended all the accessories, such as petrol tanks, water ballast bags, bomb stowage, etc.

Part of the corridor has been widened out to form the crew space and is fitted with tables, stools, drinking tanks, and being entirely surrounded with curtains is wonderfully comfortable and free from noise.

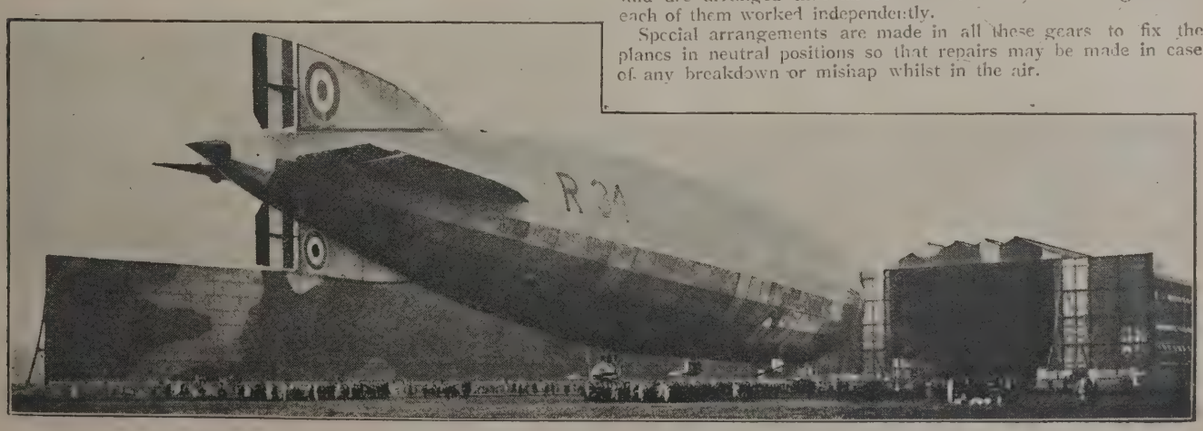
Many of the petrol tanks are designed so that they can be slipped to take the place of ballast in case of emergency.

The gas bags are each fitted with an automatic relief valve designed to blow at a certain pressure, and nine of the gas bags have a manœuvring valve placed on top. These may be operated as desired from the forward car and are used, of course, during the manœuvring of the ship for discharging gas when the ship becomes light or for trimming purposes.

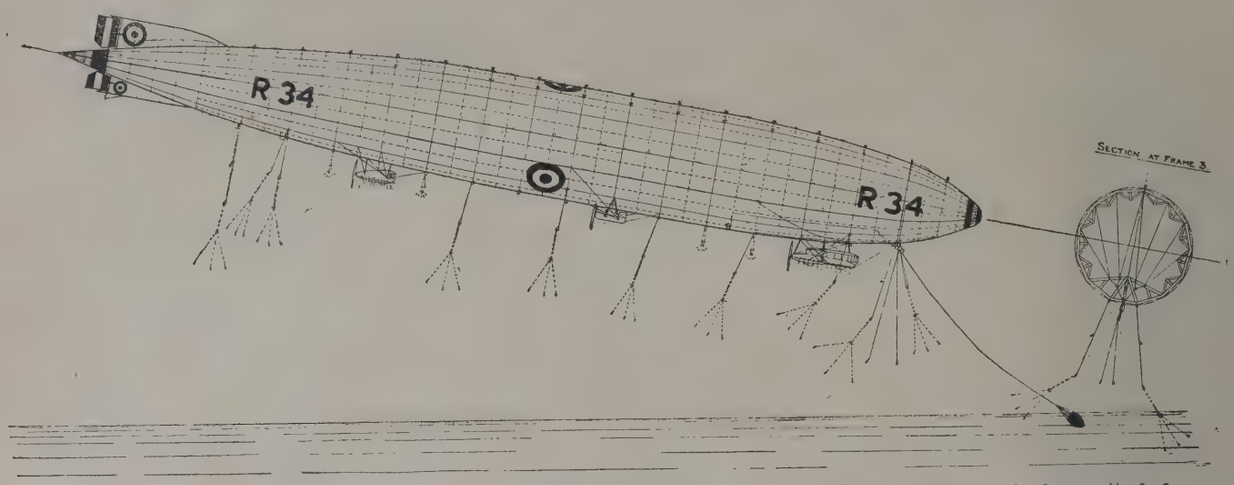
All the water ballast bag valves and the flaps for allowing the trail ropes and mooring ropes to fall can also be operated direct from the forward car. All the wires, of which there are nearly 50, passing between the hull and the car, are enclosed in a small streamline fabric casing.

The rudders and elevators are also operated from this car with an auxiliary or secondary control from the after car. They are all hand-controlled, but, as they are balanced, the actual working of them is very light. The controls are designed for working the rudders and elevators from 20° hard-over to 20° hard-over and are arranged that all of them can be worked together or each of them worked independently.

Special arrangements are made in all these gears to fix the planes in neutral positions so that repairs may be made in case of any breakdown or mishap whilst in the air.



R34 about to enter her shed at Beardmore's Airship Works, Inchinnan.



A Diagram of R34 showing the arrangement of the handling and mooring ropes. A droque for use at sea is shown attached to the main mooring rope.

The cars and the corridor are all lighted electrically from generators run by the main engines or alternatively from accumulators carried in each car. Telephone and voice pipe installations are fitted and the wireless apparatus is of the very latest type and special design and has ranges of 500 and 1,200 miles.

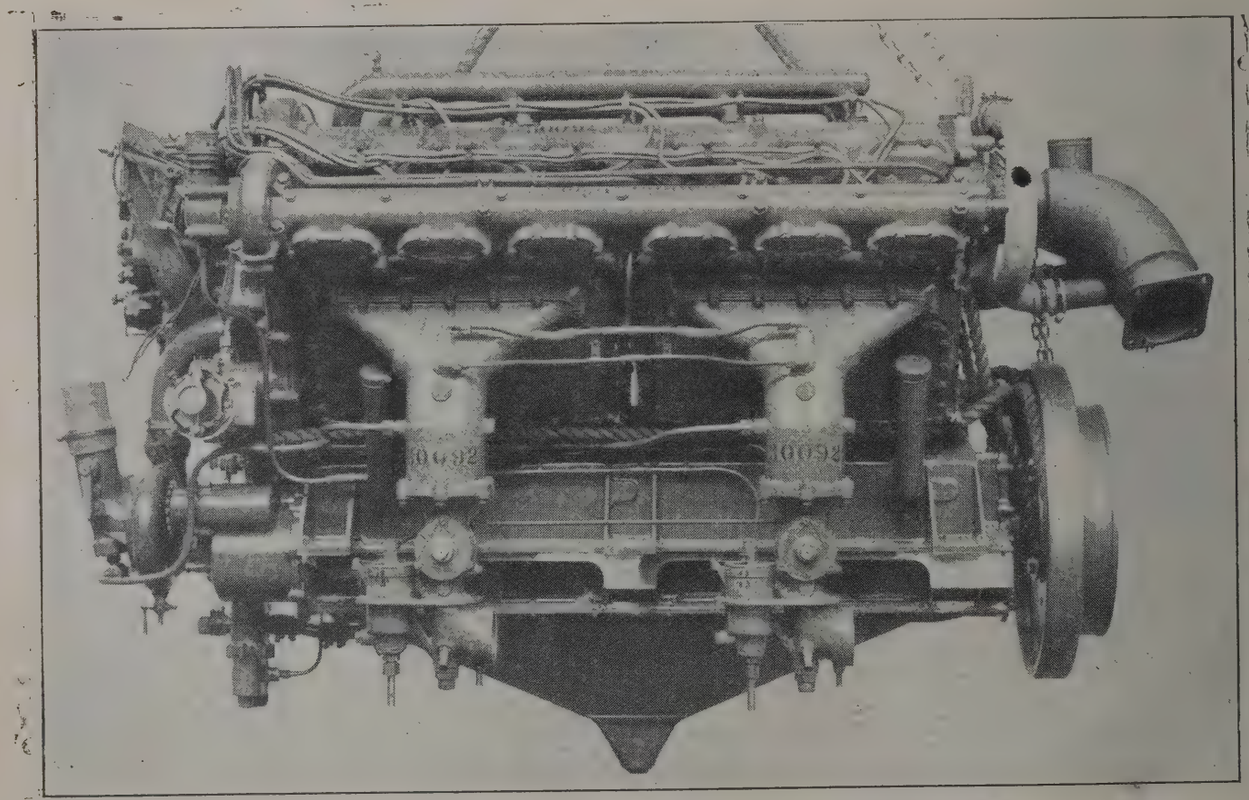
The ship is also fitted with directional wireless arrangements by which the position of the ship can be obtained after communication has been established with shore stations.

Particular care has been taken in this ship to provide her with the most effective mooring and handling arrangements. A sketch is reproduced showing these "all down." Of course the ship does not carry all these when she is actually sailing. The handling ropes are fitted with toggles on the end and are removed by the landing party before the ship is finally let go. The fixed part which hangs down from the ship is then hauled up and stowed alongside the corridor. A special drogue is also fitted for mooring over the sea. This is fitted with tripping gear which enables it to be slipped instantaneously.

The R34 was completed towards the end of last year, and her first formal trial lasted just over four hours. Afterwards a special endurance flight was undertaken, and on this occasion she remained up throughout the night for a total period of 19 hours. This flight was made from the banks of the Clyde, down over Ireland and the West Coast of England, and back again.

The official acceptance trial also lasted overnight, but this was due to the fact that fog prevented a landing at her station, East Fortune. The ship was actually in the air for 20 hours on this occasion, and proved thoroughly reliable and satisfactory; it was easily and safely housed after the fog had dispersed.

After being handed over to the Admiralty, the vessel carried out a very notable long-distance flight over the German coast and the Baltic. On this occasion she left East Fortune on the evening of June 17th and returned in the early hours of the morning of the 20th, after having been in the air for 56 hours and covering some 2,400 miles.



The Sunbeam-Coatalen "Maori 4" Airship Engine of the type used on R34.

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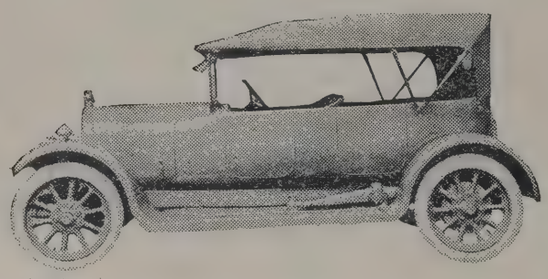
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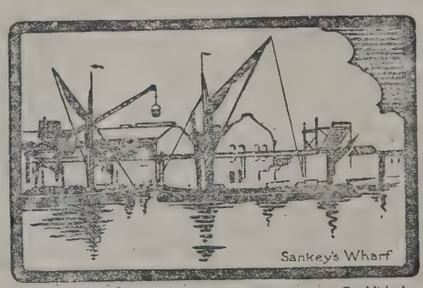
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A NOVEL TYPE OF RIGID AIRSHIP.

By Short Brothers, Bedford.

At present the section of a rigid airship is generally of a circular or slightly oval form, and as the difference between the internal and external pressure varies from a very small pressure at the lowest point (which may itself vary from nothing to the pressure at which the relief valve is set) to a maximum at the highest point, the resulting tension in fabric, circumferential wires, or supporting rings will vary, being a maximum at the top and very small at the bottom; and this introduces bending moments and other distorting stresses in the supporting structure, which is partially counterbalanced by the tension of radial wires.

By the proposed method of construction it is intended to make the cross section of a such a form that in the average condition of pressure in the bags the circumferential tension in the fabric, and in the circumferential supporting wires or frames, will be constant, thus avoiding the necessity for most of the radial wires, and reducing the pressure on the longitudinals and the bending moment in the frames.

The shape necessary for constant tension when the pressure at the lowest point is equal to the atmospheric pressure is given in Fig. 1. This is the shape (inverted) which a cylindrical bag made of flexible material and open at the top would take if filled with water. As this shape is unsuitable for a rigid ship owing to the large ratio of height to breadth it is proposed to combine two or more such shapes together removing the internal partitions, and replacing them by tension or lift wires. Fig. 2 shows such a form composed of three sections, the shape being such that the circumferential tension is uniform throughout.

These shapes may be varied slightly on the same principle to suit any average condition of gas pressure which it may be desired to work to, and the number of sections or spans may be varied as desired. The particular form shown in Fig. 2 is the most suitable, as the breadth and depth are practically equal, and the volume is practically the same as a circular section of the same height. The increase in surface is very small and the form is suitable to take longitudinal and sheer stresses.

With this form practically the whole of the lift of the bags is taken by the circumferential wires EE and the lift wires from the re-entrant angles BB and CC which may be led to the corridor where most of the weights are concentrated, or to the gondolas at the sides.

The circumferential wires are secured at the lower ends only, the length being such as to enable them to take up the shape shown. They are kept in position at each longitudinal frame but free to move circumferentially, thus ensuring that no side strain is transmitted to the frames and that the tension is equal throughout.

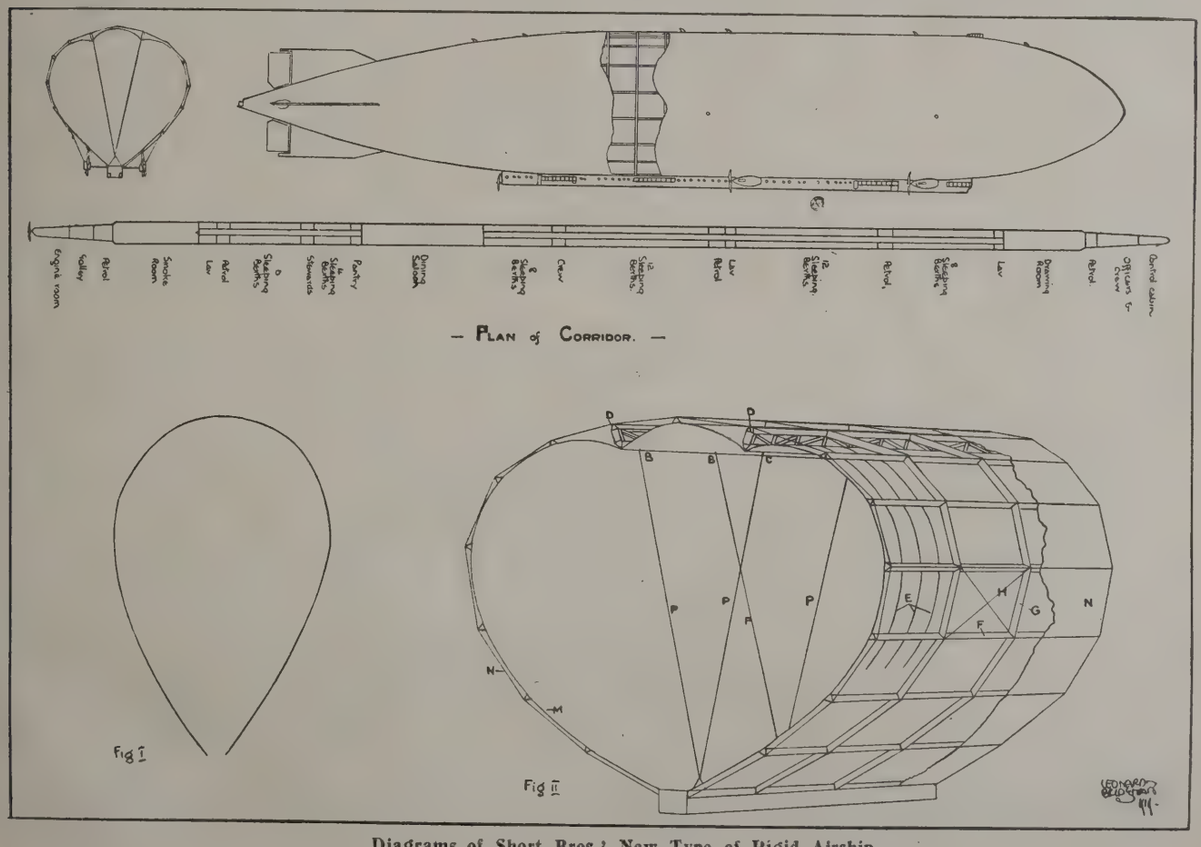
The upper end of the lifting wires are attached to one of the longitudinal girders or a special longitudinal girder D at the re-entrant angles, and are taken through the bag at suitable points through conical neck pieces or otherwise. The external shape of the framework is maintained in way of these girders with no re-entrant angles so as to reduce the surface friction

The construction differs from that used in certain non-rigid airships in that the external form, more especially in the longitudinal sense, is maintained by the rigid framework composed of transverse frames and longitudinal girders on which an outer cover is stretched, and it is not necessary to depend on any internal pressure at the bottom of the bags to maintain the shape. The general shape of the sections and position of the re-entrant angles are, therefore, different.

The proposed construction combines the advantages of the rigid and non-rigid types, giving the best results with the minimum of weight. The external shape is generally maintained by the rigid framework, but it is of such a form that the gas pressure produces practically no distorting stresses on it.

Further, the end pressure of the gasbags in the event of one being accidentally deflated is at present taken by the taut radial and chord wires, thus introducing an abnormal strain in them.

It is proposed instead to make the ends of the bags slightly convex, or more accurately the shape of the lower end of a pear, as shown in Fig. 3, one fitting close into the other, the supporting transverse wires RR being fitted loosely so as to follow this surface, and supported, if desired, at the centre by a longitudinal centre line wire SS. These transverse wires will not be of any use for maintaining the rigid form, but this is not necessary with the shape put forward in the first part of this proposal. Owing to the shape of the ends the transverse wires need be of much less strength than at present, and the strains



Diagrams of Short Bros.' New Type of Rigid Airship.

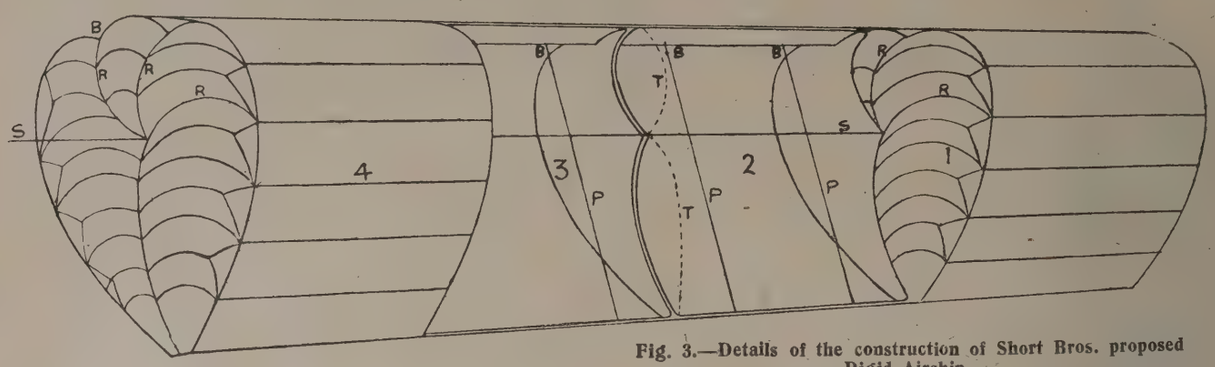


Fig. 3.—Details of the construction of Short Bros. proposed Rigid Airship.

on the main structure caused by one bag being accidentally deflated are reduced to a minimum. The curvature of the end and the position of transverse wires is arranged so that there will be practically no distorting stresses on the framework.

In Fig. 3 four bags are shown in elevation, bags 2 and 3 being in section. In the event of a bag being deflated the end of the adjacent bag, which is concave, will be free to blow out into the desired convex shape, as shown by the dotted line TT in Fig. 3, and incidentally reduce the pressure in that bag. The lift wires from the re-entrant angles BB (Figs. 2 and 3) are led through the bags so that the tension on these will not be unduly increased in the event of a bag being deflated.

The advantages claimed for these proposals are:—

1. Practically no distorting strains in the rigid framework due to gas pressure, leaving it free to perform its main function of providing longitudinal rigidity.

2. The maximum of strength with the minimum of weight.

3. The construction combines the most important advantages of both the rigid and non-rigid types.

4. The stresses on the different members are definite and easily calculated.

PROPOSED AIRSHIP FOR PASSENGER SERVICE—LONDON TO NEW YORK WITH 50 PASSENGERS.

General Specifications.

Length overall	694 ft.
Mean diameter	107 ft.
Height overall	115 ft.
Width overall	120 ft.
Capacity	4,450,000 cubic ft.
Total lift (95 per cent. full)	128.26 tons
B.H.P. in 5 units, 4 gondolas and 1 engine at end of corridor	2750
Speed	60 knots
Total weight of ship ready for flight (excluding fuel, oil, water, provisions, passengers and crew)	63.7 tons
Weight of petrol	44 tons
Radius of action at 60 knots	6,000 nautical miles
Available weight for provisions, water, passengers and crew	20.56 tons

THE CONSTRUCTION OF A WOODEN RIGID AIRSHIP.

The following, a brief description of the R32, is due to Messrs. Short Bros., her builders.

Although of an experimental nature, this ship gave excellent results on trial, her speed being 65 to 70 m.p.h., which is greater than that obtained from any ship at present in commission.

Her principal dimensions are as under:—

Length	615 ft.
Maximum diameter	65 ft. 6 in.
Total capacity	1,550,000 cubic ft.
Total lift	47 tons
Disposable lift	16.5 tons
Ratio, disposable lift to total lift	35 per cent.
Total B.H.P.	1,500
Endurance at two-thirds full power in sea miles	2,200

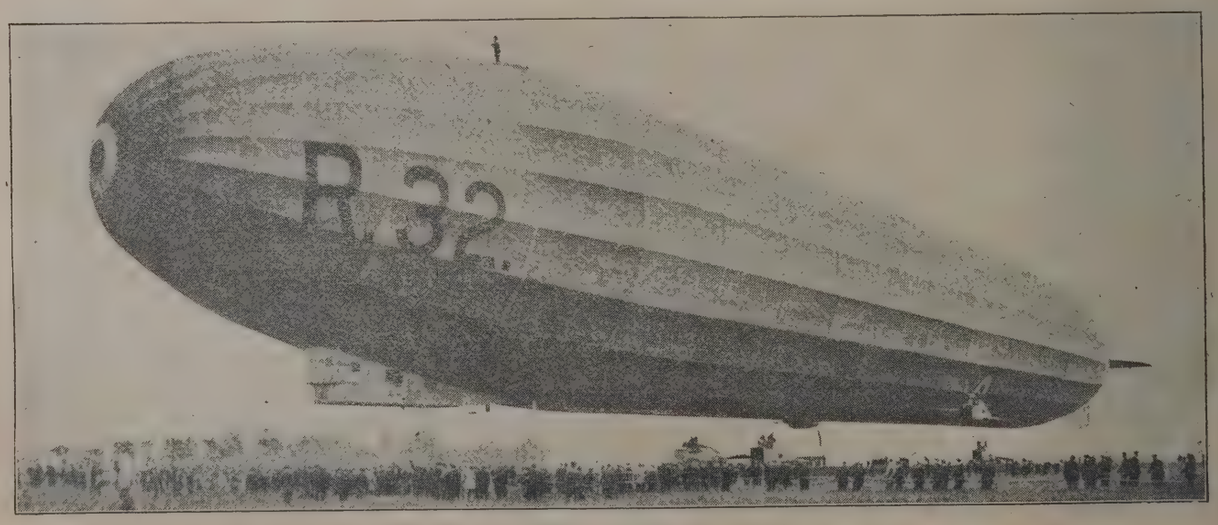
The shape of the hull approximates to a streamline, the middle portion being parallel and with bow and stern tapered.

The framework consists of a number of main frames built of twenty wooden triangular girders wired to a centre ring by radial wires, which rigidly maintain its shape. These frames are spaced about 30 ft. apart. Equally spaced between the two main frames are two rings of intermediate girders which are not wired and are of much lighter section; these mainly assist in keeping the ship rigid and absorb the difference in tensions in the diagonal wires.

Running longitudinally are a number of other triangular girders spaced at each of the joints of the transverse girders. The number of longitudinal girders so fitted is twenty. The girders are all braced together by diagonal cross wires whose function is to take the shearing forces due to the ship as a beam, and also to take the gas pressure due to the upward lift of the gas.

Running through the keel is a triangular structure of girders forming a passage way, from each side of which are suspended the petrol tanks, water ballast bags, bombs, etc., which are disposed evenly along the keel to relieve the hull as far as possible from undue strain.

The 300-h.p. Rolls-Royce engines are arranged in five units, viz, in two forward cars, two amidship cars and one after car. The propellers, each 17 ft. diameter, are direct driven, and the engines in the amidship car have a reversing gear.



H.M. Airship R32. Built by Short Bros., at Bedford.

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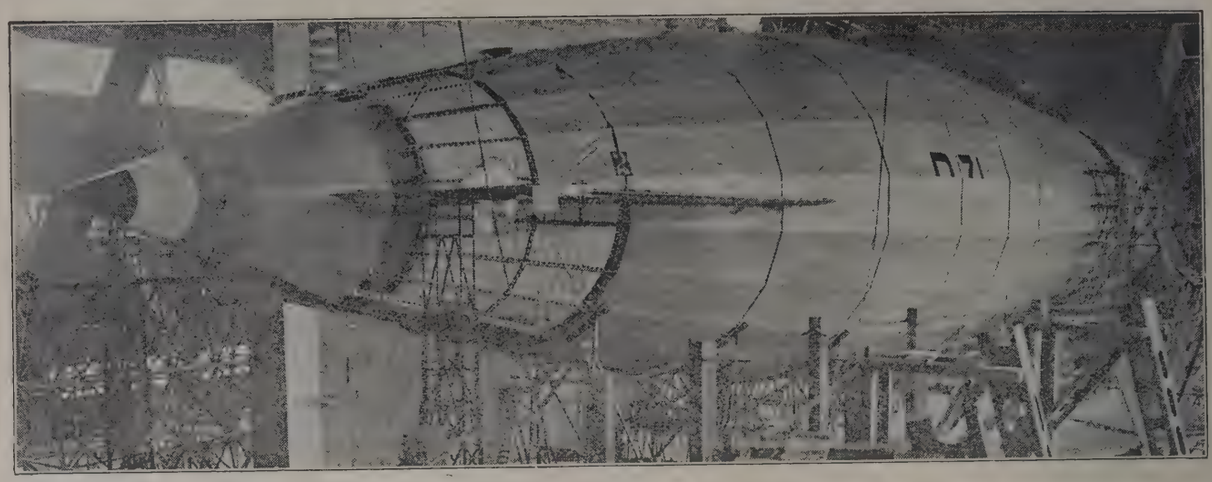


ARMSTRONG, WHITWORTH

NEWCASTLE-UPON-TYNE.

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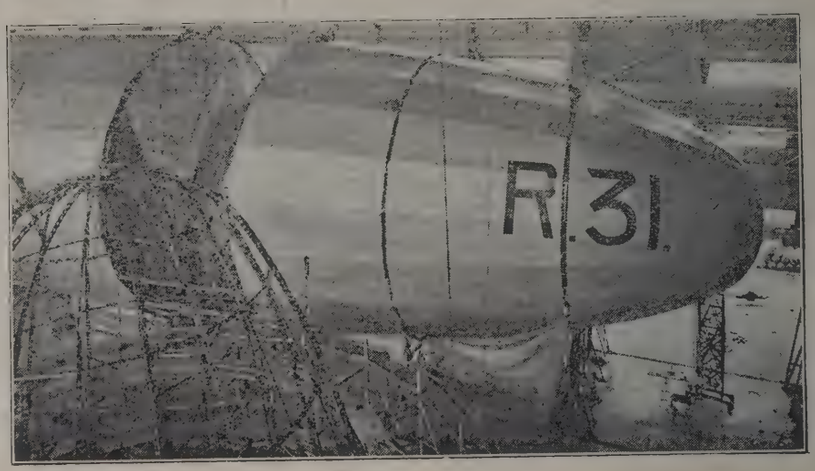
TELEGRAMS:- ARMSTRONG AVIATION, NEWCASTLE-ON-TYNE.



The cars are slung under the ship, the forward and after cars being slung direct to the centre ring and the amidship cars to the framework. The control car is built under the ship at the forward end and from this car the ship is navigated and controlled. The wireless cabin is also in this car.

The fins, rudders and elevators at the tail end are cruciform in shape and consist of a light framework of wooden girders covered with doped fabric. The ship is divided into twenty-one compartments, with a gasbag in each.

An outer cover is stretched over the framework in sections between main frames and is made of a doped cotton fabric. There is a clear air space between the outer cover and gasbags which tends to keep an even temperature in the gasbags. Two types of valve are fitted to the gasbags, viz., manœuvring and automatic. The manœuvring valves are fitted in the tops of the bags and are operated from





AT SHORT BROS.' AIRSHIP WORKS.—The construction of wooden airships Top, Stern View of R31 nearly complete. Centre, Bow of R31. Bottom, R31 in background; framing of R32 in the foreground.

Ever since the R 34 left at frequent intervals the American weather bureau, a most admirable organisation, regarding which you ought to hear the opinions of Mr. Harris, has sent radios giving forecasts based upon more data than are usually available at short notice on your side of the Atlantic. The bureau here works with the utmost personal goodwill, because, to quote its officers, "England has shown the United States remarkable courtesy in allowing an American observer to travel both ways on the first flight, and also given us every information down to samples of the castrol oil for engine-bearings, which we want to analyse for our own purposes."

OVER THERE
R34 in America

THE "DAILY TELEGRAPH" of July 12th contained the cable reproduced here from its correspondent in NEW YORK.

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The Stock Rooms of the World are empty and—BRITAIN should fill them

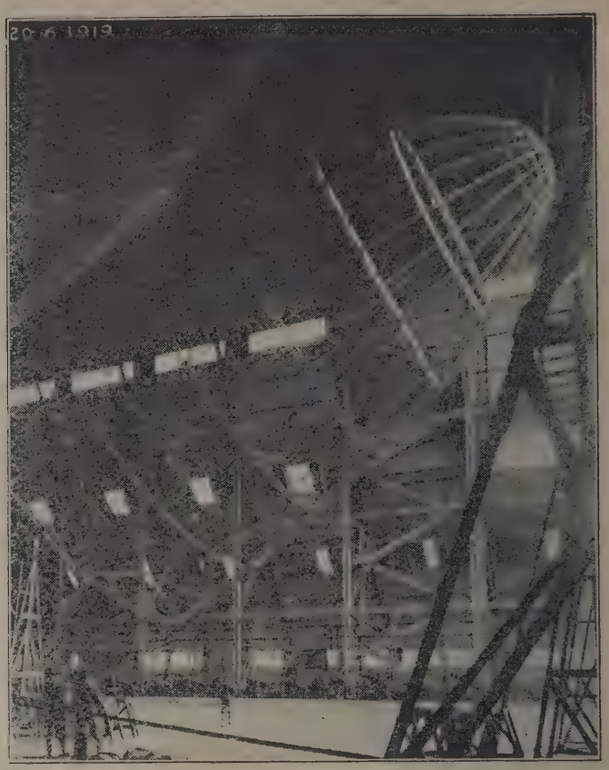
She *should* fill them, but she'll have many competitors and it's essential in the British interests that every manufacturer should lose no opportunity of bringing his products before the buyers of the world—THE BRITISH INDUSTRIES FAIR held concurrently in LONDON, GLASGOW and BIRMINGHAM is a NATIONAL TRADE FAIR—the BIRMINGHAM SECTION has a schedule including Hardware Manufactures as at side—every building of any size in the City will be used for exhibition purposes—buyers from all markets of the world will be there by official invitation from the Board of Trade—Space is letting rapidly—HAVE YOU BOOKED? Date of Fair is FEBRUARY 23–MARCH 5, 1920.

Applications for space to General Manager, British Industries Fair (Birmingham), 1920, Chamber of Commerce Buildings, Birmingham.

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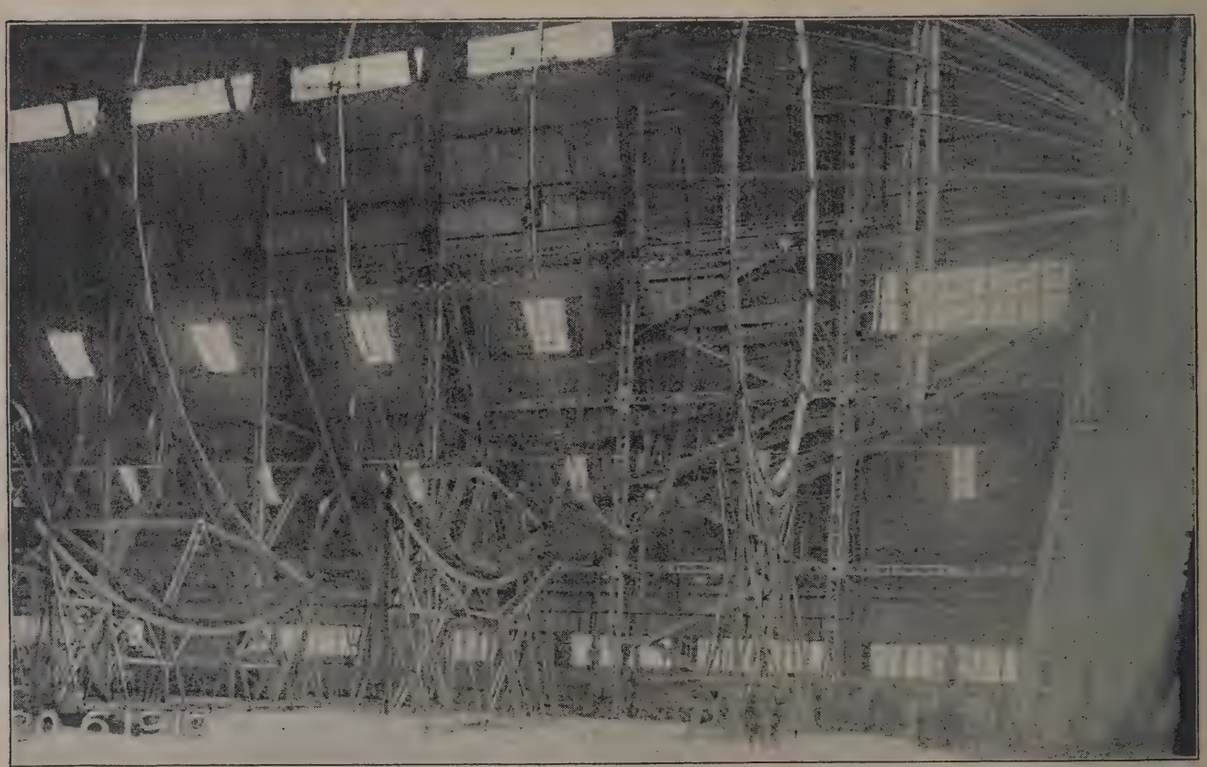


the control car when it is necessary to alter the trim of the ship. The automatic valves are placed in the bottom of the bags, just above the corridor. These are arranged to blow off at about 3 m/m water pressure. The gas is led from these valves to the top of the ship through exhaust trunks.

At the top of the forward end of the ship is fitted the gun platform, and machine-guns are also fitted at various points on top of the walking way, at the tail end and in all the cars.

A strong structure is built into the after end of the control car to act as a mooring point and the ship is moored to this point on open ground or over the sea. In the latter case a drogue is used which is made of fabric in the shape of a truncated cone which trails in the sea.

During flight, arrangements have been made for hot food to be supplied to the officers and crew by means of an exhaust-heated cooking apparatus.



A TRICKY BUSINESS.—The three photographs on this page show the nose section of the frame of R32, firstly completely assembled in a vertical position, secondly half-way through the process of being turned over, and lastly in the final horizontal position resting on its cradles.

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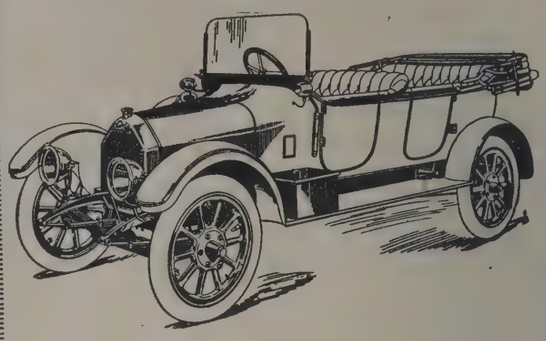
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AIRSHIPS IN PEACE AND WAR.

Contributed by Airships, Ltd.

THE HISTORY OF AIRSHIPS, LTD.

Airships, Ltd., came into existence in February, 1914, under the managing-directorship of Mr. G. Holt Thomas, who has always been a great believer in the future of lighter-than-air craft, and who was largely responsible for reviving official interest in the subject at a critical period in the early days of the war. This faith has found the most complete justification in the indispensable work since performed by airships.

Shortly after its formation the company acquired the British rights of the famous Astra-Torres Airship Co., of Paris. Two airships of the Astra-Torres type supplied to the British Admiralty were used very effectively in patrolling the Channel and in escorting the transport steamers which carried the first British Expeditionary Force to France in August and September, 1914.

In 1915 it became apparent that the use of submarines by Germany to destroy merchant shipping would create a considerable danger to British food supplies, and that this menace could only be encountered by more intensive patrol of home waters. Airships were considered the most promising means of achieving this result with a minimum of delay.

At the suggestion of Mr. Holt Thomas an envelope belonging to the small airship "Willows No. 2" (named after its constructor, Mr. E. T. Willows, who was at that time connected with the firm) was, in conjunction with a standard aeroplane fuselage, used as an experimental scouting craft.

On trial this airship gave excellent results, and was, in fact, so satisfactory that orders were placed for a large number of similar ships. Several of these were delivered by Airships, Ltd. They were called the S.S. ("Submarine-Searcher" or "Sea-Scout") class, since popularly known under the pseudonym—"Blimps."

The S.S. airship having filled, or at least giving definite promise of filling, the pressing need for aerial scouts to patrol the seas in the narrow waters of the English Channel and at other important strategic points, it was considered necessary to extend the process, from a limited number of bases, along the whole coast-line and further out to sea. This could only be done by craft having wider range of action and therefore, necessarily, of greater capacity.

For this purpose the Astra-Torres design of envelope was considered to be particularly suited. An envelope having a capacity of 4,000 cu. metres was, therefore, supplied by Airships, Ltd., and provided with a car of novel, but effective, construction. This airship became the prototype of the C.P. ("Coastal Patrol") airships of which a large number were placed in commission during the succeeding year. Modified airships of the same general type—known as the C ("Coastal") and C* ("Coastal Star") classes, having capacities of 170,000 cu. ft., and 200,000 cu. ft., respectively—and all built upon the Astra-Torres system—were subsequently produced.

The C.P., C, and C* airships proved thoroughly satisfactory and carried out very valuable work within the limits of their range. For naval operations upon a grand scale, however, it was necessary to have a still greater range of action, and with this end in view a class of airship having a capacity of 360,000 cu. ft.—also of Astra-Torres design—was constructed. These airships, which proved to be the most effective non-rigid craft ever produced by any nation, were capable of considerable speed and long duration. Their operations could be extended many hundreds of miles from their bases.

The serviceability of these airships, as shown by their performances under most exacting war service conditions—referred to more particularly upon a later page—cannot but be appreciated. The continued adherence of the Admiralty to the Astra-Torres design, through many successive stages of development, shows very clearly the esteem in which the system is held.

Airships, Ltd., have also been very extensively engaged in the manufacture of captive balloons. Spherical balloons were used for observation in the early stages of the war, and were produced by the firm in large numbers, including one having a capacity of 150,000 cu. ft.—the largest spherical balloon ever produced in this country.

Owing to the difficulty of taking accurate observations from spherical balloons, especially in windy weather, the more stable kite-balloon made its appearance at an early stage of the war. The manufacture of these was taken up extensively by the company. At the end of the war Airships, Ltd., were the largest manufacturers of kite-balloons in Great Britain. Kite-balloons of all types have been built, commencing with the "Drachen," and passing through several intermediate types to the Caquot R and M types which have now become the standard balloons for all military and naval observation purposes. Altogether a total of over 1,000 envelopes were produced during the period of the war.

The workshops at Merton, where the envelopes and suspensions are made, are perfectly equipped with the latest machines and appliances. Upwards of one thousand skilled fabric workers and riggers are employed therein. Similarly, the workshops at Hendon are equipped for the manufacture of the planes, rudders, car structures, engines, propellers, etc.

An experimental laboratory provides facilities for testing material and parts, and the company is fortunate in possessing a 7-foot wind-tunnel built upon modern and approved lines. This tunnel enables the wind resistance of airships and parts (represented by scale models) to be measured with extreme accuracy, and experiments relating to aerodynamic stability to be readily performed. It would be difficult to over-estimate the assistance which the designing department receive from constant and intimate contact with practical experiments of this character.

THE USES OF AIRSHIPS.

To those who have been unable to keep in touch with the development of airships during the war, the publication of figures showing the vast amount of flying which has been carried out by lighter-than-air craft, must have afforded considerable interest and food for thought. The impression still exists, even among many who are interested in aviation, that the airship is a frail and impractical craft, incapable of facing average weather conditions and of taking its place beside the aeroplane in the world of Aeronautics. This impression has been fostered by the secrecy which has until recently surrounded the work of Service airships, aided to no small extent by the fact that the operations have been carried out mainly at sea.

The exigencies of war have proved that airships are capable of performing many useful functions which cannot be conveniently or economically carried out by water-borne craft or safely attempted by seaplanes. They have, in fact, a wide field of utility which does not overlap those of the foregoing types of craft.

FACTS AND FIGURES.

During the war the aggregate time spent in the air by British airships was upwards of 80,000 hours, and the total distance covered approximately 2,300,000 miles. These figures speak for themselves as to the utility of airships.



A British Non-Rigid Airship (N.S.7), built on the Astra-Torres principle.

In illustration of the amount of work which may be carried out by one airship, it may be mentioned that one non-rigid ship was in actual commission for a period of two years and seventy-five days. During that time 2,500 hours were spent in the air, and the total mileage flown was 66,000, equal to more than two and a half times the circumference of the globe.

TYPES OF AIRSHIPS.

Airships as constructed to-day fall into two main classes known respectively as the "Rigid" and "Non-Rigid" types. Rigid construction is usefully applicable only to airships of the largest size, that is to say, to those having capacities of a million cubic feet or more. The non-rigid type, at the present stage of development, includes examples ranging from very small two-seater craft up to sizes having a capacity of nearly half a million cubic feet.

When transport by air becomes a regular feature of the world's commerce it is extremely probable that the longer journeys will be carried out almost exclusively by means of large rigid airships, which even at the present stage are capable of carrying heavy loads over distances sufficient to link up the Continents.

THE FUTURE OF AIRSHIPS.

Although the development of airships has been greatly expedited by urgent necessity arising out of a state of war, the airship is not essentially or exclusively an instrument of warfare. In all probability time will prove the airship, like the steamship, to have a wider and more general application to the arts of peace than of war. Attention is drawn to a few, out of many, civic and commercial purposes for which small airships may be employed.

ADMINISTRATIVE.

Closely allied to the purposes for which these airships were originally developed is the work of maintaining police supervision over large areas of land and sea.

In undeveloped regions where it is necessary to hold in check troublesome native races, where the nature of the country, forest or mountain, renders it essential that observation, to be effective, should be carried out near the ground, and from a craft able to remain practically stationary where required—conditions which cannot be met by aeroplanes—and where, moreover, the absence or scarcity of landing grounds renders the use of aeroplanes dangerous and impracticable, the airship is particularly adapted.

Similarly, territorial waters containing fisheries may be effectively protected, by the establishment of an airship patrol, against illicit exploitation by unauthorised persons.

When used for purposes such as the above, the airship—after the usual manner of police organisations—would be lightly armed for moral rather than material effect. The purpose of the craft would be preventive rather than punitive, and the mere presence of the airship would, in most instances, achieve the desired result.

In computing the advantages of using airships for patrol work of the above kind, it should be remembered that an area of half a million square miles can be kept under observation from a single airship base, and any given part of that area may be visited between dawn and dark of an average day.

MARINE SALVAGE.

The phenomena which renders it possible from a height to distinguish objects beneath the surface of the sea or reposing upon the sea-bed, where the depths are not excessive, can be made use of in combination with the ability of an airship to move slowly or remain stationary over a given spot. Used in this way, an airship should be of the greatest value in locating sunken vessels and in facilitating the execution of salvage operations.

For the above and kindred purposes it is extremely desirable that all maritime and colonial nations should possess at least one or two small airships. This policy has already been adopted by important overseas dominions.

SURVEYING AND PROSPECTING.

For the purpose of carrying out survey or prospecting work in undeveloped tracts of country the airship is particularly suited. The ability to move slowly or remain stationary as mentioned above, and to operate in safety at low altitudes, confers upon the airship unrivalled advantages as a platform for optical or photographic observation.

COMMERCIAL USES.

DELIVERY OF MAILS, NEWSPAPERS, ETC.

One of the most important conditions affecting the financial success of any commercial undertaking employing aircraft for transport purposes is the existence, over the chosen routes, of a regular and sufficient volume of traffic. In this respect the carriage of mails and newspapers is nearest to the ideal.

It is not suggested, however, that aircraft can compete with railways where such exist, but there are many parts of the world where railways are either non-existent or have to be supplemented by other slower and more expensive means of transport in order to fulfil the needs of agriculture or mining districts consisting of a large number of widely scattered settlements. In such districts a general business in the transport of parcels and passengers forms a valuable addition to the regular contract work of carrying mails, etc.

The question as to whether aeroplanes or airships should be used for the foregoing purposes would depend largely on local conditions. Apart from these it may perhaps be stated very generally that, while the initial outlay and cost of upkeep are greater with airships than with aeroplanes, the running cost per ton of load carried is considerably less. Consequently where exceptionally heavy traffic over long distances has to be dealt with, the advantage is entirely with the airship.

PASSENGER SERVICES.

For purely passenger work, where other means of transport are unavailable and where speed is not a decisive factor, the airship is generally to be preferred. It gives a feeling of greater security to the average person, and can therefore command patronage from a much wider section of the public.

In an airship comfort can be provided. The interest of journeys may be enhanced by travelling at low altitudes, which enables local objects to be distinguished and prevents the scenery from being robbed of its beauty by the flattening effects of great elevation.

Pleasure trips from inland centres of population to seaside places and short cruises from health resorts where a large number of pleasure-seekers are congregated in a limited area during the holiday season and are prepared to pay relatively high rates for the novelty of travelling in the air can be made to provide profitable employment for airships of moderate size.

PRIVATE OWNERSHIP.

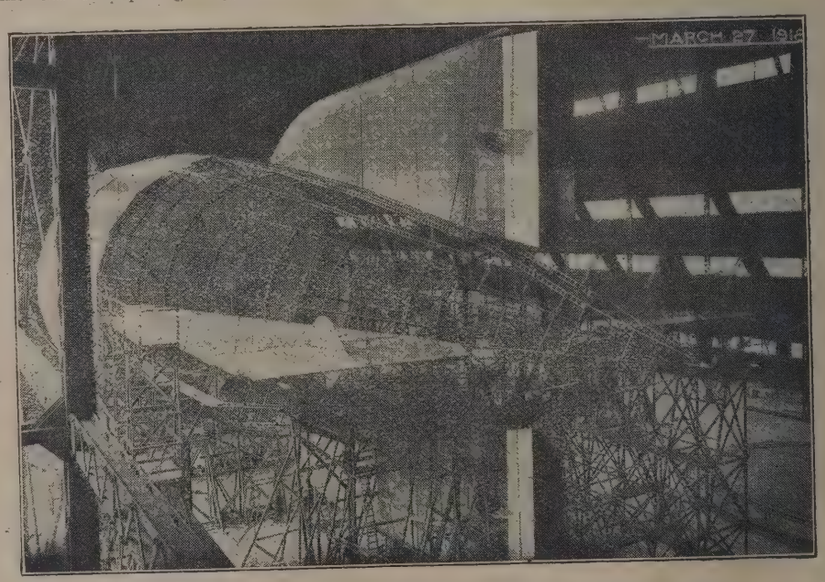
An airship can be suitably constructed and fitted out as an air-yacht, with comfortable state-rooms and appointments to form an excellent alternative or auxiliary to the ordinary yacht. The cost of such a craft compares very favourably with that of a steam-yacht, and would not be prohibitive to those who normally indulge in yachting as a pastime.

PREPARATIONS FOR THE FUTURE.

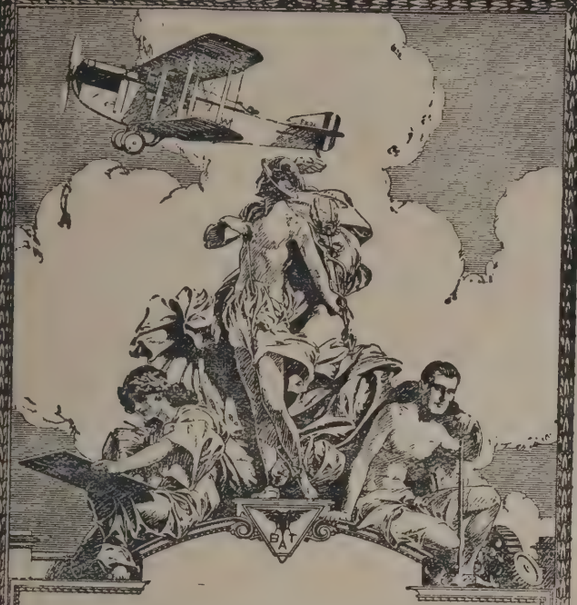
In view of the facts set out above, Airships Ltd. are preparing designs for a series of airships designed to meet the various purposes to which such aircraft may be immediately applied.

The series will range from ships of approximately 400,000 cubic ft. capacity capable of carrying 30 passengers for 800 miles non-stop at 50 m.p.h. down to a ship of more or less the "Blimp" type of 70,000 cubic ft. capacity, capable of carrying a crew of three for six hours' flight at 48 m.p.h., which, converted to the requirements of private ownership, would be eminently suitable for use as a small air yacht.

Airships Ltd. are therefore in a position to supply anyone who is considering the use of airships of small or moderate size for any commercial or private purposes with estimates and designs for types suitable for such use.



The Tail of R31 under construction at Short Bros.' Works, Bedford.



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THE machine illustrated above is the B.A.T., F.K. 26—a dual purpose aeroplane equally suitable as a heavy load mail carrier or a four-seater touring machine. Equipped with a Rolls-Royce Eagle VIII. motor, an average speed of over 120 miles per hour is obtained at a fuel cost of under eightpence per mile.

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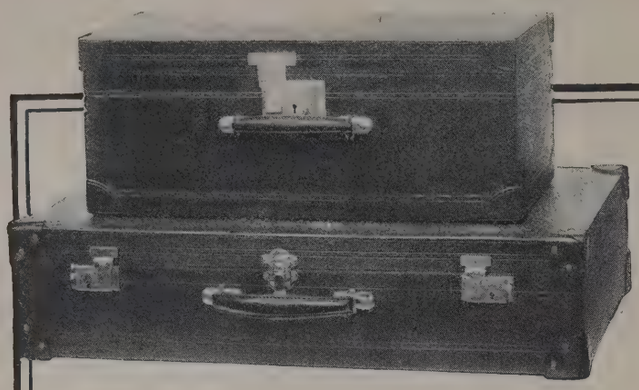
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THE LIFT OF HYDROGEN.

By P. L. TEED (MAJOR, R.A.F.).

The term, "Lift," as applied to airships is equivalent to "buoyancy," and like buoyancy when applied to water-borne ships, it depends on two considerations:

(1) The weight of the ship.
(2) The weight of supporting medium displaced by the ship.

Here the analogy between water and air-borne craft ceases. For, in the case of water-borne ships (other than the submarine), a condition of equilibrium always prevails; if the weight of the ship is increased its displacement is increased, the water line being altered, but a state of equilibrium continues.

The airship, being entirely surrounded by the supporting medium, has no equivalent to the alteration in water-line producing equilibrium. With change in weight of the displaced supporting medium the airship may possess either positive or negative buoyancy.

While the structural weight of the ship remains constant, the weight of medium displaced by the ship is subject to considerable variation.

The following affect the buoyancy:—

(1) The volume of gas in the airship.
(2) The purity of the gas.
(3) The barometric pressure of the air.
(4) The temperature of the air.
(5) The amount of water in the air.

Of the five matters affecting the lift of an airship apart from its volume, the purity of the gas is generally to be taken as the most significant factor, but the combination of temperature and barometric pressure may produce even more important variations.

The maximum purity of hydrogen in an airship does not exceed 98 per cent. by volume, while certain chemical considerations necessitate the deflation of the airship at 80 per cent. by volume.

Under mean atmospheric conditions, viz., temperature 55 deg. Fahrenheit and barometer 29.5 in., the lift of 1,000 cubic ft. of hydrogen at 98 per cent. purity is 69.3 lb., while under the same atmospheric conditions at 80 per cent. purity it is 56.6 lb.—a variation of 12.7 lb. per 1,000 cubic ft. of volume.

Now turning to purely atmospheric effects, 1,000 cubic ft. of 98 per cent. pure hydrogen at a barometric pressure of 31 in. and at a temperature of 20 deg. Fahrenheit gives a lift of 78.3 lb., while an equal volume of gas of the same purity at a barometric pressure of 28 in. and a temperature of 80 deg. Fahrenheit gives a lift of 62.8 lb., a variation of 15.5 lb. per 1,000 cubic ft. of volume.

Having illustrated the variations in lift due to purity and to atmospheric changes, it is perhaps permissible to state that while the lift of 1,000 cubic ft. of hydrogen 98 per cent. pure at a temperature of 20 per cent. Fahrenheit and under a barometric pressure of 31 in. is 78.3 lb., the lift of 1,000 cubic ft. of hydrogen 80 per cent. pure at a temperature of 80 deg. Fahrenheit and under a barometric pressure of 28 in. is 51.2 lb.—a variation of 27.1 lb. per 1,000 cubic ft., which represents the extremes of purity and atmospheric conditions which may easily be met with.

Having dealt with the general principles of lift and illustrated its variations by some examples, the question will now be dealt with in detail.

PURITY OF THE GAS.

It is customary to give the chemical composition of the hydrogen in an airship as so many per cent. pure. This term requires definition.

By the percentage of purity of hydrogen is meant the percentage of hydrogen contained by volume assuming the impurity to be of the same density as air.

Now it will be seen that if the impurity in the hydrogen is air, then since air in air is without weight, the relative lift of equal volumes of impure hydrogen under the same atmospheric conditions is in the same ratio as their hydrogen contents (by volume).

To sum up.—Lift of unit volume is directly proportional to purity.

ALTERATION IN LIFT BY BAROMETRIC CHANGE.

One thousand cubic ft. of pure hydrogen at 30 in. barometric pressure and a temperature of 40 deg. Fahrenheit weighs 5.5 lb. One thousand cubic ft. of dry air under the same atmospheric conditions weighs 79.6 lb. Therefore, on the basis lift is the difference between displaced weight and displacing weight:—

$$79.6-5.5 \text{ lb.} = \text{Lift of cubic feet of pure hydrogen at } 30'' \text{ barometer and } 400^\circ \text{ Fahrenheit,}$$
$$= 74.1 \text{ lb.}$$

Now assume that the temperature remains constant but that the barometer changes to 31 in. Then by the application of Boyle's Law it will be seen that:—

$$79.6\times 31-5.5\times 31 = \text{Lift per 1,000 c.f. of 100\% pure hydrogen at } 31'' \text{ barometer and } 40^\circ \text{ Fahrenheit.}$$
$$= 82.3-5.7$$
$$= 76.6 \text{ lb.}$$

But the above is an unnecessarily complicated way of arriving at the desired result, for the mathematical expression may be simplified to:—

$$= \frac{\frac{31}{30}(79.6-5.5)}{30\ (74.1)} = \frac{31}{30\ (74.1)}$$
$$= 76.6 \text{ lb.}$$

But 74.10 lb. is the lift of 1,000 cubic ft. of hydrogen 100 per cent. pure at 30 in. barometer and 40 deg. Fahrenheit. Therefore the rule may be expressed:—

Lift of unit volume is directly proportional to barometric pressure.

ALTERATION IN LIFT BY THERMOMETRIC CHANGE.

By the direct application of Charles' Law it can be shown that:

Lift of Unit Volume is inversely proportional to the Absolute Temperature.

To summarise the three rules which have already been stated:—

(1) Lift of unit volume is directly proportional to PURITY.
(2) Lift of unit volume is directly proportional to BAROMETRIC PRESSURE.
(3) Lift of unit volume is inversely proportional to ABSOLUTE TEMPERATURE.

From the above the following formula may be deduced to give the lift of 1,000 cubic ft. of hydrogen under any condition of purity, temperature or barometer:—

Lift per 1,000 cubic ft. in lb.—

$$\frac{74.06 \times \%\text{Purity} \times \text{Barometer in inches} \times 500.}{100 \times 30 \times (460 \text{ plus temperature in deg. Fahrenheit}).}$$

$$\frac{12.34 \times \%\ \text{Purity} \times \text{Barometer in inches.}}{460 \text{ plus temperature in deg. Fahrenheit.}}$$

THE TEMPERATURE OF THE GAS.

In the formula which has been given it has been assumed that the temperature of the gas is the same as the temperature of the air—a condition which generally prevails in the airship shed, but during flight there is frequently a material difference in temperature between the two. This difference arises in two ways:—

(1) The effect of the sun on the gasbag.
(2) The effect of a quick descent after flying for a considerable time at a high altitude.

In the first case the sunlight striking the gasbag fabric causes this to rise above the air temperature, the heat being in course of time transferred to the gas itself. The gas then expands in accordance with Charles' Law. Now in rigid airships if the gasbag is not full, or in non-rigid airships if there is air in the ballonets, this expansion will cause a greater volume of air to be displaced and consequently an increase in lift to take place.

For example:—At 40 deg. Fahrenheit and 100 per cent. purity 1,000 cubic ft. of hydrogen weighs 5.5 lb., and 1,000 cubic ft. of air under the same atmospheric conditions weighs 79.6 lb. Hence the lift per 1,000 cubic ft. is: 79.6—5.5 lb. = 74.1 lb.

Now assume that the temperature of the gas rises to 50 deg. Fahrenheit. Its volume instead of being 1,000 cubic ft. will be:—

$$\frac{1{,}000 \times 510 \text{ cubic ft.}}{500}$$
$$= 1{,}020 \text{ cubic ft.}$$

But its weight is still 5.5 lb., although the weight of air displaced is not the same; for instead of 1,000 cubic ft. being displaced, 1,020 cubic ft. are displaced, which weigh:—

$$\frac{79.6 \times 1{,}020 \text{ lb.}}{1{,}000}$$
$$= 81.2 \text{ lb.}$$

So the lift of the original 1,000 cubic ft. of gas becomes:—

$$= 81.2-5.5 \text{ lb.}$$
$$= 75.7 \text{ lb.}$$

This alteration in lift by difference in temperature of the gas may at first sight appear to be of mere academic interest, but in large airships this is certainly not the case.

Take the case of a Zeppelin of 1,250,000 cubic ft. maximum capacity containing only 1,000,000 cubic ft. of hydrogen. The ship is flying in equilibrium when the sun comes out and causes the gas temperature to rise from 40 deg. Fahrenheit to 50 deg. Fahrenheit. Then, as has already been seen, the lift of the gas is increased 1.6 lb. for every thousand cubic ft. of gas in the ship at 40 deg. Fahrenheit; but the volume of the gas was assumed to be one million cubic feet; therefore the lift of the ship will be increased:—

$$1{,}000 \times 1.6 \text{ lb.}$$
$$= 1{,}600 \text{ lb.}$$

This alteration in lift during flight in large airships is of considerable importance, and it is consequently necessary that the pilot should always be acquainted with the relative temperature of the gas and air, for which purpose electric thermometers are now fitted inside one of the gasbags recording in the car.

THE AMOUNT OF WATER IN THE AIR.

Though it may not appear of importance, the humidity of the atmosphere has a certain effect on the lift of hydrogen. The greater the amount of water vapour in the atmosphere the less the weight of unit volume of air, consequently the less the lift of unit volume of hydrogen, for the difference between displaced and displacing weight is less.

This alteration in lift due to humidity is not very material, as it does not generally cause a difference in lift of more than 0.3 lb. per 1,000 cubic ft. of gas. However, in the case of "Lift Trials" some adjustment must be made for humidity of the atmosphere. This adjustment can most easily be made by observing the difference in temperature between the wet and dry thermometer and then employing an empirically compiled table which gives the necessary adjustment per 1,000 ft. of gas.

THE LIFT OF AIRSHIPS.

So far the lift of hydrogen and the phenomena which affect it have only been dealt with. Now the lift of airships will be considered. Before dealing with this, two terms require definition :— one, Available Lift; the other, Disposable Lift.

Available Lift.—Available Lift is the total lift of the gas in the airship.

Disposable Lift.—Disposable Lift is the difference between the available lift and the fixed weight of the airship.

The Disposable Lift is that buoyancy which is available for carrying fuel, oil, crew and ballast.

As will be seen, both the available lift and the disposable lift will vary with temperature, barometer, humidity and purity. Consequently a custom has originated in classifying airships on their available lift, assuming the ship to be 100 per cent. full, with hydrogen 95 per cent. pure, the barometer being 29.5 in., the thermometer 55 deg. Fahrenheit, and the air dry.

From the formula for lift already given, it can be calculated that the lift of gas under these conditions is 67.2 lb. per 1,000 cubic ft. Thus the tonnage of existing classes of English airships are :—

S.S.Z. $\frac{70 \times 67.2}{2,240}$ Tons = 2.1 Tons.

C.P. $\frac{185 \times 67.2}{2.240}$ Tons = 5.55 Tons.

N.S. $\frac{360 \times 67.2}{2,240}$ Tons = 10.80 Tons.

In building airships their disposable lift under the conditions of purity, humidity, barometer and temperature already mentioned is generally specified, but when the disposable lift is taken practically, it is improbable that all, if any, of the specified conditions exist; consequently the practically obtained figure must be converted by simple mathematics to what it would have been had the conditions of the specification prevailed.

To convert disposable lift from one set of conditions to another the following must be known :—

(1) Disposable Lift on the occasion of the trial.
(2) Temperature on the occasion of the trial.
(3) Purity of Gas on the occasion of the trial.
(4) Barometer on the occasion of the trial.
(5) Humidity of the air on the occasion of the trial.
(6) Volume of the gas, or fixed weight of ship on the occasion of the trial.

To take an example, let it be assumed that by practical trial 9 tons was found to be the disposable lift of a million cubic ft. airship, 100 per cent. full of hydrogen 98 per cent. pure, when the barometer was 30 in. the temperature 40 deg. Fahrenheit, and the humidity of the atmosphere negligible. It is required to know what would be the disposable lift under the generally specified conditions, namely 100 per cent. full of hydrogen, 95 per cent. pure, when the barometer is 29.5 in., the temperature 55 deg. Fahrenheit, and the humidity negligible.

The first thing to be done is to determine the total lift on the occasion of the practical trial.

By means of the Lift Formula already given, determine the lift per 1,000 cubic ft. of gas on the occasion of the trial. This will be found to be :—72.6 lb. per 1,000 cubic ft. Now the volume of the ship is known to be one million cubic ft.

Therefore $\frac{72.6 \times 1,000}{2,240}$ tons is the available lift,

$= 32.4$ Tons

Now the disposable lift of the ship was, by trial, 9 tons.

Therefore 32.4—9.0 tons is the weight of the ship = 23.40 tons.

Now by means of formula determine the lift per 1,000 cubic ft. of hydrogen under the conditions of the specification. This will be found to be :—67.2 lb.

Therefore under the conditions of the specification

$\frac{67.2 \times 1.000}{2,240}$ tons is the available lift,

$= 30.0$ Tons

But the fixed weight of the ship was found to be 23.4 tons.

Therefore 30.0—23.4 tons is the disposable lift under specified conditions = 6.6 tons.

In the example which was taken the volume of the ship was known but not its fixed weight. Now let it be assumed that the weight was known but not the volume. Under these circumstances, if in other respects the same problem was to be solved, the procedure would be :—

Determine the lift per 1,000 cubic ft. on the occasion and circumstances of the trial. This would be 72.6 lb. per 1,000 cu. ft.

Now the weight of the ship was known to be 23.4 tons.

Therefore 23.4 plus 9 tons is the available life of the ship = 32.4 tons.

Therefore $\frac{32.4 \times 2240}{72.6}$ thousand cubic ft. is the volume of the ship.

= 1,000 thousand cubic ft. or 1,000,000 cubic ft.

Occasion may arise when it is desired to know the disposable lift of an airship when the conditions of the specifications do not exist and neither the volume nor the weight of the ship is known.

Let it be assumed that on the occasion of the practical trial the disposable lift was found to be nine tons when the ship was 100 per cent. full of gas of 96 per cent. purity, and the barometer was 29.8 in. and the temperature 30 deg. Fahrenheit.

Determine the lift of 1,000 cubic ft. of hydrogen under these circumstances by formula. It will be found to be 72.2.

When this has been done, it is necessary to wait until some of the conditions have altered. Assume on a later occasion that the ship is 100 per cent. full with hydrogen 95 per cent. pure, when the barometer is 28.5 in. and the temperature 60 deg. Fahrenheit. Take the disposable lift, which for purposes of argument will be assumed to be five tons.

Then work out the lift per 1,000 cubic ft. of hydrogen under the conditions prevailing.

This will be found to be 64.4 lb. per 1,000 cubic ft

Between the first and the second trial the disposable lift has altered from nine tons to five tons, and the lift per 1,000 cubic ft. from 72.2 to 64.4 lb.

Now, the difference per 1,000 cubic ft. in lift on the two occasions is : 72.2 — 64.4 lb.

= 7.8 lb.

The difference in disposable lift, 9 — 5 tons

= 4 tons = 8,960 lb.

Therefore, since the fixed weight of the ship has remained constant, $\frac{8.960}{7.8}$ is the volume of the ship in thousands of cubic ft :—

= 1,148.7 thousand cubic ft. or 1,148,700 cubic ft.

The volume being now determined, from the methods already described it is possible to calculate the disposable lift under any conditions whatever.

To summarise, the following are necessary for the conversion of disposable lift :—

Under conditions of lift trial :—

Available lift 100 % full — disposable lift found = fixed weight.

Under conditions to which disposable lift is to be converted :—

Available lift 100 % full — fixed weight = disposable lift.

THE "MAORI 4" SUNBEAM-COATALEN AIRCRAFT ENGINE.

As is fairly well known, the Sunbeam-Coatalen engines, in addition to the work which they have done in aeroplanes, have also been largely used in British airships.

R34 and her sister ships are equipped throughout with the "Maori 4" Sunbeams—which is thus the first aero-engine to have made the return trip from Europe to America and back.

This type of engine is illustrated on page 728, and the following specification gives all its main features.

12 cylinders.
100 m/m bore by 135 m/m stroke.
60 degrees Vee.
4 overhead valves per cylinder.
2 overhead camshafts per block of cylinders, driven by a train of gears.
Volume of cylinders ; 12,270 ccs.
Direct drive to propeller shaft. A flywheel is also fitted to these engines.
Articulating connecting-rod system.
Normal revolutions 2,100 per minute.
275 B.H.P. at normal revolutions of engine.
Approximate weight per h.p. : 3.3 lbs.
4 Claudel Hobson carburetters B.Z.S. 38.
Pressure feed to carburetters.
Ignition is by two 12-cylinder magnetos.
A hand starter and electric starter are fitted.
The exhaust pipes are provided with a special arrangement for water cooling.
The water pumps are of specially large dimensions, and a governor is fitted to the engine to prevent over-running. When the engine speed reaches 2,500, the governor automatically comes into operation, and similarly when the oil pressure falls below 20 lbs. per square inch.



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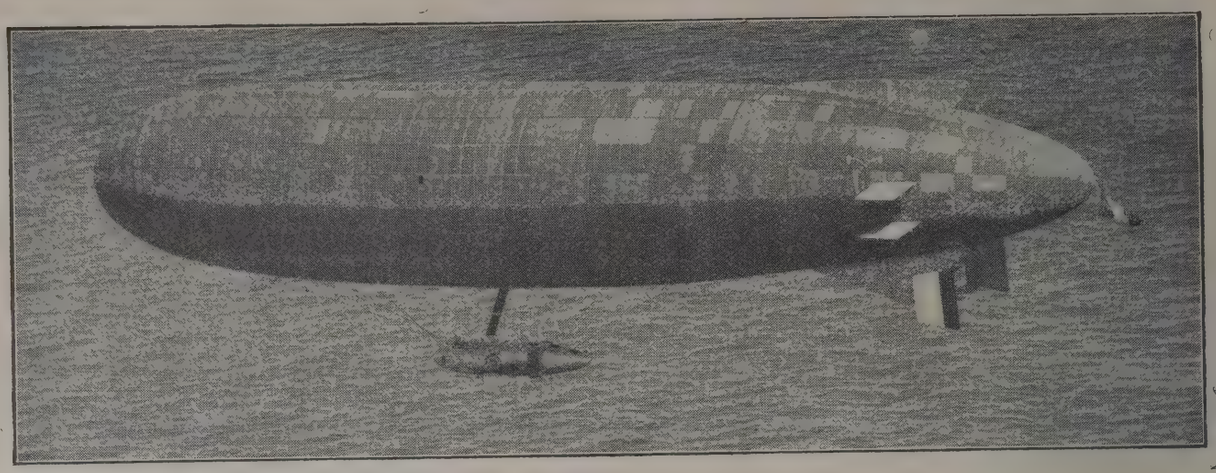
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III.—FRENCH AIRSHIPS.



A French C.M. Class Airship. The arrangement of the tail is characteristically French.

MILITARY AIRSHIP FACTORY (Chalais Meudon).

Construction on a large scale both of non-rigid airships and kite balloons has been undertaken by the Chalais-Meudon establishment, in addition to experimental work and tests.

During the first three years of the war, airships were built for the French Army alone. Notable among these vessels are the "Lorraine" and "Tunisie" (1916), of about 10 tons displacement, and the "Capitaine Caussin" (1917), of nine tons. In their general features, these airships are akin to Zodiac practice of the same period.

The Zodiac system of rigging has been adopted, comprising an external girdle along both sides of the envelope and tangential cables to the car.

In each case the car is short, and constructed of steel tubing. Twin propellers are mounted upon brackets on opposite sides, driven by engines enclosed in the car, through shafts and bevel reduction gears.

Pressure in the envelope is maintained by a power blower in the car, from which air passes up to the ballonets through a vertical pipe.

CHARACTERISTICS.

	"Lorraine" & "Tunisie" (1916).	"Capitaine Caussin" (1917).
Capacity	370,000 cubic ft.	312,000 cubic ft.
Length	305 ft.	267 ft.
Width	50 ft.	46 ft.
Engines and h.p.	2 220 h.p. Clement Bayard	2 240 h.p. Canton Unné
Gross lift	10.6 tons	9.2 tons
Disposable lift	4.4 tons	4.9 tons
Maximum speed	43 m.p.h.	50 m.p.h.
Crew	5	6

THE "T" CLASS.

Following upon the "Capitaine Caussin" in 1917 appeared a smaller type of airship, known as the T.

Six vessels at least were produced of this pattern and taken over by the Navy for anti-submarine patrol duties.

The envelope form of the T class is distinguishable by its extremely high fineness ratio—in the order of 8 : 1. In conjunction with the manner of rigging the car, a short one, close under the envelope, this long envelope must certainly involve the use of an inordinately high internal gas pressure to keep it in alignment. Consequently, the envelope fabric must be heavy, and this is probably the chief reason for the fact that the ratio of disposable lift of this type is low.

The car is streamlined, constructed of duralumin, and provides good protection for the crew. The two power units installed are Salmson Canton Unné engines of 160 h.p. As they are of radial type, it has been possible to economise space and weight by embodying the engines in the framework on opposite sides of the car, each engine facing outboard and driving through shaft transmission and bevel reduction gearing a two-bladed propeller.

CHARACTERISTICS.

Capacity	194,000 cubic ft.
Length	230 ft.
Overall width	46 ft.
Engines and h.p.	2 160 h.p. Canton-Unné
Gross lift	5.4 tons
Disposable lift	1.7 tons
Maximum speed	50 m.p.h.
Crew	5

THE C.M. CLASS.

A non-rigid airship of medium size on the same general lines as the T class, but with a shorter envelope of more conventional shape. The C.M. class was specifically designed for submarine hunting, and towards the end of the war appears to have become the standard French airship for sea patrols.

The car is constructed of duralumin, and is carefully faired throughout. In this respect the method of mounting the twin Canton-Unné engines flush with the sides of the car is noteworthy.

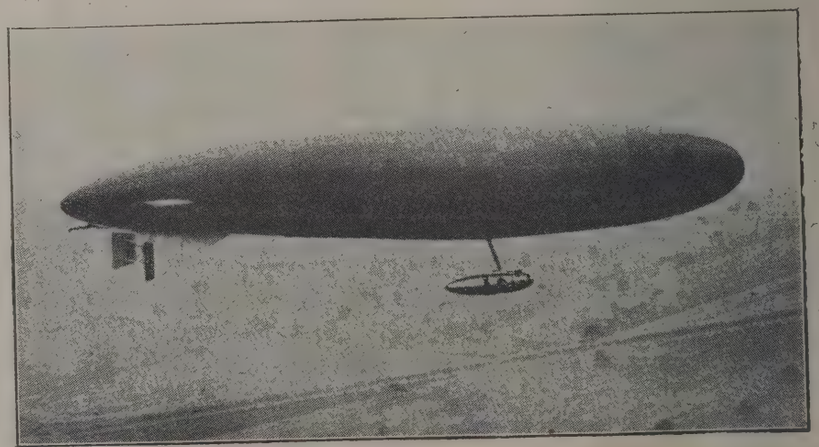
The propellers, carried on outrigger brackets on each side, are driven through bevel gearing by shafts directly coupled to the engines.

A Q.F. gun of light calibre is mounted forward.

Biplane horizontal fins are attached to the tail of the envelope, and a large triangular fin below forms the foundation for the "box" type elevator and rudder control surfaces.

CHARACTERISTICS.

Capacity	176,500 cubic ft.
Engines and h.p.	2—160 h.p. Canton-Unné.
Gross lift	5.2 tons.



A French airship of the "T" class notable for the fineness of its lines.

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THE ASTRA CLASS.

Astra Société de Constructions Aeronautique, 13, Rue Couchot and 121, Rue de Bellevue, Billancourt, Paris.

British representative: "Airships, Ltd," 47, Victoria Street, London, S.W.

This firm was founded by M. Surcouf for the production of ordinary balloons. Constructed early Lebaudys, later Astras, and finally the Astra-Torres type, noted principally for the unique trefoil section of the envelope.

Large vessels built by the firm have been used during the war by the French Government. Vessels with one and two cars have been constructed, of which details are available concerning the sister ships "Alsace" and "Pilatre de Rozieres," built in 1915.

In general appearance these airships are similar to the British N.S. Class.

CHARACTERISTICS.

Capacity .....495,000 cubic ft.
Length .....295 ft.
Diameter .....54 ft.
Engines and h.p. .....2 220 h.p. Chenu.
Gross lift .....14.2 tons.
Disposable lift .....6.5 tons.
Maximum speed .....40 m.p.h.
Cruising speed .....80 m.p.h.
Crew .....6.

LATER TYPES.

Two later types of Astra non-rigid airships of smaller volume were constructed in 1917 for anti-submarine operations. The first vessel of this new series was reported to have a capacity of approximately 210,000 cubic ft. and two 170 h.p. Renault engines.

The second type was somewhat larger, with a capacity of 234,000 cubic ft., giving a total lift of 6.7 tons and a disposable lift of 2.4 tons. With two 200 h.p. Hispano-Suiza engines, this type of airship attained a full speed of 50 m.p.h. and an endurance of 10 hours.

CLEMENT-BAYARD CLASS.

Usines Clement-Bayard, quai Michelet, Levallois-Perret (Seine). (Seine).

The principal products of this firm, before the outbreak of war, were large non-rigid airships, with streamlined shaped envelopes from which was suspended a girder nacelle of great length intended to distribute the load.

ZODIAC CLASS.

Société Francaise des Ballons Dirigeables et d'Aviation Zodiac, 10, Route du Havre, Puteaux, Seine.

The Zodiac Company maintained a fair output of successful airships during the war period.

Two non-rigid airships, built to the order of the French Army during 1915-16, are notable as being the largest non-rigids constructed in recent years. They are the "D'Arlandes" and "Champagne," each of 530,000 cubic ft. volume. When the French Military Airship Service was disembodied, these vessels passed to the Naval authorities.



The Car of a French C.M. Type Airship. The mounting of the Salmson engines should be noted.

A distinguishing feature of Zodiac design is the method of attaching the car suspension cables to the envelope by means of long reinforced fabric girdles attached to the envelope on both sides. Considerable success has been achieved in rigging the car close up to a long, finely streamlined gasbag, despite the natural difficulties of this system. Gas pressure is doubtless high.

The stabilising surfaces of the Zodiac closely resemble those of the productions of the Chalais-Meudon establishment, illustrated in the photographs of the C.M. type airships. In brief, the arrangement consists of a large vertical fin below the tail, carrying box elevators and rudders, with one or more small supplementary horizontal fins attached to the sides of the envelope immediately above.

All Zodiac airships are equipped with a power-driven blower in the car to maintain pressure in the internal ballonets. An air duct, of large diameter, through which the air passes from the car to the envelope, is a recognisable feature of the make.

"D'ARLANDES" AND "CHAMPAGNE."

CHARACTERISTICS.

Capacity .....530,000 cubic ft.
Length .....335 ft.
Diameter .....49 ft.
Engines and h.p. .....2 220 h.p. Zodiac
Gross lift .....15.2 tons
Disposable lift .....7 tons
Maximum speed .....43 m.p.h.
Cruising speed .....32 m.p.h.
Crew 6

LATER TYPES.

"VEDETTE ZODIAC" (1916).

Capacity .....77,600 cubic ft.
Gross lift .....2.23 tons
Engines and h.p. ..... 2 70 h.p. Anzani
Maximum speed (about) ..... 50 m.p.h.

"VEDETTE ZODIAC" (1917).

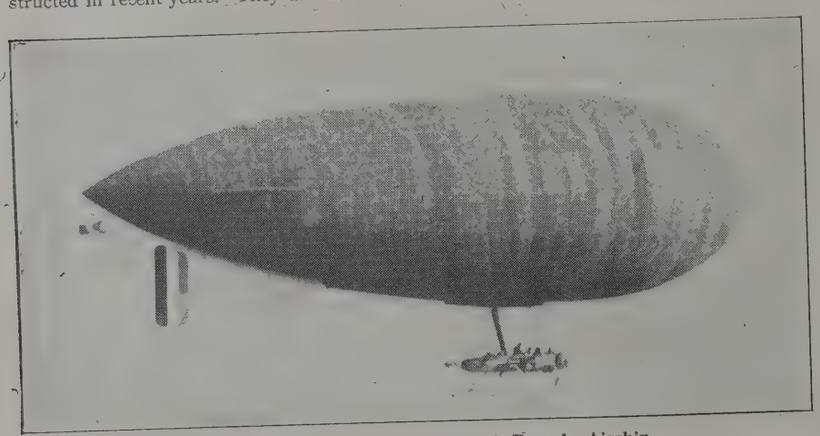
Capacity .....97,000 cubic ft.
Engines and h.p. .....2 60 h.p. Renault
Gross lift .....2.8 tons
Maximum speed (about) .....50 m.p.h.

"ECLAIREUR ZODIAC" (1917).

Capacity .....219,000 cubic ft.
Engines and h.p.
2 220 h.p. Hispano-Suiza
Gross lift .....6.3 tons
Maximum speed (about) .....50 m.p.h.

"CROISEUR ZODIAC" (1917-18).

Capacity .....430,000 cubic ft.
Length .....31 ft.
Diameter .....50 ft.
Engines and h.p. .....2 225 h.p. Zodiac
Gross lift .....13.3 tons
Maximum speed .....47 m.p.h.



The "Eclaireur Zodiac" type of French Airship.

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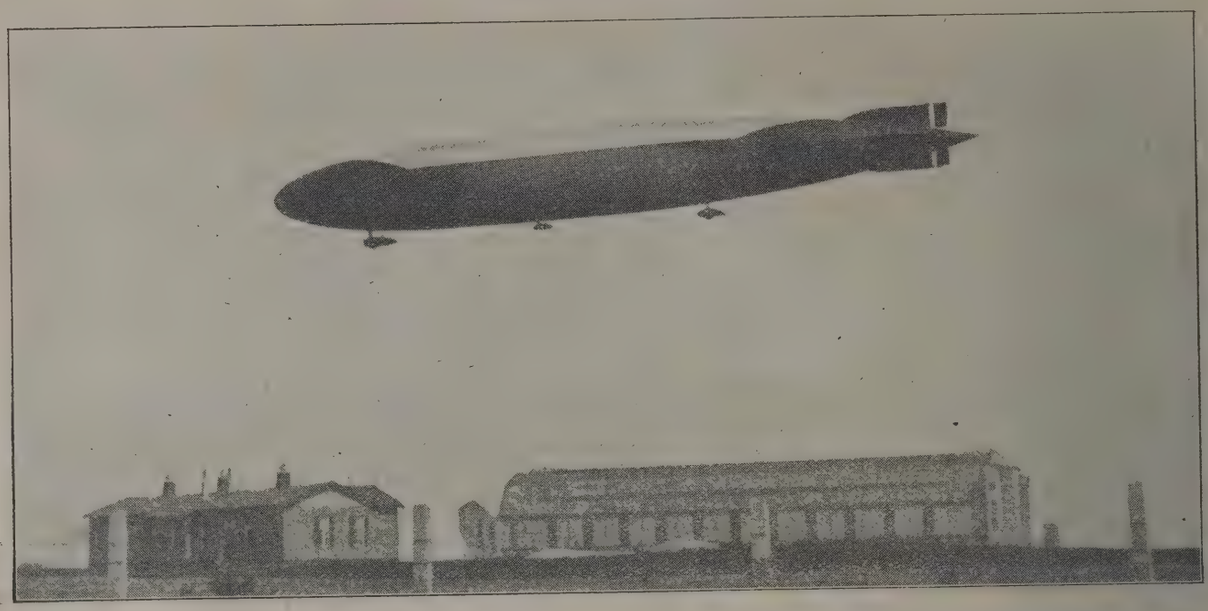
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IV.—GERMAN AIRSHIPS.



One of the German Zeppelins of the "Height-climbing" class. The peculiar painting should be noted. This ship is black below to reduce the effect of searchlights from below and white above to reduce the heating effect of sunshine.

NOTE.—A total of about 120 airships are believed to have been constructed by the Zeppelin Company for the German Army and Navy, and about 20 by the Shütte-Lanz Company for the Navy. The German Military Airship Service was disbanded probably during the summer of 1917, and the few Zeppelins that it then possessed passed to the control of the German Admiralty.

The year 1918 was disastrous to the Naval Airship Service, for in addition to war losses, including the practical extinction of Tondern Station by British aeroplanes and the destruction on her first war flight of the L70, their latest and best vessel, involving the death of Captain Strasser, the Leader of Airships (Fuhrer der Luftshiffe), six Zeppelins of a new type were destroyed by an explosion at Ahlhorn. Thus it happened that at the time of the Armistice only nine airships—all Zeppelins—were in commission and on the active list.

In the stress of the last few months of Germany's war effort, the production of new vessels appears to have been reduced, but that the Germans had by no means lost faith in rigid airships is shown by the fact that designs had been prepared for Zeppelins of much larger size and greater capabilities than any others yet constructed.

The capacity of these vessels would probably have been somewhere in the region of 5,000,000 cubic feet, and the "ceiling" of the projected vessels would undoubtedly have been very much higher than the 22,000 feet already attained. It is therefore possible that raiding might have again become a practical proposition, though this work was never regarded as the primary function of the German Airship Service—sea reconnaissance was the most important of its duties.

ZEPPELIN CLASS.

The Zeppelin airship in commission at the close of hostilities belonged chiefly to what is known as the long-range class, with the possible exception of one or two training airships, and the L71, which was the second vessel recently constructed of a new and improved class. Included with the training ships may have been the famous L14, on which many notable Zeppelin pilots learned their art, a vessel built in 1915 that established a tradition of its own for charmed longevity, and was still heard of well towards the end of the war.

From the appended table of dimensions and performance may be gathered the progress of Zeppelin development from L1 to L70 of the naval classes, and the following notes furnish additional particulars of the airship latterly employed.

ZEPPELIN L40 (HEIGHT-CLIMBING) CLASS.

Airships of this class were constructed in 1917. The capacity (2,000,000 cu. ft.), overall dimensions, and general arrangement were almost identical with those of the previous L30 Class, and, as these features also recur, without material variation, in the British R33 Class, a detailed enumeration is unnecessary.

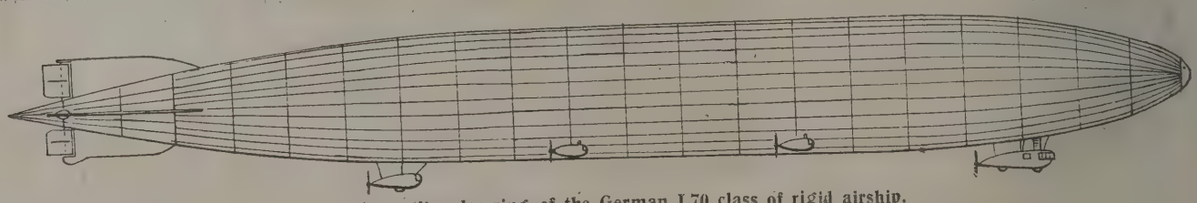
With the object of saving weight, however, many improvements were introduced in the construction of the hull, and it may be said that the process of lightening was carried to such a point that these airships were capable of the highest performance with safety only at great altitudes where the aerostatic and aerodynamic forces experienced are less—e.g., at roughly 16,000 feet the principal stresses on a rigid airship are nominally halved.

The truss system of stiffening the main circumferential girder frames was modified and lightened and minor economies in weight were effected wherever possible. The gondolas were made considerably smaller and more attention paid to reducing their air resistance by streamlining. This development applied principally to the forward gondola, but it was also evidenced in the wing gondolas, as is shown in the accompanying photographs of the wreck of the L49.

The engines installed were five 240 h.p. Maybachs distributed as in the case of R33—one in the aft section of the forward gondola, one in each of the twin "wing" gondolas, and two in the sternward gondola. A full speed of 62 miles per hour was attained by these airships, which were capable of a static climb to 21,000 feet. In the raids on Britain a load of bombs was carried amounting usually to about 2½ tons.

ZEPPELIN L57 (LONG-RANGE) CLASS.

These airships, commissioned late in 1917 and early in 1918, probably comprised L57 to L65, and were 50 ft. longer than the above-mentioned L40 class, but not otherwise dissimilar in general appearance.



An outline drawing of the German L70 class of rigid airship.

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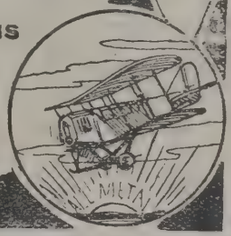
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The gas capacity was increased to 2,200,000 cubic ft. and the extra lift so secured, supplemented by a further addition in disposable lift effected by certain improvements in design, resulted in a better all-round performance.

Four streamlined gondolas, similar to those of the "height-climbing" class, were fitted, but in place of the 240 h.p. Maybach engine the newly-developed 300 h.p. engine of the same make was adopted, five engines being installed as before. Thus the power was increased to a total of 1,500 h.p. and the speed to 65 miles per hour.

Many long flights were accomplished by Zeppelins of this class, including an attempt to fly from Jamboli (Transylvania) to East Africa with 12 tons of medical stores. The airship was ordered back by wireless and landed at her base after covering about 3,000 miles.

ZEPPELIN L70 CLASS.

Two vessels of a new type, L70 and L71, were commissioned in 1918, L70 meeting destruction by British Naval forces in August of that year. They were the largest, most powerful, and most efficient airships ever built. Possibly L71 may fly again under another flag.

In size these airships retained the same dimensions as their predecessors of the "long-range" class, the length being 693 ft., diameter 79 ft., and capacity 2,200,000 cubic ft. The gross lift was 66.64 tons, and the disposable (useful) lift 38.84 tons, which, although this type of craft was very heavily engined, amounted to more than 58 per cent. of the total lifting capacity.

The design, whilst displaying no fundamental departure in principle from precedent, represents the highest standard of development yet achieved. It was the product of 12 years of effort on the part of the Zeppelin designers.

A point of recognition was the number of the gondolas, of which there were six, an addition of two "wing" gondolas, making four in all, having been occasioned by the greater number of engines installed, as compared with former classes.

The gondolas thus comprised one double gondola forward containing, in separate sections as is usual, the controls, W/T and an engine, an after gondola containing the auxiliary control position and two engines, and four "wing" gondolas, each with one engine, arranged in two pairs spaced at equal intervals intermediately.

The engines, seven in number, were the Maybach 300 h.p. type, giving a total of 2,100 h.p., with which a full speed of 77.6 miles per hour was obtainable.

Flying at an economic speed of 45 miles per hour, the L70 class of airship was capable of cruising for nearly eight days, covering 8,000 miles in still air.

THE DEVELOPMENT OF NAVAL ZEPPELIN AIRSHIPS, 1912-1918.

In the following table an attempt has been made to demonstrate the progressive growth in size and performance of the Naval types of Zeppelin airships.

A considerable number of Military airships and a few passenger models were produced in the early days of development, with a consequent diversity of characteristics.

As, however, the Naval models during this period were generally similar in dimensions to their contemporaries, it is convenient to confine the figures to the Naval types, as representative of the whole.

Information concerning certain of the Naval series is scanty, and various recorders of Zeppelin data give divergent figures in some instances. There is no means at the present of securing absolute accuracy, and therefore certain of the values in the table below may be incorrect. Generally, they can be accepted as being not far from the mark, erring, if at all, on the side of underestimation.

	1912 L1.	1913 L2.	1914-15 L3—L8.	1915 L11—L19.	1916 L20—L24.	1916 L30—L39	1917 L40—L56	1918 L57—L65.	1918 L70
Capacity, cu. ft.	882,500	918,000	1,059,500	1,130,000	1,235,500	2 000,000	2 000,000	†2,200.000	†2,200 000
Length, ft.	495	525	525	561	561	643	643	693	693
Diameter, ft.	52.1	54	60.7	60 7	66	78.75	78 75	79	79
Gross lift, tons	25.9	28	32	34.3	40,2	59.5	59,5	66.4	66.4
Disposal lift, tons	8 7	8.9	—	15.7	—	27	30.5	—	38.8
Cars	2	3	2*	2*	2*	4*	4*	4*	6*
Engines, No. and h.p.	3—180 h.p. Maybach (540)	4—180 h.p Maybach (720)	3—180 h.p. 1—240 h p. Maybach (780)	4—220 h.p. Maybach (880)	5—220 h.p. Maybach (1,100)	6—220 h p. Maybach (1,320)	5—240 h p. Maybach (1,200)	5—300 h.p. Maybach (1,500)	7—300 h p. Maybach (2,100)
Airscrews	For'd 2-2 Bl. Aft. 2.4 Bl,	4—4 Bl. "Wing"	4-2 Bl. "Wing"	2—2 Bl Pu her 2—2 Bl. "Wi g"	2—2 Bl. Pusher 2—2 Bl. "Wing"	4—2 Bl. Pusher 2—2 Bl. "Wing"	4—2 Bl. Pusher	4—2 Bl. Pusher	6—2 Bl. Pusher
Crew	16	17	18	18	18	22	22	†22	30
Speed (full), m.p h.	47	49	50	55	59	60	62	†63	77.6
Height (Maximum static rise)	—	6,000	9.000	10,000	11,500	14,000	21,000	22,000	20,900
Endurance (full speed), hours	—	13	14	25	30	54	46.3	†65	55
Endurance (cruising speed), hours	30(Endurance test)	20	26	60	†67	116	92.5	†150	177

* Forward car divided into two separate sections. † Estimated.

V.—ITALIAN AIRSHIPS.

NOTE.—The majority of the Italian airships are officially designed and built, or procured, by the "Stabilimento Construzioni Aeronautica" at Rome, which is the aircraft factory of the Italian Government, and provides airships and kite balloons to both the Naval and Military authorities. The official designs emanate from the Institute Centrale dell' Aeronautica adjoining the works.

It is necessary to explain that the semi-rigid in Italy has been developed on two distinct principles. Firstly, there is the official design, having as its characteristic a keel composed of a number of separate rectangular sections, constructed of steel tubing, which are ball-jointed together so that the whole is free to bend in a vertical plane, whilst constituting a beam for the purpose of distributing the suspended weights of the car evenly along the envelope.

The correct shape of the envelope in this design is partially dependent upon internal gas pressure, but the head of pressure necessary is very considerably less than in a non-rigid airship. Consequently, a lighter fabric can be used, and, in the aggregate, sufficient weight may be saved to compensate for the weight of the keel system.

The second principle is represented by the Forlanini and in lesser degree by the Usuelli. In these airships the keel is a rigid beam which distributes the suspended weights in a similar manner. The Forlanini design has merit in this respect, but it lacks the advantages derived from the flexibility of the official type.

STABILIMENTO CONSTRUZIONI AERONAUTICA.

Four primary classes of airships (excluding the D.E. class) were projected—viz., the Piccolo (P)—small Medium, (M)—medium, the obsolescent Veloce (V)—fast, and the Grande (G)—large. The latter, a proposed rigid airship, was abandoned during the war, and a large semi-rigid, known as the A class, was introduced in its stead.

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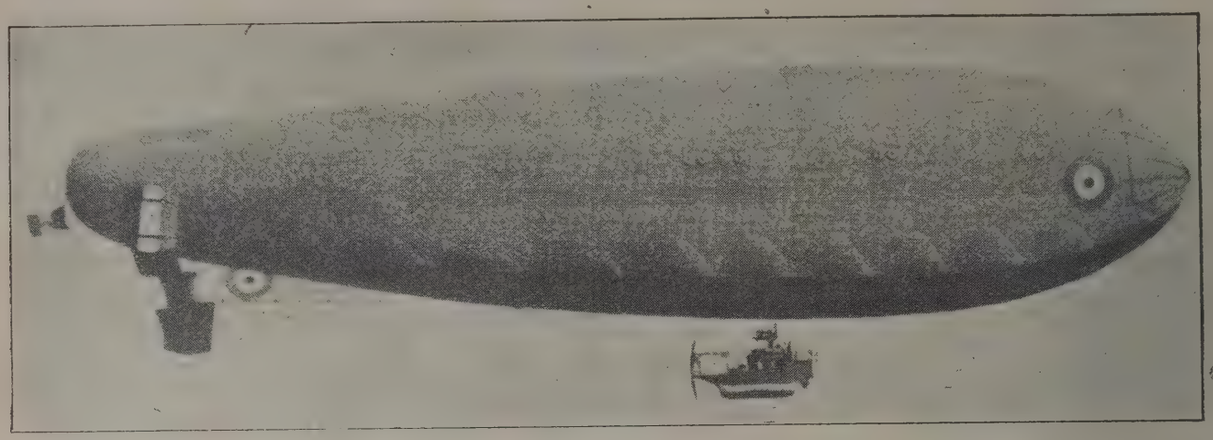


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An Italian Ship of the "M" Class.

P and P-VELOCE CLASSES.

These are old and obsolescent airships, now mostly used for instruction. In general appearance they are similar to the D.E., M and V types, and represent the intermediate size between the two first-mentioned models.

The P is the earliest of the official Italian designs. Two 75 h.p. Fiat engines are installed, which are usually carried on outrigged bearers like those of the S.S. Twin. With these engines a speed of 40 m.p.h. is obtained.

The P-Veloce is the same type of airship fitted with two 225 h.p. Fiat engines. As it attains a maximum speed of 56 m.p.h., it is the fastest of all Italian airships, except, perhaps, the latest Forlanini vessels. Its range of action is limited.

CHARACTERISTICS.

(Common to P and P-Veloce).

Capacity	176,500 cubic ft.
Length	203 ft. 6 in.
Width	39 ft.
Height	70 ft. 6 in.
Gross lift	5·4 tons
Crew	3

M CLASS.

During the war the M type has undergone considerable modification, and the following notes must be taken to refer to the improved type now being built with two, three, and perhaps four engines. Two engines apparently constitute the standard.

The envelope is divided by diaphragms into six gas chambers, each fitted with two valves. A ballonet extends internally from the bow to near the tail, and is joined to the lower part of the envelope on either side of the keel. At the forward end the ballonet encloses a valve in the extreme nose, the entrance of air being regulated by shutters on the principle of a Venetian blind.

Perforated diaphragms are inserted in the ballonet. Whilst permitting air to pass, these serve to check the tendency of the air to surge towards the lower end when the airship is inclined.

The keel (sectional hinged type) is attached at the bows to a radial nose-stiffening framework, and at the stern forms the foundation for the attachment of a large vertical stabilising fin and the control planes. A narrow fin is attached to the top of the envelope.

The weight of the car is communiated from the keel to the envelope by means of parabolic wires sewn into the envelope between each keel-joint. Also, circumferential bands pass round the envelope at each of these places, and internal wires connect the keel to two longitudinal canvas girdles along the top of the envelope—producing a small lobe in the centre.

A gun platform is provided above the bows.

The car is short and bulky. Two engines are carried in bearers on the sides of the car, each driving a propeller at the rear through long shafting. These propellers are of variable and reversible pitch. In certain of the illustrations of an M-type car, a third engine is shown mounted on a gantry above the others.

CHARACTERISTICS.

Capacity	441,000 cubic ft.
Length	265 ft.
Width	59 ft.
Height	89 ft.
Engines and h.p.	2 280 h.p. Itala
Gross lift	13.8 tons
Crew	5

V CLASS.

Following the advent of the M class, a limited number of larger semi-rigids were built to a new design, known as the V. It appears that the development of this type has lapsed, and some of its proved good points have been incorporated in a revised model of the M.

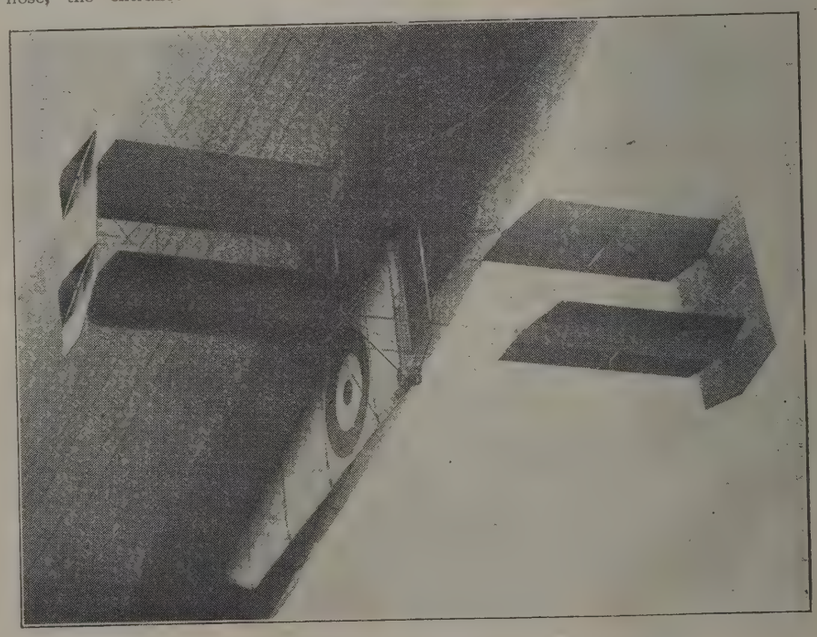
The V is distinguishable from other Italian airships of the official series by the absence of a long, single vertical fin below the keel. In lieu thereof it has two small triangular fins and larger vertical control planes. A long top fin is also fitted.

CHARACTERISTICS.

Capacity	553,000 cubic ft.
Length	287 ft.
Width	62 ft. 4 in.
Engines and h.p.	4 130 h.p. Itala
Gross lift	17 tons
Maximum speed	51 m.p.h.

D.E. CLASS.

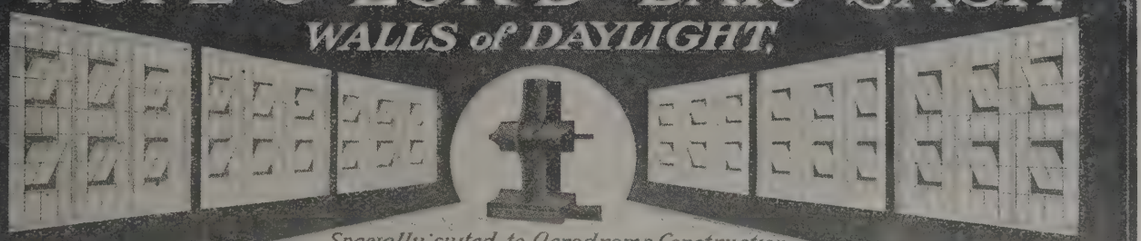
The Dirigible Exploratore type of semi-rigid airship was produced chiefly for submarine hunting, and corresponds in size and functions with the British S.S. Zero type. It is interesting as demonstrating that the semi-rigid prnciple can be success-



The Tail Surfaces of an Italian Airship of the M Class.

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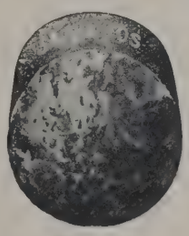
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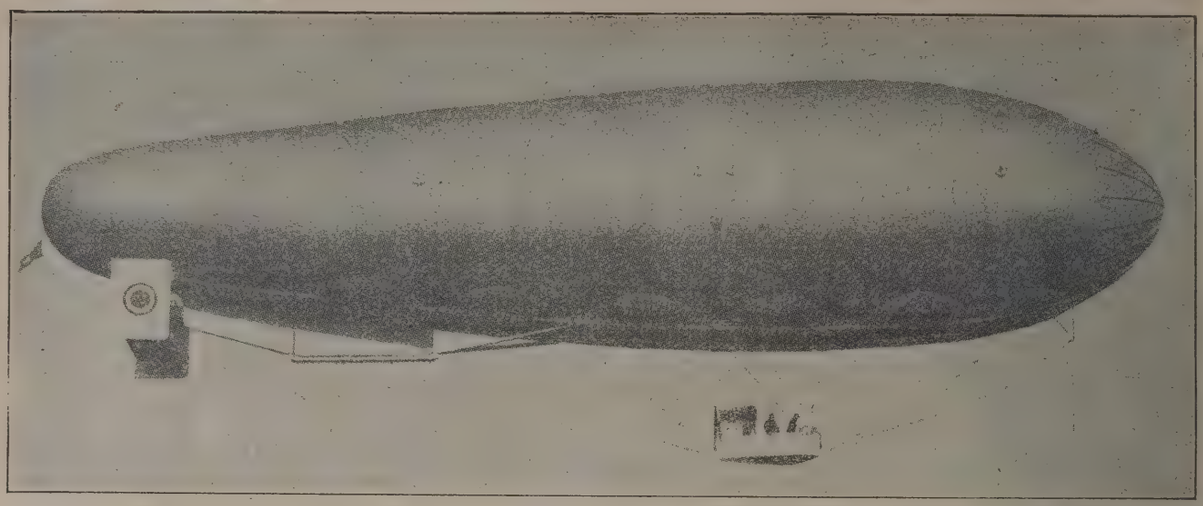
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fully applied to an airship of so small a capacity as 100,000 cubic ft.

The envelope is divided by fabric diaphragms into four gas compartments, to reduce the loss of gas in case of localised damage. One long air-ballonet extends along the inside of the envelope, above the keel. A shutter valve in the nose of the airship (where pressure is relatively high) admits air to the ballonet.

At the after-end of the keel is attached a long stabilising fin, which forms the perpendicular of a number of triangular frames. The control planes are of "box" type, fitted at extremity of this fin.

In each of the above features, the D.E. is representative of the officially designed types.

The car is short and, although roomy, appears to afford little comfort for the crew. A Fiat engine of 100 h.p. is mounted on a gantry above the car, and drives directly a propeller of conventional pattern.

CHARACTERISTICS.

Capacity	92,000 cubic ft.
Length	159 ft.
Width	34 ft. 6 in.
Height	55 ft. 9 in.
Engines and h.p.	1 100 h.p. Fiat
Gross lift	2.8 tons
Maximum speed	42.5 m.p.h.
Crew	4

FORLANINI CLASS.

Manufacturers: La Società Leonardo da Vinci. Offices: Via Baccacio 21, Milan.

Although limited in number and use, the semi-rigid airships built by the Società Leonardo da Vinci, near Milan, to the designs of Enerico Forlanini, have developed very considerably in size and capabilities during the war. The latest projected model, when completed, will be the largest airship, other than of the rigid type, in existence.

Generally, the following characteristics are typical of all airships of Forlanini design:—

A rigid triangular steel girder constructed of light steel tubing, lattice fashion, extends internally from end to end, along the bottom of the envelope.

The gas is contained in a compartmented gasbag (usually with 12 gas chambers) from which the lift is transferred directly to the top of the keel girder evenly along its length. The whole is surrounded by an outer cover of silk, and the ring space between the inner and outer envelopes constitutes the air ballonet of the airship. Air enters through a valve in the nose.

The car is attached rigidly to the keel, and encloses the control cabin and two or more engines. Two variable pitch propellers are mounted on brackets on the sides of the car and driven through shafting and bevel gears.

A peculiar feature is the installation of a small air compressor actuated by shafting from the engines. From a receiver, air is available at different pressures for operating the gas valves, for the petrol system and for inflating the bumping bags under the car.

In the case of the F3, it is stated that biplane elevators are fitted on the sides of the car to increase the dynamic lift of the airship. The "box" control planes of this vessel comprise ten rudders and eight elevating planes attached to a large fin below the tail end of the keel.

Characteristics of Forlanini Airships.

An indication of the development of the Forlanini vessels from the beginning is furnished by the following table:—

	F1. Leonardo da Vinci.	F2. Citta di Milano.	F3.	F4.	F5.	F6.	*F8.
Capacity, cu. ft.	115,250	416,500	487,000	487,000	628,000	628,000	990,000
Length, ft.	132	238	297	297	295	295	361
Width, ft.	46	59.4	59.4	59.4	65.6	65.6	75.5
Engines and h.p.	40 h.p. Antoinette	2—85 h.p. Isotta-Frachini (170)	4—100 h.p. Fiat (400)	2—160 h.p. (320)	2—240 h.p. Fiat (480)	4—240 h.p. Fiat (760)	4—350 h.p. (1,400)
Gross lift, tons	3.32	12	14	14	19.1	19.1	30
Disposable lift, tons	—	—	—	—	9.55	9.36	15.04
Max. speed (sea level) m.p.h.	31	40	46	45	43.5	45.8	49.7
Max. speed (at 13,000 ft) m.p.h.	—	—	—	—	49.7	55	62.2

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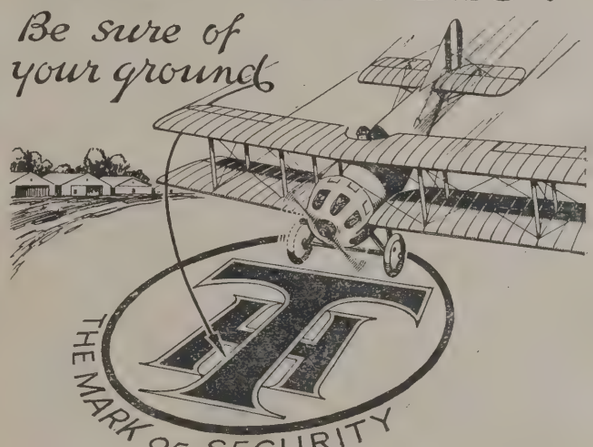
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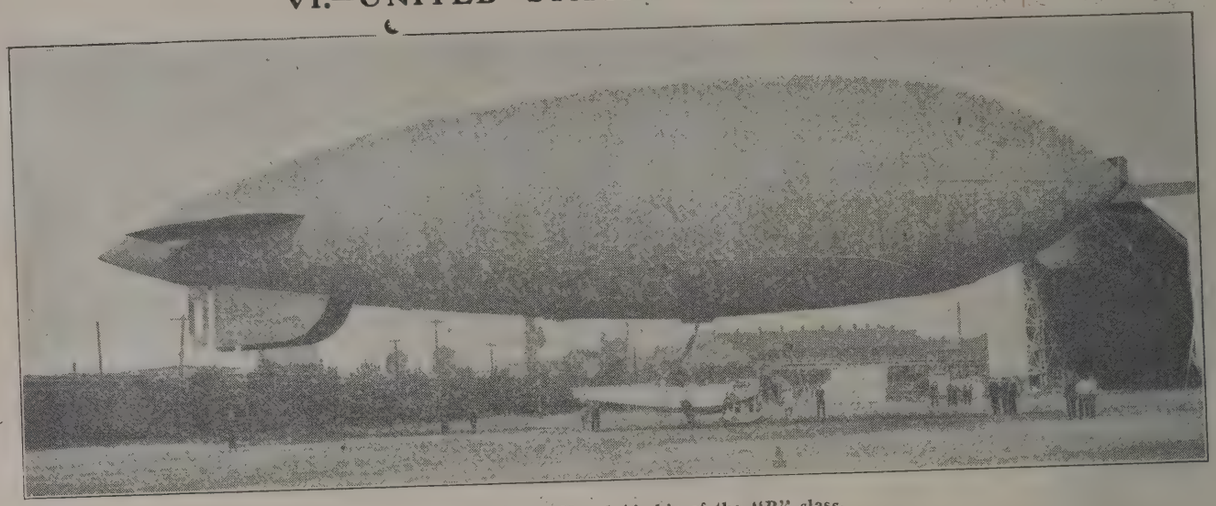
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VI.—UNITED STATES AIRSHIPS.



A United States Naval Airship of the "B" class.

NAVAL AND MILITARY

A large number of non-rigid airships of diverse types were constructed in America during the last year of the war, mainly for the purpose of submarine hunting. The designs were prepared by the Bureau of Construction and Repair, Navy Department, and contracts placed with the Goodyear Tyre and Rubber Company, Akron, Ohio; the B.F. Goodrich Company, Akron, Ohio; and the Connecticut Aircraft Corporation. Since the declaration of armistice it has been announced that the American Navy will continue to devote money to the development of lighter-than-air craft, and proposals have been published for the construction of three or four rigid airships and a considerable number of new non-rigids.

In addition, the Balloon and Airship Division of the Department of Military Aeronautics contemplates the building up of a fleet of small, single-engine airships of the non-rigid type, which it is intended to use for fire control work, and also in connection with coast fortifications and military liaison duties.

An initial order for six airships of about 75,000 cubic ft. has been let, one half in the U.S.A. and the others in Europe.

COMMERCIAL.

Various schemes are on foot to start the construction of commercial airships, but nothing definite has as yet been accomplished.

The Goodyear Tyre and Rubber Company have completed the designs for a 750,000 cubic ft. airship of the semi-rigid type, reminiscent of Forlanini practice, which is to be 400 ft. long, 65 ft. in diameter, and is to be driven by two 450 h.p. engines. Accommodation is provided for twenty-four passengers, and the endurance at 60 m.p.h. is estimated at 2,000 miles. This ship has been designed for trans-continental transport.

The Connecticut Aircraft Corporation have tentative plans for the construction of a 300,000 cubic ft. airship of the non-rigid type, with belly-band rigging. This airship is to accommodate twenty passengers, and be fitted with two engines totalling 400 h.p. A maximum speed of about 60 m.p.h. is expected. The engines will be located in separate cars, rigged forward and aft, while the passenger car will be located amidships.

The B.F. Sturtevant Company, which has had some experience with light structures by building vanadium steel aeroplanes to Grover C. Loening's designs, is investigating the possibility of building rigid airships and operating them for passenger transport between New York and Chicago.

B CLASS (NAVAL).

Submarine Scout Airships.

B1—B33 (1917-1918). Built by Goodyear (24), Goodrich (7), and Connecticut Aircraft Company (2).

A small type of non-rigid airship, proportional in size to the British S.S. class. Capacity, 75,000 to 84,000 cubic ft.

The envelope design is conventional. Tangential rigging is employed for the car suspension, the attachment of the cables to the envelope being effected either by a rigging girder or by finger patches.

Air is supplied to the ballonets by a power blower in the car or, alternatively, by a blower pipe interposed in the propeller slipstream.

The arrangement of the stabilising fins varies. A horizontal fin is attached on either side of tail, and in some ships two vertical fins are placed on the under side; on others, one vertical fin is placed above and one below. All control planes are balanced.

The car follows the lines of a tractor aeroplane fuselage, with accommodation for a crew of two. Floats are provided on the landing carriage to permit of a descent upon water.

Characteristics.

GOODRICH TYPE A. (Rigging by belly-band.)	CONNECTICUT TYPE B. (Rigging by belly-band.)
Volume ..... 80,000 cubic ft.	75,000 cubic ft.
Length ..... 167 ft.	156 ft.
Width ..... 33 ft.	35 ft.
Height ..... 50 ft.	45 ft.
Total h.p. 100	
Engine ..... Curtiss OXX-2	Hall-Scott A-7a
Airscrew ..... 1 tractor	
Full speed ..... 50 m.p.h.	44-47 m.p.h.
Full speed endurance ..... 10 hours	
Rate of climb ..... 700 ft. per min.	
Static ceiling ..... 7,000 ft.	

GOODYEAR TYPE F (12). (Rigging by finger patches).	GOODYEAR TYPE FA (12). (Rigging by finger patches).
Volume ..... 77,000 cubic ft.	84,000 cubic ft.
Length ..... 160 ft.	163 ft.
Width ..... 31.5 ft.	31.5 ft.
Height ..... 45 ft.	45 ft.
Total h.p. 100	100
Engine ..... Curtiss OXX-2	Curtiss OXX-3
Airscrew ..... 1 tractor	1 tractor
Full speed ..... 45 m.p.h.	49 m.p.h.
Full speed endurance ..... 10 hours	
Rate of climb ..... 700 ft. per min.	
Static ceiling ..... 7,000 ft.	

C CLASS (NAVAL).

C1—C15 (1919 and building, nine by Goodyear and six by Goodrich).

Coastal patrol airships designed for escort duties and submarine hunting.

These airships are not remarkable for any particular features, apart from demonstrating the practicability of applying the patch system of suspensory attachment to non-rigid airships of fairly large size. Finger patches are used in the Goodyear airships, and horseshoe patches in those built by the Goodrich Company.

The envelope has the same silhouette as that used for the British non-rigid airships, and is laid out upon analogous lines.

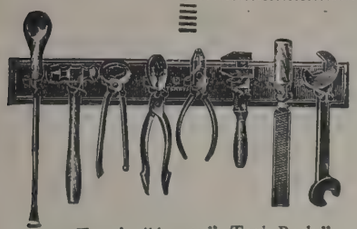
A large car is fitted with two engines mounted upon outrigger bearers towards the forward end, and twin propellers. Ample accommodation for the comfort of the crew is provided.

The air supply system for maintaining pressure in the ballonets consists of two blower pipes in the wake of the propellers. The bore of these pipes appears to be small, in view of the size of the airship, probably indicating a slow rate of descent.

A point of recognition is the large single vertical fin under the hull.

Characteristics.

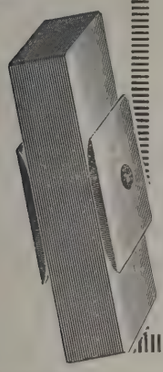
Volume	170,000 cubic ft.
Length	190 ft.
Width	43 ft.
Height	54 ft.
Total h.p.	300



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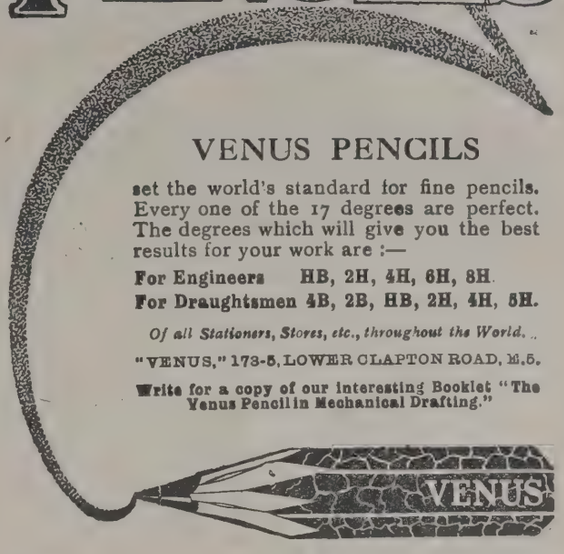
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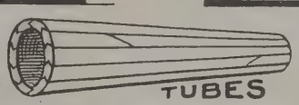
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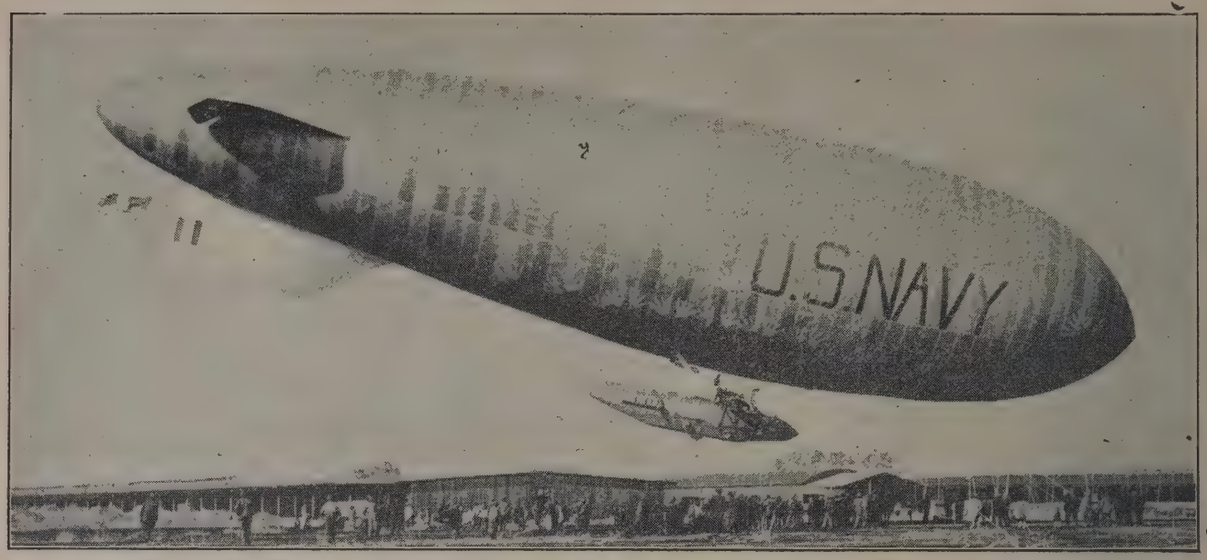
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A "C" type Airship belonging to the U.S. Navy.

Engines	Two 150 h p Hispano-Suiza.
Airscrews	2.
Full speed (alleged)	60 m.p.h.
Full speed endurance	10 hours.
Rate of climb	1,000 ft. per min.
Static ceiling	8,000 ft.
Complement	4

D CLASS (NAVAL).

D1—D8. Building or to be built, five by the Goodyear Tyre and Rubber Company, Akron, Ohio, and three by the B.F. Goodrich Company, Akron, Ohio.

Medium-sized airships of the non-rigid type, intended for coastal patrol duties.

As in the case of the C class, the suspensory rigging is attached to the envelope by stuck-on patches.

CHARACTERISTICS.

Volume	180,000 cu. ft.
Length	198 ft.
Width	43 ft.
Height	54 ft.
Total h.p.	250
Engines	Two 125 h.p. 6-cyl. Union
Airscrews	2
Full speed (alleged)	60 m.p.h.
Full speed endurance	12 hours
Rate of climb	1,000 ft. per min.
Static ceiling	8,000 ft.
Complement	4

Description.—Non-rigid type, trimmed by ballonets; external rigging. to finger patch (Goodyear) and horseshoe patch (Goodrich). Designs of the Bureau of Construction and Repair, Navy Department.

E CLASS (NAVAL).

A refinement of the Submarine Scout class of small non-rigid airship. Actual figures as to the size of this type are not available, but it is presumed to be about 100,000 cu. ft.

The design of the envelope and the system of car suspension is based upon standard practice.

A point of interest is the large area of the balanced rudder and elevators, the shape of which is also distinctive. A top fin is fitted.

An air blower pipe in the slipstream of the propeller conveys air to the ballonets, and for use in emergency a power-driven blower is installed in the car.

The car has clean lines and is arranged much in the same way as a "pusher" aeroplane nacelle. An undercarriage, equipped with floats, is fitted at the after end, and under the nose of the car there are two small bumping bags

The engine is a 150 h.p. Thomas.

OTHER COUNTRIES.

Beyond the nations hereinbefore mentioned none have carried out any airship work of note.

Japan is known to have possessed at one time a curious experimental airship of native design, and it is distinctly likely that during the late war she may have acquired small airships of Allied make and have reproduced them.

Otherwise, so far as can be discovered, the rest of the world has been absolutely inert in the matter of airships.



An Airship of the U.S. Navy's E class.

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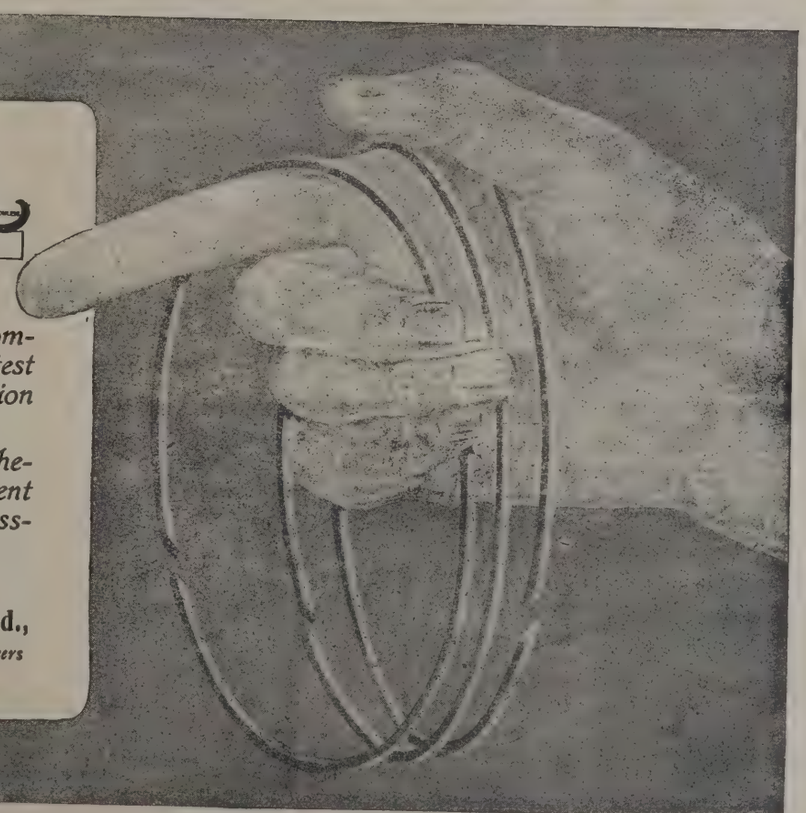
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COMMERCIAL AERONAUTICS & CIVIL AERIAL TRANSPORT

NOTES OF THE WEEK.

GREAT BRITAIN.

THE OFFICIAL VISIT TO HOLLAND.

Sir Frederick Sykes, K.C.B., C.M.G., Controller-General of Civil Aviation, left Felixstowe for Amsterdam on Aug. 12th by flying-boat. The boat arrived at Amsterdam after a flight of one hour 55 minutes.

Sir Frederick officially visited the Amsterdam Aircraft Exhibition, and was received by General Snyders and the British Chargé d'Affaires, Mr. Robertson.

The following officers were among those who accompanied Sir Frederick in four other flying-boats:—Colonel Waterhouse, Major Bernard, Major Leslie, Major Clayton, Captain Burling, Captain Nowall, Captain Faux, Captain Mackworth, Lieut. Walsh, Lieut. Snelgrove, and Lieut. Tapper.

Although the boats had not flown the Atlantic the crews were entertained at an official lunch, and later at an official banquet. Despite this fact they were able to fly home two days later.

Sir Frederick and his party left Amsterdam at noon on Aug. 14th, and arrived at Felixstowe at 3.30 p.m.

THE LONDON-PARIS AIR SERVICE.

If the Civil Aviation Department gives permission in time, the Aircraft Transport and Travel, Limited, will start a daily aerial service to Paris on Aug. 25th, weather permitting.

The machines used will be of two types, the D.H.4a and the D.H.16, both with limousine fuselages. The former will carry two and the latter four passengers. Accommodation will be provided for one handbag per passenger. The machines will leave at 12 noon in each direction, weather permitting, and the average time of flight is estimated at 2¼ hours.

Parcels will be carried at 7s. 6d. per lb., but if arrangements are made to carry them regularly a substantial reduction to 3s. 9d. per lb. is made.

They will be accepted at the American Express Company, 6, Haymarket, S.W.1, till 10.30 a.m. daily, and at the Hounslow aerodrome till 11.30 a.m. daily.

Passengers and parcels will be taken in a motor from the company's office to Hounslow, and they will be similarly conveyed from the Le Bourget aerodrome to the Place de l'Opéra, Paris, and vice-versa. At first only one machine per day will make the journey each way, and therefore tickets must be secured in advance at the American Express Company or at any of the aerial booking agencies. The price for the single fare is twenty guineas.

Although the service is an experimental one, it will be continued for at least six months, and at all events much valuable experience will be gained. Both types of machines to be used have a cruising speed of 100 m.p.h. The Aircraft Transport and Travel, Limited, are out to prove that a small machine with a high speed is of very much more use in commercial flying than a large machine with larger capacity but a comparatively slow speed.

According to the "Times" of August 19th, Farman machines are to be used on a weekly service entirely for passengers. Carrying twelve passengers, they will fly from London on Thursdays and return from Paris on Fridays. If the demand requires it, further flights will be made.

The first ticket for the first trip has been sold by the Lepaerial Travel Bureau to Mr. Pinoli, the restaurateur.

FOR CLOSER ALLIANCE.

Waring and Gillow, Ltd., who control the Alliance Aerodrome Company, contemplate opening up aerial communication between their various houses upon the Continent and elsewhere. The London-Madrid flight was the initial trip.

A NEW AGENCY.

The London agency of the United Aircraft Engineering Corporation has been established at 123, Pall Mall, S.W.1. The president of the Corporation, Mr. F. G. Diffin, paid a short visit to this country for the purpose of establishing the agency, and has now returned to the United States of America.

The London agency recently purchased from the Disposal Board 98 D.H.6 machines with 90-h.p. Curtiss engines, and these are being offered for sale. A representative of THE AEROPLANE was informed that negotiations are now being made, but that so far no important sales have been completed. The price asked for the machines is in the neighbourhood of £300 each. Some of them may be exported.

It has been reported in the Press that a number of these machines have been sold to a concern called "The Yellow Taxi Co.," of Chicago. The report is unconfirmed, but it ought to be true.

The United Aircraft Engineering Corporation, which has its headquarters at 52, Vanderbilt Avenue, New York, has been in existence for the last two or three years, and has done much work in the construction of aerodromes, planning of aerial routes, and so on. At the end of this year the Corporation will begin the manufacture of aeroplanes and engines, which so far has not been undertaken.

A FALSE REPORT.

It was announced in the "Morning Post" last week that the Handley Page Company will start a regular passenger service between London and Amsterdam. Inquiries made by THE AEROPLANE show that this announcement is incorrect. Probably it is due to a misunderstanding as the Handley Page Company had under consideration the scheme of running a daily service between London and Amsterdam for visitors to the Amsterdam Aero Show. The scheme was dropped, however, when it was discovered that the aerodrome at Amsterdam was unsuitable for the purpose.

AN AERIAL TOUR.

A large Handley-Page machine left Cricklewood on August 17th with seven passengers. The pilot is Major Tryggve Gran, a pre-war aviator and Antarctic explorer. The passengers are his wife, Capt. Steward, Capt. Meisterlin, a representative of the Royal Aero Club, and two mechanics.

At a height of 10,000 to 13,000 ft. they crossed the Channel and landed at the Soesterberg Aerodrome, near Amsterdam, for lunch. They left there at 4.30 p.m. and landed on the Danish island of Langoland at 10 o'clock, where they spent the night.

At 8.30 a.m. on August 18th they proceeded to Copenhagen, where they arrived at 9.30 a.m. (75 miles). They were received with great enthusiasm by an enormous crowd.

After a stop at Copenhagen for a few days they intend flying to Christiania and Stockholm and back to England *via* the North Sea.

FREE FLIGHTS.

The "Daily News" is offering 175 free flights on Saturday, August 23rd, at the following places:—Cricklewood, 100; Southend and Hastings, 20 each; Great Yarmouth, 15, Cowes, Isle of Wight, and Paignton, 10 each.

On Monday, August 25th, they offer 15 free flights at Derby.

The flights at the Isle of Wight were postponed on Saturday, August 16th, until Tuesday, August 19th, on account of the weather.

BEXHILL.

On August 12th, Major Fowler, of the Eastbourne Aviation Company, who was flying with a passenger in a seaplane, saw a girl bather in difficulties in the sea. He went to her assistance and brought her safely to shore.

BLACKPOOL.

Flying has proceeded as usual at Blackpool during the past week. The weather has been ideal for the "wakes" and large crowds gathered daily to watch the machines. The Avro five-seaters are doing the bulk of the work. The passengers seem to prefer these to the tandem seater.

BRIGHTON.

One five-seater Avro and two three-seaters made 70 flights during the week, ending Aug. 17th, taking up 172 passengers.

HARROGATE.

An Airco D.H.4a and a D.H.6 are taking up passengers at Harrogate, where joy-riding is quite a popular pastime.

HERNE BAY.

On the afternoon of Wednesday, Aug. 13th, an Avro machine flew from Margate to Herne Bay, where passengers were taken up. In future a machine will be available there twice a week on Wednesdays and Thursdays.

LONDON.

CRICKLEWOOD.—Handley Page, Limited, have now taken up nearly 3,000 paying passengers.

HENDON.—A D.H. 10a with Liberty engines, piloted by Capt. Gathergood, flew to Amsterdam on Aug. 14th.

It is now announced by the proprietors of the London Aerodrome that the Hendon-Brighton-Hendon Air Race arranged to

take place on August 30th and the Hendon-Manchester-Hendon Air Race arranged to take place on September 20th have been postponed. The new dates will be announced later.

HOUNSLOW.—The following cross-country flights were made in Avros during the week ending Aug. 17th:—Two each to Brighton and the Isle of Wight, and one each to Chatham, Hamble and Swansea. The machines made return journeys on every trip, except on that to Swansea. A five-seater Avro went to the Eastney Fair for four days and took up 388 passengers.

An Avro machine loaded with sixty brace of grouse was flown from Perthshire to Hounslow on August 12th in eight hours. The grouse were served at dinner the same night at Prince's Hotel, Piccadilly.

A Vickers-Vimy aeroplane carrying twelve passengers flew from Amsterdam to Hounslow on August 15th in three hours.

MARGATE.

A total of 232 passengers was taken up at Margate for the week ending Aug. 17th. Among the passengers was Dame Stancombe Wells, who is well known in Ramsgate. As several people desired to be flown to Folkestone, the Avro management arranged the trip.

NOTTINGHAM.

The big flying scheme for taking up between 2,000 and 3,000 passengers at Nottingham in the middle of September is maturing. The proceeds are to go to a local charity. It is intended to use "the Forest" in the centre of the city for the flights, which are being arranged jointly by Sir Jesse Boot and the Avro Co.

SOUTHAMPTON.

The Supermarine flying-boat daily service from Southampton to Bournemouth, which has been running for some weeks, was officially opened by the Mayor of Southampton on Saturday, August 16th. The mayor and other prominent Corporation members were given flights from the Royal Pier, Southampton Water.

SWANSEA.

During the week ending Aug. 17th, three three-seater Avros made 136 flights and took up 258 passengers. A daily flight was instituted to Llanwrtydd Wells. The machine lands in the grounds of the Abernant Hotel and takes up passengers during the day.

VENTNOR.

On August 12th the motor-launch service run by Messrs. Spencer Bros. was held up, owing to shortage of petrol. A supply of "Shell" was conveyed in a Supermarine flying-boat, enabling the service to be continued.

WESTON-SUPER-MARE.

One Avro machine took up 228 passengers for the week ending Aug. 17th.

A good many "would-be" passengers were disappointed on account of the numbers wishing to fly. A three-seater machine will be available this week, and will relieve the pressure somewhat.

WINDERMERE.

The Avro seaplanes have been very busy during the week, taking up passengers for two guineas a flight round the Lake. A trip of 15 minutes is given, that is about 10 minutes in the air, and four or five minutes on the water, as they do not rise or alight on the "Narrows" in front of the shed, owing to the crowded state of the water there.

The class of passengers who come here for flights consider, as a rule, that they get very good value for their two guineas, but one day a cheerful gentleman blew in and said that 10s. 6d. was his price for a flight. When Capt. Pixton told him that it could not be done for that, he expanded a bit and said that he would "gi'e another bob."

IRELAND.

The Great Northern Aerial Syndicate, Limited, of Liverpool, wrote to the Queenstown Urban Council asking to be put in communication with estate agents or landowners at Queenstown with land for sale within two miles of the town. They require 50 acres of land suitable for the accommodation of airships of 310 to 860 feet. Lloyd's List states that the larger airships are for trans-Atlantic service, and the smaller for local service.

CANADA.

Two American aviators, with the first permit ever granted by the Canadian military authorities, flew across the international boundary on July 12th on a visit to the Aerial League of the British Empire at Montreal.

Apropos the way in which aircraft are being used in Australia and Canada for rounding up herds of cattle, V. Steffanson, the Arctic explorer, is in the Canadian Rockies completing his report for the Canadian Government, and obtaining material for his book. On July 15th he was at Vancouver on his way to Banff. The explorer expressed the opinion that the herds of caribou in the northern lands were destined to solve the problem of a cheap and plentiful supply of meat for Canada.

The difficulties of rounding up the caribou in the country are very great, owing to its rough and frozen nature. The flocks could be easily herded by a flying machine of a type suitable for landing on water and snow.

An expedition has set out in a steamer for Battle Harbour, Labrador, with four Canadian training aeroplanes, to survey, explore, photograph and map the approximately two million acres of forest in the territory tributary to Battle Harbour. The boat was expected to leave Port Hastings, Cape Breton, on July 15th.

Capt. Daniel Owen, flying officer, R.A.F., is in charge of the expedition, and in addition to the pilots and mechanics there are wireless operators, surveyors, a naturalist, a medical officer, a surgeon, and a cinematograph photographer.

The base will be established at Battle Harbour, whence the machines will fly in pairs daily over the forests. Photographs will be taken with aerial cameras of the same type that were used during the war.

Estimates of the cost of the future development of the country will be made from the photographs and the data obtained by the surveyors.

The expedition is able to keep in touch with their offices at Boston by the wireless telegraph, and daily reports of their progress will be made. The project is financed by a syndicate of Boston bankers.

The entire aeroplane equipment was purchased from the United Aircraft Engineering Corp. of New York, the concern that recently purchased the entire flying equipment of the Royal Air Force in Canada. It was also noted in last week's issue of THE AEROPLANE that this corporation had bought 700 aircraft engines and a large number of aeroplanes from the Aircraft Disposal Dept., Ministry of Munitions.

Many famous aviators have entered for the New York-Toronto air contest. Among the Canadians are Col. W. A. Bishop, V.C., D.S.O., and Col. Barker, V.C. Col. Barker will fly over Toronto with H.R.H. the Prince of Wales, who is to be the starter. [Or perhaps he will not.—ED.] The race is to be held on August 25th.

CENTRAL AFRICA.

The Congo Mission of the Disciples of Christ have written to The Curtiss Aeroplane and Motor Corporation.

They are thinking of replacing their motor launches with flying boats for communication between their various stations.

They also wrote that small aeroplanes could land in the central streets of the native towns, which are straight, smooth and usually clear of grass and other obstructions, and not less than 100 feet wide.

[With American aeroplanes they would possibly be nearer Heaven, if farther from the Altitude Record.—Ed.]

FRANCE.

On Monday, Aug. 11th, the Farman "Goliath," piloted by Bossoutrot, flew from Paris to Casablanca with eight passengers.

By covering 2,050 kms. in 17 hours 25 minutes without a stop, the "Goliath" claims to have beaten all records for distance and duration for commercial aeroplanes.

In flying over Spain it was necessary to climb to 4,000 metres to get over the Sierra Morena and the Sierra Guadarama ranges.

On the 14th, at 11.30 a.m., the machine left Casablanca for Mogador, (300 kms.), which was reached at 1.20 p.m. It is proposed to complete the flight to Dakkar by night to avoid the disturbed air conditions which prevail in this part of Africa during the daytime.

The "Goliath" reported that she had passed Port Etienne at 3.30 a.m. on Aug. 16th. She then had only 375 miles to cover to reach Dakar. Up to Aug. 19th, no further news had been heard of her.

On August 13th, a Farman "Goliath," known as "Goliath II." (piloted by M. D'Ors), flew from Toussons-le-Noble, near Paris, to Copenhagen. Two passengers, a mechanic, and some diplomatic papers were carried.

A landing was made at Soesterburg, the Dutch military aerodrome, near Utrecht, and the journey was resumed next morning. The actual flying time for the 700 miles was 8¾ hours.

MM. Vaillement and Deniau arrived at Salonika on Aug. 14th, having flown from Marseilles *via* Naples. They left Salonika the following morning for Constantinople, whence they will fly to Cairo.

It is reported that a passenger service between Le Havre and Deauville is being effected by a "Zodiac" airship of 3,000 metres cubic capacity.

GERMANY.

The Deutsche Luft Fahrt Reederei, which started passenger traffic before the war with the Zeppelins Viktoria Luise, Hansa, and Sachsen, will start a regular service between Berlin and Friedrichshafen. On the Swiss lake a Swiss steamship company will run a connecting steamer service.

The voyage is to take seven hours, with a stop at Munich. It is understood that the airships are of a new model built exclusively for peace purposes.

The Hannoverische Waggenfabrik is to start a regular service to the Harz. The service will begin as soon as the works at Gosler are ready.

The Rumpler works in Augsburg inaugurated the first passenger flight in the Bavarian Alps. A regular service is being planned.

The first aerial limousine built by the Deutsche Flugzeugwerke has made its maiden voyage over Leipzig. The passengers are accommodated in an enclosed sound-proof cabin.

HOLLAND.

The Avro "Baby" which won the Sealed Handicap at the Aerial Derby in June has left Hamble for Amsterdam, where it will be exhibited at the E.L.T.A. Aircraft Exhibition. The pilot is Capt. Hamersley. Another three-seater Avro has also left, and Major McMinnies is also taking over a five-seater. This will raise the number of Avro machines at Amsterdam to a total of seven.

According to the "Nieuwe Rotterdamsche Courant" of Aug. 13th, the plans for aviation transport in Holland have begun to materialise. The Vickers Consortium have decided to join the originators of the scheme. The capital is to be 10 million guilders. The new company intends to organise a regular post and passenger inland service, and to connect this with England by means of a seaplane service.

The first projected routes are (1) Flushing-Rotterdam-Hague-Amsterdam-Groningen, (2) Flushing-Hertogenbosch-Arnhem and connections with Germany, and (3) Amsterdam-Utrecht-Arnhem-Maastricht and connections with the South.

The Combine proposes to be ready to start in 1920. The plans include the construction of an aeroplane factory, aerodrome, a flying school, and the necessary roads to connect—by motor-car—with the town or/and railway stations.

The Dutch correspondent of The Aeroplane writes:—

A usually reliable source states that the Dutch Government intends to negotiate for the acquisition of 24 Airco machines.

On July 21st the Nederlandsche Vliegtuigfabrick was founded in Amsterdam. The company proposes to build aeroplanes and make all spare parts, to trade in such aeroplanes, to establish or encourage the establishment of flying schools, aerodromes, landing grounds, and the exploitation of aeronautical exhibitions, etc. The capital is 1,500,000 florins. The director is A. H. G. Fokker.

The Nederlandsche Automobile en Vliegtuigenfabrick is taking a financial interest in the new company, but the works will continue to specialise in building motor-cars, although the Government orders granted to the company, which are at present in hand, will be fulfilled at the Trompenburg works.

It is understood that Mr. Fokker is at present building an entirely new type of passenger aeroplane different from those now in use, which are simply war aeroplanes fitted with seats for passengers.

ITALY.

In the August 6th issue of The Aeroplane it was noted that a Caproni biplane on a flight from Milan to Venice had crashed near Verona on August 2nd. The Italian correspondent of The Aeroplane writes:—

"The only idea now held is that the machine, as the result of overstrain or shock, disintegrated in the air, though the firm point out that the number of passengers (16) was not abnormal. Ocular witnesses, as is usual on these sad occasions, saw everything imaginable happen. The fact that parts of the machine were distributed over a radius of a mile, and that the bodies of the victims were all over the district, one even in the river and another totally missing, points to disintegration at a great height.

"Major Ercole, the new C.O. of the Verona camp, found half the propeller intact on its shaft, which he considers practically disposes of the supposition that an airscrew came adrift and cut up the tail of a fuselage, one of the first asserted causes of the accident. The firm are stated to be holding to the idea that an explosion occurred, though nothing was found singed or burnt."

Mario Stoppani's flight from Madrid to Rome *via* the Gulf of Lyons, Marseilles, Genoa, Pisa and Grosseto, some 1,200 miles non-stop in 11 hours on August 6th was a distinctly good performance. The machine was a SVA with 200 h.p. Spa engine.

Messrs. Nieuport-Macchi's M.1 has a two-storied or floored car. It took up 27 M.Ps. for a cooling trip round Rome the other day. Another member flew in a Sva. The never-contented are complaining that an opportunity was lost because nothing happened.

The Sicilian Auto Club has announced a seaplane competition to be held on September 14th. The route will be Palermo, Milazzo, Catania, Syracuse, Cape Passero, Marsala, Trapani, Palermo.

SPAIN.

Major de Havilland, flying an Airco machine with a Napier Lion engine, arrived in England from Spain on August 13th. He reported very successful demonstration work there, and thinks that there are great possibilities for aerial mail services in that country owing to the indifference of the railway services.

The train journey from Barcelona to Madrid takes twelve to fifteen hours. Major de Havilland flew the distance in 2 hrs. 25 min., and from Madrid to St. Sebastian (train, ten to twelve hours), in 2½ hrs.

SWEDEN.

Prince William of Wied's jewels and other valuables were dropped from an aeroplane in Sweden because the German banks were no longer willing to take the responsibility of keeping them.

According to Reuter, the German Dr. Stockhausen, who picked them up, said that there was no intention of deceiving the Swedish Customs authorities.

SWITZERLAND.

The Swiss aviators, Comte and Mittelholzer, on August 10th made a tour of the Swiss Alps by flying from Schwamendingen, near Zurich, over Lucerne, and the Bernese Alps, including the Finsteraarhorn, Jungfrau, Mont Leone, Mischabel, and Mont Cervin, landing at Lausanne.

In the afternoon they flew over Mont Blanc and the Matterhorn, landing at Bellinzone, and returned to Zurich a few days later, having covered a total distance of 1,200 kms.

The Italian correspondent of The Aeroplane writes:—

At Bellinzona, just over the Italo-Swiss frontier, active work on hangar building is going on. It is said that a service between that town and Zurich is shortly to be started.

A Concours, open to Military pilots only, is being held under the ægis of the Director of Swiss Aviation. The prizes are rich. As the nature of the country requires, attention is chiefly paid to landing manœuvres.

Tests of landing to be made by aviators of different stages of proficiency from the newly fledged to those having more than 10 months' flying experience.

Reports from Germany of go-ahead projects for transporting the Hun all over the land are apparently being taken au-pied-de-la-lettre by the Federal Authorities.—T. S. H.

UNITED STATES OF AMERICA.

When the 27th Division was returning to America on the Leviathan, an Aeromarine flying boat was flown ten miles out to sea and dropped upon the deck pouches containing messages of welcome to the American troops.

This demonstration convinced steamship officials of the practicability of speeding up trans-Atlantic voyages by releasing the ship immediately on loading and not waiting for the ship's papers to be fully prepared. The papers could be dropped onto the ship by an aeroplane when the ship was at sea, and thus many hours could be saved.

The White Star Line interested the U.S.A. Post Office Department, and an official experiment was decided up.

The "Adriatic" left New York for Southampton on Aug. 14th at 12.30 p.m. A flying boat left New York at 1.30 p.m. with 100 lbs. of late mail, caught up the liner and circled over it. A long weighted wire was let out from the flying boat, which manœuvred until the wire was caught by a cable stretched between the masts of the "Adriatic." The machine then dropped the other end of the wire, to which was attached a waterproof bag containing the mail. This fell into the water and was hauled aboard the liner.

The Pacific Aviation Company of San Francisco has established an aerial taxi service on the Pacific Coast.

Five hundred passengers have been carried already on a Glenn-Martin and a Curtiss machine.

The U.S.A. air mail service was placed upon an equal footing with all other means of mail transportation on July 18th.

The Postmaster-General has now fixed the postage at two cents an ounce, the regular postage rate for first class matter.

Arrangements are being made to put on the New York—Washington route the three fastest aeroplanes in the service. These have a capacity for 18,000 letters and a maximum speed of 132 m.p.h.

The New York-Chicago aerial service enables the department to save in train expenses more than twice the cost of the air mail service on that route.

The Curtiss Aeroplane and Motor Corporation has purchased the Atlantic City Airport. The airport is the official flying field of the Aero Club of America, the Aerial League of America, the Pan-American Aeronautic Federation, the Atlantic City Aero Club, and the National Aerial Coast Patrol Commission.

It is the only place in the world affording facilities for land and water aircraft practically in the heart of the city. It is also claimed to be the only flying ground in the world having five and ten kilometre courses marked with regulation towers as required by the International Aeronautical Federation for testing the speed of aircraft.

It has two frontages of 3,400 ft., and has a railway siding within 300 ft. Mr. W. W. Mountain, the vice-president and general manager of the Curtiss Company, has stated that one hundred thousand dollars will be spent to improve the airport and make it "the world's aeronautical show-window."

The WORLD of AERONAUTICS

NEWS OF THE WEEK FROM ALL QUARTERS

Further Honours for the C.A.S.

Those who take the trouble to study the "London Gazette" will have noticed that Air Vice-Marshal Sir Hugh Trenchard has been gazetted colonel of the Royal Scots Fusiliers. The honour is on both sides—the Royal Scots Fusiliers are honoured by having as their colonel the man whose handling of the Royal Flying Corps saved the British Army, and the Chief of the Air Staff is honoured by becoming colonel of the distinguished regiment in which he served as a subaltern.

A Deserved Reward.

The "Court Circular" of Aug. 12th announced:—

The King has been pleased to signify his intention of conferring a baronetcy of the United Kingdom on the following:—

William Joynson-Hicks, M.P.—Raised 17th and 23rd Service Battalions, Middlesex Regt. Public services.

Though this is ostensibly the reason for the honour thus deservedly conferred on Sir William Joynson-Hicks, one prefers to believe that the real reason is the service which he has rendered to aviation in general and to the Royal Flying Corps in particular by leading the various agitations which led to reforms of various kinds.

All those who have worked with Sir William in the cause of aviation will rejoice at this reward for good work.

Thoroughness.

When Major-General Sir Frederick Sykes was appointed Controller-General of Civil Aviation he expressed his intention of becoming a civilian, knowing as he did that some of the inefficiency of Service offices is caused by the false importance or subordinance given to individuals by a uniform. Sir Frederick has now been gazetted as having been placed on the Retired List of the Army and as having retired from the R.A.F., so that he becomes definitely a civilian in future. At any rate, his thoroughness in divesting himself of both Army and Air Force rank shows that he is very much in earnest.

The Abolition of Control.

Several papers state that all control over Civil Aviation is to be withdrawn, and that the Department of the Controller-General of Civil Aviation is to be abolished. While fully recognising the good work done by Sir Frederick Sykes in drawing up the International Aeronautical Convention, it would be hard to work up any real grief over the demise of his Department so far as the personnel is concerned. Apart from what he himself has done, one cannot trace any good thing which has been done by his Department, and one can certainly trace a good deal of harm. Civil Aviation needs a certain amount of control, but not of the kind from which it has suffered hitherto.

The "Times," which seems to have constituted itself Defender-in-Chief of the Civil Aviation Department, has been publishing a list of its achievements. Among the first of these it places the publication of a map showing the location of aerodromes The accuracy of the work of the Department may be gauged by the fact that it showed Cattewater (Plymouth) as the terminal aerodrome in the West, omitting to mention that Cattewater is a seaplane station.

It is also alleged, in favour of the Department, that 40,000 people have been carried as passengers since the Civil Aviation Regulations came into being. One would be equally justified in claiming that they had been carried *in spite of* the Department.

Canadian Air Board Appointments.

The Air Ministry issues the information that the Canadian Civil Service Commission, Ottawa, state that a Canadian Air Board having been constituted, the following appointments have become available at the following initial salaries:—

	Per annum.
Secretary	$3,000
Supt. of Certificate Branch	3,600
Supt., Government Flying Operations	4,500
Medical Officer	2,400

All salaries are subject to annual increase. These appointtments would be for three years, renewable, and candidates who do not secure appointments may be eligible for other positions under the Air Board, probably including the following:—Assistant Secretary, two Inspectors in the Certificate Branch (one for Pilots and Navigators, and one for Aeroplanes and Mechanics), a Flying Officer in Operations Branch, and an Equipment and Supply Officer in Operations Branch. Candidates selected must be willing to take the air.

Applications should be made to the office of the Director of Air Services, Canadian Air Office, Oxford Circus House, London, not later than Aug. 21st next. Preference will be given to Canadian citizens. Any R.A.F. officer selected must relinquish his R.A.F. Commission on appointment.

A Professorship of Aeronautical Engineering.

The Vice-Chancellor of Cambridge University gives notice that the election of a Francis Mond Professor of Aeronautical Engineering will take place at 3 p.m. on Friday, Sept. 26th, at the University Offices, St. Andrews Street.

Candidates for the vacant professorship are requested to communicate with the Vice-Chancellor, and to send such evidence as they may desire to submit to the electors, on or before Friday, Sept. 19th.

The Lord Advocate and Sir John Hunter.

There is a very pretty argument in progress between Mr. Clyde, Lord Advocate of Scotland, and Sir John Hunter, lately Chief of the Air Ministry's Works and Buildings Department. Sir John apparently thinks that certain people should be prosecuted for various alleged crimes, while the Lord Advocate says that a prosecution would fail for lack of evidence. On such a question it seems wiser to back the Lord Advocate, who may be presumed to know something about his job. One is inclined to wonder whether Sir John is quite infallible at his own work. There are some quaint stories about concerning his ideas as to the works and buildings necessary for the handling of seaplanes into and out of the water at seaplane stations, and if those stories are true the country is a good deal richer because the proposed works were never put in hand.

The Schneider Cup Race.

The following are the entries for the Jacques Schneider International Race to be held on Wednesday, September 10th:—

The Sopwith Aviation Co., Ltd. Sopwith biplane with 450 h.p. Jupiter Cosmos engine. Pilot, Mr. H. G. Hawker, O.B.E., A.F.C.

A. V. Roe & Co., Ltd. Single-seater float machine with Siddeley-Deasy 240 h.p. Puma engine. Pilot, Capt. H. A. Hamersley, M.C.

Supermarine Aviation Co., Ltd. Single-seater pusher-type flying-boat with 450 h.p. Napier Lion engine. Pilot, Squadron Commander B. D. Hobbs, D.S.O., D.S.C.

Fairey Aviation Co., Ltd. Fairey seaplane with 450 h.p. Napier Lion engine. Pilot, Lieut.-Colonel Vincent Nicholl, D.S.O., D.S.C.

The Royal Aero Club had at the time this issue went to press received no particulars of the three French entries. The Italian entry is a Savoia by the Societa Anonima Costruzioni Aeronautiche.

The Afghan Scandal.

It is alleged that the aeroplanes used in the brief Afghan War just concluded were "all more or less obsolete, having been sent out three years before." Yet the "Times," which makes this charge, is the paper which started the crusade to cut down the Air Force Vote to a sum on which it would be impossible to support an Air Force. Consistency is sometimes advisable, even in journalism.

What is Economy?

The Harmsworth Press is busy inveighing against those women war-workers who were its pet heroines during the war. The W.R.A.Fs. come in for more than their share of abuse as a Government extravagance. Somebody must cook and wash-up for the R.A.F. Which are cheaper at the work, women who know their job, or able-bodied men who don't, and who might be better employed doing a man's work?

A Useful Purpose Again.

On August 12th the last of the host of Air Ministry officials and clerks, beauteous or merely male, who have so enjoyed the late splendid war, evacuated their dug-outs at the Hotel Cecil, and have dug themselves in at Empire House, Kingsway. With unconscious humour someone remarked that the Hotel will now be put to a useful purpose again.

That German Aviette.

A story has been going round the Press, accompanied by a photograph, stating that a "motorless aeroplane" has been raised by man-power at the Templehofer Field, Berlin, to "a height of 50 metres." The machine shown in the picture is apparently the fuselage and undercarriage of the earliest type Fokker monoplane, fitted with gull-shaped wings of at least 25 feet span. The Germans claimed at one time to be supermen. One of them must certainly be a superman if this machine ever left the ground.

Anyhow, the machine cannot be "the first real flying machine," as the "Daily News" alleges, for Messrs. Weiss and Keith, as well as Mr. Kemp and Mr. Gnosspelins have already achieved some success with "flappers."

The WORLD of AERONAUTICS (continued)

A Photographic Officers' Dinner.

The first annual dinner of photographic officers of the R.A.F. was held on the night of August 11th at the Café Royal, Regent Street. Major F. C. V. Laws presided, and Lieut.-Colonel Moore-Brabazon, M.P., was present.

The Sale of Aerial Cameras.

The Disposal Board of the Ministry of Munitions announces that, from time to time, apparatus suitable for aerial photography will be available for sale.

Attention is also drawn to a quantity of cameras, plates, tripods, and other accessories, suitable for ground work, kinema cameras, together with a small quantity of films. The stock is in London, and information can be obtained at Caxton House, Westminster.

An Inquiry.

The inquiry into the relations of the British Cellulose and Chemical Manufacturing Co. and Government Departments has now been published, and it will cause general satisfaction to the Aircraft Industry to know that this sound firm has come out with flying colours. The Committee has expressed the opinion that "nothing amounting to favouritism of the company has been shown by the Aircraft Department." One now wonders if the investigation was prompted by people jealous of this enterprising firm's success.

The Case of Miss Douglas-Pennant.

The Select Committee appointed by the House of Lords to inquire into the dismissal of Miss Violet Douglas-Pennant from the Women's Royal Air Force met on Aug. 15th to consider their procedure. The Committee sat in private.

The chairman, Lord Wrenbury, afterwards said that the procedure the Committee had adopted was that Miss Violet Douglas-Pennant has been invited to lodge not later than four o'clock on Wednesday, Sept. 3rd, with the secretary of the Committee (the Hon. E. A. Stonor) at the House of Lords, a statement of her case. This statement is to be confined to the facts which she deems relevant, and is not to include the evidence by which she will seek to support her case.

Arrangements will be made by which any person who, in the opinion of the Committee, is interested, and who wishes to take part in the inquiry, may obtain a copy of this statement. Applications for a copy should be made not later than Wednesday, Sept. 3rd, to the secretary of the Committee, supported by a statement of facts sufficient to show that the person applying is a person entitled to receive a copy.

Any such person, who wishes to advance further facts, may (not later than four o'clock on Tuesday, Sept. 23rd) lodge with the secretary of the Committee as above a statement of such further facts (without the evidence as before). A copy of every such statement of further facts to be supplied to Miss Douglas-Pennant at her request not later than Tuesday, Sept. 30th.

The Committee will hear evidence upon the facts alleged in the several statements, or such of them as they deem relevant, and will not allow the parties (without special leave given by the Committee) to travel beyond those statements or so much of those statements as the Committee determine to be relevant. But the Committee reserve the right to hear any other party they think proper, and to extend their inquiry to any further matters which they deem to fall within the limits of their reference.

The inquiry will be held in public, the Committee reserving power to sit in private at any time they think proper. The parties will be heard by counsel if they so desire.

Sources of Information.

The following letter appeared in the "Morning Post" of August 15th:—

Sir,—Having regard to the publicity that has been given to this matter in the House of Commons and elsewhere, should not the fact that, as a public accountant, I found it necessary to resign my appointment as Honorary Chief Auditor of Works Accounts, Air Ministry, in December last, be brought to notice?

I was first associated with the Air Ministry, December, 1917, to March, 1918, as Chairman, Board of Financial Control, and subsequently as Adviser to the Finance Department

On being invited to rejoin the Ministry in May, 1918, I accepted the honorary position of Chief Auditor of Works Accounts, fully aware of the state of affairs in connection with aerodrome construction accounts, and only resigned when it became impossible to contend against the thinly disguised obstruction encountered. The experience I had of lack of administrative ability, and ignorance of the most elementary form of accounting on the part of responsible heads of departments was probably unique.

I placed the whole facts in connection with the matter before the Exchequer and Audit Department, and also the Treasury in February last, owing to the refusal of the Air Ministry to do so. Presumably the result of this action was the appointment by the Treasury of the Committee, under the chairmanship of Sir Maurice Fitzmaurice, referred to by Mr. Winston Churchill in the House of Commons on Tuesday last.

Surely there should be a proper inquiry in public to ascertain the facts, and to find out who has created the "Smoke Screen," quoting the Lord Advocate of Scotland, that has allowed an auditor to resign without comment or reference to the "Shareholders."—Yours, etc.,

ARTHUR C. ROBERTS.

9 and 10, Pancras Lane, Queen Street, August 14th.

[One is glad to see Sir Arthur Roberts thus assisting in clearing up the financial scandals of the Air Ministry, and one hopes that when Parliament assembles after the Recess he and his colleague, Mr. Bertram Jones, will take the matter further. Mr. Bertram Jones was also concerned with the Supply Department, and should be able to bring forward much information of high value to any Committee of Enquiry.—ED.]

A Souvenir of a Fine Flight.

On Saturday, Aug. 16th, H.M. the Queen of Spain accepted a gold cup as a souvenir of the arrival of the first commercial aeroplane to make a non-stop flight from London to Madrid on an Alliance aeroplane with a 450 h.p. Napier "Lion" engine. The cup was presented by the pilot, Capt. W. R. Curtis, R.F.A., and Mr. J. A. Peto. At the same time Her Majesty was handed a letter from her mother, Princess Beatrice.

Information Wanted.

Is it a fact that the Admiralty has recently placed orders on its own account for seaplanes "for experimental purposes" with one or two aeroplane constructors in this country? The rumour is very persistent, and if based on fact the act seems wholly commendable. The only thing that makes one doubt it is that it seems far too sensible a thing for the Admiralty to do.

The "Daily Express" Prize.

The "Daily Express" has received a cablegram from the Mayor of Johannesburg congratulating that paper upon its offer of the prize of £10,000 for reliability flights, South Africa and India.

The Royal Aero Club.

COMMITTEE MEETINGS.

A meeting of the House Committee was held on Aug. 12th.

A meeting of the Committee was held on Aug. 13th.

The following new members were elected:—Capt. John Alan Bott, M.C.; Major William Grahame Chambers, R.A.F.; Donald Robert William Gedge; Lady Sybil Grant, Lieut. Edgar Wikner Percival, R.A.F.; Lieut. Reginald James Read, R.A.F.; Major Henry Joseph Cecil Smith, R.A.F.; Capt. Francis Edward Fitzroy Smyth, R.A.F.; Lieut. Kenneth George Withers, R.A.F.

On the recommendation of the Flying Services Fund Committee, Col. C. R. Samson, D.S.O., was appointed to fill the vacancy on the Flying Services Fund Committee caused by the resignation of Col R. H. More.

THE BRITISH RECORD FOR SPEED IN A CLOSED CIRCUIT.

The following British record for speed in a closed circuit was granted:—

SPEED IN A CLOSED CIRCUIT.

Date.	Pilot.	Machine.	Motor	M.P.H.
June 21st, 1919.	Capt. G. H. Gathergood.	Airco 4.	Napier "Lion," 450 h.p.	129.3

THE JACQUES SCHNEIDER INTERNATIONAL RACE.

The following entries have been received:—

Great Britain.—Sopwith Aviation Co., Ltd., Kingston; Supermarine Aviation Co., Ltd., Southampton; A. V. Roe and Co., Ltd., Manchester; Fairey Aviation Co., Ltd., Hayes.

France.—Three entries (particulars not yet available).

Italy.—"Savoia."

The race will take place on Wednesday, Sept. 10th. The course is 200 nautical miles, exclusively at sea, in a circuit of about 20 nautical miles, embracing Bournemouth, Swanage and Christchurch.

Messrs. S. E. Saunders, Ltd., of Cowes, have kindly placed their sheds and slipway at the disposal of the Club for the competing machines.

THE AUSTRALIAN GOVERNMENT £10,000 PRIZE FOR A FLIGHT FROM GREAT BRITAIN TO AUSTRALIA.

The following entries have been received:—Lieut. Bert Hinkler, Lieut. C. Kingsford Smith and Lieut V. Hendle, Mr. Harry Alexander Rigby, Alliance Aeroplane Co., Ltd., Martinsyde, Ltd.

The attention of the competitors is drawn to the following supplementary regulations:—

1. No start will be permitted until subsequent to September 8th, 1919.
2. Machines must have a flying range of at least 500 miles
3. A competent navigator must be carried, who may be the pilot
4. Competitors must satisfy the Royal Aero Club that landing places are available.
5. At the request of the Australian Government it has been decided that the motor or motors may be changed en route.

AIR NAVIGATION REGULATIONS AND FREE BALLOONING.

The Royal Aero Club has received a letter from the Air Ministry stating that the revision of the Air Navigation Regulations as affecting Free Ballooning is under consideration

In the meantime, the Air Council will, on the application of the Club, consider any special exemption required.

COMING EVENTS.

AUGUST.

Amsterdam Aircraft Exhibition. (Still open.)

Thursday, August 21st.—R.A.F. Annual Athletic Meeting at Stamford Bridge.

Sunday, August 24th to Sunday, August 31st.—The "Avenir's" Tour de France Aérien is due to start.

SEPTEMBER.

Monday, September 1st.—Last day for presentation of British machines for the Schneider Cup Competition.

Wednesday, September 10th.—Schneider Cup Competition, Bournemouth.

DATES TO BE ANNOUNCED LATER.

Hendon-Paris-Hendon Air Race.

The "Daily Express" £10,000 Prize Competitions.

Hendon-Manchester-Hendon Air Race.

AIRCRAFT IN PARLIAMENT

HOUSE OF LORDS.

On August 14th, on the motion of Earl STANHOPE, the following were appointed a Select Committee to deal with the inquiry concerning Miss Violet Douglas-Pennant:—The Earl of Denbigh, the Earl of Kintore, Lord Methuen, and Lord Wrenbury. The noble Earl intimated that he had given notice that on the following day he should move the addition of Lord Glentanar to the Committee.

* * *

HOUSE OF COMMONS.

The following oral answers were given on Aug. 11th:—

FORCES OF INDIA (AEROPLANES).

Major-General SEELY, replying to Captain R. Terrell, said: Owing to transport difficulties there has been delay in supplying the forces of India with the required number of machines of suitable types. There has been adverse criticism on the types employed. We did not get the right type of machine for the purpose, but that is being remedied.

Major-General SEELY, replying to Mr. Billing, said: The officers responsible for selecting the types used were aware that machines which will fly in this country will not fly in India

* * *

The following written answer was given on Aug. 11th:—

WOMEN'S ROYAL AIR FORCE.

Major-General SEELY, replying to Lieut.-Commander Kenworthy, said: The numerical strength of the Women's Royal Air Force at the dates mentioned by my hon. and gallant friend was as follows:—

	Officers.	Other Ranks.
Jan. 1st, 1919	545	24,911
July 1st, 1919	434	18,282
Aug. 1st, 1919	407	15,700

The force is being demobilised as quickly as circumstances will permit with the object of reducing the numbers to about 3,200, at which figure it is intended the post-war strength of the force shall be fixed.

* * *

The following oral answer was given on Aug. 12th:—

ANTI-AIRCRAFT SERVICE (GENERAL SERVICE MEDAL).

Mr. J JONES asked the Secretary of State for War if he will reconsider the question of granting the general service medal to the members of the anti-aircraft service.

Captain GUEST: As I have already stated, the question of an award to those who served at home during the war is under consideration.

Mr. J JONES: Is the hon. and gallant gentleman aware that large numbers of these men were actually in danger; while some men who have the medal were never near the firing-line and were never in any danger?

Captain GUEST: There is a certain amount of truth in what the hon. Member says. The men composing the committees considering the question have been in the operations and on home service during the war. The War Office has been largely guided by their advice.

* * *

The following written answers were given on Aug. 13th:—

CONTRACTS (SELECT COMMITTEE'S REPORT).

Mr. DAWES asked the Under Secretary of State to the Air Ministry whether he was aware that the Select Committee on National Expenditure have recently reported in connection with certain clothing contracts that (1) the replies given to them by Major Cockburn, R.A.F., were contradictory and unsatisfactory; that (2) they were unable to attach any credence to the statements made to them by Colonel Latimer, R.A.F.; and that (3) the replies given to them by Colonel Bersey, R.A.F., were very unsatisfactory, and that (4) this officer ignored the request of the Committee to come before them for further examination. (5) What are these officers' war records? Are they still on the active list? and (6) what action, if any, will be taken with the matter?

Major-General SEELY said that the answer to the first two questions was in the affirmative, and to the third the complaint was that Colonel Bersey did not attend at all and not that his replies were "very unsatisfactory."

As regards (4) a letter was sent from Colonel Bersey's solicitors explaining his non-appearance. The Air Ministry is not aware of anything in his conduct to show that he wishes to avoid examination. At present he is attending in London to give evidence before the O'Sullivan Court of Inquiry.

As regards (6) he could not make any statement until the findings of the above-mentioned Court of Inquiry were received.

In answer to (5):—

Major Cockburn was transferred from the Army to the Royal Air Force as from April 1st, 1918, and was employed at Headquarters up to Oct. 24th, 1918, first with the Directorate of Manning and then in the Directorate of Air Quartermaster Services. He was then transferred to Headquarters Midland Area, where he remained until he was demobilised on Feb. 21st, 1919.

Colonel Latimer was employed in an administrative position first at South Farnborough, and then at the Air Ministry, from Oct. 12th, 1916, until May 3rd, 1919, when he relinquished his commission.

Colonel Bersey joined the Service on Oct. 29th, 1917, and was employed in an administrative capacity under the Air Board and Air Ministry until Sept. 30th, 1918, when he was transferred to No. 7 Royal Air Force Reception Depot, where he remained until his transfer to the unemployment list on April 25th, 1919.

* * *

The following references to the Royal Air Force are abstracted from the debate on the third reading of the Consolidated Fund (No. 2) Bill in the House of Commons on August 12th:—

Major-Gen. SEELY made a statement which he had promised the House with regard to the expenditure of the Air Ministry and certain specific complaints.

Major-Gen. SEELY said that the point was constantly raised outside the House that we were extravagant in that we put up Estimates of £66,000,000 for the Royal Air Force. The great proportion of that amount was for the finishing of war contracts (we had arrangements to produce 50,000 aeroplanes per year), and it had no relation whatever to the ordinary Estimates for the Air Ministry.

At the time of the Armistice we had 30,000 officers, and 20,000 of these had been demobilised. We had then 264,000 cadets and other ranks, of which 203,000 had been demobilised; 210 aerodromes and landing-grounds had been given up out of 386.

The number of staff of the Ministry at the date of the Armistice was 806, it had now been reduced to 402. We had 2,145 hired premises and hotels; 1,927 had been given up, and 37 more were in process of being given up.

The number in the Women's Royal Air Force had been reduced by not quite half. They were going to be reduced to about 3,000 and would do all the work of domestic service, for which women were more suitable than men.

General charges of extravagance against the Air Ministry were constantly made. He asked that specific cases should be shown. Three such cases had been ventilated in the House and in the Press.

The first was the statement in a letter to the "Times" that aeroplanes were being recklessly destroyed and that most horrible waste was going on at Farnborough. He went down there and had never seen a business so well organised.

Major-Gen. SEELY said: "The officer in charge was a man who had made a speciality of salvage work, and had earned the thanks of his superior officers in France, owing to his great skill and the saving of millions of money to the public by his salvage."

Every part of an aeroplane that could be sold was collected and sold by auction or otherwise. The officer assured him that the business did just pay.

Major-Gen. SEELY said: "I am not sure that it will be found, when full accounts are made up, that it does not pay to go through this elaborate business, but at least we have saved tens of thousands, probably hundred of thousands of pounds, by the meticulous care shown by these people at Farnborough in the difficult art of breaking up an aeroplane and salving the parts."

The next case was the Air Ministry cars. There had been sixty-eight; now they had been reduced to twenty-two. There were thirty-three allotted cars for officers going to particular places. These had now been reduced to six. Sir F Banbury's Committee had investigated the question of the cost of these cars. A mistake had been made and it was assumed that the touring cars cost £2,700 a year to run, whereas that amount covered the total cost of 238 vehicles. He had been working out the cost of running a motor-car and believed it worked out at £593.

The next specific allegation related to Blandford. This case had been made much of by the Press and especially by the "Times." A letter which the "Times" made much of stated that the camp should not be there at all, that a railway should not have been built to it, that it costs 4s. 7d. a day to get the girls to work and that there appears to be as many lorries as there were when the camp was full.

Blandford had proved to be one of the healthiest places in England. The railway must have paid for itself over and over again in taking the amount of equipment and stores necessary for this huge depot which had to equip and send out 800 men a day.

The whole of the pay, pensions, gratuities and records of the men of the R.A.F. were done at the depot. The girls had to be kept to do the work. There was no room in the camp for them. It would have cost much more to move the depot. The cost of getting the girls to work was £4 5s. 3d. for three months, which worked out at 11.3d. and not 4s. 7½d. There were 133 lorries in use; there are now 33.

They were building up the new Air Force at the same time as they were reducing the old. In desiring to carry out his duty he had reduced too fast. He did not leave his office as a rule before eight. General Trenchard, General Sykes, and their officers were always there still. These men had been working for the last few months from ten to fourteen hours a day. They were gravely overworked.

Major-Gen. SEELY said: "I saw General Trenchard this morning and he said to me, 'I wish you would tell those to whom you speak that I long to hear any cases of extravagance.'"

It was sometimes definitely asked in the Press, "What is the good of the Royal Air Force? Is it worth while keeping it? Millions of money is unnecessarily spent on it." Already this year the R.A.F. had saved millions of money and thousands of precious lives. The Afghanistan rebellion of 1879 was fought with extraordinary skill by Lord Roberts, but it cost £14,000,000 and thousands of lives. This year a similar rebellion occurred, and two men knowing India well, Sir William Birdwood and General Sir O'Moore Creagh, the Commander-in Chief in India, both said that aeroplanes shortened the war very considerably.

During the rebellion in Egypt all communications were cut for several days and all had to be carried by air. In 1882 Lord Wolseley crushed a similar rebellion in a couple of months, but it cost £1,800,000. The largest estimate of the cost of the work done by the Air Force in Afghanistan and Egypt worked out at £43,000 each. To this had to be added the cost of the other troops, but it has been said that bombing stopped the Afghan War and aeroplanes the Egyptian rebellion. It can be said that the Air Force has saved tens of millions of pounds.

The LORD ADVOCATE (Mr Clyde) said that the Renfrew aerodrome was contracted for by the War Office near the end of 1917. It was taken over by the Air Ministry and reconstituted on Feb. 8th, 1918. At the end of 1918 the Air Ministry became aware that the affairs of the contractor were in a state of extreme mismanagement. Some £50,000 or £60,000 had been spent for which there was no work to show. This sum of money was not to be the subject of contemplated criminal proceedings.

The only information lodged with his Department (the Criminal Department of Scotland) was in reference to proceedings for £286 4s. 5d. made up of paltry sums of £89 5s. 2d. and £196 19s. 3d.

In the middle of Feb. 1919, when the investigations were complete, it was obvious that any idea of prosecution for the first of these two sums must be abandoned

Mr. CLYDE said: "The reason was that it was not possible to obtain evidence by which you could define particular entries in the accounts as being ungenuine, false or inaccurate." With regard to the second sum he had the inquiries exhausted as the evidence was exceedingly thin and the difficulties in regard to identification were very great.

The bookkeeping was in a state of confusion and could not be checked in an ordinary way.

Where work has to be done under dirty and disagreeable conditions, what is called dirty money is often paid to the men. In this case dirty money was paid for the dirty work done. It was entered in the wages sheet on the week succeeding the week in which the payments were actually made. Care was not taken to enter the amounts of the dirty money opposite the names of the men who received it. A very large number of men were employed on this work. That dirty money system was a very bad practice, but he came to the conclusion that there was nothing left of the criminal charge and wrote a letter to that effect to the Air Ministry on March 6th.

Sir JOHN HUNTER was grievously disappointed. Mr. Clyde had an interview with him in which Mr. Clyde told him that even if the prosecution for the £286 ended in success, which it would not, it would carry no distance at all to the recovery of the £50,000 or £60,000 which Sir J. Hunter thought to be lost. Mr. Clyde advised him to raise civil proceedings for the recovery of the £60,000.

Mr. CHURCHILL said that Sir D. Maclean had referred to the clothing contract case which is associated with the activities of Miss Douglas-Pennant. He had been trying to induce her to state a case for inquiry on any charge of corruption or immorality without success. But charges had been made by a Miss O'Sullivan in regard to a particular contract, and an inquiry was ordered on the moment that those charges were made. That inquiry is taking place now, and will be made public.

In regard to the Renfrew aerodrome, one of the allegations was that a military officer who was involved in the proceedings was not tried by court martial on the demand of Sir John Hunter. The officer was a Canadian lieutenant employed under the Air Ministry in Sir John Hunter's department.

Mr. CHURCHILL said: "Sir John Hunter wrote to the Adjutant-General to demand that the officer should be placed under arrest, but the reason he gave was this: 'I am unable to formulate any definite charge against him under civil or criminal proceedings, but I demand that he shall be placed under arrest.' The Adjutant-General, not unnaturally, refused to take such a step against a Canadian officer, who is to a very large extent, except in case of emergency, outside the War Office jurisdiction, unless there is the prosaic formality of a definite charge in the first instance."

This officer was detained by the Canadian authorities at their request for upwards of three months, until the Crown Council in Scotland and the Lord Advocate's Office definitely reported that no charge against him could be made the subject of a criminal investigation

When Mr. Churchill became responsible for the Air Ministry in January he had many misgivings about the state of the aerodrome works finance and contracts of the Air Ministry. At the end of February Sir James Stevenson drew his attention to the state of the finances and accounting. He was advised to appoint Messrs. Price, Waterhouse, and Company, one of the best firms of chartered accountants in the country, to make a special expert investigation into the whole of this subject.

He expected that the staple topic of the Report of the Committee of National Expenditure would have been on this investigation, which had been in operation for four or five months. Instead a very large proportion of the Report was occupied by the somewhat sensational evidence given by Sir John Hunter, which, as the Lord Advocate has shown, related not to £60,000 as was apparent from the Report, but only to very much smaller sums.

Mr. CHURCHILL next spoke on the subjects of Army and Air Force finance.

He said that it has been arranged with France that by Oct. 31st our forces on the Rhine will be reduced to the dimensions of a strong brigade, four or five thousand men. The Air Force will be reduced to the dimensions of a single squadron. The expenditure this year depends upon what is happening, but that of 1920-21 should depend on policy, and that is still in the hands of Parliament and the Cabinet. They can decide on the size of the Army and the Royal Air Force, or how much they will spend on each.

We had practically no Air Force before the war, and at the end of the war we had the finest Air Force in the world The demobilisation of the Air Force has gone faster than that of the Army. Since the Armistice the Army has been reduced to about a quarter and the Air Force to about a fifth.

With regard to the permanent structure of the Air Force, he said he had instructed Sir Hugh Trenchard that he must provisionally frame his scheme within £25,000,000 a year, which is equal to something less than £12,000,000 a year at a pre-war basis. An earnest and resolute effort must be made to reduce the costs of the national Government. "I believe that it will be found, in these four or five years after the war, that the best course for the armed forces of the Crown is to aim at scientific progress and quality rather than mere numbers or instant readiness for action."

Mr. WALLACE said that when the Air Ministry demanded over £60,000,000 for a year of peace for the Air Service the Chancellor of the Exchequer should have had it reduced by at least 50 per cent. or resigned his office. He continued:—

"I read wonderful accounts in the newspapers of what the Air Ministry is doing. I saw the account the other day of a wonderful new airship which the Air Ministry had ordered. It took 200 men to bring this airship safely to land. A statement of that sort leaves me very cold. I am not uninterested in the development of aviation. It would interest me more, however, very much more, if I saw 200 men in this House banded together determined to bring to earth Government Departments who at the present time are floating, complacently and buoyantly, in an atmosphere of extravagance!"

He hoped that the Prime Minister would take this matter of retrenchment in hand. Commercial firms should develop commercial flying, and the Government should let it alone.

Mr. RAPER: "So far as the Air Force is concerned, I will simply say that I hope the Government will see their way to allow ex-Air Force officers and mechanics to volunteer for service with General Judevitch, and that the Government will see their way to grant these officers and men the necessary facilities and permission and to supply General Judevitch with the necessary machines and equipment. I suggest this as one means of assisting Finland and of strengthening her position as the bulwark of Western Europe against the poisonous flowing flood of Bolshevism."

* * *

The following oral answers were given on Aug. 14th:—

ROYAL AIR FORCE (ESTABLISHMENT).

Major-Gen. SEELY (Under Secretary of State for Air) replying to Mr. BETTERTON said that the saving which could be effected in expenditure by a revision of the R.A.F. establishment was under consideration and a provisional establishment has been drawn up which shows very substantial reductions. The results will be embodied in the Air Estimates.

SUFFOLK AERODROMES (RELEASE OF LABOURERS).

Major-Gen. SEELY replying to Lieut.-Col. GUINNESS said that the number of men employed on the removal of surplus material at Aldeburgh and Orfordness has now been reduced to six and thirty-three, respectively. Any bona fide agricultural labourers amongst them are to be immediately released for work on the land. In addition forty men, including some local labour, have been employed by the Air Ministry on the very urgent work of repairing sluices and sea-walls, which should be finished in about a month from now. He was not aware that Sir J. Hunter had these places in mind when he referred to the 70,000 men whom he described as not having earned their money.

Major-Gen. SEELY replying to Lieut.-Commdr. KENWORTHY said that the two aerodromes were started long before the war and not to meet the submarine menace.

COMMERCIAL AIRCRAFT (COMPETITIVE DESIGNS).

Lieut.-Col MALONE asked the Under Secretary of State to the Air Ministry whether it was proposed to hold a competition for commercial types of aircraft; and, if so, when particulars would be published.

Major-Gen. SEELY: Yes, Sir. During the war the paramount necessity in aircraft design was military efficiency, but for the successful development of aviation the first essential is safety. The Government have accordingly decided to institute a competition with a view to obtaining a type giving greater safety. Any machine which succeeds in qualifying will represent a great advance in respect of safety and comfort over any machine at present in use.

The Treasury have agreed to the competition, and I am sure that, even at this juncture, the House will not grudge the funds for the prizes. Prizes will be offered for three types of aircraft—a smaller aeroplane, a larger aeroplane, and a seaplane, respectively. In addition to the advantage to civil aviation the lessons learnt will be of the greatest value to the Royal Air Force.

The precise terms of the competition will be announced in a few days. If all the competitions are won, the amount required for prizes would be about £4,000.

The following written answer was given on Aug. 14th:—

BRITISH ARMY AND AIR FORCE (STATISTICS).

Mr. FORSTER replying to Major FARQUARSON said that the number of men who have served in the Army and Royal Air Force from the beginning of the war till Nov., 1918, was 5,756,252; the number discharged or demobilised to the end of July, 1919, was 3,719,950, and the number discharged invalided to the end of July, 1919, was 722,903. These figures do not include the R.N.A.S.

CONTRACTS (SELECT COMMITTEE'S REPORT).

In the last issue of THE AEROPLANE oral answers on the above subject were taken from the "Times." The date on which they were given was stated by error as Aug 4th. They were given on Aug. 11th.



The Power Plant and Car of an American C Class Naval Airship.

NAVAL & MILITARY AERONAUTICS

GREAT BRITAIN.

FROM THE COURT CIRCULAR.

BUCKINGHAM PALACE, August 12th.

Lieut. W. A. Coryton (R.A.F.) had the honour of being received by The King.

NAVAL.

ADMIRALTY, August 11th.

The King has been pleased to give directions for the following appointments in recognition of services during the war:—

O.B.E. (MILITARY DIVISION).

Lt. J. R. P. Clarke, R.N.V.R.—For valuable services in the Anti-Aircraft Corps.

Comdr. G. Grenville-Grey, R.N.V.R.—For valuable services in the Anti-Aircraft corps.

Lt.-Comdr. I. D. C. Howden, R.N.V.R.—For valuable services in the Anti-Aircraft Corps.

M.B.E. (MILITARY DIVISION).

Actg. Gnr. E. D. Lamb, R.N.—For valuable services in the Anti-Aircraft Corps.

ADMIRALTY APPOINTMENTS.

The following appointments have been made:—

AUG. 12th.—Wt. Mech.—H. A. Woodman, to "Argus," Aug. 11th.

AUG. 14th.—R.A.F.—Lt.-Col.—R. E. Peirce, D.S.O., A.F.C., to "Queen Elizabeth," as Fleet Flying Officer, on staff of Commander-in-Chief, Atlantic and Home Fleets, June 15th.

AUG. 16th.—Sub-Lts. J. M. D. Hunter and E. E. Norse to "Furious," Aug. 15th.

* * *

It is announced that Admiral Sir Doveton Sturdee, Commander-in-Chief at the Nore, with the approval of the Air Ministry, has cancelled the orders issued by him in March, 1918, under the Defence of the Realm Regulations, prohibiting approach to the air stations at the Isle of Grain, Eastchurch, Leysdown, Manston, and Westgate, and the Kite Balloon Station at Sheerness.

MILITARY.

FROM THE "LONDON GAZETTE."

WAR OFFICE, August 11th.

REGULAR FORCES.—Gen. List.—To be temp. Sec. Lt.:—Actg. Serjt. G. J. Godwin, R.A.F., while empld. as an Officer Instr., July 28th.

INFANTRY.—E. Surr. R.—J. W. Squire (temp. Sec. Lt., R.A.F.) to be temp. Sec. Lt., Feb. 15th, with seny. Oct. 31st, 1917 (since promoted temp. Lt.).

OVERSEA FORCES.—CANADA.—Can. Engrs.—Temp. Capt. H. S. Quigley, M.C., C.M., ceases to be secd. for duty with the R.A.F., July 5th.

EASTERN ONTARIO R.—The following temp. Lts. cease to be secd. for duty with the R.A.F.:—S. B. Nelson, W. G. Jewitt, July 24th.

W. ONTARIO R.—Temp. Lt. W. P. Harris ceases to be secd. for duty with the R.A.F., March 10th.

ALBERTA R.—Temp. Capt. F. R. McCall, D.S.O., M.C., D.F.C., ceases to be secd. for duty with the R.A.F., June 23rd.

BRIT. COLUMBIA R.—Temp. Capt. (actg. Maj.) P. A. Landry, O.B.E., ceases to be secd. for duty with the C.A.F. as Liaison Officer, May 15th; Temp. Capt. H. R. Denison ceases to be secd. for duty with the R.A.F., June 18th (substituted for "Gazette" notification, July 3rd, page 8,377).

CAN. MACH. GUN CORPS.—Temp. Capt. F. K. Alford, M.C., ceases to be secd. for duty with the R.A.F., July 27th.

CAN. FORESTRY CORPS.—Temp. Lt. W. A. Scott ceases to be secd. for duty with the R.A.F., May 31st.

CAN. AIR FORCE.—Temp. Capt. D. R. MacLaren, D.S.O., M.C., D.F.C., British Columbia R., to be temp. Capt., May 22nd.

SASKATCHEWAN R.—Temp. Lt. H. B. P. Boyce ceases to be secd. for duty with the R.A.F., April 15th.

TERRITORIAL FORCE.—INFANTRY.—7th Bn. Hampshire R.—Sec. Lt. K. L. Bulkley (Lt., R.A.F.) to be Lt., and to remain seconded, Sept. 1st, 1918.

WAR OFFICE, August 12th.

REGULAR FORCES.—INFANTRY.—N. Staff. R.—Lt. H. S. Shield, M.C. (attd. R.A.F.), resigns his commn., Aug. 13th.

WAR OFFICE, August 13th.

REGULAR FORCES.—COMMANDS AND STAFF.—ATTD. TO THE GENERAL STAFF.—Station Accountant Officers, Class GG.—To be temp. Capt. while so empld.—Lt. A. V. Faulks, R.A.F., July 16th.

WAR OFFICE, August 14th.

REGULAR FORCES.—Hdqrs. of Admin. Servs. and Depts.—Station Accnt. Officers, Class GG.—And to be temp. Capts. while so empld.:—Lt. R. Whyte, R.A.F., June 20th; Temp. Lt. E. Oliver, M.C., M.G. Corps, Aug. 1st.

REGULAR FORCES.—OVERSEAS FORCES.—Canada.—Can. Art.—Temp. Lt. T. J. Findley, M.C., ceases to be secd. for duty with R.A.F., July 31st.

NOVA SCOTIA R.—Temp. Lt. H. N. Price ceases to be secd. for duty with R.A.F., July 31st.

QUEBEC R.—Temp. Lt. J. E. Cole ceases to be secd. for duty with the R.A.F., July 31st.

MANITOBA R.—Temp. Maj. T. A. Dennistoun ceases to be secd. for duty with the R.A.F., June 9th (substituted for "Gazette" notification, May 30th).

SASKATCHEWAN R.—Temp. Lt. A. H. Bill ceases to be secd. for duty with the R.A.F., July 30th (substituted for "Gazette" notification, July 30th, page 9817).

ALBERTA R.—Temp. Capt. M. K. Ryan ceases to be secd. for duty with the C.A.F. as Capt., Technical, Aug. 4th.

BRIT. COLUMBIA R.—Temp. Lt. W. E. Lambert ceases to be secd. for duty with the R.A.F., July 31st.

WAR OFFICE, August 16th.

REGULAR FORCES.—ESTABLISHMENTS.—R.F.C.—Mil. Wing.—Equipment Officer, 2nd Class.—Capt. E. H. J. Visct Falmouth, C. Gds., Spec. Res., vacates his appt., July 2nd, 1918.

OFFICIAL COMMUNIQUÉS.

The following communiqué was issued at Simla on August 11th:—

We bombed the Wazir camp at Miranshah on the 9th, inflicting some casualties.

An aeroplane reconnaissance on the 10th reports no enemy between Murgha and Fort Sandeman.

* * *

On August 13th, British aeroplanes again bombed the fortress of Kronstadt. Hits were observed.

* * *

The Finnish General Staff states that two British aeroplanes crashed at Koivisto. The casualties resulting therefrom are unknown.

* * *

It has been reported by the newspaper "Helsingen Sanomat" from the usual unreliable source that the town of Olonetz has been bombed by the British aeroplanes. The source of this information, a fugitive from Petrosavodsk, said that leaflets stating that the British were arriving at the last-named town on August 20th were also dropped.

AIR FORCE.

FROM THE "LONDON GAZETTE."

AIR MINISTRY, August 8th.

DENTAL BRANCH.—G. Packman is granted a temp. commn. as Capt., Aug. 1st.

The following are granted temp. commns. as Lts.:—P. E. Bernard, R. H. More, Aug. 1st.

CHAPLAINS BRANCH.—The Rev. H. E. Ruddy, M.A., is transferred to unemplid. list, July 28th.

MEMORANDA.—The following Overseas Cadets are granted temp. commns. as Sec. Lts., with effect from Feb. 15th, and relinquish such commns. with permission to retain the rank, from the day following termination of the standardised voyage in the case of those claiming immediate repatriation and from the day following demobilisation in England in all other cases:—452046 A. F. Cook, 18279 T. C. Lowry, 87202 F. W. Mansell.

The following Cadets are granted Hon. commns. as Sec. Lts.:—178758 R. A. C. Mitchell, Dec. 4th, 1918; 37392 R. F. Fletcher, 175174 L. R. Harris, 25051 G. F. Moss, 175478 W. R. McKinley, Dec. 6th, 1918; 171893 D. A. Turnure, Dec. 14th, 1918; 113225 C. A. Bristow, Jan. 8th; 176169 C. F. Ball, 175081 C. A. Boulter, 175182 D. H. Evans, 100301 J. S. Kirk, 175758 L. Leffler, 176253 F. W. Logan, 176357 C. W. Savage, 175157 J. A. J. Thompson, 175625 G. E. R. Williams, Jan. 16th; 177190 H. Aubert, 176205 A. E. Baker, 178410 W. J. Barrett, 176741 P. J. T. Bates, 175367 F. Bennett, 177399 W. H. R. Blankley, 137416 J. L. Bott, 177614 V. K. Bowker, 178614 T. C. Boyes, 155154 J. A. Bridger, 127854 E. A. Brown, 177682 H. J. Brown, 142307 T. Cairns, 177090 H. L. Calder, 177483 J. Campbell, 177236 W. P. Cartwright, 177811 W. H. Chaick, 176752 R. S. Charlesworth, 175247 G. S. Cheshire, 175998 V. M. Clare, 177096 L. E. Clubb, 177254 C. A. Clark, 178748 L. Coleman, 177522 D. W. Cutler, 156504 F. Dann, 177567 W. R. Davies, 176762 P. Dean, 176072 B. R. C. Durrage, 177921 E. A. Dutton, 177406 W. Eadie, 177527 J. Edwards, 177480 P. A. D. Edwards, 177161 F. H. Evans, 177493 R. E. Ferris, 177691 H. W. Fryer, 177167 C. R. Gardner, 175920 T. C. C. Garrett, 177130 F. R. Hardley, 177531 J. M. C. Hardstone, 176624 L. J. R. Harris, 177324 R. G. E. Harvey, 177053 A. Hicking, 177633 F. J. H. Hill, 128470 A. E. Hoath, 177054 T. Holloway, 176936 W. Holman, 177459 A. H. W. Holt, 177009 T. M. Hough, 177272 J. R. B. Howlett, 177277 W. J. Hughes, 176094 E. T. F. Hunt, 177325 R. S. Hutchins, 178776 L. C. Ingram, 177046 J. A. Issett, 177602 L. M. James, 177056 O. L. Jones, 177212 A. Kay, 177667 S. Kendrick, 175274 A. D. Kirkbridge, 177415 E. T. Lambeth, 177541 G. Manchester, 123301 G. J. Matthews, 177450 A. Metcalfe, 175834 H. W. Mills, 110652 F. G. Moody, 175071 W. C. Mortimer, 177636 R. D. Mould, 177232 J. R. Norris, 177751 J. H. Offer, 177019 E. R. Osler, 176910 R. Parker, 177023 T. E. Rose, 177305 A. P. Stevens, 176703 W. J. Stockdale, 178390 M. C. Stone, 176986 E. C. Vere, 177344 P. H. White, 177681 G. Whittington, 176466 C. G. Wilkinson, 176289 G. A. Williams, 176899 E. A. Wood, 177186 L. Wynne, 177039 T. J. Yoreth, 177911 W. L. Young, Jan. 17th; 126381 C. Turner, Jan. 23rd; 137307 W. D. E. Clayton, 110811 T. H. Dyson, 175750 F. J. Jordan, Jan. 25th; 110100 C. C. Emmett, Jan. 26th; 175611 A. J. Macfarlane, 175086 A. W. Strutt, 158038 W. R. Tucker, 200829 G. S. Westmucket, Jan. 27th; 128061 H. M. D. Davis, Jan. 30th; 117709 A. J. Davis, Feb. 1st; 128568 A. Bowman, 128093 G. F. Constable, Feb. 3rd; 200194 R. P. Bostock, 93514 M. H. Brooks, 117863 J. J. Chantry, 127305 J. M. Caldicott, 2411 A. T. Davis, 176921 B. Dodd, J. J. Macnamara, 176030 E. C. Read, 204615 W. J. Reed, 177338 H. F. Tressider, Feb. 4th; 175240 C. M. Bethune, 203031 W. S. Eales, 117175 F. C. Edwards, 77505 H. B. Moon, Feb. 6th; 270770 W. Johnson, Feb. 8th; 36241 G. I. Blow, 175179 A. B. C. Duncan, 137383 C. E. A. Griffin, 244544 L. J. D. Henly, 203146 P. Hough, R. A. Jago, 28282 F. H. Kidd, 175137 L. D. Knight, 110525 R. Robertson, 434 L. T. Smith, 175007 H. C. Staight, Feb. 9th; 110093 A. R. Clacher, Feb. 11th; 176268 H. T. Ollerenshaw, Feb. 12th; 177730 P. W. Brown, 178615 G. R. Brierly, 170135 W. H. F. Bailey, 178591 B. E. Clark, 181344 H. C. Donaldson, 179102 N. L. Derham, 175689 H. A. E. Drescher, 177259 J. A. Denholm, 178752 T. C. Edwards, 179400 C. F. Foreshaw, 150975 G. C. Farley, 178816 E. C. Goodson, 179438 S. H. Harries, 178648 F. C. Kirkpatrick, 179892 B. P. Lord, 177539 S. C. Luck-Horam, 179278 B. L. Middleton, 178924 A. V. Pearson, 179241 F. W. Patterson, 180857 W. G. Pearce, 178227 A. C. W. Stephens, 117568 A. V. Stedman, 178838 E. C. Wood, March 19th; 178133 J. Baggulley, 180748 F. R. Elvy, 177711 W. G. Falconer, 103252 C. J. W. Faulkner, 200645 R. Gibson, 181085 W. C. Hayden, 180826 S. E. Hancock, 179253 G. B. Holmes, 176678 A. James, 177785 H. R. J. Jones, 176046 A. H. Jones, 178114 N. R. Law, 181931 A. M. McGill, 178829 F. R. Pickworth, 180694 W. Swift, 177830 H. Swift, 180700 S. B. Ward, 180701 E. V. Ward, 238476 A. S. Williams, March 20th; 175238 J. L. Arnott, 181173 P. E. Chapman,

180877 R. C. Cornelius, 178256 L. Griffiths, 177588 A. G. Giles, 176180 A. J. Holt, 181130 L. E. Hough, 177715 T. C. Hare, 178823 C. F. Jenkins, 179256 H. B. Jenkins, 177569 C. Kenyon, 178584 H. Kingham, 177282 F. B. Mitchell, 202510 S. C. Stead, 179427 C. Verbin, March 21st; 180651 F. W. Bullock, 128623 D. Graham, 176042 S. H. Potter, March 24th; 179018 J. R. Birch, 117956 J. W. Briscoe, 178973 A. Burgess, 178912 H. H. Butler, 206208 G. D. Carter, 176322 T. H. Copre, 178805 H. H. Crooks, 179428 C. E. Dennison, 128467 W. H. Foden, F29960 B. H. Garside, 170476 D. Gray, 178819 G. E. P. Ham, 179232 R. B. Harold, 179439 C. Harvey, 181925 E. A. Henslowe, 179401 W. B. Hollis, 181357 W. A. E. Holmes, 178821 A. L. Hubble, 179441 J. Hughes, 110708 G. A. Hunter, 181359 S. G. C. Jones, 179207 H. P. Ford, 178827 H. V. Mahoney, 17887 B. Meddings, 178721 W. Palmer, 128304 A. Plaisten, 35629 C. W. Raydon, 179462 L. V. Rees, 181934 J. E. M. Rogers, 178936 M. P. Selfe, 178835 J. S. Sheddon, 95156 W. Smith, 187906 C. Solomon, 179415 P. G. Stevenson, 178933 G. E. Stokes, 179219 P. Stone, 176390 C. Thomas, 179087 H. Thompson, 128724 E. W. Turner, 117606 J. C. Ward, 179116 T. Watson, 179247 G. G. Wesley, March 25th; 180771 J. G. Robinson, 175724 H. Williams, March 27th; F1283 F. W. Holleyman, March 28th, 211346 L. C. J. Nunn, March 30th; 316039 E. Haynes, 316040 G. H. Sealy, April 2nd; 870062 C. W. Richards, April 6th; 2483 H. W. Read, April 10th; 109029 E. J. W. Timson, April 13th; L/8681 E. F. Farnell, April 15th; 202984 C. G. Holmes, April 20th; 65403 J. G. Bowes, April 22nd; 177244 H. K. Anstey, 110929 A. T. Baines, 177554 G. L. Taylor, April 25th; M/4385 R. J. Daly, April 30th; 316050 J. H. Chattaway, May 14th; 208245 H. Rogers, June 13th; 209953 A. W. Lamond, July 8th.

Lt.-Col. A. Christie, C.M.G., D.S.O. (Capt. (temp. Lt.-Col.), Royal R. of Artillery), relinquishes his commn. on ceasing to be empld., Aug. 2nd.

Transferred to unempld. list:—Maj. (actg. Lt.-Col.) C. Jarrott, O.B.E., from (S.O.), April 25th; Capt. P. P. C. Penberthy, from (S.O.), April 30th; Capt. E. P. Stapleton, O.B.E., from (S.O.), July 22nd; Maj. A. E. Loder, from (S.O.), July 26th; Capt. H. F. Atkinson-Clark, M.V.O., O.B.E. (Scots Guards), from (S.O.); Capt. M. Skitt, from (S.O.); Capt. A. F. Wickenden, from (S.O.), Aug. 1st.

Capt. C. H. S. Taylor relinquishes his commn. on account of ill-health contracted on active service, and is granted rank of Lt.-Col., June 30th.

The notification in "Gazette," April 29th, concerning Maj. J. W. K. Allsop is cancelled.

The notification in "Gazette," July 18th, concerning H. P. MacDonald is cancelled.

AIR MINISTRY, August 12th.

R.A.F.—The follg. temp. appointment is made:—Staff Officer, 2nd Class (Air).—Maj. G. S. Trewin, A.F.C., July 6th (substituted for notification in "Gazette," July 18th.

FLYING BRANCH.—Sec. Lt. W. D. Wood is antedated in his appointment as Sec. Lt. (A.), May 10th.

The following Flight Cadets are granted temp. commns. as Sec. Lts. (S.):—A. H. Murphy, Oct. 19th, 1918; A. C. Kennedy, Oct. 25th, 1918; W. F. McCunn, R. E. Parker, H. Small, Nov. 1st, 1918.

The following relinquish their commns. on ceasing to be empld.:—Sec. Lt. H. R. Herbert (Lt., E. Ont. R.), Feb. 28th; Lt. S. D. Morrison (Lt., Nova Scotia R.), April 20th; Capt. G. H. Morton (Capt., Brit. Col. R.), May 26th; Sec. Lt. (Hon. Lt.) H. B. Kennedy (Lt., Can. Fld. Art.), June 1st; Lt. H. T. Singleton (Lt., R. Dublin Fus.), July 24th; Sec. Lt. (Hon. Lt.) W. M. F. Bayliss (Lt., Lancers), July 26th.

Transferred to the unempld. list:—Capt. N. H. Fletcher, Feb. 7th; Lt. C. E. Pither, March 19th; Sec. Lt. A. Douglas, May 15th; Sec. Lt. T. C. Stranger, June 6th; Lt. (actg. Capt.) W. F. Findlay, June 11th; Sec. Lt. C. C. R. Thompson, June 13th; Lt. R. W. Redding, June 26th; Lt. T. E. Rogers, July 3rd; Sec. Lt. A. J. Storm, Sec. Lt. A. R. T. Thompson, July 10th; Capt. (actg. Maj.) F. S. Moller, M.C., July 11th; Sec. Lt. J. Freeman, Sec. Lt. A. B. Ryan, Sec. Lt. G. J. D. Ryan, Sec. Lt. E. W. Swackhamer, Sec. Lt. W. P. O'B. Sweeney, July 12th; Lt. T. L. Gitsham, July 14th; Sec. Lt. A. B. Miles, July 17th; Sec. Lt. W. A. Peggs (Sherwood Fors.), July 24th; Lt. E. H. Peverell, July 25th; Sec. Lt. J. R. Noble, July 26th; Maj. A. S. Redfern, July 29th; Lt. G. Mortimer, July 30th; Sec. Lt. W. P. Mills, Lt. G. L. Percy, July 31st; Sec. Lt. C. H. Wheeler, Aug. 1st; Lt. B. L. McCarthy, Sec. Lt. (Hon. Lt.) E. P. Whitehead, Aug. 7th; Sec. Lt. W. M. Oosthuizen, Sec. Lt. E. E. Owens, Lt. W. J. Tarring, Sec. Lt. F. H. L. Tindall, Aug. 10th.

Maj. H. S. Shield, M.C. (Lt., N. Staffs. R.), resigns his commn. and is permitted to retain his rank, Aug. 13th

The date of appointment of the following Sec. Lts. to be Lts. is May 8th, 1919, and not May 8th, 1918, as stated in "Gazette," July 22nd:—A. Beedie, E. A. C. Britton, W. B. Crouch, R. Henderson, C. N. James, W. S. Jenkins, D.F.C., W. H. Jordan, A. D. Kiernander, H. W. Matthews, T. H. Mercer, F. R. Oddy, T. G. Reed, J. W. Sole, A. G. B. Whittaker, L. A. Williamson

The notification in "Gazette," March 18th, concerning Sec. Lt. H. R. Herbert (Lt., E. Ont. R.) is cancelled.

ADMINISTRATIVE BRANCH.—P. S. Stewart is granted a temp. commn. as Sec. Lt., Aug. 7th.

Transferred to unempld. list:—Capt. R. H. Gee, May 16th; Sec. Lt. J. L. Rhys, May 31st; Sec. Lt. J. MacD. Roberts, July 11th; Lt. P. R. Mattinson, July 18th; Lt. P. H. S. Tozer, July 23rd; Maj. L. P. Walker, July 28th.

Sec. Lt. J. Nowell (Lt., Worc. R.) relinquishes his commn. on account of ill-health contracted on active service, Aug. 12th.

TECHNICAL BRANCH.—Transferred to unempld. list:—Sec. Lt. A. F. Rees, July 2nd; Sec. Lt. R. P. Wilmot, July 12th (substituted for notification in "Gazette," July 29th); Sec. Lt. R. Gowing, July 18th; Sec. Lt. I. Samber, July 28th; Sec. Lt. F. H. Wave, July 30th.

MEMORANDUM.—The following Overseas Cadets are granted temp. commns. as Sec. Lts. with effect from Feb. 15th, and relinquish such commns. with permission to retain the rank from the day following termination of the standardised voyage in the case of those claiming immediate repatriation, and from the day following demobilisation in England in all other cases:—7965 J. Cohen, 222491 R. M. Richardson.

Sec. Lt. A. D. Watts is transferred to unempld. list, from (S.O.), Aug. 1st.

The notification in "Gazette," June 6th, concerning 316200 R. D. Richardson is cancelled.

AIR MINISTRY, August 15th.

R.A.F.—PERMANENT COMMISSIONS.—Lt. W. B. Farrington is granted a permanent commn. as Lt. (A.), Aug. 1st (substituted for notification in "Gazette," Aug. 1st).

The surname of Capt. W. B. Callaway is as now described, and not "Gallaway" as stated in "Gazette," Aug. 1st

The following temp. appointments are made:—Staff Officer, 2nd Class.—(Air) Capt. A. D. Spiers, Nov. 11th, 1918, and to be actg. Maj. while so empld. till April 30th.

Staff Officers, 3rd Class.—(Air) Capt. V. Buxton, from (S.O.)2, Aug. 2nd; Sec. Lt. A. Jukes, July 13th, and to be actg. Capt. while so empld.

FLYING BRANCH.—Capt. A. W. Bird, D.S.O., to be graded for purposes of pay and allowances as Maj. while empld. as Maj. (A.), May 1st.

Lt. R. G. Rolfe-Rogers to be graded for purposes of pay and allowances as Capt. while empld. as Capt. (A.), May 1st

Lt. H. C. Leaver to be Lt. (A.), from (O.), June 3rd, 1918.

Sec. Lt. C. L. C. Craft (late Gen. List, R.F.C., on prob.) is confirmed in his rank as Sec. Lt. (A.), Nov. 2nd, 1918.

J. E. Tarlton (Sec. Lt., R.G.A.) is granted a temp. commn. as Sec. Lt. (A.), July 7th, 1918.

T. A. Woodward (Sec. Lt., L'pool R.) is granted a temp. commn. as Sec. Lt. (O.), Nov. 16th, 1918.

The following relinquish their commns. on ceasing to be empld.:—Sec. Lt. F. W. F. Turner, Sept. 14th, 1918; Lt. J. G. MacKenzie (Lt., Cent. Ont. R.), March 31st; Lt. H. Cassels (Capt., Can. Highrs), April 14th; Lt. R. Grandy (Lt. (actg. Capt.), R. Newfoundland R.), June 22nd; Lt. (Hon. Maj.) J. L. Booth (Maj., R.E., T.F.), June 30th; Sec. Lt. A. W. Wyncoll (Lt., R. Lancs. R.), July 29th; Sec. Lt. (Hon. Lt.) J. F. D. Tanqueray (Lt., Can. Engrs.), Aug. 6th.

Transferred to unempld. list:—Sec. Lt. G. W. Fitchie, Jan. 24th; Sec. Lt. G. Crosthwaite, Jan. 30th; Lt. N. J. Taylor, Feb. 14th; Lt. J. E. Doe, Feb. 18th; Sec. Lt. L. K. Davidson, Sec. Lt. W. Snaw, March 1st; Sec. Lt. (Hon. Lt.) R. H. Stonmill, M.M., March 14th; Capt. H. J. Wiser, April 1st; Lt. G. S. Frame, April 10th; Lt. S. Humphries, April 11th; Capt. L. H. F. Irving, April 16th; Lt. J. H. Forbes, April 18th; Lt. S. G. Pearson, April 19th; Sec. Lt. W. B. Smith, Lt. P. B. Williams, M.C., April 20th; Lt. J. H. Forman, Sec. Lt. F. W. Wells, April 22nd; Lt. D. Cairns, April 23rd; Sec. Lt. W. N. Simpson, April 24th; Sec. Lt. A. E. Thorp, May 3rd; Maj. J. W. Jardine, May 5th; Sec. Lt. H. A. Scrivener, May 9th; Lt. E. J. Finch, May 16th (substituted for the notification in "Gazette," June 3rd); Sec. Lt. J. B. Weir, May 18th; Sec. Lt. P. H. B. Wood, May 19th (substituted for the notification in "Gazette," May 20th); Sec. Lt. W. G. Campbell, May 20th (substituted for notification in "Gazette," May 20th); Lt. G. A. Welsh, *May* 20th; Sec. Lt. J. E. Taylor, June 13th; Capt. J. S. Smith, June 14th; Sec. Lt. (Hon. Lt.) B. P. Springett, June 17th; Lt. F. P. Watson, June 18th; Lt. C. L. Willcock, June 19th; Lt. C. Thomas, June 24th; Lt. E. H. F. Scott, June 26th; Lt. A. H. Stead, June 28th; Lt. E. J. Furlong, D.F.C., Lt. E. J. Stephens, July 2nd; Lt. T. H. French, D.F.C., Lt. W. Skelton, July 4th; Sec. Lt. E. O. Humphries, July 7th; Sec. Lt. R. C. Tice, July 8th; Lt. I. W. T. Fraser, Sec. Lt. J. M. Freston, Lt. I. de W. Wood, July 10th; Sec. Lt. R. J. Tilney, July 11th; Lt. C. Becker, Sec. Lt. W. L. Dean, Sec. Lt. P. G. Rowe, Sec. Lt. W. J. Sanderson, Sec. Lt. F. J. Seaton, Sec. Lt. M. L. Selkirk, Sec. Lt. E. G. Simpson, Lt. E. S. Smith, Sec. Lt. G. L. Smith, Lt. N. L. D. Smith, Lt. E. L. Smithers, Sec. Lt. (Hon. Lt.) O. B. Thompson, Sec. Lt. S. O. Truby, Lt. C. R. Wrede, Sec. Lt. P. H. Zealand, July 12th; R. A. Stedman, July 14th; Sec. Lt. R. Franklin, July 17th; Lt. M. W. Clark, Lt. G. T. Scott (substituted for the notification in "Gazette," July 29th), July 18th; Lt. H. E. Judge, July 19th; Capt. T. C. Arnot, Sec. Lt. E. T. Shone, July 21st; Sec. Lt. W. E. J. Bloodworth, Lt. C. T. Brown, Sec. Lt. (Hon. Lt.) H. D. D. C. Tiley, July 22nd; Lt. R. H. Speight, July 23rd; Capt. C. C. Sharp, Sec. Lt. E. W. Steele, July 24th; Lt. R. Alton, Sec. Lt. (Hon. Capt.) R. Bomphrey, Sec. Lt. D. E. Dann, Sec. Lt. D. C. Hurworth, Lt. E. E. Wright, July 25th; Sec. Lt. H. G. Dixon, Lt. J. R. H. Hewlett, Lt. J. G. Kingsbury, Lt. (Hon. Capt.) W. L. Pittendrigh, July 26th; Capt. J. H. P. Brain, July 27th; Capt. M. T. Baines, Capt. C. A. Hervey, Lt. R. G. Young, July 29th; Sec. Lt. (Hon. Lt.) H. B. C. Nicholls, July 31st; Lt. E. E. Moodey, Aug. 1st; Sec. Lt. P. S. Joubert, Aug. 7th; Sec. Lt. R. E. Bell, Sec. Lt. G. P. Mitchell, Aug. 10th; Lt. C. W. Davies, Aug. 14th; Lt. R. J. Thompson, Aug. 15th (substituted for notification in "Gazette," July 29th).

The follg. Lts. relinquish their commns on account of ill-health, and are permitted to retain their rank:—H. F. N. Jones (contracted on active service), June 12th; C. Miller (contracted on active service), June 25th; W. R. Elson, E. R. Salter (contracted on active service), July 31st; J. Burdekin (contracted on active service), A. E. Garrison, M.C. (caused by wounds), E. Snell, Aug. 1st.

Sec. Lt. W. D. Wood is antedated in his appointment as Sec. Lt. (A.), May 10th, 1918 (substituted for notification in "Gazette," Aug. 12th).

The rank of Lt. D. F. Brookes is as now described, and not "Sec. Lt," as stated in "Gazette," May 5th.

The notification in "Gazette," Dec. 31st, 1918, concerning Sec. Lt. D. G. Fraser, is cancelled.

The notification in "Gazette," June 3rd, concerning Lt. G. F. Bell is cancelled.

The notification in "Gazette," July 4th, concerning Sec. Lt. C. Butcher is cancelled

The notification in "Gazette," July 11th, concerning Sec. Lt. R. J. Acheson is cancelled.

ADMINISTRATIVE BRANCH.—Sec. Lts. to be Lts.:—H. V. Hall, Nov. 2nd, 1918; R. W. Johnson, Aug. 5th

The following relinquish their commns. on ceasing to be empld.:—Sec. Lt. P. C. Cooper (Sec Lt., Northants. R.), April 20th, 1918 (substituted for notification in "Gazette," July 22nd); Lt. V. M. McMahon, M.C. (Lt., R. Dub. Fus.), Feb. 6th; Lt.-Col. E. H. Davidson, O.B.E., M.C. (Capt., Gord. Highrs.), June 12th; Lt. C. M. Sinclair (Lt., R.A.S.C.), June 24th; Lt. (Hon. Capt.) W. F. T. James (Capt., Glam. Yeo.), July 9th; Lt. J. Redmond, M.C. (Lt., R.I. Rif.), Aug. 1st; Lt. W. S. King (Lt., R. Newfoundland R.), Aug. 10th.

Transferred to unempld. list:—Sec. Lt. H. R. Cooke, Jan. 28th (substituted for notification in "Gazette," April 1st); Lt. B. C. Budd, Lt. C. P. Creighton, April 19th; Lt. S. M. Pemberton, April 20th; Sec. Lt. E. Sykes, June 2nd; Maj. (Hon. Lt.-Col.) C. P. Foley, June 3rd; Sec. Lt. V. S. Stevens, June 7th; Capt. R. G. Staveley-Dale, June 14th; Sec. Lt. W. W. Smith, July 12th; Lt. E. E. Stock, M.C., July 18th; Sec. Lt. M. T. Saunderson, July 24th; Sec. Lt. A. E. Le Sueur, July 26th; Sec. Lt. R. J. Bright, July 28th; Maj. C. Kent, July 29th; Maj. J. G. A. Baillie, July 30th; Capt. G. S. Kilby, Aug. 1st; Lt. J. Cobley (Middx. R., T.F.), Aug. 4th; Lt. W. Dee, Aug. 15th.

Capt. R. B. H. Lechmere (Dragoon Gds.) relinquishes his commn. on account of ill-health caused by wounds, Aug. 12th.

Lt. H. F. Proctor relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain his rank, July 30th.

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—C. McI. French, July 12th (substituted for notification in "Gazette," Jan. 21st); C. Hunter, Aug. 6th

TECHNICAL BRANCH.—Capt. A. D. Spiers to be actg. Maj. while empld. as Maj., Grade (A.), May 1st

E. L. M. Emtage, July 12th, 1918 (substituted for notification in "Gazette," Jan. 3rd)

Sec. Lt. (Hon. Lt.) R. V. Weeks to be Lt., May 23rd, 1918, without pay and allowances of that rank prior to Nov. 3rd (substituted for notification in "Gazette," May 9th)

Sec. Lt. (Hon. Lt.) L. G. Martin is transferred temporarily to unempld. list, from March 27th to May 29th (substituted for notification in "Gazette," June 17th).

Transferred to unempld. list:—Sec. Lt. W. Brown, Feb. 7th; Sec. Lt. T. Conlan, Feb. 14th (substituted for notification in "Gazette," March 28th); Sec. Lt. R. E. Towler, May 5th; Capt. C. E. Turner, May 17th; Lt. S. Wilson, May 20th; Sec. Lt. W. S. C. Stephens, June 3rd; Sec. Lt. (Hon. Capt.) W. S. H. Smith, June 16th; Lt. R. H. Butler, July 2nd; Lt. J. G. Francis, July 10th; Lt. W. G. Stuart, Sec. Lt. C. W. M. Sabine, July 12th; Sec. Lt. W. G. Willis, July 16th; Sec. Lt. E. R. Veneer, July 18th; Lt. G. D. Harrison, Lt. A. Howard, July 25th; Sec. Lt. J. Bennett, Sec. Lt. (Hon. Lt.) B. L. Blomley, Sec. Lt. (Hon. Lt.) R. A. Law, July 26th; Sec. Lt. L. J. Sterlini, July 28th; Capt. O. Hardee, July 29th; Lt. W. C. England, Aug. 11th.

Lt. C. J. M. Lowe (R.E.) relinquishes his commn. on account of ill-health, Aug. 12th.

Sec. Lt. A. C. Wright relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Aug. 1st.

MEDICAL BRANCH.—Maj. (actg. Lt.-Col.) B. R. Bickford, D.S.O. (Staff Surgn., R.N.), relinquishes his commn. on ceasing to be empld., Aug. 1st.

Capt. R. Hall is transferred to unempld. list, July 15th.

Capt. T. E. Mulvany relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, Aug. 13th, 1918.

MEMORANDA.—The following warrant officers are granted hon. commns. as Sec. Lts. :—L. L. Lipsky, I. V. Smyrnoff, July 30th.

Capt. M. McK. Wood, O.B.E. (Capt., Gordon Highrs.), relinquishes his commn. on being elected M.P., April 15th.

Lt. W. Lingard, M.B.E., is transferred to unempld. list, from (S.O.), July 31st.

The notification in "Gazette," July 4th, concerning Sec. Lt. C. W. Kerr is cancelled. The notification in "Gazette," July 11th to stand.

* * *

The Air Ministry announces that the following stations and landing grounds have been relinquished by the R.A.F. :—

STATIONS.—Torquay Seaplane Station; New Romney; Seaton Carew Seaplane Station; Tipnor Kite Balloon Base; Sheerness Kite Balloon Base.

LANDING GROUNDS.—Lower Beeding, Sussex; Earnley, Sussex; Kingshill (West Malling), Kent; Blackneath (Colchester), Essex; Plungar, Nottinghamshire; South Cave, Yorkshire; Bishopton, Durham; Cairncross, Berwickshire; Burnham-on-Crouch, Essex; Broomfield (Chelmsford), Essex; Appleton Wiske, Yorkshire; Ponteland, Northumberland; New Chapel, Surrey.

* * *

It is stated by Major-General Seely that there is no intention that a rigid airship shall fly to India at present.

* * *

A dinner was given at Claridge's Hotel on Aug. 14th by the Finnish Minister, M. Ossian Donner, to Squadron Leader W. G. Sitwell, D.S.C., R.A.F., and Flight Lieutenant Bailey, R.A.F. The dinner was given to celebrate the recent flight of these two officers from England to Helsingfors and back. General Swinton, of the Civil Aviation Department, was present, and Air Commodore R. M. Grove and Squadron Leader Field, R.A.F., were also there.

* * *

Private Bruckmann, 97th Infantry Reserve Regt., the German prisoner of war whose gallantry in rescuing two British officers from a burning aeroplane was recently made the subject of an Air Ministry communiqué, has left England for Germany. Before leaving England he was presented by a representative of the Royal Air Force with a sum of money and a silver watch and chain. Several thousand German prisoners were paraded at the camp to witness the ceremony.

Pte. Bruckmann was severely burned while assisting the officers.

* * *

Ballantyne, the member of the crew of H.M.A. R34, who recently created a great sensation in America and the English Press, by making the aerial voyage across the Atlantic as a stowaway, has been arraigned by his officers. He was severely reprimanded and informed that he is no longer a member of the crew of R34.

* * *

The Royal Air Force held a series of trials at Queen's Club, West Kensington, on Aug. 6th, with a view of selecting representatives for the championship meeting at Stamford Bridge on Aug. 21st.

Capt. H.R.H. the Prince Albert, K.G., R.A.F., watched the sports, and at the close presented the prizes to the successful competitors. Among others present were Brig.-Gen. T. L. Webb-Bowen, C.B., C.M.G., Col. A. M. Longmore, D.S.O., R.A.F., and Major Owen, R.A.F.

Several well-known athletes were among the competitors, and some very fair performances were recorded. Serjt. P. H. Poingdestre won both the 100 yards and quarter-mile races, the former by a good yard from Lieut. A. J. Moore, in 11 1-5 sec.; and the latter, in which he beat Serjt. R. E. Skinner by five yards, in 54 3-5 sec.

A/M. J. Pratt won the mile and three miles very easily. In both events he made his own pace throughout, and his time of 4 min. 51 3-5 sec. for the mile, and 16 min. 26 1-5 sec., were, in the circumstances, decidedly good.

Capt. Marlowe won the half-mile after a fine race with L. A/C Cook in 1 min. 57 4-5 sec., and A/M F. R. Aggersberg, the 220 yards by half a yard from Cpl. P. Wilmot in 24 1-5 sec.

Serjt. Bellingham took the long jump with 17 ft. 7 in., L. A/M Owen, the high jump at 5 ft., and L. A/M Kitson, the 120 yards hurdles. Boy Downs won the 100 yards and 220 yards races confined to enlisted boys.

The S.D. Earlscourt beat the 143rd Squadron E. two pulls to nothing in the tug-of-war, and the Sixth S.D. Ascot won the mile relay.

A relay race for the W.R.A.F., was won by N. 1 M.T. Wormwood Scrubbs, and in a tug-of-war Kidbrook beat Regent's Park with two straight pulls.

On August 8th the R.A.F. in Ireland held a sports meeting in Dublin. Among the events was an aerial race of 102½ miles. There were twenty-one competitors, the race being won in 1 hr. 9 min. 34 sec., by Lieut. Urmston, R.A.F. Captain Sibley, R.A.F., whose time was 1 hr. 9 min. 35 sec., was the second man in, but was disqualified for passing the post on the wrong side. Lieut. Baker, R.A.F., was third, his time being 1 hr. 11 min. 55 sec.

The following cricket team represented the Royal Air Force against the Army at the Oval on Aug. 15th and 16th :—

Lieut.-Col. Blount, Lieut.-Col. D. Harries, Major E. C. Baker, Capt. S. D. Harrower, Capt. W. H. G. Heath, Capt. P. Burke, Capt. G. F. Earle, Lieut. J. N. Bitton, Capt. L. P. Hoult, Lieut. F. E. S. Creek, and A.M. E. Tomkins.

The match ended in a drawn game on Aug. 16th. At the end of the first innings the score was: Army, 387; R.A.F. (nine wickets), 94. The scores for the second innings were: Army (five wickets), 60; R.A.F., 357.

* * *

Life is dull in the Air Force to those who have the ill luck to be in the North-Western Area in the land of porridge and mountain dew.

Days and weeks slip aimlessly away, and it is found harder to kill time than Huns. The dancing craze which kept messes lively during the winter months has died out, and golf and motor-cycling, or lying about the ante-room are the chief forms of passing away the idle hours.

In Montrose a stray Avro amuses the visitors about once a month, but, as few flying officers are stationed there, the sight of a machine now causes comment, and the shed doors rust on their guides.

About three dozen mechanics keep the floors swept and polish the petrol tins, and have plenty of time left for bathing.

Edgill Aerodrome is now practically non-existent, for, after the sale of buildings, etc., it has been gradually demolished, and the ground put up "to let."

Why such a site was ever chosen is one of the countless war mysteries.

Crail is being used as a storage depot for machines, and row upon rows of new unassembled Snipes and Avros fill the hangars all correctly dressed by the right.

A few of the old personnel are left to look after them, and their tired expressions gives one to see how "fed up" they are.

Leuchars has still a few flying officers and as many scout machines whose chief occupation appears to be amusing the crowds by the Tayside coast. They scare the inhabitants of the "jute and jam" city of Dundee with their low stunting, and are reckoned by those hard-headed Scots to be "fair deevils."

Their methods of advertising the Victory Loan were so thrilling that they made people run from "bonds" and banks to the Esplanade to see their exhibition. One, unfortunately, had a dip and lost his machine in the Tay, and was saved from Davy Jones' Locker by the boys of the "Mars" Training Ship near by. Thanks to the reliability of modern engines, many more of them have been saved from similar experiences.

Dundee Seaplane Base has still a large personnel, being one of the four permanent stations in Scotland, but very little flying is being done there.

Turnhouse has been allotted as one of the two aerodromes where civil machines may land, and has a small number of men looking after it, waiting for prop (and lead) swinging.

Gullane is being used as a dispersal centre for the R.A.F., and changes in personnel are so rapid that one never knows from day to day what may happen. About 20 Bristol Fighters and Avros are there and do a little flying if the weather is fine.

Its next-door neighbour, East Fortune, is another of the permanent stations, and, being the home of R.34, is quite a busy and well-known spot. Its sheds are full of craft, mostly of the N.S. type, sometimes used on instructional work.

The other aerodrome in Scotland, Renfrew, is being used as a Stores Depot for all sorts of goods from complete machines to mess teaspoons. It has a large staff of administrative and technical officers.

Last of all, our Scotch Bolo, "The Adelphi," still carries on with great form, and is still as hot on court-martials for bold, bad pilots, etc. The recurring scramble for the Staff allotment of mountain dew and the signing of chits for dances, socials, etc., keep them from being very wearied with themselves.—R. M. D.

FRANCE.

On Aug. 10th President Poincaré conferred the Legion d'Honneur upon Dunkirk. During the ceremony he stated that this town had been bombed 172 times by German aviators.

* * *

The official statistics of the losses of the Service d'Aviation Militaire have just been published, and are as follows :—

From Aug. 4th, 1914, to Nov. 11th, 1918, the losses in the

Army zones were 1,945 pilots and observers killed, 1,461 missing, whose death may be regarded as certain, and 2,922 wounded.

Outside the Army zones 1,927 pilots and observers were killed, bringing the total losses in killed and wounded up to 7,757.

As the full strength on Dec. 1st, 1918, was 12,919 men, the war losses represent 61 per cent., which is believed to be the greatest proportion of losses in any arm of any of the Allied armies. [Presumably, this means 12,919 pilots and observers, exclusive of some hundreds of thousands of mechanics and others. —Ed.]

The production of aeroplanes for the Air Service was 3,460 in 1915, 7,552 in 1916, 22,751 in 1917, and 34,219 during the first nine months of 1918. The aircraft factories employed 12,650 workers on Jan. 1st, 1915, 30,960 on the same date in 1916, 68,920 on the same date in 1917, 131,551 on the same date in 1918, and 186,003 on Nov. 2nd, 1918.

* * *

Six seaplanes under the command of Lieut. (?) de Morcourt, French Navy, will shortly fly from St. Raphael to Casablanca. Alightings will be made at the following places on the way to Casablanca :—Cette, Barcelona, Valencia, Cartagena, Malaga, and Tangier.

U.S.A.

Major Crowell, Assistant Secretary of War, has raised great controversy in the U.S. by advising the formation of a Single Air Service. The War Department agrees with Major Crowell, but the Navy, having presumably benefited by the mistakes of others, is against the amalgamation.

As a result of the reduction of the U.S. Service Estimates for the current year, it seems probable that the Army will be forced to disband its Aviation Service in the Autumn.

* * *

Lieut.-Col. R. S. Hartz is in charge of a Martin Bomber that started on an endurance flight on July 24th and will cross 31 States round the rim of the country.

Starting and finishing at Washington the total distance covered will be 7,805 miles. The flight is planned to test the endurance of the Martin Bomber and the Liberty engine, for recruiting purposes and for the charting of routes and the locating of landing fields.

* * *

It is reported that two U.S. Army aviators, Lieuts. Paul Davis and Harold Peterson, who have been missing since August 10th, have sent letters to the Military Headquarters stating that they are held to ransom by Mexicans for $15,000, and that if the money is not forthcoming by August 16th they will be executed. No official opinion has been given by the War Department.

PERSONAL NOTICES.

NAVAL.

MARRIAGE.

TRAVERS—FRASER.—On Aug. 6th, at Ryton, near Shifnal, Salop, Major H. G. Travers, R.A.F., D.S.C., was married to Hermia, younger daughter of Colonel and Mrs E. A Fraser, of Bodicote Lodge, near Banbury, Oxon, by the Rev. H. P. Fraser, M.A., uncle of the bride.

MILITARY.

ENGAGEMENTS.

CAMPBELL—COLLINGWOOD-ALLEN.—The engagement is announced of Flight Lieut. Hector A. Campbell, A.F.C., Seaforth Highlanders, attd. R.A.F., youngest son of Colonel and Mrs. Campbell, of Larachan, Sutherlandshire, to Ecie Collingwood-Allen, elder daughter of Major and Mrs. H. C. Allen, Charlton Lodge, Shepton Mallet, Somerset.

JENKINS—ROBERTSON.—A marriage has been arranged between Lieut.-Col. F. Howard Jenkins, O.B.E., M.C., R.A.F., second son of the late J. H. Jenkins, M.R.C.S., L.R.C.P., of Lytham, Lancashire, and Harriet Fernelith, second daughter of Duncan J. Robertson, O.B.E., County Clerk of Orkney.

KEMPSON—FEARNSIDE.—An engagement is announced between Capt. William Robert Kempson, R.F.A. (T.), late R.A.F., of Thorpe, Norwich, and Miss Enid Margaret Fearnside, daughter of Col. C. F. Fearnside, I.M.S., and Mrs. Fearnside, of Haven House, Conway.

WATT—MELLINGTON.—The engagement is announced between Capt. William McIver Watt, M.B.E., the Black Watch, attd. R.A.F., only son of Mr. Nat Watt, Commercial Bank House, Musselburgh, and Gwendolen Joyce, younger daughter of Mr. and Mrs. J. A. Christie, Mellington, Charlton Kings, Cheltenham.

MARRIAGES.

MATHER—WHITLOCK.—The marriage arranged between Mr. Harry Mather, late Lieut. R.F.C., eldest son of Walter Mather, Esq., Brierfield, and Chôtee, elder daughter of Lieut.-Colonel G. F. A. Whitlock, C.B.E., R.E., 30, Winn Road, Southampton, took place quietly in London on Aug. 2nd.

MELHUISH—EBDEN.—The marriage arranged between James Walter Douglas Melhuish, M.C., late 7th Worcesters and R.A.F., only son of Mr. T. W. W. Melhuish, M.I.C.E., and Mrs. Melhuish, of Clifton Hill, Exeter, and Decima Mary Tenison, only daughter of Mr. and Mrs. Tenison Mosse, of Bank of England, Manchester, and grand-daughter of the late Mon. Alfred Ebden, of Belmont, Rondebosch, Cape Town, took place very quietly on Thursday, Aug. 14th, at the Cathedral, Manchester.

SKINNER—ALLEN.—On Aug. 12th, at St. Anne's Church, Wandsworth, Lieut. Herbert Skinner, Gordon Highlanders and R.A.F., son of Reverend J. Skinner, M.A., Old Deer, Aberdeenshire, was married to Rhoda, younger daughter of Capt. Allen, O.B.E., and Mrs. Allen, Wandsworth, London, by the Reverend H. P. Statham.

AIR FORCE.

DEATHS.

GILMAN.—Lieut. Walter Gilman, R.A.F., who was previously reported missing on July 13th, 1918, after alighting in the sea when returning from a bombing raid, is now officially presumed to have died on or since that date. He was the only son of Mr. and Mrs. William Gilman, Hazelcroft, Alderley Edge, Cheshire, and was 19 years of age.

MOORE.—Lieut. James Gordon Moore, R.A.F., who died on Aug. 14th as the result of wounds received in action, was 24 years of age.

MORRIS.—A two-seater Bristol Fighter aeroplane crashed on Aug. 14th while passing over the riverside village of Hurley, near Marlow. The first arrivals found the machine a total wreck, and the aviator, Lieut. H. S. Morris, R.A.F., badly injured. He was conveyed to Maidenhead Cottage Hospital, where he died a few hours later without recovering consciousness.

ENGAGEMENTS.

CASWELL—EDWARDS.—The engagement is announced between Capt. G. F. Caswell, R.A.F., and May, daughter of George Edwards, J.P., and Mrs. Edwards, of 180, Piccadilly, W., and "Cheniston," Egham, Surrey.

ELLERTON—HUSBAND.—The marriage arranged between Capt. Alban Spenser Ellerton, O.B.E., R.A.F., and Miss Maureen Gilliland Husband, of 69, Belsize Park Gardens, will take place on Sept. 13th, at 11.30 a.m., at the Savoy Chapel. Friends will be welcome at the church.

HARRIS—CAMPION.—The marriage arranged between Capt. Stafford Berkely Harris, A.F.C., R.A.F., and Miss Enid Campion will take place at St. Jude's Church, Southsea, on Aug. 21st, at 2.15 p.m.

JUDGE—EADIE.—A marriage has been arranged, and will take place on Wednesday, September 10th, at Bromsgrove Parish Church, between Captain H. E. Judge, R.A.F., and Olivette, daughter of Mrs. Eadie, Rigby Hall, Bromsgrove, Worcestershire.

MOFFETT.—YERBURY.—A marriage has been arranged, and will shortly take place, between Ritchie Francis Henry Moffett, Lieut., R.A.F., son of J. Ritchie Moffett, of Ladybrand, O.F.S., South Africa, and Hilda Pauline, daughter of Mrs. Yerbury, 26, Milton Road, Acton, London, W.

PRYCE—HARBORD.—The engagement is announced of George, youngest son of the late Lieut.-Col. John Pryce, of Gunley, Montgomeryshire, to Phyllis, eldest daughter of Lionel Harbord, R.A.F., of Mousehold House, Norwich.

SHEPPERD—GODSON.—The engagement is announced between Lieut. Harold E. Shepperd, R.A.F., only son of Mr. and Mrs. E. A. E. Shepperd, of Knockholt, Kent, and Olive Ethel, third daughter of Mr. and Mrs. E. H. Godson, of Heckington, Lincs.

MARRIAGES.

BULMAN—FAIRMAN.—On July 16th, at Christ Church, Sunderland, Major George Purvis Bulman, O.B.E., R.A.F., only son of the late W. W. Bulman, of Alexandria, Egypt, and Mrs. Purvis Bulman, Queen's Club Gardens, was married to Emmeline Preston, youngest daughter of Mr. and Mrs. G. P. Fairman, 21, St. Bede's Terrace, Sunderland, by the Rev. C. W. Froggatt.

DE ROEPER—KEY.—On Aug. 2nd, Major Bruno P. H. de Roeper, A.F.C., R.A.F., second son of Mr. and Mrs. de Roeper, of "Bella Vista," Upminster, was married to Jean Julia Key, only daughter of Mr. and Mrs. W. Garbutt Key, of "Glen Caladh," Hall Lane, Upminster, before the Superintendent-Registrar, at Romford.

DORE—GELLION.—On July 18th, at Holy Trinity Church, Paddington, Charles Noel Gregory Dore, R.A.F., son of the late S. Lammas Dore, Esq., and of Mrs. S. Lammas Dore, of Pinner Hill, Middlesex, was married to Evelyn Emily, daughter of the late Duncan Gellion, Esq., and of Mrs. Duncan Gellion, of 2, Orsett Terrace, Hyde Park, W., by the Rev. F. A. Bealey, Vicar of St. Anselm, Hatch End, assisted by the Vicar of Holy Trinity, Paddington.

BIRTH.

WOOLNER.—On Aug. 7th, at St. Faith's Home, Mount Park Road, Ealing, the wife of Capt. J. H. Woolner, A.F.C., of a daughter.

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THE AEROPLANE

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ON THE AIR MINISTRY SCANDALS.

Doubtless some people are surprised that so little attention is being given by this paper to the Air Ministry scandals which have been occupying so unduly large a portion of the public Press and of the time of Parliament of late. Personally one can see no reason whatever for taking any interest in these scandals, except perhaps in the part in which Miss Douglas-Pennant is concerned.

When one recalls Mr. Lloyd George's connection with the Marconi scandal before the war; when one recalls the openly discussed grafts of high officials during the war; when one knows of the real financial scandals in other departments; and when one knows of the corruption, crookedness, and graft which infested the Technical, Supply, and Inspection Departments of all three Services during the war (chiefly, be it noted, owing to the introduction of numberless civilian officials by our so-called Business Government), the matters which were defended so violently by General Seely with all his usual rhetoric seem so utterly trivial that it is hardly worth while even giving up so much space to them as has been given. After all, what matters a few millions of pounds here or there when for three or four years we have been wasting at least a million a day? If the House of Commons wants an Official Inquiry into the misdeeds of officials concerned with the Flying Services during the war let it turn its attention to something more important.

What is the value of a human life in pounds sterling? It is true that the Flying Services only lost some 2,700 officers and men in all definitely known to be killed; the total casualties were 7,589 killed, wounded, and missing. And of all those killed or wrecked for life it is fairly safe to say that half have been so killed or wrecked by the misdeeds of Government officials.

Let the House of Commons go back before the war to 1912 or 1913, or at any rate to the early days of 1914, when that eminently respectable Tory, Captain Walter Faber, M.P., brought his first "Murder Charge" against the administration of the R.F.C., long before Mr. Pemberton-Billing was howled down by the hangers-on of the Government for saying that R.F.C. officers in the field were being murdered by officials at home. What is the value of the men who have since been murdered by these officials compared with the few millions about which Parliament is now in such a pother?

Subjects for Inquiry.

Let Parliament inquire why, when Colonel Seely (as he then was) stated officially that we had 120 war aeroplanes it was possible for Mr. Joynson-Hicks (as he then was) to prove that we only had 13? Let Parliament inquire why at the outbreak of war we had no British aero-engines, and why, despite the Naval and Military Engine Competition of 1914, British engine production was held back for two years, so that the Royal Aircraft Factory might experiment with engines which never become efficient, and allowed our aviators to be killed in hundreds by better-mounted enemies. Let Parliament inquire why throughout 1915 and 1916 our aircraft constructors were prevented from producing the best aeroplanes in the world while our aviators were being shot down day after day in the contraptions turned out by the Royal Aircraft Factory?

Let Parliament inquire whether and why officers who had the courage to help the Air Inquiry of 1916, which investigated these crimes, were hounded down and hustled out of the Flying Services, despite the guarantee given them that their Service careers would not suffer as the result of their patriotism?

Let Parliament inquire why the healthy competition between the R.N.A.S. and R.F.C., which enabled the R.N.A.S. to acquire the engines and aeroplanes which saved the R.F.C. when the plotters for a Government monopoly of design had failed, was killed by a still bigger monopolist plot, and why all aircraft supplies were concentrated in a single Department which failed as lamentably as did the Royal Aircraft Factory?

Some More Subjects.

There are plenty more subjects into which inquiries can be held if there is any real desire in Parliament to get at the truth and to purify the future of the Royal Air Force. It was commonly reported that certain R.A.F. stations were hot-beds of vice and were the hunting-grounds of procureurs of both sexes. Is that a subject worthy of inquiry? Perhaps Miss Douglas-Pennant will attend to this question.

It is known that drunken debauches were not merely common but customary in many R.A.F. stations. Should that pass without inquiry?

It is known that common bribery and corruption, as well as the higher and more subtle kinds of graft, prevailed throughout the war in the Technical and Supply and Inspection Departments. Is that to be investigated?

It is known that the designs of some firms were accepted without question while better designs by other firms were turned down. Is that to pass unchallenged?

It is known that thousands of pounds were handed out to some firms for experimental work while more promising designs could not obtain one pennyworth of support. Does that meet with the approval of Parliament?

The Sins of the Naval Side.

It is known that our seaplanes were shot down time after time, and that the German Brandenburg seaplanes practically held the Command of the Air over the North Sea till driven from their bases on the Belgian Coast by the British Army. Yet all the while we had in this country seaplane fighters which were far better than the Brandenburgers. Is anybody to answer for the deaths thus needlessly caused?

It is known that because of our lack of seaplanes orders were issued to escort convoys with land-going

aeroplanes which were unfit for land warfare. Who is to be held responsible for the loss of life and material caused by this policy?

It is known that in October and November, 1914, Zeppelins and their sheds were destroyed or damaged in Germany by the R.N.A.S. It was not till 1918 that any more damage was done to German airships and sheds by British aircraft. Who is to be blamed for the immunity of the Germans during the intervening years, and for the loss of life in this country caused by thus allowing the Germans to operate unmolested?

It is known that we had torpedo-dropping aeroplanes before the war and that the R.N.A.S. torpedoed Turkish ships early in 1915. Yet we had no torpedo aircraft at Jutland in 1916, nor when the "Goeben" came out of the Dardanelles in 1918. Who is responsible?

It was known early in 1917 that any sea-going ship to which a kite-balloon was attached was absolutely immune from attack by submarine. Yet the Irish mail steamer "Leinster" and Heaven knows how many other merchant ships and human lives were lost for lack of kite-balloon escort. Who is to be held responsible for these "murders"? Surely not the German submarine commanders and crews, who were merely doing their duty in enforcing an effective blockade, but rather the British Navy which, despite its much-advertised sea-power, failed so fatuously in breaking that blockade.

Camouflage.

Is the whole of this fierce agitation in Parliament merely a vast piece of camouflage designed to hide the real crimes of the Government and its hangers-on, and to side-track public attention from the main line of criminality onto these paltry financial affairs. Either those who are raising the agitation are lamentably ignorant of the graver issues or else they are peculiarly clever fellow-conspirators with the Government Departments concerned.

As for Major-General J. E. B. Seely, C.B., C.M.G., D.S.O., Under-Secretary of State for Air, he seems to be, as he was before the war, merely the dupe of the officials whose crimes he has to hide. He is quite honest and quite simple-minded, for all his cleverness. He is in fact like one of those simple yet cleverly designed jets through which the Huns used to eject poison-gas on our troops in the field, and he performs the same functions. Innocent in himself, he emits the vapour with which the enemies of his owners are doped, and, to his credit be it said, he does it quite efficiently.

But, as Mr. Joynson Hicks wrote in the "Morning Post" on March 16, 1914, "the country will not be satisfied with a mere statement by Colonel Seely." The country's estimate of General Seely to-day does not differ from its estimate of him five and a half years ago.

Certainly another Air Inquiry Committee is needed, but not an impotent affair like that of 1916. If we are to have another, let it be one with power to subpœna witnesses and to take evidence on oath, and let it be one which—on the other hand—may be forced to ask questions which are handed to it by people who are not members of the Committee. Under such circumstances it might be possible to bring some of the real criminals to justice, and to assure to the R.A.F. a clean and wholesome future.—C. G. G.

THE GOVERNMENT COMPETITIONS.

The rules issued by the Air Ministry on August 21st for the forthcoming Government trials for commercial aircraft will be found in full in this issue of The Aeroplane.

It may be said forthwith that as they stand they are totally unsatisfactory.

At the very beginning the types of aeroplane for which the prizes are to be awarded are ridiculous.

The specification for the small type, carrying pilot and passenger, calling for a maximum speed of 100 m.p.h. at least, a minimum speed not in excess of 40 m.p.h. and a climb of at least 500 feet per minute could be met by any competent designer with an engine of 60 h.p., and such a machine in the hands of a competent pilot should pass all the flying tests with ease.

There is nothing in the rules to prevent any maker from entering a machine in this class with a 600 h.p. engine and an enormous surface, commercially useless on account of its cost, but which will defeat any reasonably economically designed two-seater on landing speed, top speed, and general comfort and convenience, except that much-abused word "efficiency" included amongst the list of general features for which marks are to be awarded.

In any case the small two-seater is a machine which has no commercial use which could not be served by very slight modifications to existing machines.

Merely Ridiculous.

Had the limit for small machines been fixed at, say, four or five persons in addition to the pilot, and were there either a scale of permissible power for each passenger up to that limit, or a defined scale of awarding marks on the basis of useful weight carried per h.p., there might be some value attached to the affair. As the rules now stand, they are ridiculous. They call merely for machines designed to carry out a "stunt"—certainly a novel "stunt"—regardless of any consideration of the cost of carrying it out.

The large aeroplane class is—so far as the load to be carried is concerned—rather more reasonable. A 15-passenger carrier is a useful commercial vehicle—if it can be operated at a reasonable cost. But cost, except as regards the cost to the Air Ministry of buying the machine, is nowhere touched upon. There is no word as to cost either of manufacture, of upkeep and maintenance, or of operation, from one end to the other of the whole series of rules.

A Few Good Points.

The competition for seaplanes shows certain good points.

The condition that they must be able to land on a smooth aerodrome and to get off the same is to be commended. Even if it fails to produce any very satisfactory combined water and land undercarriages, but merely demonstrates to the general public that a decently designed seaplane can land, and even get off any reasonable aerodromes on its floats alone, it will serve a useful purpose in encouraging a more extended use of seaplanes.

The mooring-out tests should be valuable, particularly in so far as they call for the machines being brought up to and moored to their buoys without any outside assistance.

These are purely matters of the technique of design, however, and the seaplane tests show no more idea of encouraging economical design than do the aeroplane tests.

The very allocation of twice as large an amount of prize-money for aeroplanes as for seaplanes, in a country like England, is in itself evidence of an absence of vision on the part of those responsible for the drawing up of the rules.

The Neglect of Seaplanes.

Great Britain, with its unequalled network of roads

and railways, is one of the most unpromising of countries for the development of overland aerial transport.

On the other hand, its island condition, the lack of direct communications along the coast-line, and the enormous cross-seas traffic with the Continent render it one of the most promising fields for the intelligent exploitation of seaplane services.

It would seem reasonable, therefore, to have devoted special attention to seaplanes, particularly as during the war seaplanes have been almost entirely neglected; but it may be assumed that, as seaplane manufacturers have been very nearly extinguished in this country, the Air Ministry has considered it safe to treat them with even more contempt than their slightly more vigorous brethren who build aeroplanes.—W. H. S.

EXHIBITION FLYING IN U.S.A.

The Director of Air Service, Washington, U.S.A., issued the following on July 22nd :—

"With the immense popular interest in flying together with the difficulties of living up to the common expectation and the technique of flying, it is remarkable that more accidents have not occurred through the use of makeshift fields. During the Victory Loan Campaign, teams of aviators, flying various types of high-powered, high speed machines, including even captured enemy Fokkers, covered almost the whole United States with the shadow of their wings, sustaining but one accident, and that to a spectator. Flights were made in 88 cities, utilising such fields in the vicinities as happened to be available."

THE "DAILY EXPRESS" PRIZE.

The Advisory Committee on the "Daily Express" £10,000 reliability prize, held its preliminary meeting on Aug. 22nd. The Committee decided to meet again on Aug. 29th, and will then announce the date on which entries will be officially received. Meanwhile, the Committee agreed to the extension of the closing date from June 1st to Oct. 31st, 1920.

Among those present were Brig.-General Sir Capel Holden, C.M.G., D.S.O. (Chairman); Lieut.-Col. F. K. McLean, D.S.O.; Lieut.-Col. A. Raikes, D.S.O.; Capt. G. Mansell; Capt. P. D Acland; Mr. A. Allen; and Mr. H. E. Perrin.



The R34 (1,950,000 cu. ft.; five 250-h.p. Sunbeam "Maori" engines) flying at Pulham Aerodrome, Norfolk. Below is the R24 (924,000 cu. ft.; four 250-h.p. Rolls-Royce engines) moored to a mast during mooring tests.

THE OFFICIAL BRITISH AIRCRAFT COMPETITION

The Air Ministry makes the following announcement:—

A Committee composed of members of the Air Ministry and of the Aviation Industry has been sitting for the past two months under the chairmanship of the Under Secretary of State for Air to consider the question of encouraging the future development of aviation on the lines of increased safety. A large number of witnesses has been called, including constructors and designers and representatives of the public who are interested in aviation. It has been decided, as stated in Parliament, to institute a competition open to the British Empire. Prizes to the value of £64,000 will be awarded by the Government under the conditions which are set out below.

Rules for a Competition for Aircraft to further the Attainment of Safety of Air Travel.

Notes on the Competition.

(a) The aim of these competitions is to obtain a real advance in the efficiency and design of aeroplanes and seaplanes, more especially with the view of increasing the safety of air travel. The rules drawn up are intended to secure this object.

(b) As regards the rules for aeroplanes it is recognised that the conditions are, generally speaking, easier for the small machine than for the large. The object in this is to attract a large number of competitors from amongst designers of small machines.

(c) The present competitions are not directly aimed at engine reliability, nor at economy in fuel and oil consumption, although these are of the first importance, but chiefly at the attainment of efficiency in the machine itself. A much longer time is required to produce radical improvements in engines than in machines, and since it is intended that the present competitions should be held early next year, it has been decided to concentrate attention on the machine on this occasion.

Rules.

Aeroplanes.

1. A competition will be held commencing on March 1st, 1920, with the object of ascertaining the best types of aeroplanes which will be safe to travel in, and, in particular, be capable of alighting in and rising from a small space.

2. Two types of aeroplanes will be entered for the competition.
   (a) Small type with a total carrying capacity of two persons (including pilot).
   (b) Large type with seating accommodation for 15 persons (exclusive of crew).

3. Machines and engines must have been designed and constructed within the British Empire. This rule will not, however, apply in the case of such secondary equipment as ignition system carburetters and instruments.

4. Machines are to fulfil all conditions required for a certificate of airworthiness, and are to carry parachutes for all persons for whom accommodation is provided, including crew.

5. Each machine must be capable of flying level at or above the following speeds with full load at ground level:—

Small Type.—100 m.p.h. Large Type.—90 m.p.h.

and must also be capable of flying level at or below the following speeds with full load at ground level:—

Small Type.—40 m.p.h. Large Type.—45 m.p.h.

Each machine must also be capable of climbing not less than:—

Small Type.—500 ft. in the first minute, starting from ground level.

Large Type.—350 ft. in the first minute, start from ground level.

6. Landing and Getting off Test.
   (a) A circle will be marked out on open ground to represent a field surrounded by obstacles. This circle will be of the following diameter:—
   Small machines ..... 175 yards.
   Large machines ..... 275 yards
   The obstacles will be represented by a continuous string or tape with streamers attached, 50 ft. from the ground, of such a nature as to be easily broken by an aeroplane.
   (b) The landing to be made in still air. Still air includes any wind not exceeding 5 miles per hour at ground level.
   (c) During landing the machine is not to side slip nor to turn, after reaching the obstacles until it is on the ground. Once it has touched the ground the machine may turn in any direction.
   (d) The machine to come to a standstill before reaching the marks representing the boundary of the field.
   (e) After landing, the machine to get out of the same field over the 50 ft. obstacle in still air (as defined in sub para. (b), no turn to be allowed until clear of the obstacle on the far side.
   (f) No breaking device operated by the engine may be used during landing.
   (g) Any landing or taking off gear used must be integral with the machine.
   (h) No landing apparatus may be used that in the opinion of the judges would be liable to cause undue damages to an aerodrome, e.g., a claw attached to the machine as used on certain types of German machines would not be allowed, but the ordinary knife edge on a tail skid would be allowed.
   (j) Both landing and taking off to be with full load.
   (k) Each machine will be allowed two trial attempts (which are definitely not to be counted as tests), and thereafter will be allowed four attempts, of which two must be successful.

7. Reliability Test.
   (a) In the case of the small type, each machine must carry out a series of two flights of 3½ hours each at a speed, through the air, of not less than 80 miles per hour, starting with full load. Between flights machines will be left untouched, and under seal if necessary, a period of not more than 30 minutes being allowed before the second flight, for the purpose of filling up and normal examination.
   No parts of the machine to be adjusted or changed without permission from the judges.
   (b) In the case of the large type, each machine must carry out one flight of seven hours' duration at a speed, through the air, of not less than 75 miles per hour, starting with full load. Pilots may be changed during those flights.

8. Machines must be capable of landing from a height of 500 ft., with their engines switched off or completely throttled down.

9. In a machine having two or more engines, the stoppage or retardation of any one engine must not prevent the machine from flying level nor cause it to get out of control.

10. Machines must be capable of being started from the cockpit or cabin without undue muscular exertion on the part of the pilot.

11. Machines to be capable of flying at cruising speed for 5 minutes without the use of any controls or stabilising devices. Controls may be locked during this test.

12. Machines to be capable of standing unattended and not fastened down in a wind of 10 miles per hour, blowing in any direction with reference to the machine.

13. The design of the machines to be such that the risk of the machines turning over on a rough ground is reduced to a minimum.

14. Each machine to be provided with a complete outfit for pegging it out in the open. This outfit will not be carried as part of the load during tests.

15. In order to be eligible for prizes, machines must fulfil the conditions and tests laid down in Rules 3 to 14 inclusive. Marks will be awarded for soundness and quality of construction, for general features and for exceeding the specified requirements in Rules 5 and 6.

16. "Soundness and quality of construction" will include:—
   (a) Fire protection, including use of self-sealing tanks, position of tanks (from the point of view of safety from fire in event of a crash), fire-fighting appliances and accessibility of same.
   (b) Reliability of petrol, oil, and water systems; and facilities for seeing if all tanks are full.
   (c) Durability of machine, including propeller (any advantages due to metal construction may be taken into account).
   (d) Simplicity of design and accessibility of parts.
   (e) Absence of vibration in the machine.

17. "General features" will include:—
   (a) Efficiency and ease of control.
   (b) Unrestricted field of view to the front for the pilot
   (c) Silence as affecting occupants of the machine, including crew.
   (d) Comfort generally, including warmth.
   (e) Self-starting devices.
   (f) Method of wind screening adopted.
   (g) Convenience for use of instruments.
   (h) Freedom of entry and exit for occupants.

18. With reference to rule 6, marks will be allotted for the capabilities of machines to land in an area more restricted than that used for the tests.

In judging this, the point vertically below the point where the centre line of the machine crosses the tape will be marked on the ground and the maximum distance reached by the wheels of the undercarriage will be measured in a straight line from this point.

19. Marks will be allotted for exceeding the minimum high speed and for flying less than the maximum low speed.

20. The judges will have regard to the method of fitting parachutes and especially to the means of exit by parachute afforded to the occupants of the large machine, and will allot marks for the same.

21. Marks will be allotted for the convenience of pegging out the machine in the open and for the lightness of the apparatus necessary for pegging down.

22. Marks will not be given on account of the number of engines installed.

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WITH



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23. The following will be the allotment of marks.—
Soundness and quality of construction (Rule 16).—Sub-para. (a), maximum 8; (b) maximum 8; (c) maximum 6; (d) maximum 6; (e) maximum 4. Maximum total, 32.
General features (Rule 17).—Sub-para. (a) maximum 6; (b) maximum 6; (c) maximum 6; (d) maximum 5; (e) maximum 5; (f) maximum 3; (g) maximum 3; (h) maximum 2. Maximum total, 36.
High speed.—For each m.p.h. in excess of required minimum (Rule 5), ½. No maximum.
Low speed.—For each m.p.h. below required maximum (Rule 5), 1. No maximum.
Landing.—For every complete 3 yards less than the distance allowed in 175 yards for small and 275 yards for large machine (Rules 6 and 18), 1. No maximum.
Method of fitting parachutes (Rule 20); maximum marks, 5.
Convenience of pegging-out (Rule 21); maximum marks, 3.

FORFEITURE OF MARKS.

Adjusting or changing parts in reliability test. See Rule 7 (a); maximum marks, 8.
For every two minutes or portion of two minutes in excess of the maximum time allowed for filling—1 mark. See Rule 7 (a); maximum marks, 8.

24. With reference to Rule 6, when carrying out the landing and getting-off test, machines will start with the full load of petrol and oil and will be allowed to fly for 20 minutes. If they have not carried out their tests by the end of that period they must land and fill up again.

25. The type of propeller used on any machine must be the same for all the tests.

26. Full load is to include:—
Instruments as under
Revolution counter; aneroid; air speed indicator; turn indicator; compass; watch; oil pressure gauge (when necessary); air pressure indicator (when necessary); radiator thermometer (when necessary).

SMALL TYPE.—Petrol and oil sufficient to fly 450 miles at 3,000 ft. In addition, a load of 440 lb., to include weight of pilot and passenger, if carried, and parachutes.

LARGE TYPE.—Petrol and oil sufficient to fly 600 miles at 3,000 feet. In addition, a load of 3,000 lbs., to include weight of passengers, if carried, and also to include parachutes, but not to include the weight of crew.

27. Petrol and oil for the tests and, as far as possible, accommodation (at owner's risk) for the machines will be supplied free by the Government.

28. The judges shall have the right to disqualify any machine that is very seriously defective in any respect.

29. The judge shall have the right to put up a Service pilot to fly any of the machines should they consider it desirable to do so at Government risk.

All tests will, however, be carried out by the entrant's pilot.

30. During or on completion of any flying test if it is necessary to effect any repairs to the machine after landing, it will be considered to have failed in that particular test.

This does not apply to cases where the machine is by the judges' instructions being flown by the pilot other than the entrant's pilot.

31. Any entrant may enter more than one type of machine.

32. If a machines is wrecked during the competition, it may, at the discretion of the judges, be replaced by another, but the replacement machine must carry out the whole programme of tests.

33. The decision of the judges shall be final in all matters affecting the competition.

34. The Government do not accept any liability in respect of accidents during the competition, whether resulting in injury to personnel or damage to the machine, except as specified in Rule 29.

35. The Government reserve the right to adjourn the competition.

36. The Government reserve the right to withhold any or all of the prizes if, in the opinion of the judges, no real advance on existing designs is shown.

37. The Government will, if the entrant agrees, buy the machine of each type winning the first prize, the designs to remain the property of the manufacturers. The maximum prices payable under this head will be:—
SMALL TYPE.—£4,000. LARGE TYPE.—£10,000.

38. The following prizes are offered:—
SMALL TYPE.—1st prize, £10,000; 2nd, £4,000; 3rd, £2,000.
LARGE TYPE.—1st prize, £20,000; 2nd, £8,000; 3rd, £4,000.

39. Entries to close Dec. 31st.

Rules.

SEAPLANES.

1. A competition will be held on March 1st, 1920, with the object of ascertaining the best types of Float Seaplanes or Boat Seaplanes in which it will be safe to travel, and, in particular, to be capable of alighting on and arising from land as well as water.

2. Each machine entered for the competition will be provided with seating accommodation for four persons, exclusive of the crew.

3. Machines and engines must have been designed and constructed within the British Empire. This rule will not apply in the case of such secondary equipment as ignition system carburetters and instruments.

4. Machines to fulfil all conditions required for a certificate of airworthiness, and to carry parachutes and lifebelts for all persons for whom accommodation is provided, including the crew. The boat or floats must be so sub-divided that if perforated in any one part, each float still retains positive buoyancy.

5. Each machine must be capable of flying level at or above a speed of 80 knots with full load at sea level, and must also be capable of flying level at or below a speed of 40 knots with full load at sea level.

Machines must be capable of climbing not less than 350 ft. per minute.

6. ALIGHTING AND GETTING OFF TESTS.

(a) Getting off test (sea).

Machines will be required to take off with full load and clear an obstacle 25 ft. above sea level in a distance not exceeding 300 yards from a position of rest.

(b) Alighting test (land).

Machines will be required to land on a smooth aerodrome over an obstacle 25 ft. in height and to come to rest in a distance not exceeding 400 yards, measured in a straight line from the point where the obstacle is crossed. For this, test machines will be required to carry full load, less 50 per cent. total and oil.—[*sic.*—Ed.].

(c) Getting off test (land).

Machines will be required to take off a smooth aerodrome with full load and clear an obstacle 25 ft. in height in a distance not exceeding 400 yards from a position of rest.

(d) The above tests are to be made in still air, which, for the purposes of this competition, will be regarded as any wind velocity not exceeding five statute miles per hour.

(e) During landing the machine is not to side-slip nor to turn after reaching the obstacle until it is on the ground. Once it has touched the ground the machine may turn in any direction.

(f) No braking device operated by the engine may be used during landing.

(g) Any landing or taking off gear used must be integral with the machine.

(h) No landing apparatus may be used that in the opinion of the judges would be liable to cause undue damage to an aerodrome.

(i) In test (a), (b), and (c) above, machines will be allowed four attempts, of which two must be successful.

7. TEST OF RELIABILITY IN FLIGHT.

(a) Each machine must carry out a flight of five hours at a speed through the air of not less than 70 knots, starting with full load.

Pilots may be changed during this flight.

8. MOORING OUT TESTS.

(a) Fair weather. Each machine will be moored to a buoy by its own crew and using its own mooring tackle (other than the buoy and its moorings) for a period of 24 hours, during the first 23 hours of which time it will be left unattended. The crew will not be allowed on board to pump out the bilges at any time during this test except with the permission of the judges in case of emergency.

At the conclusion of the 24 hours' period the crew will be allowed on board the machine and will be got under way by its own crew and under its own power, and will be required to carry out a short flying test within a period of one hour from the conclusion of the 24 hours' period.

The test will be carried out under fair weather conditions. Marks will be allotted for rapidity in getting under way.

Moderate weather. Each machine will be moored to a buoy for a period of not less than 12 hours, unattended under the following conditions:—

Locality.—Roadstead sheltered from the open sea.

Wind.—From 4 to 6 on the Beaufort Scale.

Marks will be allotted for the general condition of the machine at the conclusion of this test, and its behaviour during the test.

In both the above tests the ordinary average tidal currents existing round the coast of the British Isles may be experienced.

9. Rough water getting off and alighting test.

Each machine will be required to carry out a test of getting off and alighting on disturbed water, which, in the opinion of the judges constitutes a moderate sea. The condition, in any case, will not exceed state four in the sea disturbance scale. (Waves under 4 ft. in height).

10. Machines will be required to carry out a test of being



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towed in a moderate sea as defined in paragraph (9) in a circle of approximately ½-mile radius.

11. Each machine must make a figure of eight course round two buoys 100 yards apart and within a rectangle measuring 200 yards by 100 yards, in a wind not exceeding 15 m.p.h. The sea to be smooth and the tide at slack water.

12. Each machine must be capable of moving on the water, under its own power, for a period of at least 30 minutes, and at a speed of not less than 10 knots, and not greater than 20 knots.

13. Each machine will be required to carry an anchor and sea anchor as well as its own mooring tackle, and to anchor on good holding ground with its own gear, and remain fast in a wind of 10 m.p.h. and with tidal current not exceeding 3 knots.

14. In a machine having two or more engines, the stoppage or retardation of one engine must not cause the machine to get out of control.

15. Machines must be capable of flying at cruising speeds for three minutes without the use of any control or stabilising devices. Controls may be locked during the test.

16. Machines, in the round flying position, must take up and maintain a gliding angle, when the engine or engines are cut off without the use of any controls or stabilising devices.

17. After stalling (1) machines must be capable of recovering flying speed and complete control without a loss of more than 500 feet of height.

18. Machines must be capable of being started from the cockpit or cabin, without undue muscular exertion.

19. (1) In order to be eligible for prizes machines must fulfil the conditions and carry out the tests laid down in paragraphs 2 to 18 inclusive. Marks will be awarded for soundness and quality of construction, for general features, for general behaviour afloat, and for exceeding the specified requirements in Rules 5 and 8 (a).

20. (2) Soundness and quality of construction will include :—
- (a) Fire protection, including use of self-sealing tanks, position of tanks (from the point of view of safety from fire in event of a crash), fire-fighting appliances and accessibility of same.
- (b) Reliability of petrol, oil and water systems, and facilities for seeing if all tanks are full.
- (c) Durability of petrol, oil and
- (c) Durability of machine including propeller (any advantages due to metal construction may be taken into account).
- (d) Simplicity of design and accessibility of parts.
- (e) Absence of vibration in the machine.
- (f) Ease of repair, especially in regard to the hull or floats.

21. (iii) General features will include :—
- (a) Efficiency and ease of control.
- (b) Unrestricted field of view to the point [? front] for the pilot.
- (c) Silence as affecting occupants of the machine.
- (d) Comfort generally, including warmth.
- (e) Self-starting devices.
- (f) Convenience of mooring and anchoring arrangements.
- (g) Method of wind screening adopted.
- (h) Convenience for use of instruments.
- (i) Freedom of entering and exit for occupants.
- (j) Bilge pumping arrangements.

22. Behaviour afloat will include :—
- (a) Stability at rest.
- (b) Water stability at all speeds.
- (c) Minimum spray at all speeds.

23. Marks will be allotted for exceeding the minimum high speed and flying less than the maximum low speed.

24. The judges will have regard to the method of fitting parachutes and especially to the means of exit by parachute afforded to the occupants and will allot marks for the same.

25. Marks will not be given on account of the number of engines installed.

26. The following will be the allotment of marks :—

Soundness and quality of construction (Rule 20).—Sub-para. (a) 8; (b) 8; (c) 6; (d) 6; (e) 4; (f) 4; maximum total, 36.

General features (Rule 21). Sub-para. (a) 6; (b) 6; (c) 6; (d) 5; (e) 5; (f) 5; (g) 3; (h) 3; (i) 3; (j) 3; maximum total 45.

Behaviour afloat (Rule 22).—Sub-para. (a) 6; (b) 6; (c) 6; maximum total, 18.

High speed (Rule 5).—For each knot in excess of required minimum, ½; no maximum.

Low speed (Rule 5).—For each knot below the required minimum, 1; no maximum.

Mooring-out test (Fair Weather) (Rule 8a).—For each complete 5 minutes less than the hour allowed from the completion of the 24-hour period to the moment when the machine leaves the water; 1 mark.

Mooring test in moderate weather (Rule 8b).—For behaviour of machine during test; maximum marks, 5.

For condition of machine at end of test; maximum marks, 5.

Method of fitting parachute (Rule 24); maximum marks, 5.

27. With reference to Rule 6, when carrying out alighting and getting-off tests machine will start with the load of petrol and oil specified and will be allowed to fly for 20 minutes. If they have not carried out their tests by the end of that period, they must alight and fill up again.

28. The type of propeller used on any machine must be the same for all the tests.

29. Full load will include :—

Instruments as under :—Rev. counter, aneroid, air speed indicator, compass, watch, turn indicator, bearing plate, sextant, oil pressure gauge (when necessary), air pressure gauge (when necessary), radiator thermometer (when necessary).

Petrol and oil sufficient to fly 450 nautical miles at 1,000 ft.

In addition a load of 1,000 lb., to include passengers if carried, and lifebelts and parachutes, but not including crew or any gear specified in Rules 8 (a) and 13.

30. Petrol and oil for the tests, and, as far as possible, accommodation (at owner's risk), for the machines will be supplied free by the Government.

31. The judges shall have the right to disqualify any machine which is very seriously defective in any respect.

32. The judges shall have the right to put up a Service pilot to fly any of the machines, should they consider it desirable to do so at Government risk.

All tests will, however, be carried out by the entrant"s pilot.

33. During or on completion of any flying test if it is necessary to effect any repairs to the machine after alighting it will be considered to have failed in that particular test.

This does not apply to cases where the machine is by the judges' instructions being flown by a pilot, other than the entrant's pilot.

34. An entrant may enter more than one type of machine.

35. If a machine is wrecked during the competition, it may, at the discretion of the judges, be replaced by another, but the replacement machine must carry out the whole programme of tests.

36. The decision of the judges shall be final in all matters affecting the competition.

37. The Government do not accept any liability in respect of accidents during the competition, whether resulting in injury to personnel or damage to the machine (except as specified in Rule 32).

38. The Government reserves the right to adjourn the competition.

39. The Government reserve the right to withhold any or all of the prizes if, in the opinion of the judges, no real advance on existing designs is shown.

40. The Government will, if the entrant agrees, buy the machine winning the first prize, the design to remain the property of the manufacturer. The maximum price payable under this head will be £8,000.

41. The following prizes are offered :—1st prize, £10,000; 2nd prize, £4,000; 3rd prize, £2,000.

42. Entries to close Dec. 31st.

[The eccentricities of style and grammatical construction are those of the Air Ministry officials who drafted the rules. The curious sub-paragraphing of paragraphs 19, 20 and 21 of the Seaplane Section is also to be attributed to the same source.—Ed.]

MORE PRIZES OFFERED.

It is announced that the French Government has allotted some £8,000,000 to commercial aviation. Prizes will be awarded to companies establishing air lines (1) in France, for lines going East to West; (2) for Colonial lines connecting France and the colonies; (3) for Colonial lines opening communication with distant points in the interior.

The Control Board undertakes the preparation and equipment of landing stages to be established every 50 or 60 kilometres. According to their importance, these aerodromes are to be classified as "air ports" (for the reception of every type of flying machine), "air stations" (with hangars, hotels, etc.), or "stops" (for revictualling).

THE TRANS-PACIFIC RACE.

The Aero Club of America announces that aviators who wish to enter for the trans-Pacific Race in September, for which Thomas H. Ince has offered a prize of £10,000, should make application to any club affiliated with the Federation Aeronautique Internationale. The entrance fee is 500 dollars.

If westward, the flight must be made from Venice, California, and the finish be in Australia, Japan, the Philippines, or the Continent of Asia. But it may be made eastward from any of these places.

Contestants must complete the flight within 288 hours from the time of starting. Ninety-five per cent. of the mileage travelled must be in the air. Towing is not prohibited, and stops and landings may be made en route.

In the event of no contestant being able to complete the flight, 10,000 dollars will be awarded to the aviator who, setting out from the Californian starting-place, reaches the Hawaiian Islands in the shortest time. Should no contestant succeed in reaching these islands, 5,000 dollars will be awarded to the aviator flying farthest in the air.

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A DANGEROUS POLICY.

By Captain P. A. BARRON (late R.A.F.).

The aeronautical correspondent of the "Times" has commenced a series of articles, the first of which is entitled "A Policy for Aviation." With most of the views expressed one disagrees with whole-hearted enthusiasm. The articles show that considerable thought has been given to the subject—just as one might say that the answer of a schoolgirl indicated thoughtfulness when she was asked whether a kiss was a common noun or a proper noun, and answered that it might be either common or proper according to the circumstances.

The danger of these articles that look so reasonable is that they are extremely likely to influence the opinion of the public that is not in a position to judge whether the premises upon which the arguments are based are sound. With all due deference to this writer, much of whose work one admires, it seems necessary, therefore, to criticise his views. In last week's issue of The Aeroplane it was pointed out that the proposal to allot a sum of £25,000,000 per annum to the upkeep of the R.A.F. showed lack of forethought, and that the sum would be entirely inadequate to the needs of the Empire. This writer in the "Times," however, calmly suggests that the maximum expenditure need not be more than £15,000,000 a year for all Government aviation for the next three or four years, and he suggests that of this sum only £12,000,000 would be necessary to provide for a force of 25 squadrons on a permanent basis.

He suggests the allocation of £1,000,000 per annum for the next five years, which would be distributed in prizes to civilian manufacturers, and that another £2,000,000 could be usefully employed by the Air Ministry on postal services with those parts of the Empire where Service squadrons are required strategically.

One feels strongly opposed to these views, because one sees clearly that a certain section of the Press to which the "Times" belongs is likely, in carrying out the policy of crying for a reduction in national expenditure, to go too far and to show an utter lack of discrimination in its efforts to point out where money can be saved advantageously, and where it cannot be saved without disastrous effects in the future.

Mental Equilibrium Needed.

At the present time, while the country is groaning under the burden of a ponderous income tax, and when most business men feel that the task of reconstruction is almost as hopeless as that of Sisyphus toiling at his rock, it is perhaps understandable that any proposition that appears likely to reduce expenditure will be received favourably by the public. One expects, however, that papers which at one time were regarded as authoritative should retain a certain amount of sanity in dealing with present-day problems. The scheme put forward does not give one the impression that this desirable state of mental equilibrium exists.

If one has understood the views expressed, it appears to be thought that the R.A.F. can be almost neglected and that the Government should encourage the development of Civil Aviation in order that a Reserve Force may be built up somewhat similar to the reserve formed by the Mercantile Marine. It is argued that "the initial stages . . . of the training of pilots and navigators are identical for both Civil and Service personnel, and that all that the Service personnel need is additional specialised training. All training for both types of pilots should be carried out at the same schools with the same instructors, the permanent Service pilots merely going on to purely Service schools for advanced training."

One can only say that one does not agree. On the same line of argument one might say that every boy in England who wishes to make the sea his career should go to the Royal Naval College, and that after receiving instruction there those who desire to enter the Royal Navy should receive a little extra education, while the remainder would go into the Mercantile Marine. One disagrees with this view because one knows that the training of the boys who enter the Royal Navy is entirely different from that of others who enter the Mercantile Marine. And exactly the same thing would apply in future to those who enter the career of Commercial Aviation and those who wish to serve their King.

A Mistaken Idea.

One is not saying that the personnel to be found in Commercial Aeronautics in the future will not be a great asset to the country. One realises that it will; exactly as the personnel of the Mercantile Marine was an enormous asset to the Royal Navy in war-time. It will form a great reserve, but one feels strongly that the idea that the same schools will serve for both Civil and Service pilots is a mistaken one.

But it is when one turns from the subject of personnel to that of equipment that one finds oneself most strongly in disagreement with the aeronautical correspondent of the "Times." For example, he writes: "Most types of civil aircraft as they develop will be capable of conversion into war craft comparatively easily." Now this is one of those statements which are so apt to mislead the public, who still believe—for their fathers have told them—that the "Times" is a journal that speaks with authority, and they are therefore not likely to question such statements as these.

But let us examine it in the light of our faith in future aeronautics. Is it probable that civil aircraft as they develop will be capable of conversion into war aircraft comparatively easily? One must at least be allowed to doubt. For instance, among the qualities required for war machines are rapid climb, high ceiling, and manœuvreability. As one is writing for a technical audience, one need not explain why.

Are these qualities required to the same extent in commercial aircraft, in which it would appear that the greatest desiderata are speed, cargo-carrying capacity, and economy? A moderately high ceiling may be necessary in order that navigators may find a favourable weather stratum, but, judging by what we know of the very rapid progress that has been made in the development of anti-aircraft guns, one thinks that it will be far more important for Service machines to attain a great height rapidly than it will be for machines designed for purely commercial purposes. Again, what immediate use can one see in Civil Aeronautics for the fast single-seater fighting machines which played so great a part in the closing months of the war? The answer would appear to be none.

Truth May Become Untruth.

In these days of rapid change one feels it necessary to express one's ideas with considerable diffidence. Certainly one does not wish to be dogmatic. For a truth too vigorously expressed may become an untruth. A lie has been prettily defined as "an abomination in the sight of the Lord, but a very present help in time of trouble"—which means, presumably, that it is a useful thing to hurl into an argument when one finds oneself in a tight corner.

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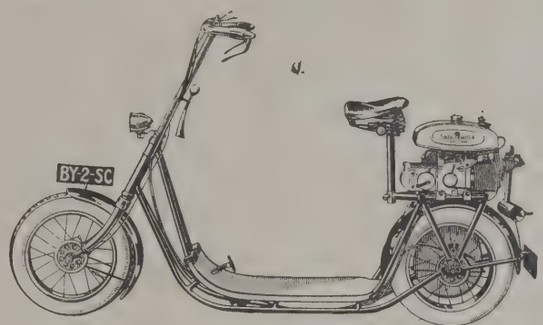
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At this stage one is merely inclined to say that it is a very dangerous proposition to state that commercial aircraft and fighting aircraft are likely to develop upon the same lines. To fall back on analogy one feels that upon a similar argument the less-educated section of the British public might have been induced to believe that because we had the greatest Mercantile Marine in the world a Fleet was unnecessary, and there might be a certain number of people who would be induced to think that it would pay us better to subsidise liberally a Merchant Fleet and let the Navy go. The more enlightened would think differently, knowing that the two are distinct and in war have entirely separate uses.

Commercial aircraft may prove an asset of incalculable value in war, just as did our Mercantile Fleet, although one would not send out Atlantic liners to fight enemy Dreadnoughts. By all means let Commercial Aeronautics be encouraged, but not by starving the R.A.F.

In a second article the aeronautical correspondent of the "Times" calls for an entirely new organisation with many responsible official positions. With this one may perhaps deal on a future occasion. For the present one has said enough.

Fiat justitia, ruat cœlum. One trusts that one has misjudged or misread some of the views expressed in the "Times." One can only say that one has studied them, and that, if the points mean what they seem to mean, one is in entire disagreement with the views expressed.

MISDIRECTED CRITICISM.

A lot of hysterical nonsense has appeared in the daily Press recently with regard to Lord Midleton's accusations of Governmental waste of money at the Dorchester aerodrome.

Upon the principle that any stick is good enough to beat a dog with, the papers belabour the Government (1) for building a great airship shed on farm land that was yielding good crops; (2) for paying unreasonably high wages to workmen; (3) for not paying the owner of the land—an apparent attempt at economy; (4) for leaving the great steel and corrugated iron building unfinished; (5) for not pulling it down, and so on.

The fact is, of course, that the country is at present in a panic over the expenditure on the war, and that anyone who wishes to make a bid for popularity has only to accuse the Government of wicked waste to achieve his object. That money has been squandered recklessly everybody knows, but the critics are not happy at the examples they bring forward.

In this particular case the Admiralty appear to take the view that it would be less costly to finish the great building than to demolish it. If it is demolished the entire cost, exclusive of the comparatively small amount the materials might realise, would be a dead loss to the country. If, on the contrary, the building is completed and the landing ground prepared as originally intended, the country will have as an asset one of the finest aerodromes for airships in the world. If it is pulled down now, it will certainly be necessary to erect a similar building in a few years' time.

As one said before, the examples of waste that are brought forward are badly chosen. One could almost believe that everybody concerned is in a conspiracy to divert public attention from the greater scandals by focussing the electors' thoughts on the minor ones which rhetorical Ministers can prove are not scandals at all but are evidence that we have the best of all possible Governments in the best of all possible worlds.

Let the critics demand to know why hundreds of the best of our pilots were literally sent to certain death by the blundering attempts of the Technical Department to foist inferior machines and engines on the R.F.C. and refuse the infinitely superior products of private enterprise. Let them look to the things that really matter, discover the great criminals and demand that a few of them be shot if necessary, but this mean quibbling over comparatively small matters leads nowhere.—P. A. B.

MAJOR-GENERAL SEELY'S DEFENCE.

The statements made by Major-General the Right Hon. J. E. B. Seely, C.B., C.M.G., D.S.O., M.P., in the House of Commons, in reply to the charges of extravagance, have been criticised severely. A correspondent of the "Times" writes regarding the alleged waste at Blandford:—

"Indignation is expressed at the suggestion that there is no room in the camp to house the girls who are engaged as clerks in the Records Office, and that it is necessary to convey them by train from and to Bournemouth every day. A walk round the camp shows that, in addition to numerous unoccupied huts, there are blocks of brick and concrete buildings of a permanent character standing empty, and suggesting in themselves a solution of a fair-sized housing problem. In fact, over a wide expanse of hutments to the east of the camp railway terminus there are only one or two occupied huts to be seen.

"With regard to the cost of transporting some 400 girl clerks daily from and to Bournemouth, Major-General Seely denied that the cost per head per day was 4s. 7½d., and submitted as the true cost the figure of 11½d. The ordinary passenger who wishes to visit Blandford from Bournemouth is required to pay 4s. 7½d. for his return ticket. If the Air Force pays at the rate of only 11½d., who pays the difference? According to Mr. Lloyd George, there is no doubt that the railways at the present moment are run at the expense of the State, so, no doubt, the taxpayer pays the difference, and enables the Air Force to commend itself for its economy."



Some Officers of the U.S. Army Air Service serving in France towards the end of the War.

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The WORLD of AERONAUTICS

NEWS OF THE WEEK FROM ALL QUARTERS

The Schneider Cup Race.

In last week's issue the British entries for the Jacques Schneider International Race were announced. The Royal Aero Club has now received particulars of the French and Italian entries. They are:—

Two Nieuport machines with 300 h.p. Hispano-Suiza engines. The pilots are Malard and Casale.

One Spad (type of engine not stated). Pilot, Sadi LeCointe.

The Italian entry is a Savoia hydroplane type S.13 single-seater, with a 250 h.p. Isotta engine. Pilot, Janello.

The Royal Aero Club is making arrangements for members to have a reserved enclosure at the end of Bournemouth pier from which a full view of the race may be obtained.

Members who require tickets should apply to the Secretary, Royal Aero Club. As already announced, the race will take place on Wednesday, Sept. 10th.

The Sopwith Schneider Cup Seaplane.

The Sopwith machine entered for the Schneider Cup Race is a small single-seater float seaplane, fitted with a 450 h.p. Cosmos "Jupiter" engine. She follows the usual practice in small float seaplanes, and is more or less a modernised version of the original Sopwith seaplane that won the "Cup" at Monaco in 1914. The fuselage is built up in the usual way, and is faired for about half the length, so as to retain the form of the circular cowl that covers in most of the engine, the circular form gradually giving way to the ordinary slab-sided fuselage which tapers to the trailing edge of the rudder, the base of the rudder, which is directly in rear of the fuselage, being brought up to the thickness of the end of the fuselage and streamlined off. The small fin is also streamlined and built into the top of the fuselage, and hinged to it is a small unbalanced rudder. There is no tail float.

The "Cosmos" engine is bolted direct to the engine-plate, and has four extra attachments in the way of stays leading from the front edge of the crankcase to the engine-plate. There are four tanks carried in the fuselage in front of the pilot, one large one in the fuselage and three smaller ones carried in the streamlining in the top and sides of the fuselage.

The main planes are attached to the sides of the fuselage and the centre section respectively, and have one set of struts either side of the fuselage, the top plane being set at a slight negative stagger. The pilot's seat is in rear of the main planes, and has a streamline hump behind the pilot's head. Two large unstepped floats are fitted to the fuselage by four streamlined struts.

The Avro Schneider Cup Machine.

The machine designed and built by A. V. Roe and Co., Ltd., for the Schneider Cup is the lowest powered of the British entries. Originally designed for a Rolls-Royce "Falcon" engine of 275-h.p. is was found impossible to obtain an engine of this mark in time for the competition, and a Siddeley "Puma" of 230-h.p. was installed in place thereof.

The machine itself is a small tractor twin-float seaplane of 26-ft. span, with a very small chord and gap, an upper wing built as a single unit—i.e., with spars running from tip to tip—and therefore devoid of any dihedral, and a lower wing with rather a large dihedral.

The fuselage is relatively very deep, nearly the full depth of the gap, and rather short, with the pilot's seat behind the trailing edge of the wings. At the rear end tail surfaces of normal design—adjustable tail plane, elevators, fin and rudder—are carried, as is usual.

Two long stepped floats are carried on a very simple chassis, consisting of two struts on each side raking forward and outward and two cross members joining the bases of each pair of struts, the whole cross traced in the usual manner.

No tail float and no water rudder are fitted.

The machine—in an incomplete condition—looks extremely businesslike and promises a very considerable turn of speed.

A detailed description, together with some illustrations, will, it is hoped, be available for publication in the next issue of The Aeroplane.

The Fairey Entry.

The seaplane entered by the Fairey Aviation Co., Ltd., for the Schneider Cup, is a modification of a standard Fairey type 3 machine, fitted with a Napier engine of 450 h.p., and wings of reduced surface. In spite of the reduced area, the load to be carried for the race is so small that the actual loading per square foot will be less than that of the standard type with war load, and, with the larger engine, the speed should be very high. Mr. Fairey, however, does not expect to score particularly on speed pure and simple—though on that alone it will require something very fast to beat him. In the event of the race occurring on a rough day, however, the Fairey chassis and floats should stand the machine in good stead, simply because the machine will be able to get off and land, where a pure racing machine would inevitably crash.

The Supermarine.

At the moment of going to Press no particulars of the machine entered by the Supermarine Co. are available—beyond the fact that it is a single-seat boat seaplane, with a Napier engine of 450 h.p.

From what one has been able to gather of the machines entered, it seems fairly safe to assume that under bad weather conditions the race will not be won at any speed less than 125 m.p.h., and, that given reasonable weather, it will not be surprising if the speed reached is close upon the 150 mark.

Tawdry Recruiting Posters.

A kind of rash has broken out on the hoardings lately, which, when closely examined, is found to be composed of small, vividly coloured posters, calling for recruits for the R.A.F. One had hoped that the blatantly vulgar, coloured recruiting poster of war-time that tried to outshine the advertisements of patent medicines and revues was a hideous memory of the past. Perhaps they served their purpose, but one would think that at the present day a restrained and dignified announcement of the advantages the R.A.F. offers would have been more effective. A straightforward statement of the pay and advantages offered would, one thinks, be more likely to attract possible recruits than a picture of an aeroplane and the poor pun "getting a good rise." Also, one thinks that a sober-hued poster of official appearance would show more prominently among the flaming appeals to buy somebody's soap or pills than the style of thing that has been adopted.

Yet Another Committee.

According to the report of the Departmental Committee on the Protection of Wild Birds issued on Aug. 20th:—

"A new danger to bird life has been introduced by the shooting or bombing of wild birds from aircraft.

"Already considerable destruction has resulted. We recommend that the use of aircraft for killing or taking wild birds should be prohibited."

Many recommendations follow. All the proposed regulations should, it is urged, be committed to the care of an ornithological advisory committee, who should furnish all necessary advice.

This sounds very alarming, but one has not heard that the bombing of grouse has become a pastime in this country?

Landing on a Roof.

It is reported from New York that Edwin Ballough, a pilot of an aeroplane used for delivering goods by Bamberger, proprietor of a Newark department store, has performed the feat of landing on a roof and taking off again.

Ballough has thus eclipsed the feat of the late Jules Védrines, who landed on the roof of the Galeries Lafayette in Paris, but was prevented by the police from starting again.

The building on which Ballough descended is a warehouse belonging to the Army Quartermaster's Department. The roof is 978 ft. long with a slight peak.

No. 32 Squadron Reunions.

In order that old members of 32 Squadron may not lose sight of one another it is proposed that occasional reunions may be held. Lieut.-Col. T. A. E. Cairns, D.S.O., has accepted the presidency of the Club, the headquarters of which are at 30, Bedford Row, London, and Mr. P. P. Nicholl, of that address, is acting as Secretary, and will be glad to hear from ex-members of the Squadron.

An Absurdity.

At the R.A.F. Club the other day a member tried to pull the blue-trousered leg of a Major who has only just returned to England by telling him that an order is shortly to be issued to make it compulsory for all commercial aeroplanes to carry red rear lights. He explained that the Authorities had decided that this is the logical outcome of the recent decision that it is the fastest vehicles that need rear lights as they are rarely overtaken, whereas country carts and pedal bicycles which are passed by every car do not need protection. The Major made quite an interesting little speech on the text of "the d—— silliness of everything" before it dawned upon him that so far as the red lights on aeroplanes were concerned he had been badly stung.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

The WORLD of AERONAUTICS (continued)

The London-Madrid Non-Stop Flight.

The Air Ministry has issued the following :—

The pilot's report of the recent non-stop record flight from London to Madrid made by the Alliance biplane shows that the flight was remarkable in many ways. This machine, which was fitted with a 450 h.p. Napier "Lion" engine, was originally designed for the trans-Atlantic flight. The pilot and navigator Lieut. W. R. Curtis, R.A.F., was lent by the Air Ministry to the Alliance Company for the purpose of making this flight. He had with him Mr. J. A. Peters, the designer, as assistant pilot.

The following notes are taken from the pilot's report :—

"We left Acton Aerodrome at 7.30 a.m., steering a course for Havre. A heavy ground mist made visibility poor, and at times completely obscured the ground from view.

"7.55 a.m., passed over Brighton at 10,000 ft., where visibility improved, until halfway across the Channel, when thick clouds again obscured the water from view.

"8.50 a.m., passed over Havre, which we just sighted through a break in the clouds. Course was altered here for San Sebastian, and we gradually decreased our height to 6,000 ft., flying just below clouds which were very broken.

"At 11.10 we passed over Rochelle; just after leaving this place we ran into very bad weather, the clouds being very thick, and ranging from 2,000 to 10,000 ft. in depth. After having a very bad time in thick clouds we eventually found ourselves at 2,000 ft. flying just below them in most terrific bumps which also made the machine uncontrollable. After experiencing this for some time we decided to go out to sea and get clear of the land.

"Here we found much better conditions, the sky being almost clear. We climbed to 13,000 ft. and passed over San Sebastian at 1.10 p.m. Course was altered for Madrid and the land again became obscured from view owing to very heavy clouds.

"Nothing was seen of the Pyrenées, and the first land sighted was at 2.20 p.m., when the clouds began to break up. Madrid being sighted at 3.10 p.m., and we landed at Cuetro Vientos Aerodrome at 3.28 p.m., having completed the journey in 7¾ hours."

Beating the Cable.

When the Napier-engined Alliance machine recently made the magnificent flight from London to Madrid in seven and three-quarter hours a cable message was dispatched from Madrid to Napier, Ltd., to announce the successful finish of the flight. This cablegram was not delivered until 15½ hours after its dispatch, exactly twice the time occupied by flying the distance. When one thinks of the amount of mail that might have been carried, it is obvious that aeroplanes will be serious rivals to the cable companies.

An Official Record.

It has been notified to D. Napier and Sons, Ltd., by the Royal Aero Club that the speed attained by Captain Gathergood when he won the Aerial Derby with a Napier-engined Airco machine on July 21st has been accepted as a British "record" for a closed circuit. The speed on that occasion was 129.3 miles an hour.

Offered to the Nation.

Vickers, Ltd., have stated that they are willing to present to the nation the Vickers-Vimy-Rolls aeroplane in which Capt. Sir John Alcock and Lieut. Sir Arthur Whitten Brown accomplished the Transatlantic flight.

General Seely, Under Secretary for Air, replying to a Parliamentary question the other day, said he was asking the First Commissioner of Works, if, in the event of the aeroplane being offered to the nation, he could exhibit it in South Kensington or another museum.

Alleged Bigamy.

Archibald Gill, a demobilised R.A.F. officer, was committed for trial on bail at Braintree on Aug. 22nd on a charge of bigamy.

Maud Wells stated that she married Gill in June, 1918. He was demobilised in January of this year. In February of this year she found in his pocket an affectionate letter from another woman.

Twelve days later, it was alleged, Gill married an officer's widow named Jackson, and had booked two passages to South Africa when arrested for leaving his previous wife chargeable to Braintree parish—an offence for which he has just completed six weeks' hard labour.

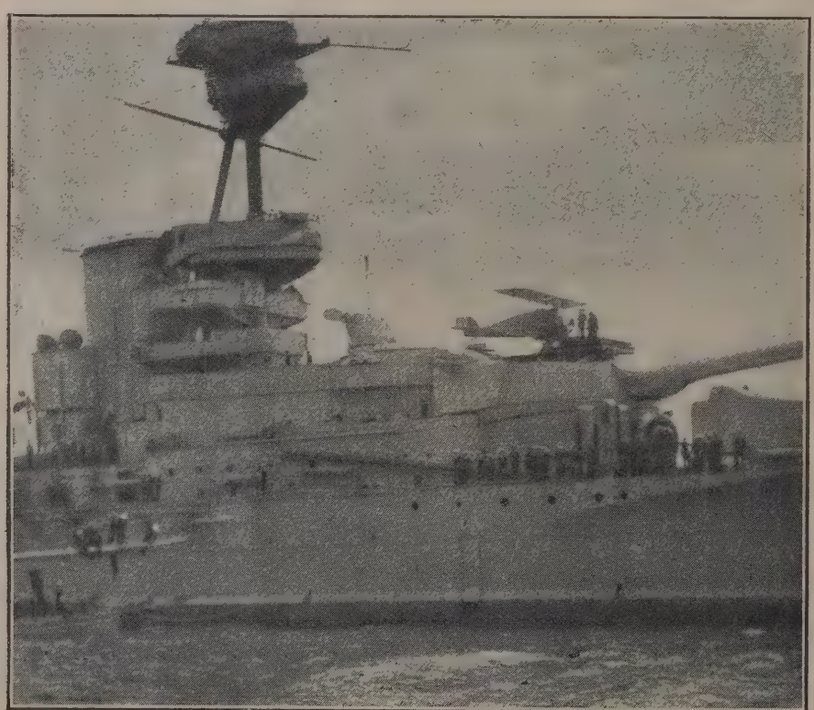
The Flying Dutchmen.

A writer in the "Evening News" says :—

"The enthusiasm of the Dutch for flying has its humours and its limitations. The people are what one flying officer calls 'load-testers'—the average weight per passenger, women included, has been about 13 stone during the exhibition. The limit was reached when seven men of the super-weight variety took their seats in a Blackburn machine. The pilot in an English aerodrome would have had no difficulty in getting off with this burden, but in Holland, where the ground generally is bad for both landing and starting, the machine gave up the ghost after making two attempts to lift."

The W.R.A.F. Clothing Inquiry.

Miss O'Sullivan, ex-Clothing Controller of the W.R.A.F., who made serious allegations regarding certain clothing contracts which have been the subject of an inquiry, has been demobilised. Miss O'Sullivan has stated that after the inquiry had been proceeding for 12 days, and before it was concluded, she was informed by the Commandant that she had been demobilised, although she had signed on for a further term of service.



A Parnell "Panther" Biplane (230 h.p. B.R.2) on a turret of H.M.S. "Revenge" with the launching platform folded up. The framework on the 15-in. guns to take the platform is shown in the print.

A Roof Aerodrome.

A Board of Trade Committee is considering a scheme for the establishment of a central clearing-house for London's goods traffic. It is proposed that the site of the clearing-house should be in Clerkenwell, and that the roof of the great building should be used as a commercial aerodrome.

Foolish Questions.

The pilots of the Avro seaplanes who are taking passengers for joy flights over Lake Windermere are sometimes asked curious questions. One woman passenger asked if the floats were intended to carry water ballast.

The London Flying Club.

The London Flying Club was opened at Hendon on Saturday, August 23rd. Among those present at the opening ceremony were H.H. the Princess Hatzfeldt, Cdr. Philip de Crespigny, Mr. Beal Davis, Mr. and Mrs. McCreesy, and Mr. and Mrs. Claude Grahame-White. A Hawaiian Band has been brought over from America for the use of this club.

Some Athletic Sports.

The Social and Athletic Club of Short Bros., Limited, held their annual athletic sports on August 23rd at Rochester. There were four open events under A.A.A. laws, as follows :—100 yards flat handicap, 880 yards flat handicap, one mile flat handicap, and a women's 80 yards handicap.



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The WORLD of AERONAUTICS (continued)

A Corporal's Capture.

At Croydon Police Court on Aug. 23rd, Edward Henry O'Brien, 26, who described himself as a horse-breaker, of Peabody Buildings, Stamford Street, Blackfriars, was charged with being concerned with two other men not in custody in stealing from Kenley Aerodrome a Crossley motor-car valued at £1,200.

Corporal C. H. Greagsby, R.A.F., said that on Friday, about mid-day, when passing the front of a garage, he noticed the prisoner drive the car away. He took a note of the number, not being certain whether it was a car belonging to the Air Force or not. On ascertaining at the office that it belonged to the Air Force, he got another car and went in pursuit. He did not overtake the prisoner till near Purley, and then noticed that he had two other men with him in the car. The witness picked up an Automobile Association scout at Purley, and drove into Croydon, where he obtained the assistance of a policeman. They then continued till the main road became narrow near Friends Road, where a tramcar was about to stop. The witness then thought that by getting his car between the Crossley car and the tramcar that he could block the prisoner in, and did so, pulling up at an angle in front of the other car. The prisoner and his two companions jumped out and disappeared up Friends Road.

It was also stated that on leaving the car two of the men got away over a wall. The prisoner was followed by a crowd of people, and after an exciting chase he was captured.

The prisoner was remanded for a week.

A Sound Argument.

The following letter appeared in the "Times" of August 19th:—

Sir,—I see that the "Times" has discovered another Slough at Dorchester. Had the "Times" confined its criticism to the policy of continuing work after the Armistice, that criticism might have been justified. As it is, one can only be distressed at the hasty conclusions it seems to have jumped at. Perhaps I can enlighten you on some points.

The airship service expanded enormously at the end of 1917, chiefly owing to the adoption of "mooring-out" stations, which system was first thought out by the C.O. of Mullion Airship Station. These mooring-out stations consisted of a landing ground and a wood, in which the airships were housed. These moored-out airships had to return every few weeks to the parent station for overhaul. Now, Mullion was the parent station of Toller (Bridport), Laira (Plymouth), and Bude. Eastbourne was the parent station of Slindon (Chichester) and Upton (Poole). I was C.O. of Toller, and a friend of mine was in command at Upton. We both found it very difficult to keep in touch with our parent station, and an intermediate station was advisable. The approach to Southampton and the suitability of Lyme Bay for submarine-resting made Toller and Upton indispensable at the time, but Dorchester would have absorbed both.

This is one of the many justifications for Dorchester.

Let us turn to your Special Correspondent's criticisms. They may be headed:—(1) Ground; (2) sand; (3) a pit; (4) a well; (5) what he calls "wings," apparently wind screens. These points can be easily dismissed.

(1) Can anyone find 400 acres of land midway between Eastbourne and Mullion, near a railway and near fairly good roads, uncultivated?

(2) Sand could have been obtained by quarrying. Would the contractor have brought sand from the Midlands, if he could have obtained it cheaper on the spot? Surely the labour question must enter into the arrangement. It is probably cheaper to buy sand than quarry it.

(3) Perhaps your correspondent would have liked the gas plant to have been in the pit. As these plants cost a quarter of a million, perhaps it is better "with its sides falling in."

(4) A well is surely necessary.

(5) Wind screens can be easily dismantled and the corrugated iron used for roofing. As for there being little work done by November, 1918, I believe you will find that the station was to have been opened in February, 1919, so that the work must have been well advanced by the end of 1918.

I may add that I hold no brief for the R.A.F. or anyone else, having been demobilised last March.—Yours faithfully,—H. Vivian Terry, late C.O., Toller R.N. Airship Station. Goldhanger, Witham, Essex, Aug. 15th.

[Moreover, as Lord Lytton stated in the House of Lords on Aug. 18th, it was not a fact that the war ended at the Armistice. Even now the Peace Treaty is still unratified by certain belligerent nations, and the Government had at least to be ready for a renewal of hostilities up to the signing of Peace in June.—Ed.]

A Miracle of Ignorance.

"The Freeman's Journal," in an article on the use of helium, says: "Hydrogen is highly inflammable, and few airships have escaped being burnt in consequence." The writer might just as truthfully say that petrol is so inflammable that few motor-cars escape being burnt. Thus do non-technical journals display to us the vast ocean of their ignorance.

The Arrest of Alleged Smugglers.

The London newspapers gave much prominence last week to a report that there had been an alleged attempt to smuggle 20,000,000 marks and securities from Germany to Switzerland. The German "Tageblatt" hints that the owner of the money is a lady who formerly occupied a very prominent position in Germany, and recently thought of going to live in Switzerland with her children. The twenty million marks represent only a part of her very considerable fortune. The securities were entrusted to a Swiss family who have been staying here for a long time, and two members of the family undertook to convey the valuables under the supervision of a gentleman "well known to the public."

The money was taken from persons who travelled by the Berlin-Bale express, and they were chased by three aeroplanes. One of them carrying a high official of the Berlin police, developed engine trouble over Magdeburg, but the official entered another aeroplane, and resumed his journey to Nuremberg, where the arrest took place.

Scandals and Glory.

A correspondent of the Edinburgh "Evening News" who has written about the recent "scandals" thinks it necessary to defend the R.A.F. Thus:—

"Apparently the public are going to hear a great deal more about the seamy side of things aerial than of the countless feats of heroism in the period 1914-18. It will be well for people to believe the best of the Force—which developed latterly into a great army, and included all sorts and conditions of men and women—and to understand what a tremendous weapon was forged under difficult conditions. That such a large Force carried 'passengers' was undoubted; but so did the Navy and the Army. There was waste, of course. Everyone who went from aerodrome to aerodrome must have noticed the profusion which inevitably accompanies war; but there were economies also. The personnel of the Force know all about that. Cox did not present them with a sheaf of blank cheques. But there was no economy in one respect—bravery."

The writer states the obvious rather prettily.

168 Miles per Hour.

It is announced by the Director of Air Service, Washington, that Lieut.-Col. H. B. Clagett, with Serjt. Ralph Kratz as passenger, made a flight in a De Havilland machine (make of engine not stated), from the Capitol at Washington to the Statue of Liberty in New York, 210 miles, in 75 minutes, which is at the rate of 168 miles per hour. It is claimed that this establishes a new record. The previous fast records were made in 84 minutes. Lieut.-Col. Clagett flew at an elevation of 4,000 ft.

Another Altitude Record Claimed.

Lieutenant Weiss, accompanied by his mechanic Beque, on August 13th, attained a height of over 9,000 metres (about 29,500 ft.).

The machine, a Bréguet 300-h.p. Renault, fitted with a Rateau super-charger, ascended from the Villacoublay Aerodrome at 6.30 p.m., and made a good landing at 8.10 p.m., the actual climb only taking 52 min. The pilot, who was forced to descend on account of the darkness, declared that he encountered a temperature of 32 deg. (centrigrade) below zero (equals 25.6 deg. below zero Fahrenheit). The exact official altitude reached will not be known until later. The pilot stated that he could have ascended much higher, but owing to the lateness of the hour he was afraid that he would not be able to land before dark.

A Use for Unserviceable Machines.

The U.S. Air Service has decided to offer a large number of unserviceable engines and aeroplanes to American colleges and schools that undertake to teach aeronautical engineering. This appears to be an excellent method of disposing of machines that would otherwise be reduced to produce.

COMING EVENTS.

August.

Amsterdam Aircraft Exhibition. (Still open.)

September.

Monday, September 1st.—Last day for presentation of British machines for the Schneider Cup Competition.

Wednesday, September 3rd.—Henlow Recruiting and Repair Depot, R.A.F. Second annual Sports at the R.A.F. Cricket Ground, Henlow.

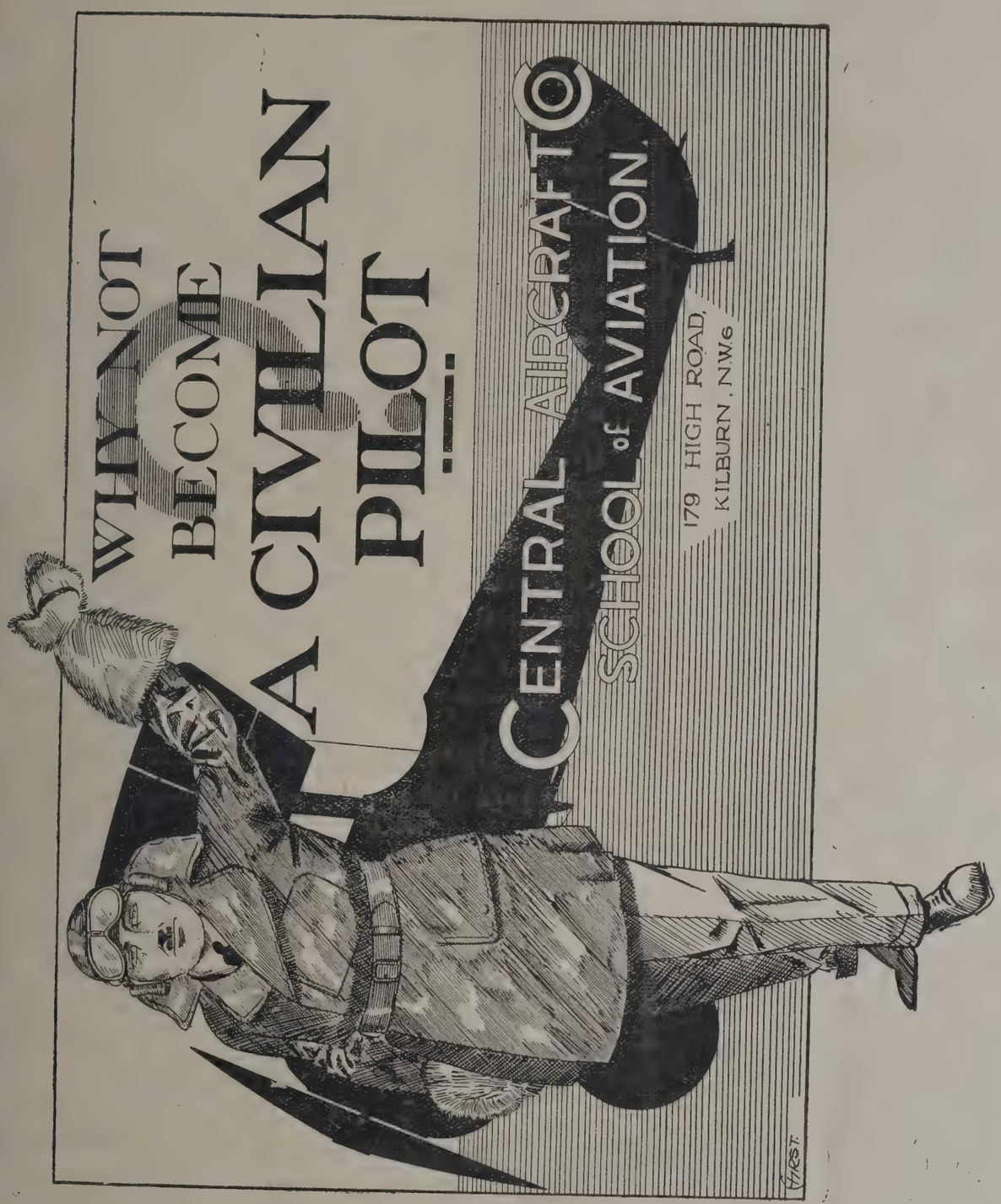
Wednesday, September 10th.—Schneider Cup Competition, Bournemouth.

Dates to be Announced Later.

Hendon-Paris-Hendon Air Race.

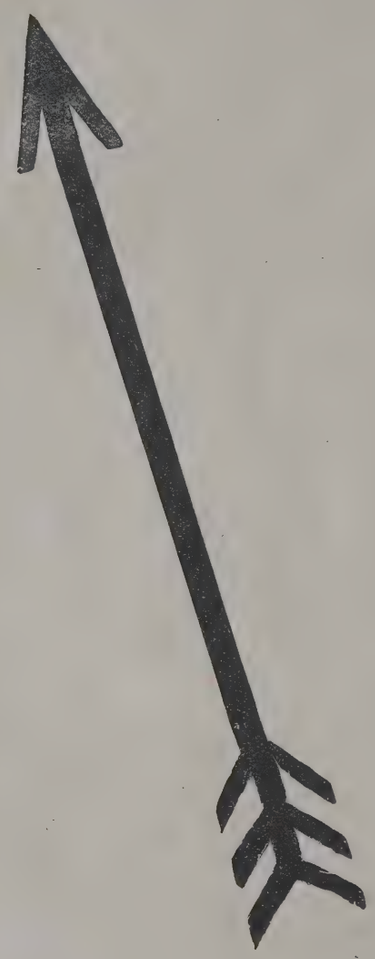
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INCORPORATING AIRCRAFT ENGINEERING, AERODYNAMICS, AIRCRAFT FINANCE AND COMMERCIAL AERONAUTICS AND MATTERS PERTAINING TO THE AERONAUTICAL ENGINEER AND THE AIRCRAFT TRADER.

THE WEEKLY COMMENTARY.

The article on "Aerial Propulsion" by Capt. W. H. Sayers is concluded in this issue.

In it Capt. Sayers points out some of the practical difficulties which have so far prevented the development of the internal combustion turbines, and makes the suggestion that the possibility of direct jet propulsion for aeroplanes is worth investigation.

Under the head of "Modern British Aeroplanes" some of the recent work of the firm of Martinsyde, Ltd., is described.

Mr. T. S. Harvey contributes further notes upon the Italian Aero Show at Taliedo.

An extensive abstract of the report issued by the American authorities, describing the special plant laid down at the Bureau of Standards for testing aero-engines under conditions similar to those which occur at high altitudes, is commenced in this issue.

AERIAL PROPULSION—II.

By CAPT. W. H. SAYERS (LATE R.A.F.).

The internal combustion turbine has attracted the attention of many engineers. A turbine driven directly by the products of combustion of gas or a liquid fuel, burnt under pressure and acting directly upon the blades of the turbine wheel, offers a prospect of great advances in the efficient use of fuel and of a great saving in the bulk and weight of power plant.

Unfortunately the difficulties of producing such a prime mover are very considerable, and have so far proved insuperable.

The elementary idea of providing a burner jet, somewhat after the style of a blow-lamp, and directing the flame upon the turbine blades, is obviously impracticable. There is no known material of which blades could be made which would stand the temperature or the erosive action of the hot gas.

Numerous ingenious attempts have been made to overcome this difficulty. Generally these have consisted in the provision of some form of separate combustion chamber to which gas, or oil, and air are introduced under pressure and there burnt. The products of combustion are then allowed to expand through some form of nozzle, gaining velocity and losing temperature therein before reaching the turbine blade. In many cases the gases have been diluted with cool air by the use of a kind of air injector, with the effect of increasing the total volume of gas and of reducing both its velocity and its temperature before reaching the turbine.

In one case the nozzle wherein the gases expanded was water-jacketed, and water from this jacket was injected into the gas stream. In this manner a working fluid was produced, consisting largely of super-heated steam, at a temperature, however, well below that of the products of combustion.

By thus diluting the products of combustion the difficulties of manufacturing the turbine itself have been fairly satisfactorily overcome, only to reappear in the combustion chamber, however.

The condition of being subject continuously to a very high temperature and pressure has proved too arduous for any known refractory material.

The cylinder walls and piston of a reciprocating engine are in contact with burning gases of equally high temperature and pressure, but only for a small fraction of the total working cycle, and they never themselves assume the temperature of combustion. Even so, elaborate methods of dissipating the heat which is imparted to them are necessary.

MIXED GAS AND STEAM TYPES.

Water-cooling of the combustion chamber has been attempted, but this involves a large waste of heat energy, partly recoverable by turning the cooling water into steam and mixing that steam with the burnt gas, but only at the cost of converting the plant into a steam turbine plant.

For aircraft purposes this is objectionable, because either condensers must be installed or a large supply of water must be carried and consumed over and above the fuel required.

Thus the internal combustion turbine, although a promising field for experimental research work, cannot be considered as likely to come into use as an aerial power plant for some years.

The consideration of the whole question of aerial propulsion suggests, however, one field for experiment which has not yet been explored.

In any form of internal combustion engine, reciprocating or turbine, the first step in the cycle of energy transformation is, as has already been pointed out, to impart motion to a volume of gas.

The final step in the cycle of energy transformations which occurs in the propulsive plant of any aircraft is also the setting in motion of a volume of gas.

Cannot the whole cycle be immensely simplified by imparting directly to a column of air the motion which is produced in the products of combustion by the heat of combustion?

The idea of direct jet propulsion is, of course, old.

Steam jet propulsion for ships was suggested certainly in the first half of the nineteenth century, but was not and cannot be satisfactory.

The efficient conversion of the energy of a gas at a high temperature and pressure into the kinetic energy of a jet of the same gas at atmospheric temperature and pressure involves a very high velocity on the part of the jet.

In the case of steam at 100 lb. per sq. in., for reasonable efficiency in such a conversion, the speed at which the steam must emerge from the nozzle is of the order of 1,000 ft. per sec.

The use of such a jet as a propeller is equivalent to the use of an airscrew giving a slipstream velocity of 1,000 ft. per sec., and would need a speed of propulsion of the aeroplane or other craft to which it was attached of 500 ft. per sec.—over 300 miles per hour—to attain a propeller efficiency of 50 per cent.

The extreme speed of ships may be put at 40 m.p.h., or about 60 ft. per sec., and under these conditions the efficiency of ship propulsion by a jet of gas at 1,000 ft. per sec. could not exceed 6 per cent. on the jet alone. As a steam engine and a marine propeller can certainly give 10 per cent. overall efficiency, reckoned from the initial calorific value of the coal, the jet method has little value in this case.

The speed of modern aeroplanes has reached 160 m.p.h. —nearly 250 ft. per sec.—and the efficiency of a steam jet propeller might accordingly reach something round 25 per cent.

This, of course, is simply the jet efficiency—in fact, it is not even that, since there are friction losses in the passage of the steam through the nozzle. Over and above this loss there are losses in the conversion of water to steam in the boiler and in the process of turning the pressure energy of the steam into kinetic energy of the jet, and the overall efficiency would certainly not equal that at present reached by the combination of internal combustion engine and airscrew.

In addition, the use of steam involves carrying large weights of water in this case as in others, and that rules it out of serious consideration.

At the same time it might be well worth while to experiment with a gas jet propeller. This would presumably be something of the nature of a gigantic blow-lamp, in which gas or vaporised oil and air would be mixed and burnt in an expanding nozzle. The velocity of the issuing jet of gas would, as in the case of a steam jet, be too high for efficient direct propulsion, and dilution by air, by using the original products of combustion in an air injector, thus increasing the volume of gas set in motion and reducing its velocity, will certainly be found necessary.

Any such method of dilution, whilst improving the propulsive efficiency of the final jet, will inevitably be accompanied by a loss in thermal efficiency of the system measured as the ratio of the original heat energy in the fuel to the total kinetic energy finally imparted to the moving stream of air.

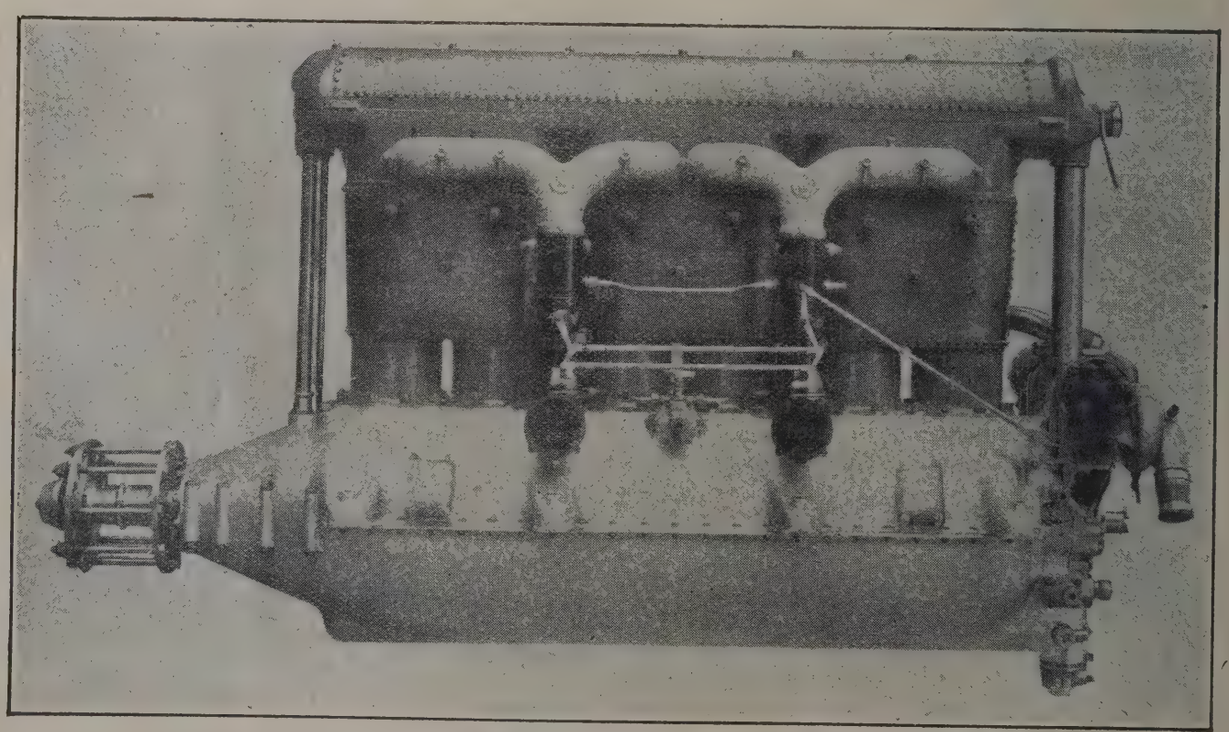
It will not necessarily be accompanied by a loss in the efficiency referred to the final useful energy imparted to the aeroplane.

It may also be pointed out that such a propelling plant offers prospects of being extremely cheap to construct and very light in weight, and that these two factors would compensate for a low overall efficiency and a fuel consumption appreciably greater than could be obtained by the present methods.

If, as seems possible, the speed of aircraft is greatly increased, the problem of direct jet propulsion will be correspondingly simplified, and the idea seems to merit detailed investigation.

Of course, for war purposes, a blow-lamp-propelled machine which had only to put its enemies into its own backwash to utterly destroy them would have uses which might justify the immediate adoption of the method.

Hostile airships, even helium-filled, would dislike such an aeroplane intensely, and night-flying demonstrations by such machines directed against barbarous races might produce an immense effect.



The 200 h.p. 6-cylinder Isotta-Fraschini Aero Engine. The cleanliness of outline is a notable feature.

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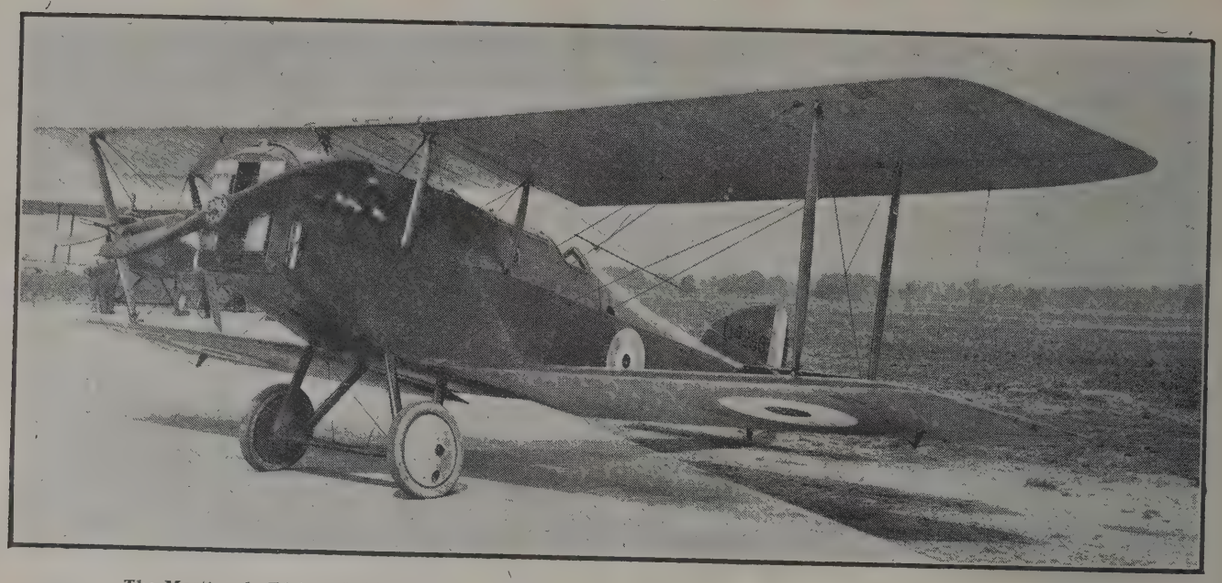
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MODERN BRITISH AEROPLANES.

XII.—Martinsyde, Ltd.



The Martinsyde F4 type fighter (300-h.p. Hispano-Suiza engine), one of the finest single-seaters ever produced.

The history of the Martinsyde firm dates back to the earliest days of British aviation, Messrs. Martin and Handasyde conjointly producing a monoplane as far back as 1908. The big "Martinsyde" monoplanes of 1911, 1912 and 1913, built at Brooklands, were noted for their graceful appearance and their wonderful flying.

Early in 1914 the firm built, for the late Gustav Hamel, an enormous monoplane upon which the Atlantic flight was to be attempted. This machine was to be powered by a "Sunbeam" engine of 250 h.p. and had tanks sufficient for a ton of petrol. The death of Hamel prevented the attempt from being made and the machine was never flown.

Towards the end of 1914 the firm produced their first biplane, a single-seat fighter with an 80 "Gnôme" engine, which was very successful and was ordered in quantity by the War Office.

A later "Martinsyde," fitted first with the 120-h.p. Beardmore engine, and later with the 160-h.p. engine of the same make, was equally successful, and the firm had to move from Brooklands to large works near Woking in order to meet the demands of the R.F.C.

Of their more recent products the types F3 and F4 are world famous as fighting aircraft.

THE MARTINSYDE TYPES F3 AND F4.

The F3 single-seat scout was designed and built in 1917. Fitted with a Rolls-Royce "Falcon" engine of 250 h.p. it had easily the best all-round performance of any aeroplane till then produced. It had a top speed of over 140 m.p.h. and was, it is believed, the first machine in the world to climb to 15,000 ft. in less than 15 mins. with full war load on board.

Unfortunately, Rolls-Royce "Falcon" engines were scarce and could not be spared for this type, and after some delay the machine was modified for the 300-h.p. Hispano-Suiza engine and was put into production as the F4, but did not reach any theatre of war before the conclusion of the Armistice.

These machines were of the usual single bay "scout" type, with lower wings staggered well back, and a deep fuselage, wherein the pilot is seated behind the trailing edge of the upper wing, sufficiently high to see both above and below that wing.

He has thus an exceilent all-round view. The armament fitted was standard, twin synchronised Vickers guns within the cowling firing through the propeller, and in conjunction with the extreme handiness of the machine and its very fine performance, would have rendered it a formidable antagonist.

The attached specification gives all the main characteristics of these machines, and their general appearance is well shown in the illustrations :—

SPECIFICATION.

Type of machine	Biplane
Name or type No. of machine	F4.
Purpose for which intended	Fighter
Span	Top plane, 32 ft. 9⅜ in.; bottom, 31 ft. 2⅜ in.
Gap, maximum and minimum	5 ft. 2⅜ in.
Overall length	25 ft. 5⅝ in
Maximum height	10 ft. 4 in.
Chord	Top plane, 6 ft 0½ in.; bottom plane, 5 ft. 6¼ in.
Total surface of wings	320 sq. ft. (all in).
Span of tail	11 ft. 1½ in. (over elevators).
Total area of tail	36¾ sq. ft. (tailplane and elevators).
Area of elevators	8¼ sq. ft. each (Total 16½ sq. ft.).
Area of rudder	9¾ sq. ft.
Area of fin	6½ sq. ft.
Area of each aileron and total area	Top, 11⅜ sq. ft. each; bottom, 9¼ sq. ft. each (Total 42 sq. ft.).
Engine type and h.p.	Hispano-Suiza, 300 h.p.
Airscrew, diameter and pitch and revs.	Dia., 8 ft. 8⅞ in.; Pitch, 6 ft. 6 in.; Revs., 1850 r.p.m.
Weight of machine empty	1710 lb.
Load per sq. ft.	7 lb.
Weight per h.p.	7½ lb.
Tank capacity in hours	3 hours.
Tank capacity in gallons	43 gallons
Performance—	
Speed low down	145 m.p.h.
Speed at 10,000 ft	143 m.p.h.
Speed at 20,000 ft.	126 m.p.h.
Landing speed	45 m.p.h.
Climb—	
To 5,000 ft.	3 mins.
To 10,000 ft.	6.30 mins.
To 20,000 ft.	19.30 mins.
Total weight of machine loaded	2,280 lb.

THE MARTINSYDE, TYPE A.

Since the conclusion of hostilities Martinsyde, Ltd., have turned their attention to the production of load-carrying machines for commercial purposes.

The "Raymor" built for Mr. Raynham's attempt at the Transatlantic crossing was a modified edition of the first of these types, the modification consisting of fitting fuel tanks up to the limit of the machine's carrying capacity.

As a commercial machine with 7 hours' fuel capacity, there is a large reserve of disposable load available for cargo or passengers.

A number of illustrations of the actual Transatlantic machine have appeared in past issues of The Aeroplane and no others are at present available.

The general particulars of the Type A, as this machine is to be called, are given below :—

SPECIFICATION.

Type of machine	"A."
Name or type No. of machine	Transatlantic (Modified).
Purpose for which intended	Commercial.
Span	43 ft. 4 in.
Gap, maximum and minimum	5 ft. 6 in.
Overall length	27 ft. 6 in.
Maximum height	11 ft. 0 in. (on prop).
Chord	6 ft. 6 in.
Total surface of wings	500 sq. ft.
Span of tail	12 ft. 4 in (over elevators).
Total area of tail	44 sq. ft.
Area of elevators	9.3 each (Total, 18.6).
Area of rudder	10 sq. ft.


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Area of fin .....6.68 sq. ft.
Area of each aileron and total area .....
17.36 sq. ft. each (Total 69.44 sq. ft.).
Engine type and h.p. .....Falcon Mark 3, 285 h.p.
Airscrew diameter and pitch and revs. .....
10 ft. dia.; 9 ft. pitch, approx. 1,300 revs.
Weight of machine empty .....1,800 lb.
Load per sq. ft. .....9.2 lb.
Weight per h.p. .....16 lb.
Tank capacity in hours .. ..7 hours.
Tank capacity in gallons .....110 gallons.

PERFORMANCE—
Speed low down .....125 m.p.h.
Speed at 10,000 ft. .....118 m.
Landing speed .....45 m.p.h.

Climb—
To 5,000 ft. .....8 mins.
To 10,000 ft. .....18 mins.
Disposable load apart from fuel .....2,000 lb.
Total weight of machine loaded .....4,600 lb.

AT THE TALIEDO SHOW AGAIN.

As I had expected, a good many more things had turned up by the time my second visit to the Show took place—i.e., towards the end of the ten weeks the exhibition was open. Among these mercifully was the Official Catalogue, a conveniently shaped pocketable work of 80 pages without adverts.

Then, too, the enemy trophies had got sorted out and their propellers, descriptions, and engines had assumed their correct places. Also another machine had arrived, so that the number slipped—just—into double figures.

The "thing of enormous span labelled Gotha" had turned into a torpedo-carrier seaplane, with Benz 400 motors, weight 3,182 kilos, useful load 1,616 ditto, with oil, petrol, crew, and armament. This latter was apparently at least one gun, as the forward gun ring base was all there. The craft has a boat-body, "does 130 kilometres per hour at low levels, and climbs to 1,000 metres in 16 minutes."

The motors, however, were not visible, and the machine was quite unreconstructible.

A moderate-sized flying-boat with motor very high on massive engine platform, wing floats, and radiator forming centre section of upper wing, evidently a relation of the Löhner family, is the last addition to the war trophy shed and the least interesting feature of it.

On the huge K.338 I now noted a four-bladed tractor driven direct by the Austro-Daimler V 350 motor. Also the wing struts appeared to be adjustable.

A further careful examination of the Caproni up-to-date section—there is also an educational or historical section in a different shed—revealed the fact that the whole of the monomotor triplane chassis is rubber-sprung to the fuselage, not the axle to the under-carriage struts or to its bearers, as is more usual. I read, too, that the wheels were to be set farther apart and more forward to parry any attempt at nose-planting on the machine's part when landing. The cables are enormous, themselves alone telling of the weight and speed for which the machine was designed, and the third and fourth interplane struts are integral with the sides of the fuselage. A four-bladed prop. is fitted, and rumour has it that the machine is not at all likely to stay on the shelf now that motors are easier to obtain.

A model of a proposed 2,000 h.p. five-motored triplane, a mere development of the 1,200 h.p. triplane, also came under my notice. The two extra engines, with their airscrews, are placed in false fuselages under the middle plane. At the end of the two real fuselages beneath the tail and extending downwards from it to the very root of the tail skids—which, it will be remembered, are supported on tall inverted "cabanes" or pyramidal structures consisting of kingposts and steel tubing—are two vertical fins of generous proportions. So evidently these big three-deck machines have been found to require more side surface lower down. Vide my second Show description in No. 4 of this volume of THE AEROPLANE. Sixteen wheels are fitted, the hind eight being of larger diameter.

While dealing with models, the exquisitely finished things shown by the Experimental Aeronautical Department (the Italian N.P.L.) should not be passed by. The admirable eel-like body of the Marchetti-Vickers biplane, quite unappreciated by the camera, is unapproached for elegance by anything since the Antoinette deceased. Can the world's speed record which this machine, with a comparatively small engine, SPA 220 h.p., did undoubtedly put up, be attributed to this unusual section? If so, what becomes of the blunt entry and streamline theory?

A full equipment of instruments for measuring everything in sky and land and air, most of them invented by Col. Crocco, are exhibited by the Institute, as also models of the V. dirigible experimented with in '14, which show how the latter-day Zepps. were copied from her internal construction and shape. The full-size power egg of a V. complete can be compared with one from a 1918 German dirigible brought down by the aid of an Italian battery on the French front. The German has two Maybach six-cyl. motors, and of course cannot be compared with the pre-war finish of the V. egg, which is radiant in an aluminium shell. Three of these eggs, with two engines clutched to a single four-bladed propeller, formed the power plant of the V., which type was not proceeded with after the outbreak of war.

The other side of the alley is to be seen a model of a revolutionary dirigible-hydro aeroplane, with eight screws and a hollow open-ended cylinder body, which hopes to capture stability by its cutting effect and the imprisonment of air. The designer—one Signor Cittadini—has other plans, all showing want of adherence to the beaten tracks of aeronautical theory.

Though somewhat unrecognised because turning out CA parts and necessary machinery, the Officine Meccaniche of Brescia and Milan did, and seem likely to continue to do, a lot of useful work. On their stand, which is guarded by aeroplane struts and chains of coil springs in a sensible, pleasing, and probably cheaper way than by the eternal ropes and posts, they show the CA fuselage complete with I-F motor fitted to the 600's, and a lot of big blocks of metal in their various stages from the rough to the finished crankshafts and axles. Also a two-storied propeller shaper smaller than the diameter of the propeller in process of shaping thereon.

Among the many motors showing, the I-F is that most in evidence because, as well as on the company's own grand stand, so many of the other firms exhibit their improved licensed repro



A modern Italian single-seater—built by the firm of Gio. Ansaldo and Co.

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ductions of it. For example, I noted a good effort to avoid nuts and bolts on the E. Breda Co.'s edition of the vertical engine.

The I-F, having motored so many of the useful MAS—marine accomplices of Italy's undersea-boat-chasing aircraft—that the inclusion of their seven yards long cum 64-valved motor-boat engine is allowable and even apposite in a post-war Aero Show such as this. It and the new 450 (V.7) aero-engine are the salient features of the stand The latter is a V. 12-cyl. W.C. motor with four magnetos and two plugs per cylinder. It appears as a clean-looking affair with the merit of having the inside of the V very clear of obstructions and accessible, but seems rather large for advertised power, than which probably it gives considerably more.

Untested and somewhat unknown is the promising Romeo 600 12-cyl. W.C. V. of that factory's production. The very wide open V produces a low, sturdy, and unusually powerful-looking engine. Its cylinders are in couples, and the valves lie almost horizontal in the head thereof. Two mags. with two plugs per cyl. and very neat wiring see to the necessary sparks. The two duplex Feroldi carbs. at opposite ends of the engine and the vertical exhaust pipes allow of ideal freedom of access to the 36 plugs, spark and compression.

Among the less-famed power producers there were several interesting efforts which, if they have not been more generally adopted, is due more to the general excellence of Italian motors than to their own shortcomings.

I examined particularly a vertical Diatto-built Bugatti eight-cyl. 120 by 160 stroke "200 h.p.," weighing 300 kilogrammes, with propeller offset to the left on a secondary shaft all its own, enclosed in the crankcase and running at a speed of 1,125 revs. reduced from the normal 1,500 engine revolutions. It makes a very short engine in spite of the eight cylinders, and power output at the propeller should be much higher than the nominal one.

The following extra data concerning the Dolara-Perfetti 300 rotary, mentioned in my preliminary Show report, are of interest. Bore 130, stroke 176 mm., cyl. capacity 21 litres, normal revs. 1,500 per minute. The engine is provided with a toothed plate (circular) for transmitting power to two or more airscrews by shaft drive. This toothed ring is of bigger diameter necessarily than the outside measurement of the engine taken round the cylinders, and, lying transversely to the longitudinal axis of the aeroplane, could drive any number of propeller shafts within its power limit. Quite an opportunity for multiple airscrew experimenters. Enquiries may be addressed: Dolara, Corso Magenta 78, Milan.

Still another of the less-famed class is the V.N.V., an anonymous company at Stand 25, the designers of whose motors are the engineers Vanni and Trivelloni. They exhibit a large two-stroke weighing 280 kilos. and developing from "200 to 300 h.p." with opposed pistons. Also a Y water-cooled 260, weight 270, cylinders three. This looks a clean job and makes a most get-at-able engine apart from its other possibilities. The firm has three millions of lire of capital, and with its evidently original initiative has the wherewithal to go far. Address is: Via Montevideo 21, at Milan.

Carlo Tosi, the great Legnano firm, has amid a lot of admirable but irrelevant machinery an aero motor and a Matteucci epicyclic reduction gear shown for various uses and also fitted to a propeller hub. I shall hope to say more of it when the Military Technical Direction take it up or vice versâ. One is encouraged by these straws to hope that Tosi is not going to keep aloof from aviation as we have been told.

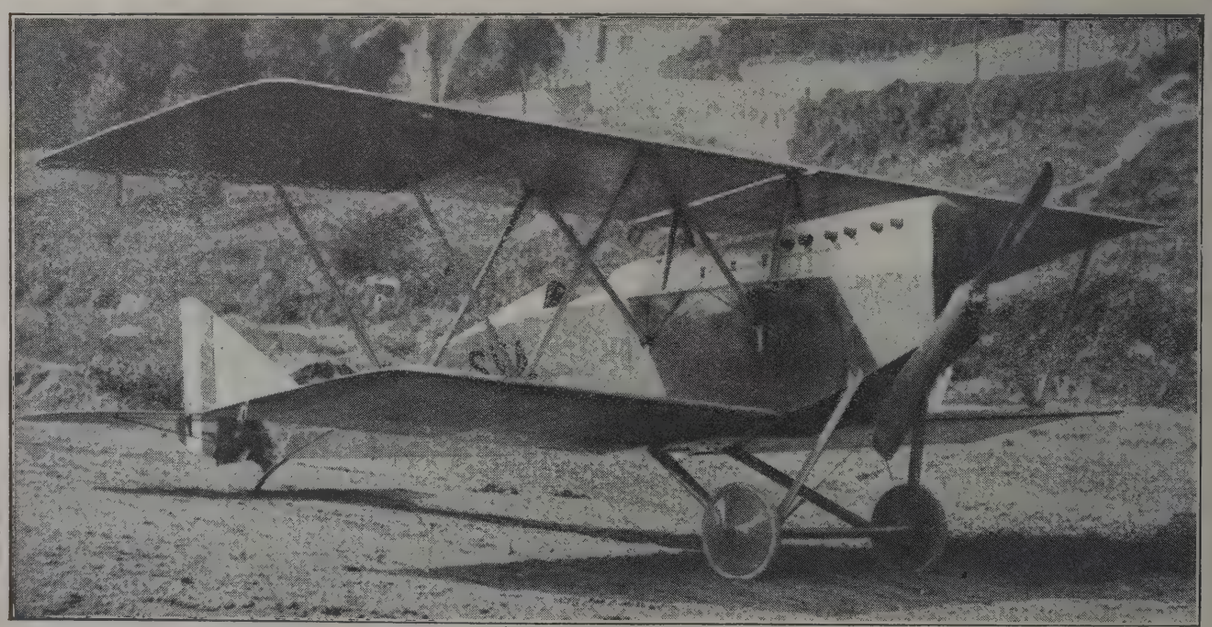
"Itala Motors," who went through the war copying H-Suizas for the Aero Corps and Maybachs for the Dirigible Section—as it used to be called—show one of these which came through the 50-hour bench test with flying colours, though stationary. It is completely dismounted and seems little the worse for the wear-and-tear test. This seems the time and place to deny that that little tale which Dora downed refers to the Itala. The story ran that a firm copying a Hun engine could never be got to waste time over the, to them, unnecessary degree of finish to the connecting rods till the authorities enquired officially why the copies used 1-5th pint more oil per—I don't remember what—than the original.

The SPA, who in their quiet, untrumpeted way were the first firm to engine an Italian aeroplane, and are now doing likewise to the SVA and other good flying machines, show motors of all sorts, from the opposed twin built about 1910 for Ing. Faccioli which flew so well, through a train of wholely original, specially designed aero engines, to its latest vertical power plant for the war. This latter about the least original of the lot owing to the exigencies of hostilities. It is a slight balm to one's regret at not seeing a Faccioli biplane in the historic section to find photos and reminiscences of that designer's machines on the SPA stand. In the words of a contemporary, "Il Cielo" (a pilot's paper): "Faccioli solved the problem of practical longitudinal stability obtained dynamically and inherent in the design when everyone else was wallowing in complete ignorance of the whole question." The first journal to publish photographs of this, the first Italian machine to fly, was edited by the present editor of THE AEROPLANE.

Now to talk of old friends. It is wonderful to think that for a long time the war was dragged on quite well with '14 Löhners built by Macchi—to order, of course—and by '13 Aviatics turned out by the S.A.M.L. Co., and that these, engined by Fiats, now still carry on and are exhibited in 1919 aero shows. I noted that a looking-glass for the pilot to see if the passengers' looks are worried or gladsome is now fitted on the latest models. These luxuries show real progress.

Among the accessories, if essentials can so be misnamed, there were spring wheels based on an application of the cantilever-cum-helical spring principles as far as one could glean in the absence of literature, stand-attendants and free access to the article. These and spring hubs are the line Messrs. Vimercati and Fiorina are taking up anent aero business, and who can say they may not be on the right track to the dollars.

A carburetter, a Corti invention, cleverly combining throttle with air entry, drew me with strange attraction, these instruments being my weakness. "Opening the throttle" causes two



An SVA. Aeroplane—built by Gio. Ansaldo and Co The machine shown is very similar in general design to the 700 h.p. Rome to London machine, illustrated in a recent issue of THE AEROPLANE, but is a single-seat fighter of smaller power.

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rollers situated in the induction pipe (which they entirely close up) to revolve. When the throttle is closed these rollers are in contact along the whole of their length. Extending over two-thirds of their surfaces each has a V-shaped depression increasing from its base in depth, and streamline contoured. When the bases of the two Vs touch the jet is closed, itself serving as a stop for the throttle lever. The rollers are bronze very carefully cut away so that the opening round the jet is always circular. The only thing which could be simpler is the throttle leverage system due to the necessity of compensating the travel of the two rollers.

The F.R.A.M. show their radiators, fitted at one time or other to most moving vehicles in this country, and is such an old and tried firm as to need nothing but a very honourable mention.

Near their wares appeared the name of the Association of the Autolocomotion Industrials, promoted to weld together those interested in modern progress by land and sea and sky, which, if it does not remain merely a name, might become the biggest trade federation in the world.

Chiribiri has indeed fallen from grace, though, perhaps, into land which he may succeed in making to flow with milk and honey, things more esteemed than money nowadays. He only shows a horrifying agricultural tank with tender slung on each wheel—I feel like writing *claw*—which mocks the contortionist, and which, with a suitable prehensible tail, should be quite a good vehicle for birds'-nesting. Each wheel is propped up at a different altitude, and the tender appears to be in the throes of a spiral. The whole thing should be a serious pull-up to the first chronic drunkard who strolls in.

Drying-up and missionary-folk, please note.

A pleasing relief among the accessories is a complete nacelle for one of Usuelli's submarine-finding dirigibles on "Blimp" lines. The firm is located in via Boccacio, No. 14, Milan, is going strong, and is an example of the help a keen amateur may become to his nation in need.

In their own "parc" the dirigible the Prassone-Avorio kite-balloon and the ordinary gasbags show, the well-informed tell me, almost incredible progress. The stillness of the P.A. in stiff winds seems uncanny to the non-expert who may be inclined to wonder whether the cable is rigid! The space in the biggest shed round the dirigible was partitioned off into two corridors filled with stands of accessories and instruments for navigation. The swivelling propellers reminded me of certain small airships of the good old days in early England.

Apparatus for the pneumatic control of the blade pitch and centre of thrust are matters round which the Angels might fear to tread lest they trip, and they are expected to be *au fait* with gravity and lift theory. I noted a built-up hollow aluminium blade and a 16-bladed wooden "lifting screw," evidently both well used. Also instruments for testing the tautness of fabric, and so detecting leakages of that elusive dirigible stuffing known as gas—helium and otherwise. The former is in use here.

Though only a specialist would dare to criticise this part of the show, one is led by it to think how far one's appreciation and respect for the research of the Dirigible Section has fallen short of the mark and that the robbing of her "Ally's" brains by Germany before she built the latter Zeppelins is more than probable.

In spite of the practically total absence of the Southern firms and the non-appearance of even some of the better-known Midland ones, this One-Nation Show is about as wonderful as man could make a Show in the times we live in. Regular passenger-carrying work by dirigible and aeroplane has been carried on to time-table during the whole ten weeks without a single accident.—T. S. HARVEY.

AN ITALIAN SEAPLANE.

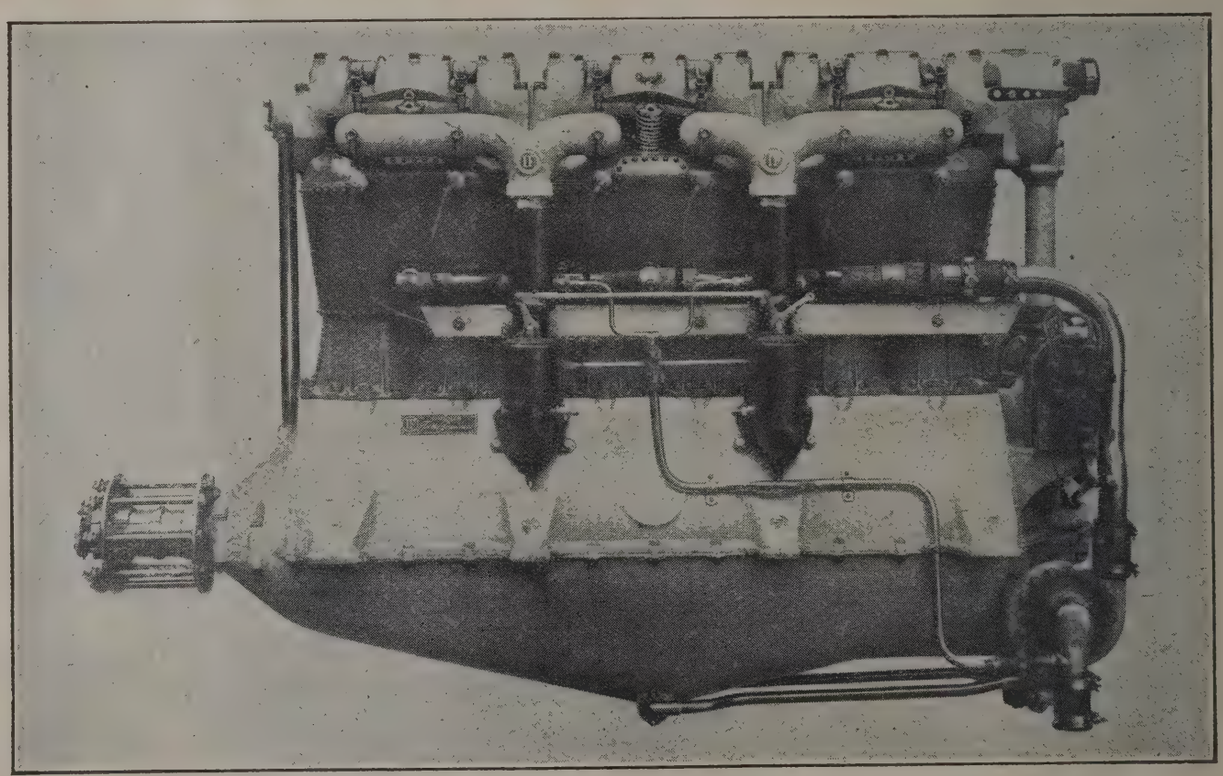
Anent Taddeoli's trip over the Alps on a Savoia-S.I.A.I.—S. 13 type seaplane with a Isotta-Fraschini V.6 250 h.p. engine—from Lake Maggiore to Geneva, it is well to remember that Taddeoli, though in the service of Italy, is Swiss, and one of the first to do waterplane flying. The machine is a biplane of 35 sq. metres surface with a chaser type cellule, carries 475 kilos. useful load, climbs to 5,000 metres in 42 minutes, and claims a speed range of from 120 to 200 kilometres per hour. Engine-bearers and struts give the impression of the weight of the power-plant being very well distributed over the whole wing surface. A small sister boat was at the Taliedo Show.—T. S. H.

THE WALKER PROPELLER BORING JIG.

Owing to the time, trouble and expense entailed in preparing a number of different jigs for boring the bosses of numberless experimental propellers produced early in the war, the Faringdon Propeller and Engineering Co., Ltd., introduced the Walker Propeller Boring Jig, which entirely superseded all the old jigs.

The jig consists of two dividing plates, separate ones being provided for various hubs having different numbers of bolt holes, and a moveable boring arm with a fine screw adjustment, which allows the bolt hole circle to vary from 4⅛ in. to 11⅛ in., the position for each hole being determined by a hardened steel spring pin dropping into the holes in the dividing plate. Suitable bushes are supplied to suit the diameters of the centre boss-hole and the bolt respectively.

With this instrument it is possible to bore any number of propellers with the minimum amount of wear; as the whole of the drilling is done through the one hardened steel bush, and it also ensures absolute accuracy with the least amount of labour.



A 200 h.p. 6-cylinder Isotta-Fraschini engine. A somewhat earlier edition of that illustrated on page 810.

AMERICAN ENGINE TESTS UNDER HIGH ALTITUDE CONDITIONS

It is fairly well known that the American National Advisory Committee on Aeronautics had carried out a number of experiments on aero engines under conditions which simulate those found at high altitudes in flight.

The majority of these tests were made at the special "Altitude Laboratory," erected for that purpose at the Bureau of Standards —the American equivalent of the British N.P.L.—and an official description of the Laboratory, and of the results of some of the tests made therein, is now available for publication.

The complete reports, as issued, are too lengthy for publication *in extenso*, but the following abstract will serve to give a general idea of the methods employed and of some of the results obtained.

Official Description of the Altitude Laboratory.

Briefly, the laboratory consists of a concrete chamber, within which the engine is mounted, and from which the air may be exhausted to any pressure as low as one-third of an atmosphere, by means of a centrifugal exhauster. At the same time the air is cooled to a temperature corresponding as nearly as possible to that encountered at the altitude of the test, by passing it over refrigerating coils. In the interior of the chamber electrically driven fans are mounted, which circulate the air over the coils and about the engine.

The power of the engine is absorbed and measured by an electric dynamometer and a water-brake mounted outside the chamber, and connected to the engine through a flexible coupling.

It will thus be seen that the conditions encountered in actual flight can be closely duplicated, while, at the same time, all the necessary data can be taken and easily recorded under the most favourable conditions for observation.

The altitude laboratory is housed at present in a temporary building of frame and stucco, having a rectangular floor plan, measuring about 24 ft. by 50 ft. In the near future, the present equipment, together with a duplicate set of apparatus, will be set up in a permanent brick and concrete structure, which is being built especially for this purpose. There are no features of the present building to call for special comment.

The Altitude Chamber.

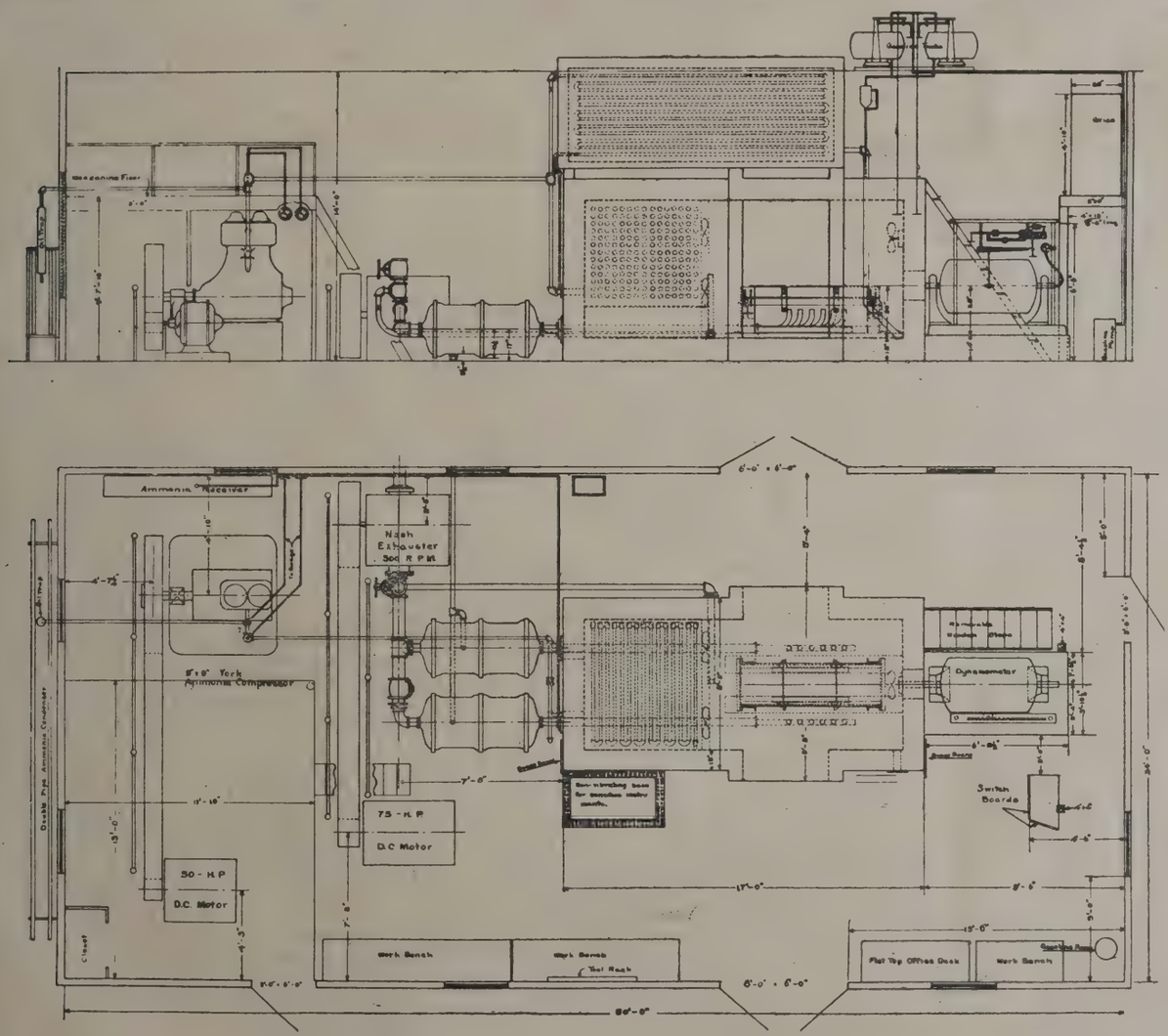
The altitude chamber is of concrete, 6 ft. 2 in. wide by 15 ft. long by 6 ft. 6 in. high, inside measurements. The walls of the chamber are 1 ft. thick, heavily reinforced with ¾-in. steel bars to withstand the pressure of the atmosphere outside the chamber.

The chamber may be considered as divided into two parts; the first containing the engine, and the second the cooling coils. The engine is mounted on a special stand at the right end of the chamber. In order to control the engine during a test, cables are led from the spark and throttle levers, etc., through holes in the walls. The walls are also pierced for the necessary pipes and wiring, each hole being closed by a flange and gasket, through which the connections are made.

The Engine Support.

The engine support was designed to reproduce, as nearly as possible, the flexibility and the inertia of the typical fuselage mounting. The design developed makes possible an accurate adjustment of stiffness as regards transverse and vertical vibration and rotation about each of the three principal axes of the engine.

Two oak beams, in this case 2 in. by 6 in., by 6 ft. 3 in. long, are supported at the ends to form the basis of the mounting. The engine is mounted directly on two supplementary beams, of 2 in. by 4 in. section, and of the length required for the particular engine under test. These supplementary beams are free from the main beams, except at two points, where they are bolted together through a thin separating block. Two yokes are provided to pre-



Plan and elevation of the "Altitude" laboratory of the Bureau [illegible]

vent torsion of the individual beams, but have no other effect, as they are free from contact with any other part of the structure.

The Air-Cooling System.

The air-cooling system may be divided into three parts, the refrigerating plant, the cooling system for the carburetter air, and the cooling system for the interior of the altitude chamber.

The refrigerating plant is installed in the left-hand portion of the building. The ammonia compressor is a 9 in. by 9 in., double cylinder, vertical, enclosed machine, with a refrigerating capacity of 25 tons in 24 hours. belt-driven from a 50 horse-power electric motor.

The cooling system for the carburetter air consists of a bank of ammonia coils mounted on top of the altitude chamber, and enclosed in a box and insulated with 4 in. of sawdust. The air is made to pass through this box in a tortuous path, and is then led through an insulated pipe provided with a set of electric-heating grids and a regulating valve to the test chamber, and then through the air meter to the carburetter. In this way warm or cold air may be supplied to the intake as required.

The system for cooling the air within the chamber is made up of a smaller bank of ammonia coils, placed in the left-hand portion of the altitude chamber. Four motor-driven fans are provided to force the air over these coils, while another fan is installed to circulate the air past the engine itself when desired.

By means of the refrigerating plant and cooling system just described, it is possible to reduce the temperature of the air admitted to the carburetter and that within the test chamber to a point approximating the temperature at any altitude up to about 30,000 to 40,000 feet. As the temperature cannot be readily controlled by means of the refrigerating plant, the air, after cooling and before admission to the carburetter, is passed over a series of electric grids, by means of which the temperature may be again raised and kept at any desired point. Some difficulty has been experienced from the condensation of moisture which occasionally causes a "snow storm" in the air passage to the carburetter. It is hoped that this difficulty will be entirely overcome in the new laboratory, through the elimination of leaks into the refrigerating chamber and the use of what may be termed a "settling chamber," through which the air will pass after being cooled, and in which the air-flow will be so sluggish that the snow will be deposited.

The Circulating Water-Cooling System.

The jacket water-cooling system is arranged as follows:—

Above the altitude chamber is placed a cylindrical iron tank connected to the inlet and outlet pipes of the engine's circulating system, and with another pipe from the city mains, while an overflow leads to the sewer. A thermostat is placed within the tank, the brass rod of this device controlling a pilot valve which admits or discharges city water from a bellows, which, in turn, controls the main valve on the city supply pipe. In case the temperature of the water in the tank rises above a certain point, the thermostat causes the pilot valve to open, admitting water to the bellows, and thus allowing cold water from the city supply mains to flow into the tank. When the temperature has again fallen, the thermostat closes the pilot valve and allows the water to escape slowly from the bellows. Two coil springs then close the main valve, cutting off the supply.

The thermostat is mounted in the fitting through which the water enters the tank from the engine jackets, and also from the city mains. It is, therefore, very sensitive to slight changes in temperature; a very important matter, since even a comparatively slight variation in the temperature of the circulating water affects the heat distribution in the entire engine. In practice it has been found possible to hold the temperature of the jacket water to a variation of about 5 deg C.

The Exhaust Cooling System.

The exhaust pipes connected to the engine are water-jacketed, the inner pipe extending down about three feet from the exhaust port, while the outer pipe or jacket is continued from the exhaust port to the main exhaust manifold in the form of a flexible tube. The water from the annular space mixes with the exhaust gases only at a point a considerable distance from the engine.

The mixture of exhaust gases and water passes through two 5-inch pipes to the auxiliary exhaust tanks, placed just outside the chamber. Here the water is drained off while the gases pass to the exhauster.

The Exhausting System.

The auxiliary exhaust tanks are both connected to a 6-inch main which leads to the centrifugal exhauster. Another 3-inch pipe is led from the main directly to the altitude chamber and serves to withdraw the air from the latter, thus maintaining the barometric pressure on the exhaust and within the chamber approximately equal. By means of a valve communicating with the outside air, placed near the exhauster the pressures maintained may be easily regulated, irrespective of the speed of the pump.

The exhauster is of the Nash "Hydroturbine" type, and has a rated capacity of 1,500 cubic feet per minute at a 12-inch vacuum, at 300 r.p.m. It is belt-driven from a 75 horse-power, direct current motor, and discharges to a point outside the building.

The Dynamometer.

The connection from the engine to the dynamometer is made through a flexible coupling.

The electric dynamometer is mounted on a concrete foundation at the right of the altitude chamber. It has a rated capacity of 300 horse-power, though it is capable of caring for considerable overloads. The dynamometer consists essentially of a direct current generator, the field ring of which is free to rotate with the armature, except as this rotation is opposed by a connection to a scale beam, which, therefore, measures the torque delivered to the machine. An auxiliary spring balance is also used, interposed between the torque arm of the dynamometer and the scale beam, which serves as a handy means for measuring the approximate torque. Current from the dynamometer is controlled from a switch-board placed near by, and may either be dissipated in grids placed outside the building, or may be returned to the regular power lines of the Bureau.

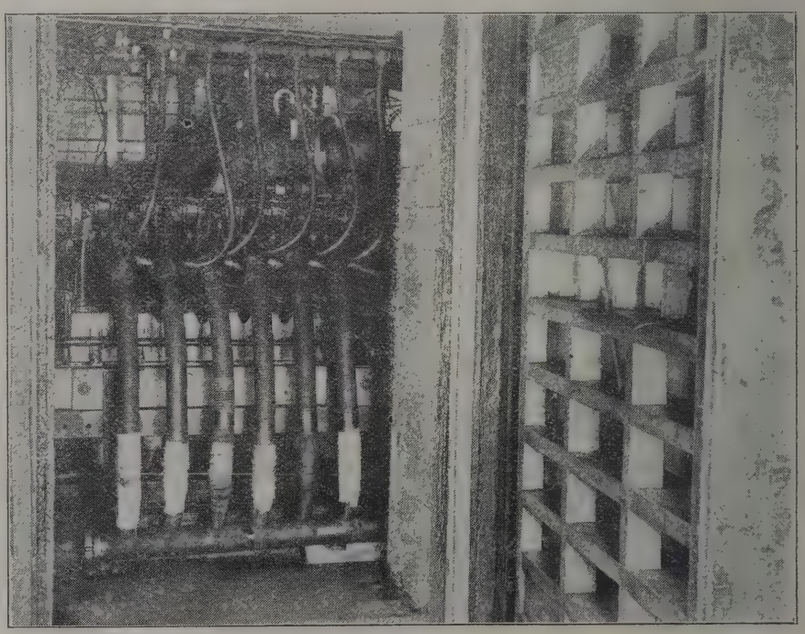
As the plant was originally laid out for the "Liberty 8" engine, before the "Liberty 12" was decided upon, the 300 horse-power dynamometer selected for the purpose is not capable of carrying continuously the full power of the latter engine. Hence, it was necessary to increase the capacity, which was done by the addition of a specially designed water-brake. This brake consists of alternate fixed and rotating perforated steel plates.

The rotor is mounted on the shaft of the electric dynamometer, and the stator is mounted on the dynamometer field, so that the two always operate together; yet the water-brake, when empty, does not interfere with the operation of the electric dynamometer. The water-brake alone can absorb about 400 horse-power at 1,800 r.p.m.

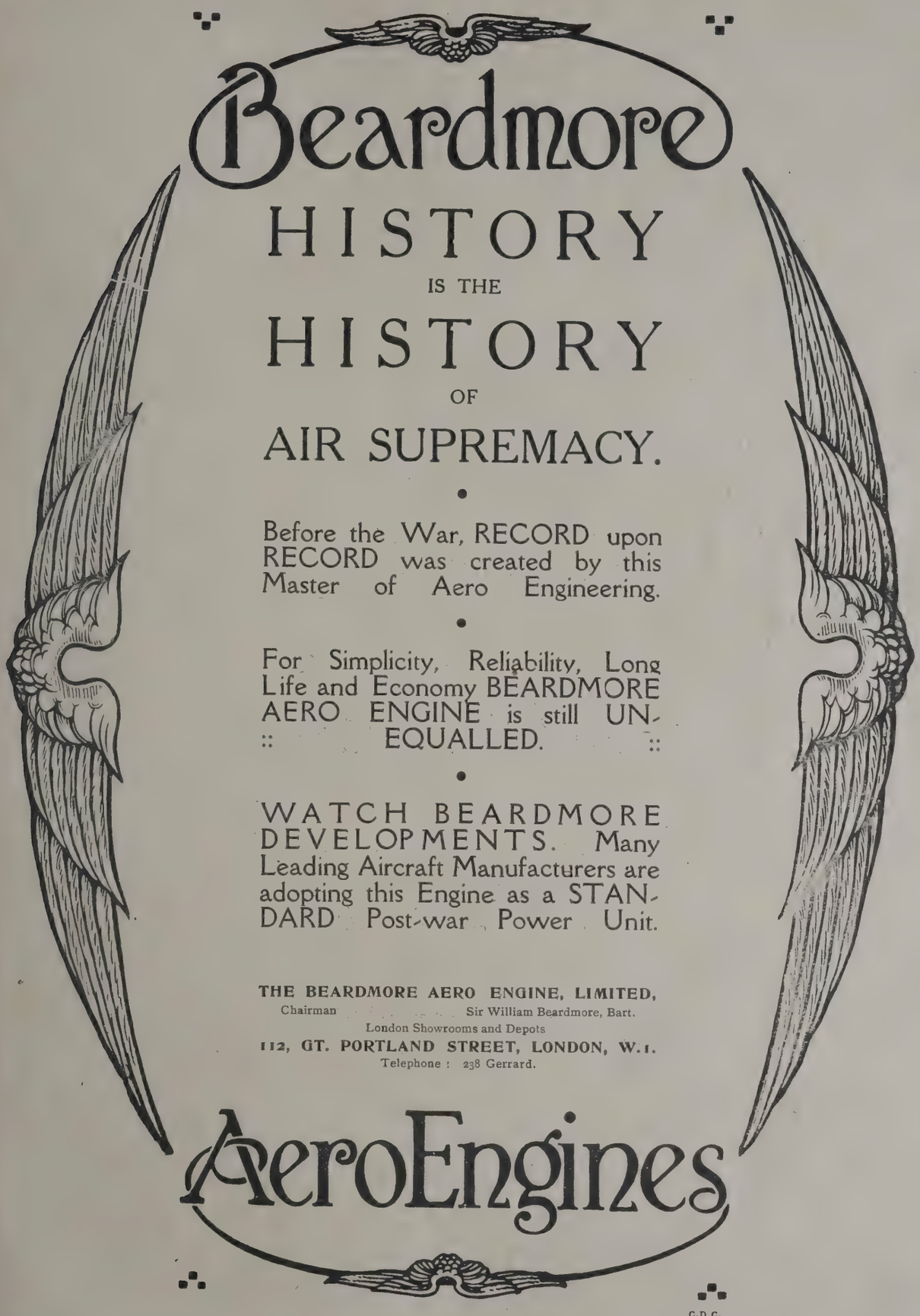
A unique feature of this brake, made possible by the fact that it is integral with the electric dynamometer, which cares for the adjustments of load, is that it can be operated at any one of four fixed water-levels corresponding to four oblong outlets in the casing. When any one of these outlets is opened, and the rate of water-flow is approximately adjusted, a constant water-level is maintained, which is reasonably independent of small variations in supply pressure. Operated in this way the water-brake is quite satisfactory, being free from the tendency to "drift" towards higher or lower roads with small changes in water pressure.

The Gauge Boards and Engine Controls.

The copper tubes for the manometers and the engine control cables are all carried to two boards, so arranged that one man



A 12-cylinder Liberty motor in the "Altitude Chamber." Note the massive construction of the open door.



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can control the entire plant, and, at the same time, conveniently see all the measuring instruments. In this way the whole plant is under the observation and direction of the Chief Operator at all times.

The spark and throttle levers work in graduated quadrants, which indicate the exact positions of the levers on the engine.

The instruments mounted on the gauge board are as follows:

1. Venturi gauge for carburetter inlet air.
2. Barometer and thermometer.
3. Manometer for carburetter float chamber pressure.
4. Manometer for exhaust back pressure.
5. Auxiliary barometer.
6. Manometer showing average pressure in exhaust manifold.
7. Manometer showing the pressure difference between the entrance to the carburetter air venturi and chamber.
8. Venturi gauge for jacket-water.
9. Venturi gauge for exhaust cooling water.
10. Venturi gauge for oil cooling water.
11. Indicator showing fluctuations of chamber pressure from that desired.
12. Manometer showing average pressure in inlet manifold above carburetter choke.
13. Manometer showing difference in pressure between entrance to the carburetter air venturi and chamber.
14. Manometer showing carburetter choke pressure.
15. Manometer indicating the pressure difference between the exhaust port and the chamber.
16. Venturi gauge on gasoline supply line.

Besides the above, there are the regular gauges and indicators supplied with the particular type of engine under test.

A revolution counter, provided with a magnetic, as well as a hand-clutch, is attached to the dynanometer shaft.

Measurement of Air Flow to Carburetter.

Two means have been used to measure the amount of air flowing to the carburetter; a Thomas meter, and a venturi tube.

The Thomas meter used was specially built for the altitude laboratory, and consisted of a wooden box 6 in. square on the inside and 16 in. long, which contained a heating grid between two sets of thermocouples The principle of operation was simply that a given energy, put into the heating grid, would cause a rise in temperature (measured by the thermocouples) inversely proportional to the mass flow of air.

This meter was eventually destroyed in a small fire in the altitude chamber, and was then replaced by a large 6-in. venturi with a 3-in. throat. The venturi was calibrated against a second Thomas meter specially supplied by the Cutler Hammer Co.

Temperature Measurements.

The following temperature measurements are made by means of thermocouples:—

1. Temperature rise of oil cooling water.
2. Carburetter air at entrance to venturi meter.
3. Rise in jacket-water temperature.
4. Jacket-water outlet.
5. Exhaust cooling water inlet.
6. Rise in exhaust water temperature.
7. Chamber temperature.
8. Oil temperature at engine inlet.
9. Oil temperature at engine outlet.
10. Carburetter air.
11. Inlet manifold temperature.
12. Gasoline temperature.

Fuel Weighing Device.

The fuel used by the engine may be measured in either of two ways; by means of an accurately calibrated tank, or by two tanks mounted on platform scales. The first method gives the volume, and the second the weight of fuel used. When using the weighing tanks a test may be run continuously, one tank being filled while the other is emptying, or two fuels may be compared as follows:—

One tank is filled with the fuel to be tested, and the second with a standard comparison fuel. The engine is run first on the standard fuel, and is then changed over the test fuel, after which a third run is made on the standard fuel. In this way the least possible variation in engine condition is involved

Miscellaneous Equipment.

Suitable pipe connections are provided for obtaining samples of the exhaust gases from the engine, these samples being then analysed in an Orsat apparatus.

A compressed air system for feeding oil to the engine sump and a means for cooling the oil during a test have been installed

The laboratory is well supplied with tools and the necessary work benches, so that all ordinary small repairs to both the engines and plant may be made without outside assistance.

General Log of Operation.

Work on the Altitude Laboratory was begun in August, 1917, and the plant was ready for the preliminary installation of an engine for test purposes in November of that year. The first engine to be mounted in the chamber was a "Liberty 8," one of the first series of five engines built for experimental purposes. Although this engine was set up in the test chamber in November, there remained many minor items of experimental equipment to be completed and "tuned up" before tests could be begun.

The securing of air-tightness of the doors and other connections to the chamber, and a multitude of other minor matters, too numerous to mention, all took considerable time.

On Dec. 26th, 1917, the first test run was made with the "Liberty 8" engine for the comparison of two grades of fuel, and for data on the contamination and deterioration of lubricating oil.

On Jan. 4th, 1918, the first test at reduced pressure was made, the lowest pressure obtained being 44 cm. below atmosphere, corresponding to an altitude of about 25,000 feet.

In all, seven tests were run with this first experimental engine, representing about 15 hours actual running time. The records of these first tests show many stops for various causes, most of which were chargeable to difficulties with the engine. This was to be expected, as the 8 cylinder model had not at that time reached a stage of perfection to warrant its use for research purposes. In fact, at that time, this model had been temporarily abandoned in favour of the 12-cylinder engine, which was then being perfected.

On Jan. 19th, a connecting-rod gave way during test No. 8, and it was decided to abandon the "Liberty 8," then obsolete, and continue work with a Hispano-Suiza engine until the "Liberty 12" was in shape for research on altitude effects.

On Jan. 25th, the first experimental run was made with the Hispano-Suiza engine. This test included the first complete set of observations under conditions corresponding to a series of altitudes up to 30,000 feet.

In the year which had elapsed between Jan. 25th, 1918, and Jan. 31st, 1919, about 150 complete altitude "flights" have been made, comprising only a little less than 1,000 hours of actual engine operation.

Observations have been made with the following models of aircraft engines:—"Liberty 8"; Hispano-Suiza, 150 h.p.; Hispano-Suiza, 180 h.p.; Hispano-Suiza 300 h.p.; "Liberty 12," 400 h.p.

Of these models, several different engines of the 150 h.p. Hispano-Suiza, 180 h.p. Hispano-Suiza, and "Liberty 12" types have been included.

EMAILLITE DOPING SCHEMES FOR AIRSHIPS.

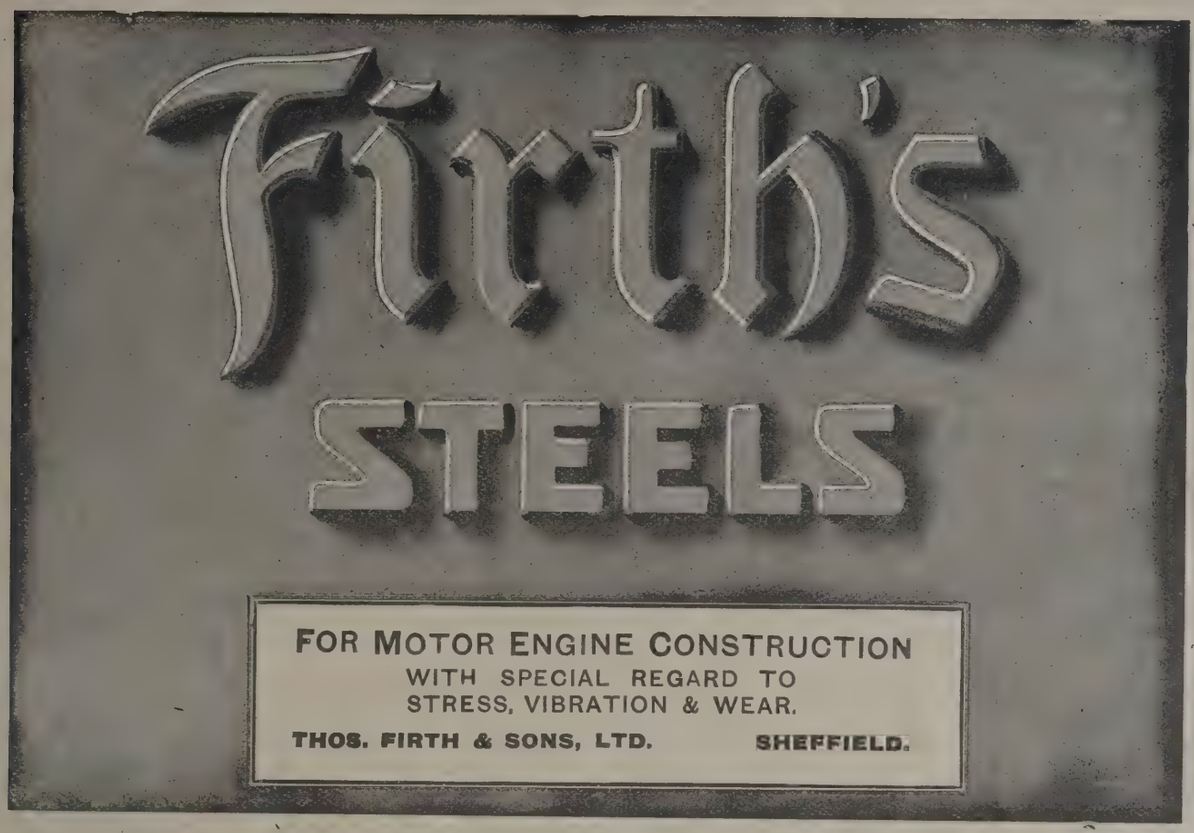
The British Emaillite Co. have long been connected with the Aeroplane "Dope" Industry, but it is little known to what a high standard of perfection they have worked in the more exacting problem of successfully doping rigid airships. The technical staff, under the control of Dr. J. N. Goldsmith, Ph.D., M.Sc., F.I.C., carried out lengthy experiments and tests with the result that they evolved a series of doping schemes for all kinds of aircraft coverings that were finally adopted as standard by the A.I.D. in 1916. When the Admiralty decided on the construction of rigid airships on a large scale it was only natural that the British Emaillite Co. should be approached, to tackle the problem of supplying a suitable doping scheme.

It must be understood that the doping of rigid airships is altogether different from the doping of aeroplanes where the dope is applied, more or less without restriction as to weight, to the fabric after it is stretched on the plane framework, and, therefore, free from further rough handling. In dealing with such a large surface as the covering of a rigid airship it is necessary that weight be kept down; consequently, the maximum weight allowed is 2 grams per sq. metre. Again, the fabric must be automatically doped before it is applied to the framework of the airship, and as the lacing has to be prepared after the proofing is applied, and, incidentally, it is rather roughly handled in the process, it can be seen that the necessarily thin protective covering must have sufficient pliability to retain it in as uniform tension as possible.

By the co-operation of the technical staff under Dr. Goldsmith and Mr. H. Bailey, the general manager of the firm, all difficulties were overcome with the result that in November, 1916, the Admiralty accepted the first Emaillite Doping Scheme for airships.

But this did not mean that the British Emaillite Co. were content to work on that one scheme. The technical department have continued, and intend to continue, their experiments, with the result that from time to time further improvements have been introduced. That the R34 should have completed the round journey —East Fortune, New York, Pulham—against almost every kind of weather condition is sufficient proof that the eminently useful work of the British Emaillite Co. has produced a highly successful scheme of weather-proofing.

The Airship Doping Scheme "P," as used on the R33 and R34, has since been improved, so that on the new ships under construction schemes known as "R" and "RA" are being used.



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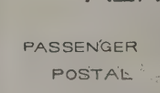
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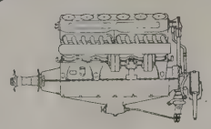
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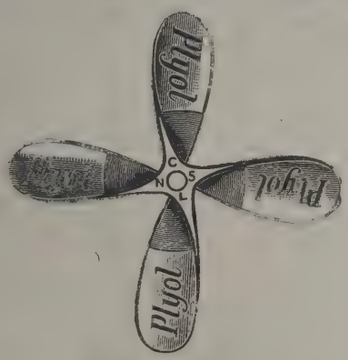
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COMMERCIAL AERONAUTICS & CIVIL AERIAL TRANSPORT

THE OWNERSHIP OF AERIAL SERVICES.

By "MEDWAY."

In recent articles I have advocated the temporary ownership of experimental services in various parts of the world, either by individual manufacturers or by the aircraft manufacturing industry as a whole. There is all the difference between carrying out the proposition that I have outlined and adopting the principle of the establishment of services by manufacturers with a view to permanent ownership.

Personally, I am very strongly of the opinion that the manufacturer's business is to sell his products rather than to operate them. At the present juncture temporary operation is justifiable, because we want data for the encouragement of future sales. Once the business is properly established, it is not the job of the manufacturer to run his own machines. By all means let him give the fullest possible service to the owners of those machines, but if he is wise he will not himself remain their owner for a minute longer than is necessary.

An Analogy.

This is one of those points with regard to which we can take a line from the development of the commercial motor vehicle. Experience shows that directly the vehicle manufacturer begins to take big financial interest in operating concerns competitive operating concerns will certainly withdraw their orders from him and will probably settle down to manufacture for themselves in preference to purchasing from the established industry. They are in fact more or less compelled to do so if their requirements are anything approaching sufficient to absorb a decent output.

In the early days of the motor omnibus some vehicle manufacturers took a considerable interest in operating concerns. The policy may have been justifiable, inasmuch as by watching their vehicles in service the manufacturers gained useful experience in design and data as to running costs. The fact remains, however, that it is now very much the exception for any motor manufacturer to do more in the way of operation than is represented by, perhaps, the hire department. On the other hand, the big London omnibus companies have set out to manufacture for themselves. The moral is a sound one. If you do not want other people to cut into your business, do not cut into theirs. When a big organisation of motor traders began to father an insurance business a prominent insurance company promptly retaliated by going into the retail motor trade on an extensive scale. This sort of thing is inevitable.

The Legitimate Job.

It is primarily for the purpose of eliminating any idea that the manufacturer is out to compete with his own clients that I suggest that even experimental services should be worked by the industry as a whole rather than by individual concerns. I have deliberately harped on this string because I am certain very much depends upon our getting a clear idea as to where the manufacturer's legitimate job begins and ends.

From what has gone before, my readers will see that I am not among those who would criticise the manufacturer for not exhibiting his confidence in his own wares by going into the transport business. Such business is, of course, speculative for the present, and it is speculative from two points of view. We do not know what our total operating costs are likely to be, neither have we any reliable data to indicate tht probable growth of traffic receipts.

Every new transport concern, land, sea, or air, is to a certain degree speculative. Receipts may fall short of the estimates. Traffic may not develop as quickly as was anticipated. In any established system, however, the other side of the case—namely, the cost of operation—is, or should be, accurately assessable in advance. The experimental services that I have suggested would put commercial aeronautics fairly onto a level with other transport systems in this respect. So soon as this point is reached we have a reasonable proposition to put to any business man with a leaning towards speculation. We can, in effect, say: "If you choose to start a concern under such and such conditions, your costs will be so much per mile flown, or so much per ton-mile carried. It is for you or your expert advisers to judge whether you can within a reasonable period work up receipts so as to show a profit in face of these operating costs."

An Element of Guesswork.

Of course, if people are so faint-hearted that they will take no risk at all, until the extent of the obtainable traffic can be exactly gauged, we shall never make much progress. There is necessarily an element of guesswork at the present stage. A single serious accident might have a very damaging effect upon receipts for a long period. Such risks have, however, been taken in the past by the promoters of transport concerns of all kinds.

Let the manufacturing industry accumulate sufficient information to enable it to take the responsibility for the publication of data of complete operating costs on the clear understanding that if such costs are exceeded under the conditions specified, either the wrong machines have been chosen or else the methods of the operating company are hopelessly bad. The manufacturers ought to be able to indicate in general terms what those methods should be. I do not think they are yet able to do so, and I cannot see how they are going to accumulate the necessary experience except by working more or less along the lines that have been roughly indicated in these pages during the past few weeks.

R.A.F. PEOPLE IN THE AIRCRAFT INDUSTRY.

Among the aircraft firms employing late Air Force personnel is the British Aerial Transport Co., Ltd., at Hendon.

Major J. C. Savage, late R.N.A.S. and R.A.F., is the commercial manager, and he is assisted by Lieut. H. W. Hern, late R.N.A.S. and R.A.F. Major R. E. Nicoll, late R.N.A.S. and R.A.F., is in charge of flying operations.

The pilots are:—Major C. Draper, D.S.C., chief test pilot, late R.N.A.S. and R.A.F.; Capt. C. R. Vaughan, late R.N.A.S. and R.A.F.; Lieut. C. C. Turner, late R.F.C. and R.A.F.; Lieut. R. E. Duke, late R.F.C. and R.A.F.: Lieut. H. M. Russell, officer in charge of W/T, late R.N.A.S. and R.F.C.

The chief of the photographic department is Mr. G. Green, late serjeant R.N.A.S. and R.A.F.

Late R.N.A.S. and R.F.C. mechanics are also employed at the Flying Ground at Hendon.

The clerks are:—Mr. T. J. Dingley, late chief writer, R.N.A.S. and R.A.F.; Mr. E. W. Westfield, late serjeant-major Scots Guards and R.A.S.C., attached London Air Defence Area Staff.

Miss M. Rye, late personal clerk to Major-Gen. Sir Godfrey Paine, K.C.B., is acting as shorthand typist.

HANDLEY PAGE, LTD.

Everyone in England knows the name of the machines which night after night flew over Germany carrying tons of heavy bombs, and succeeded in putting the wind well up the inhabitants of nearly all the towns on the Rhine. In the daylight these big, slow machines would have been an easy prey to the fast enemy scouts, on account of their size, low speed, and "unstuntability," but at night, painted black, and almost invisible, with their big load of petrol, they could go right over Germany, and their chief troubles were the searchlights and the unpleasant "woofs" of Archie.

The war has been over for so long now that we have actually had the official Peace celebrations, but Handley Page, Ltd., are still constructing machines for the R.A.F. which are *not* being built in order to be reduced to produce. On August 1st, the R.A.F. took over a number of the V type 4-engined machines. One of their pilots, who should have known better, succeeded in getting into such a position on the aerodrome at Cricklewood that prevented the heavily loaded Bournemouth week-end trip machine from getting the run it should have had, but it managed to clear the trees by a few feet.

All the long-distance trains were crowded on the August Bank Holiday week-end. Waterloo was no exception. People waited hours scrumming in the crowded station for trains to the South. The weather was hot, and it could not have been at all enjoyable standing most of the journey or well squashed in a seat. One wonders, of those people who could afford it, how many knew that they could have travelled in coolness and comfort in a Handley Page machine that left Cricklewood on the afternoon of Friday, August 1st.

The machine had a load of five passengers, the pilot and four mechanics. Two passengers were seated side by side in the nose of the machine, they got the best view, and could hear each other talking. The pilot and a mechanic sat behind them. In the rear of the gigantic petrol tank there were six more seats on the top deck. The top of the fuselage, including the rear, machine-gun position, had been removed, and the passengers' heads came just above the fuselage. To get into these rear seats it was necessary to dodge the cross-bracing wires, but, having arrived, the possessors found the seats were most comfortable. Underneath these seats the luggage was stowed. Passengers are allowed to take as much as they can carry.

The machine, with its big load, left the aerodrome at 4.20 p.m. The Rolls-Royce engines had had their compression reduced to give them longer life. As the machine did not climb very well at first, the pilot made a wide circuit over Cricklewood. The climb improved, and so the journey was started. A machine, which looked like a B.A.T. Commercial, overtook and passed the H.P. very easily just after leaving the outskirts of London. The reservoirs at Staines were soon sighted and passed over, and then no town was sighted until Winchester was reached, from which it was possible to see the sea at Southampton.

It was very easy to see one large and three small fires that were burning in the New Forest. One realised the great use of the aerial forest patrol for spotting fires, which is in operation over the large American forests.

After passing over Brockenhurst the pilot crossed the coast at Highcliffe, and went about a mile out to sea before reaching Bournemouth, which was approached between the two piers. A successful landing was made at the rather small aerodrome of the Bournemouth Aviation Co. at 6.30 p.m. The flight was carried out at a height of 2,000 to 3,000 feet.

All the passengers were delighted with the trip. A man who had not flown before inquired if there would be any stunting, as he wanted notice before he was looped. He should have been told that the only pilot who tried to loop an H.P. is now very busy pushing up daisies.

A passenger, who must have weighed 16 stone, immediately on arrival at Bournemouth rushed to the station to catch the first train back to town.

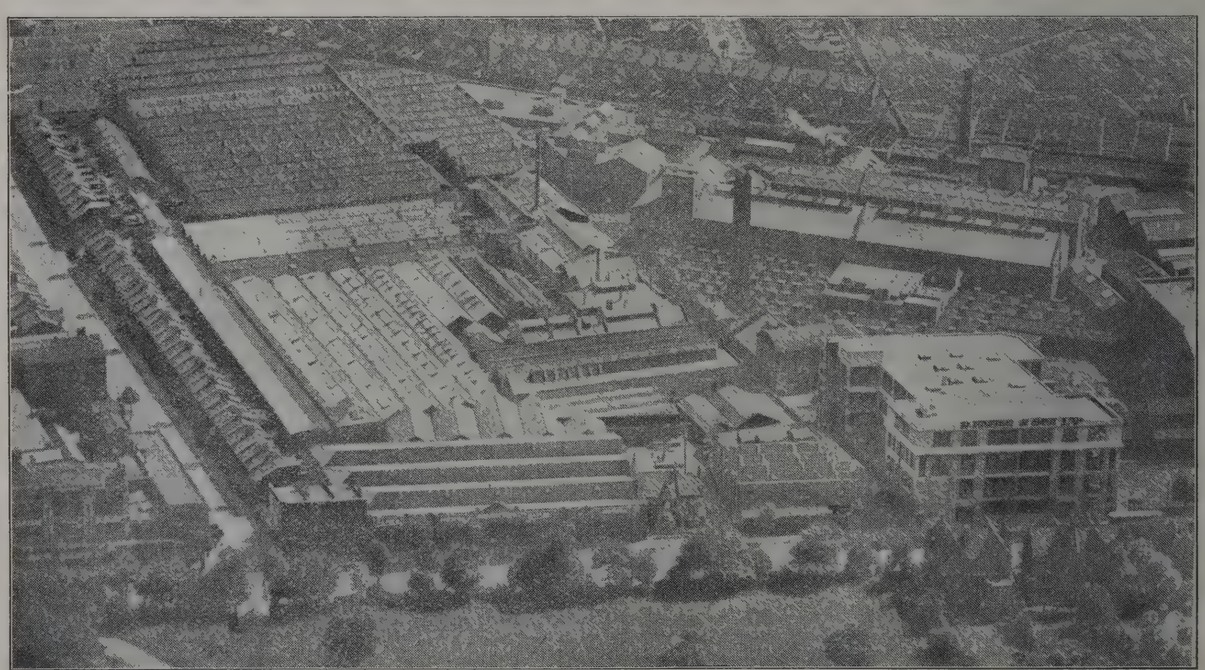
One who had been a pilot in the R.A.F. was very glad he had not gone by train, although it would have been the quickest way of reaching his destination, which was some distance from Bournemouth. He was offered a parachute at Cricklewood with which to alight at his home, but graciously but firmly declined the offer.

The machine returns to Cricklewood most week-ends on Monday, bringing the passengers home in time for lunch in town. The fare for the single journey is five guineas, and for the double journey ten guineas. Tickets may be booked at the Lepaerial Travel Bureau in Piccadilly Circus.

Handley Page, Ltd., in one record week during the war, turned out 13 machines. At the present time, they are producing an average of six machines per week. They are making a number to the order of the Chinese Government

Two machines were sent to Amsterdam for the Exhibition. One, a four-engined V type, was exhibited in the hall. The other, a two-engined machine, with a saloon body, beautifully fitted up, will carry 20 people, including the pilot. It is fitted with two aerials. One encircles the fuselage, and the other is fitted inside the length of the wings. These are used for wireless telegraphy, directional wireless and for wireless telephony.

When civil flying becomes general, and trips can be made freely to other countries, the Handley Page will come into its own. In flights from London to Paris and beyond it will be able to carry more passengers with luggage than other machines. Although flights are made with success every week-end to Bournemouth, England is so well connected up with railways that such a comparatively slow machine as the Handley Page cannot compete successfully commercially.—G. I. D.



THE NAPIER WORKS AT ACTON.—An aerial photograph taken by Captain Gathergood (late R.A.F.). Although a French firm is in existence which takes photographs from the air for commercial purposes, little use of this form of advertisement has been made in this country. As most large manufacturing firms publish "bird's eye" views of their works, there should be a good field for a firm that would specialise in aerial photo graphs.

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THE
SUPERMARINE CHANNEL TYPE FOUR SEATER FLYING BOAT

illustrated above has been designed and constructed by THE S.A.W., Ltd., Southampton, and passed for sea and air worthiness by the British Air Ministry. We have standardised this machine, which is fitted with folding wings, 160 H.P. Beardmore engine, and the latest and most up-to-date improvements in marine aircraft. We are using this model for our FLYING BOAT Passenger Service on the South Coast. Demonstration flights will be given by arrangement. Enquiries are invited for these machines, which we have ready complete for shipment to any part of the world. We are prepared to act as consultants to give advice as the result of our experience on the establishing of a Flying Boat Passenger Service. A FLYING BOAT Passenger Service is the best paying proposition to-day in Civil Aviation.

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THE SUPERMARINE AVIATION WORKS, LTD.
ESTABLISHED 1912
SOUTHAMPTON, ENGLAND.

COMMERCIAL AVIATION IN FRANCE.

The following letter has been received:—

Sir,—While "Engineer Officer" and other armchair experts are showing at great length that there is no profit in Commercial Aviation, in France the following companies are operating at a profit without sitting on the fence waiting for subsidies:—

Societé des Avions H. and M. Farman.
Cie des Messageries Aériennes.
Cie Aériennes Française.
Cie de Navigation Aérienne.
Cie des Grandes Expresses Aériennes.
Societé des Transports Aeronautiques du Sud-Ouest.

Fares and freight rates are reasonable, being from one to two francs per kilometre, according to the size of the machine. The fares in the large 'busses average 1f. 25c., or 1s. a kilometre. The fares are:—

From Paris to Lille, 250f.
From Paris to Brussels, 365f.
From Paris to London, 400f.
From Biarritz-Bordeaux, 200f.

Freight, 10f. per ton per kilometre. The amounts paid for passengers and third party insurances amount to 20 per cent. of the fares.

Now that the subsidies are established, the amounts paid for carrying the post pay all running expenses, so that freights and passengers represent profits.

Commercial Aviation does show a profit even now, and next year the activity in France will nearly equal that during the war. There are seven other companies getting ready to operate next Spring in addition to those who propose working for British companies. JOHN STRONG.

COMMERCIAL AVIATION IN SCOTLAND.

The Superintendent of the Admiralty Meteorological Service (Mr. Hugh Duncan Grant, F.R.A.S., F.R.G.S., F.R.Met.Soc.) has recently put forward proposals for civil coastal seaplane services in Scotland. Much interest has been aroused up there in that and other commercial aerial schemes owing to the difficulties in inter-communication now experienced in many parts of Scotland.

The following is an extract from an article which appeared in the "Glasgow Herald" of July 25th, written by Major A. A. Walser:—

Aerial Transport in Scotland.

"In the southern portion of the British Isles, which is well equipped with railways, there is not so much scope for the transport of passengers and mails by air. Scotland, on the other hand, where conditions are somewhat different, seems to afford a profitable field for commercial aviation.

"There is no doubt that in certain parts of Scotland existing railway facilities are far from satisfactory, and this must necessarily have a deterrent effect on the development of the country. The northern districts and many portions of the west coast are so badly served with railways and cables that visitors are cut off from the outside world for all practical purposes.

"The difficulties and expense involved in rendering this part of the United Kingdom more accessible by building railways are very great. The Highlands do not lend themselves readily to the construction of fresh railways. Moreover, the population in many parts of Scotland is a very fluctuating one. In summer and autumn a considerable number of visitors from the South invade even the most remote districts. These visitors are largely drawn from the wealthier classes, eager to escape for a time from the turmoil of city life.

"The man engaged in affairs of State, the financier, the business man, and others, though anxious for a holiday, are not always in a position to cut themselves entirely adrift from their affairs. They must be within reach of news, and if necessary must be able to return to their respective spheres of activity in a reasonably short time.

"There is no doubt that many people are deterred from visiting the most beautiful districts of the North because they know the difficulties of travel and communication in those parts.

"It is here that aircraft would be used to great advantage. In many localities it would no doubt be difficult to construct aerodromes, but inland lochs, rivers, and sheltered waters along the coasts would afford suitable landing grounds for the seaplane. There are many ways in which aviation could materially assist in the development of Scotland. Chief amongst these is the delivery of mails and newspapers.

Seaplane and Aeroplane Routes.

"The scheme most likely to be successful would probably be one which combined seaplane and aeroplane lines working in conjunction. Two main seaplane stations established, as proposed by the Superintendent of the Admiralty Meteorological Service, one on the Firth of Forth, the other on the Clyde, could be the starting bases of their respective lines.

"The first of these would establish a regular service along the East Coast, and eventually extend to Inverness; the second would work on the Clyde and to the more important districts of the West Coast, and possibly extend along the Caledonian Canal.

"Intermediate stations would be established at regular intervals along the route, where landings could be effected when necessary. All along these routes a series of dropping stations could be established, at which mails and newspapers could be dropped by means of parachute. It would be comparatively easy for stations to signal to passing aircraft, stating whether they required machines to pick up passengers or mails, and it would be possible to arrange a code of signals whereby machines flying on the regular circuit would return to the head office with information gathered from ports all along the line.

"In conjunction with these two main coastal services, all the larger cities would in time have their aerodrome and be connected by aeroplane lines. A regular service between Edinburgh, Perth, and Inverness would very quickly pay its way, and would be of great assistance in the commercial development of the country.

Local Support.

"In conclusion, it might be stated that such a scheme as the one very roughly sketched out in the foregoing remarks would undoubtedly obtain the whole-hearted support and assistance of the Scottish landowners and corporations, who are eagerly inquiring as to the possibilities of a commercial air service to improve their communications.

"Hand in hand, but supplementary to the regular service of passenger and mail carrying machines, small groups of 'pleasure' machines established at the various holiday resorts, as well as near the larger towns, would not only reap profits for their parent company, but, if properly controlled, would go far towards popularising aircraft as a practical means of travel."

A NEW COMPANY.

The American Handley Page Company, with headquarters in Ogdensburg, N.Y., was incorporated on June 17th "to establish aeroplane routes within the United States to carry passengers and merchandise." The capital stock is $5,000,000.

PROTECTION TO THE EYES.

An officer of 29th Squadron, R.A.F., flying an Avro at Croydon, side-slipped, fell 100 ft., and crashed badly, hitting his head on the instrument board. The impact sheared off the nut of the petrol pressure release valve, which can be seen in the illustration embedded in one of the lenses of his Triplex goggles.



The Triplex lens of a pair of goggles in which a nut was embedded in a crash.



TRANSITIONS IN TRANSIT

No. 3. The Ship of the Desert.

Blistering sand and a scorching sun.

The tinkling of Camel bells. The soft "sug—sug" of padded feet. The drowsy murmur of voices. These are the only sounds which break the simmering silence of the desert.

Plodding along the desert trails, the lumbering camel takes on an air of majesty which five thousand years' unrivalled supremacy has given him.

And now at last comes a monarch greater than he. The monarch of the sky—the Aeroplane!

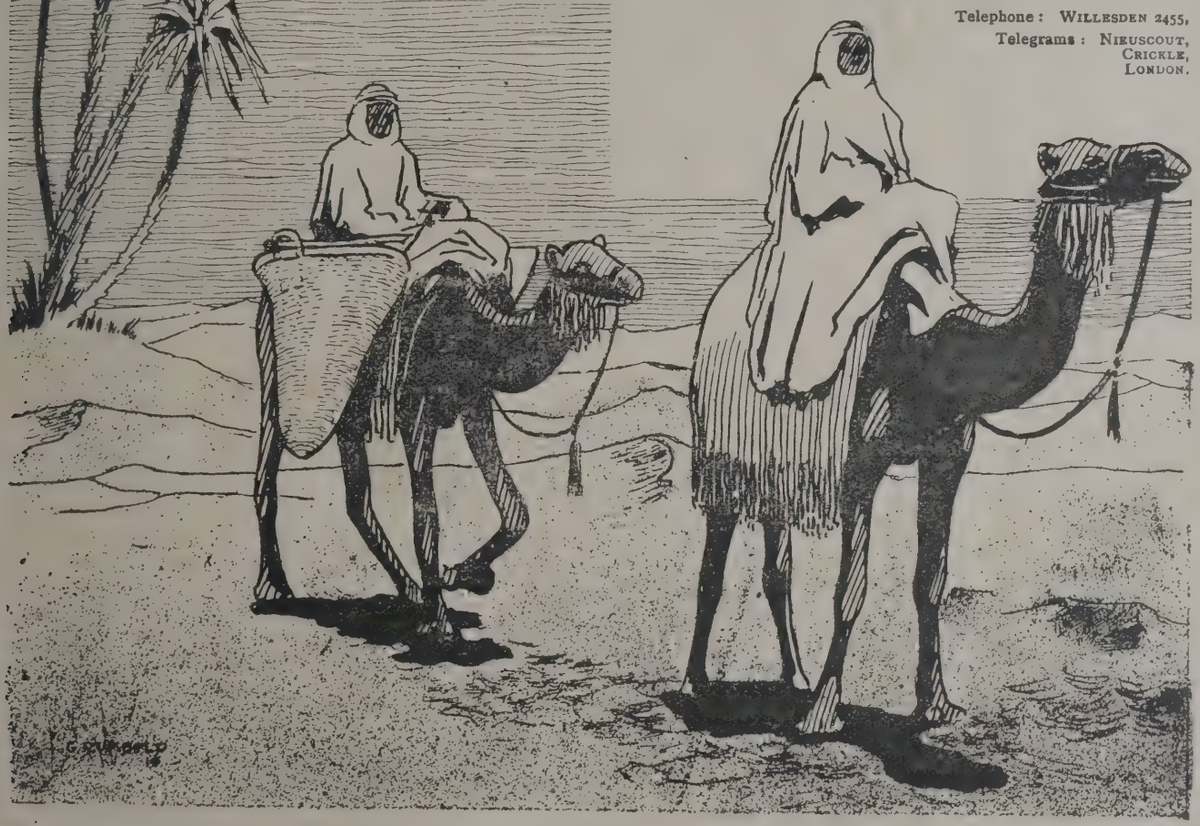
The time is not far distant when the ship of the desert must give place to the ship of the air.

The machine illustrated above is the Nieuport single seater biplane.

Offices and Works:

CRICKLEWOOD, LONDON, N.W.2.

Telephone: Willesden 2455,
Telegrams: Nieuscout, Crickle, London.



CIVIL AERIAL TRANSPORT NOTES.

GREAT BRITAIN.

London-Paris Air Services.

The Air Ministry makes the following announcement:—

"Pending the final signature of the International Convention a provisional agreement to allow of flying between France and Great Britain from Monday, Aug. 25th, has been arrived at between the respective Governments."

Great Britain is so well served by fast railway routes that competition by aircraft is hardly possible. If passengers or goods were carried from London to any big town in the Midlands by aircraft the cost would be very high. It could not be less than one shilling per mile.

The passengers would first have to make a journey out of London to the aerodrome. At the other end of the journey they would have to be taken from the aerodrome to the town. The time taken in getting to and from the aerodromes added to the time in the air could not be much less than the time taken by an express train. A train takes one from the heart of one town to the heart of another. A railway journey costs 1½d per mile

An aerial service to the continent is a much better commercial proposition. The journey by land and sea to Paris is very long and quite costly. By air the journey can be made in 2½ hours by the Aircraft Transport and Travel, Ltd. Handley Page, Ltd., are charging 15 guineas for the trip.

The somewhat dry announcement of the Air Ministry has given the companies owning long-distance and large capacity aeroplanes an opportunity to show their worth. Two of the companies, at least, have not been long in taking the chance.

It was announced in The Aeroplane last week that the Aircraft Transport and Travel, Ltd., were starting a daily service to Paris on Aug. 25th. On Aug. 25th the service was started. A D.H.4a machine left Hounslow at 9.10 a.m. with a pilot, a Press representative, a number of newspapers, a consignment of leather, several brace of grouse, and a number of jars of Devonshire cream.

The machine arrived at Le Bourget (Paris) at 11.40 a.m. Left Le Bourget at 12.40 p.m. and reached Hounslow at 2.45 p.m.

A D.H.16 left Cricklewood at 12.30 p.m., piloted by Mr. Cyril Patterson, and carrying four passengers and goods. It arrived at Le Bourget at 2.45 p.m. This machine was announced to return to London on Aug. 26th.

Bookings of passengers have been received, covering the whole of the first week of the service.

Mr. Holt Thomas anticipates 80 per cent. efficiency on the service. The machines will leave for Paris every day that it is humanly possible to go. Whether there are passengers or not, they will go to scheduled time.

The Postmaster-General has not yet given permission for letters to be carried. In America they have found it actually cheaper and obviously quicker to send letters over long distance by air. The Post Office should realise the advantages of the speed of air transport. The aerial services would be put on a secure basis if they carried the mails.

Handley Page, Ltd., are starting a regular service to Paris and Brussels on Sept. 1st. Machines will leave at 12 noon for Paris on Tuesdays, Wednesdays and Fridays, and will return on alternate days. For Brussels they will leave on Mondays, Wednesdays and Fridays, also returning on alternate days.

The fare for the single journey, as before stated, is 15 guineas. Goods will be carried at 2s. 6d. per lb., with a minimum charge of 5s. The O.400 twin-engined type of machine will be used, with covered-in limousine fuselage, having seating accommodation for 14 passengers inside and two outside. In order to have a big margin of safety, only 10 passengers and 500 to 600 lb. of freight will be carried. The journey will take three hours.

For Paris the machines will land at the Le Bourget aerodrome. For Brussels at Evere aerodrome. Motors will be provided to take passengers from these aerodromes to the respective capitals. At present a stop has to be made at Hounslow to pass the Customs. It is hoped that sanction will be received to start the journey from Cricklewood.

As an experimental trip, a Handley Page left Cricklewood complete with 11 journalists on Aug. 25th at 8.30 a.m. to fly to Hounslow. This machine arrived in Paris soon after 10 p.m. It was due to return to London on Aug. 26th.

Accordng to the "Daily Express" of Aug. 22nd, some housewives are contemplating sending their laundry to Paris by air in view of the high prices and ruinous methods of washing in this country.

Arrangements have been made for copies of the "Times" newspaper to be sent daily by the service. These copies will be available for delivery to subscribers at special rates.

Free Flights.

The "Daily News" is offering free flights at the following places on Saturday, Aug. 30th:—Cricklewood, 100; Southend and Hastings, 20 each; and Great Yarmouth, 15. These flights will be the last given by the "Daily News" this summer.

Avro Flying in the North.

During the week ending Aug. 24th 766 flights were made in 17 Avro machines and 1,621 passengers were taken up at the following Avro stations:—Birkdale (Southport), Blackpool, Douglas, Fleetwood, Manchester, Rhyl, Waterloo Sands, and Windermere.

Manchester and Blackpool Air Service.

The Avro service between these towns has been run daily since the middle of May. The service is the first regular flying service to be run on civilian lines in the country. The time table, which is even published in the Manchester railway guides, is as follows:

Leave Blackpool 12 noon, leave Southport 12.15; arrive Manchester 12.45.

Leave Manchester 2 p.m.; arrive Southport 2.30, arrive Blackpool, 2.45.

Blackpool.

Many passengers were taken up in Avros during the week ending Aug. 24th, for the "wakes" were in full swing. The climax takes place this week, when the Oldham holidays are on. The five-seater Avros as usual did most of the passenger-carrying.

An engine was urgently wanted at Birkdale. One was put in a five-seaeter Avro and flown across the Ribble in 10 minutes. It would have taken the best part of a day to send it by road. The cost of transport was about £2 as against £5 for the hire of a lorry to take it round by road.

"Lucky," a famous music-hall performing dog was looped at Blackpool. He lost his flying cap and goggles during the trip. He climbed up the ladder to the aeroplane on two legs, drank the pilot's health and generally showed how thoroughly he enjoyed his flight.

Brighton.

During the week ending Aug. 24th thirty-eight flights were made in Avro machines at the Ladies' Mile Aerodrome.

Eighty-eight passengers were carried. The weather was indifferent, and no flying was possible on the 19th and 20th insts. On Sunday, Aug. 17th, a passenger and his niece were flown to Swanage and back.

Cambridge.

The Cambridge School of Flying charges only 30s. for a flight of 15 minutes over Cambridge on Avro machines. For 10s. passengers are taken up and may bomb a "circle" with sawdust bags. The youngest passenger carried so far was aged four. Most of the passengers are women, and nearly all request to be stunted. Motor 'buses are run out to the aerodrome from Cambridge (5 miles) on most Thursday afternoons.

Flying is taught on D.H.6 machines for £100, and on Avros for £180. They also have several Caudrons, but as they are not being licensed they will be written off.

An expert photographer will take photographs of passengers in the machines. Long-distance flights can be arranged, and the company claim that they charge down to 20 per cent. less than any other company for similar journeys.

Conway.

The site at the Morfa is being levelled and will be used as a landing-ground by the Avro Co. It is a fine centre for North Wales, the aerial views being magnificent. The air is very bumpy for flying, owing to the proximity of the mountains and the sea.

Fleetwood.

Passengers are taken up two days a week in an Avro machine by Lt. Macrae, M.C.

Harrogate.

A D.H.9 biplane is shortly expected to assist in making up passengers with the D.H.6 and the D.H.4a machines. The last machine will be used for daily flights to Redcar costing 10s. return.

Hunstanton.

Capt. Birkbeck, D.F.C. (late R.A.F.), of the Cambridge School of Flying has flown an Avro to Hunstanton, where he is taking up passengers.

Isle of Man.

Lieut. Moxon, flying on probably the most difficult aerodrome in the North, is carrying many passengers on Avro machines. He has started another licensed aerodrome at Ramsey, where the flying conditions are very much better.

Kendal.

A. V. Roe and Co., Ltd., are still negotiating with the landowners and Post Office authorities who have refused to lay their telegraph wires underground for a short distance. This would make the only good piece of ground in the neighbourhood suitable for landing on.

London.

Cricklewood.—A Handley Page, piloted by Capt. Shakespear, left Cricklewood Aerodrome on Aug. 21st with passengers for Brussels. Whilst the machine was circling over the aerodrome to gain height a messenger arrived on the ground with an important letter for one of the passengers.

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Unsuccessful efforts were made to attract the attention of the pilot, and so the letter was taken by Major Meintjes in a fast two-seater machine, which overtook the Handley Page at Hounslow, where it had descended to pass the Customs.

HOUNSLOW.—A Vickers-Vimy limousine with 350-h.p engines and carrying fourteen passengers left Hounslow Aerodrome at 10 a.m. on August 20th. They flew to Amsterdam, where they were entertained to lunch by the Committee of the E.L.T.A. Exhibition.

During the week, ending Aug. 24th, 140 passengers were carried in Avro machines. Cross-country flights were made to Margate, Southsea, and the Isle of Wight.

MARGATE.

Although there was only four days' flying during the week, ending Aug. 24th, owing to the weather conditions, over 100 passengers were taken up in Avro machines.

MORECAMBE.

For five days a week Lt. Macrae, M.C., takes passengers up in an Avro machine at Morecambe, and is kept very busy.

NOTTINGHAM.

The Air Ministry has refused to sanction the flying in the "Forest" in the centre of the city for the flying week in the middle of September. A. V. Roe and Co. intend running a Nottingham-Derby air service at that time.

A commercial aeroplane service is about to be established at Nottingham. The promoters have acquired under Government sanction a site of about 30 acres near the river Trent, and the land is being adapted for an aerodrome. A start will be made with five aeroplanes for carrying passengers and goods. Special attention will be given to the transportation of lace, Nottingham's main product, which, being light in bulk, is specially suitable for the purpose.

PAIGNTON.

Four flights for lunch and two for tea were made to Teignmouth in Avro seaplanes during the week ending August 24th.

A race between the two seaplanes was arranged in conjunction with the Regatta for the afternoon of Saturday, Aug. 23rd, but as one of the machines was sent to Amsterdam it had to be scratched. It is hoped to arrange a race on August 27th.

PRESTON.

The Avro aerodrome has been licensed and requires a little levelling before passenger flying can take place.

RAMSGATE.

An Avro seaplane on its way from Southampton to Holland with a passenger was compelled to alight at Ramsgate on Aug. 25th owing to shortage of petrol. The machine was towed in Ramsgate Harbour undamaged.

RHYL.

Flying is very popular at Rhyl, and many passengers are taken up in the Avro machines. Capt. E. Maitland Heriot, D.S.C., has started upside-down flying as an attraction. The first time he did this, forgetting the laws of gravity, he inadvertently dropped a number of things out of his machine, which descended on the sands. The people there were very surprised at the sudden appearance of souvenir cards, tickets, and cushions from the sky!

Many people have come from St. Asaph, Chester, Birmingham, Denbigh, and Ruthin to fly, and inquiries for cross-country flights are numerous. When it is possible to reduce the fare there will be no dearth of bookings.

SCOTLAND.

During last week Capt. Simpson moved his two Avros from St. Andrews to Montrose, where 30 passengers have been taken up. This week he proposes to visit Dundee.

Aerial Photos, Ltd., of 81, George Street, Edinburgh, propose forming a Scottish Flying Club with centres in Edinburgh and Glasgow for the purpose of encouraging civil flying and commercial aviation in Scotland. Those interested are invited to write to the Secretary.

SOUTHAMPTON.

The Supermarine Aviation Co., Ltd., are carrying passengers in their flying-boats from Southampton to Bournemouth and the Isle of Wight. Passengers are also taken up at Southsea. The service will soon be extended to Havre and the Channel Islands.

SOUTHPORT.

The Sopwith Aviation and Engineering Co., Ltd., have the sole concession rights for making passenger flights at Southport. The Avro Company are taking up passengers at Birkdale near by. The Sopwith Company have three "Gnu" three-seaters and one "Dove" two-seater machines at Southport.

During the last six weeks Mr. King and Mr. Clapham have taken up about 1,000 passengers in two "Gnu" and one "Dove" machines. The aerodrome is in a central position adjoining the Pier and the Marine Drive.

SWANSEA.

Great interest was aroused on Aug. 15th by the arrival of the Swansea Town Crier, complete with his bell, on the Avro aerodrome.

From his pocket he produced a coil of rope which he seriously handed to the pilot with a request that he might be firmly tied into the Avro.

Then, for the first time, surely, a town crier was to be seen and heard flying above the main streets of the town plying his trade to the accompaniment of his bell and a 110 h.p. Le Rhône engine.

On Tuesday, Aug. 19th, a wonderful exhibition of aerobatics was given to the many visitors to Llandrindod by Capt. T. B. Bruce on one of the Swansea Avros.

During the week ending Aug. 24th, 24 flights were made and 47 passengers carried in Avro machines.

WATERLOO SANDS (LIVERPOOL).

Flying on this aerodrome takes place on Wednesdays and Saturdays, otherwise it is only used by the Avro machines as a landing ground.

WINDERMERE.

Capt. Pixton took the "Daily News" over to the Isle of Man several times during the week ending Aug. 24th. His trips are scheduled to take place when the midnight boats do not run from Liverpool, which is two or three times a week.

Passenger-flying is quiet, but improving, on Lake Windermere, where the air over the mountains is none too steady for flying. The Avro seaplanes are as reliable as the aeroplanes.

THE ARGENTINE.

A party, consisting of 16 French officer pilots and 44 picked mechanics, have embarked for Buenos Aires in connection with the French Aviation Mission to the Argentine Republic.

It is proposed to introduce a measure into the Argentine Chamber of Deputies providing for admission of aeroplanes into the country free of duty.

DENMARK.

The Handley Page machine piloted by Major T. Gran, which left Cricklewood on Aug. 17th for an aerial tour, as noted in the last issue of THE AEROPLANE, made several exhibition flights at Copenhagen. It left Copenhagen for Norway on Aug. 23rd, stopping at Aarhus, Jutland, at noon.

The Danish correspondent of THE AEROPLANE writes:—

Naval Captain Ulliditz flew last week as passenger with the German Capt.-Lieut. Reppert on his Brandenburg two-seater seaplane to Warnemünde, where he negotiated with various people regarding the possibilities of starting air lines to Copenhagen. They continued by air to Berlin on the same business and returned expeditely. Capt. Ulliditz has connection with the Danish Air Traffic Co. under formation.

Late in the evening of Aug. 13th the Farman twin Renault-engined Goliath No. 2 arrived in Copenhagen, carrying a pilot, two passengers and a mechanic. The rest of the 12-passenger seats were stored with spare parts. This machine is the first of such size to visit Copenhagen, and no shed at the aerodrome could house it, nor could the tent, which was erected for the special purpose.

A passenger said that great difficulties had been experienced in getting permission to leave France, and he himself had to call personally on the War Office. The giant aeroplane will stay for some days in the Danish capital, giving passenger flights.

After the inexperienced civil pilot, Dir. Nehm, had met with a fatal accident on an overland flight in an old, retouched Rumpler, he and his passenger being burned to death, civil flying has been forbidden, till the Air Bill before Parliament has been passed.

The provisory regulations requiring a safeguard of 10,000 crowns against third party damage and 60,000 crowns against third person hurting. This should speed up the efforts of Scandinavian insurance companies to tackle the new field of enterprise in union. Before being allowed to fly the pilot has to pass tests before the Commander of the Army Flying, Lieut.-Col. Koch, equalling those for obtaining a military certificate. Otherwise he must show papers of his flying career abroad.

The first to obtain a passenger-carrying brevet was the German, Hubricht, engaged as private pilot of one Mr. Tholstrup, who has repeatedly flown as passenger in a Brandenburg seaplane of his own, with the object of saving time in travelling to his dairies on the off-lying Danish island Bornholm. Mr. Tholstrup also owns half a dozen aeroplanes, including a Fokker VII. The others are L.V.G. two-seaters, the interests of which company he pushes. One of these biplanes has been flown on exhibition and joy-riding trips in Jylland, piloted by several Army aviators when on leave.

Now he has disposed of four L.V.Gs. and the Fokker to a new company which he has formed, with three Flight Lieuts., who have hired the Army aerodrome at Lundtofe, near Copenhagen, from where joy-riding, tuition and advertising flights will be carried out. This scheme was to have been carried out originally with Rumpler machines, and some were flown there: but, as the pilots had neither permit to export them from Germany, nor permit to import them into Denmark, they were arrested. They spoke of an invasion of 200 Rumpler aircraft.

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FRANCE.

An experimental postal service is being tried between Gabes and Tunis. On August 10th a 300-h.p. Breguet biplane did the journey in 2 hrs. 10 mins., as against 15 hours which is the time taken by the train.

The Farman "Goliath," piloted by Lt. Bossoutrot, which left Toussus-le-Noble Aerodrome on Sunday, Aug. 10th, to fly to Dakar, reached Casablanca in 17 hours 20 mins. without a stop. On the following Friday the flight to Dakar was resumed, and the last that was heard of the "Goliath" and its crew of eight was a wireless message asking for the direction of the wind on the Saturday morning. It was then near Cape Blanco, more than half the distance of the final stage having been accomplished.

A very systematic search was organised from Dakar, both by warships to search the coast, and by relief columns to search inland. For a week nothing was heard, and all hope had been abandoned as to their safety.

On the 24th inst. a message was received by the French Minister of Marine from the commander of the Naval Division in Morocco, stating that the "Goliath" had been discovered near the coast at a point 90 miles north of St. Louis with a broken propeller and that all the crew were safe. The delay in receiving the information was due to the fact that at this time of the year the native villages are deserted.

Commandant Wuillemin and Lieut. Dagnaux arrived at Cairo on Saturday, August 16th, having flown from Paris, with stops at Marseilles, Naples, Salonica and Constantinople. The last stage—Constantinople-Cairo—occupied nine hours' flying time.

On the 21st inst. two Portuguese aviators, Capt. Souza-Maia and Lt. Portila, on Bréguet biplanes, flew from Paris to Brussels, en route for Amsterdam in 1 hr. 38 mins.

The French reliability and endurance competition promoted by "L'Avenir" has, it is stated, been abandoned owing to the difficulties in the way of getting the competing machines ready in time.

The annual International Exhibition of Aeronautics, organised by the Chambre Syndicale des Industries de l'Aéronautique, will be held at the Grand Palais in the Champs Elysées from December 19th next to January 4th, 1920.

The exhibits will be classified in eleven groups as follows: (1) Aerostatics; (2) heavier than air apparatus; (3) motors and propellers; (4) sciences; (5) art; (6) structural materials; (7) transport and shelters; (8) cartography and bibliography; (9) commerce; (10) motor navigation; (11) various industries.

M. Malicoir, flying a Caudron biplane, flew twice under the Bridge of Var near Nice. The span of the bridge is 65 feet and the height 20 feet, as compared with the 45 feet span of the Caudron.

Capt. Leune, accompanied by a wireless operator and a mechanic flew from Paris to Rome. Between Corsica and Gênes the machine ran into a violent storm and for two hours and a half the pilot was completely lost over the sea. On landing at Rome it was found that the airscrew and the leading edges of the planes had suffered severely.

M. Fronval on a 110 h.p. Le Rhône "Parasol" monoplane flew from Paris to Amsterdam, a distance of 450 kilometres, in 2 hrs. 28 mins.

M. Poulet, the well-known Caudron exponent, is practising on a Caudron-Le Rhône biplane for a flight from Paris to Melbourne.

GERMANY.

The German police system has been reorganised, and provision has been made for a corps of flying policemen. Their duties will be to prevent capital leaving the country and to hunt and catch criminals. A landing-ground for police aeroplanes is being made now on the Swiss frontier, and similar stations are planned for Hamburg, Hanover, Breslau, and other towns.

The "Nieuwe Rotterdamsche Courant" states that, owing to the lack of material, the aerial mail service in Germany cannot be resumed for some time. Flights will be made only when authorised by the Government and other authorities. At Swinemunde and similar north coast holiday resorts joy-flights are still being made, but at very high prices.

Professor Junkers demonstrated his first limousine in passenger flights at the Johannisthal aerodrome on Aug. 6th. The machine was his 160 h.p. Mercédès-engined, wireless, all-metal (aluminium) monoplane for six persons, with an enclosed cabin for four passengers. The speed attained was 105 miles per hour.

The daily Zeppelin service between Berlin and Friedrichshafen, on Lake Constance, has been advertised by the D.L.R. Company to start on Aug. 24th.

A small type of Zeppelin has been constructed for this service. It is about 400 ft. in length, has a capacity of 20,000 cubic metres, and is said to be able to carry 10 to 12 tons. It has four engines giving about 1,100 h.p. and a speed of 77 m.p.h.

The passenger cabin contains 20 easy chairs and can accommodate 25 persons. It contains also a wireless telegraphy apparatus, a lavatory with running water, and a canteen, where hot and cold food and drinks can be obtained.

At first the flight will be made one way only each day, without making a landing en route. The 373 miles will be covered in seven hours. From Sept. 5th landings will be made at Munich on every journey. The fare for the whole distance is 400 marks, and Berlin-Munich 350 marks. Each passenger will be allowed 30 lb. of luggage.

The Government have made arrangements to use their passenger Zeppelins for the conveyance of letters and parcel post. For letters a small extra charge will be made. The "urgent" rate for parcels will be charged plus five marks for every kilogramme.

The service started on Aug. 24th with the Stan-dirigible "Bodensee," belonging to the Delag (Deutsche Luftschiffahrts A.G.), after repairs by the Luftschiffbau Zeppelin.

The airship left Friedrichshafen at 10 a.m. on its first trip to Berlin.

It carried 10 newspaper representatives and 13 other passengers, including three women.

The airship arrived over Berlin at 4 p.m. and landed at 5 p.m. at Staaken, near Spandau.

The Danish correspondent of The Aeroplane writes:—

The German coal strikes have influenced commercial aviation so much that the Sablatnig Traffic Co. and the German Aerial Shipping Co. had to stop their service on July 31st, owing to the lack of fuel, as only home-produced benzole was available, and there was not enough of that.

The latter enterprise states that the prospects for the near future are not good, and regrets it, as August and September would probably have turned out the best flying months. Special flights to order may soon be carried out with foreign petrol, but at much increased cost, as the price of this petrol will be five to six shillings against 1s. 3d. of benzole.

The company recently suffered the loss of one of its passenger aeroplanes near Johannisthal in an accident that cost half a dozen lives.

The twin-engined aircraft are equipped with parachutes. Lieut. Treibner jumped from 1,500 ft. during a passenger flight at the Johannisthal aerodrome on July 19th with a Heinike parachute. On July 21st the control of the latter was proved, as the wind drove him over unsuitable ground and he increased his falling speed by serving the central cable.

Piloted by Engineer Schwandt, a new A.E.G. twin-engined biplane has put up a new world's record for altitude flight with eight passengers.

HOLLAND.

E.L.T.A. News.

On Aug. 12th a Caudron machine, piloted by Boulard, collided with an Avro machine. The damage was slight.

The Avro "Baby" flew from Hamble to Amsterdam via Hounslow on Aug. 14th. The non-stop flight from Hounslow to Brussels took 2 hours 50 min. No trouble of any kind was experienced en route. A number of spares was carried. The machine has made a good impression at the E.L.T.A. Exhibition.

Two Avro seaplanes have also left Hamble for the Exhibition, where they will take up passengers. Nine Avros have now been dispatched to the E.L.T.A.

The only drawback to flying there is the sand which has been pumped out of the canals on to the aerodrome. It gets into the engines and causes the mechanics a good deal of trouble.

On Aug. 15th one of the Spyker machines fell from a height of about 30 ft. The propellers and the undercarriage were smashed and one wing was destroyed. The pilot, Serjt. V. D. Grient, escaped with injury.

A "Vickers-Vimy-Commercial" aeroplane, piloted by Captain S. Cockerell, carrying numerous copies of the London daily papers, left London for Amsterdam at noon on Thursday, Aug. 21st, and arrived at its destination at 3 p.m. The papers were then sold for a local charity.

Local flights were made by Verstugh on a Spyker, Mr. Duke on a B.A.T. "Bantam," Signor Guglio Motti on an Ansoldi, Capt. Stanley Cockerill on a Vickers "Vimy," and a Handley Page flew to England.

The Blackburn Aeroplane and Motor Co., Ltd., are exhibiting one of their big "Kangaroo" bombing machines converted for passenger-carrying at the E.L.T.A. Exhibition.

The machine was flown from Hull *via* Hounslow by the Blackburn test pilot, Mr. R. W. Kenworthy, and averaged a speed of 90-100 m.p.h. on the journey.

The trip from Hull to Hounslow was made in two hours. The next stop was made at Marquise for petrol. At Evere, near Brussels, a good landing was made, although part of the aerodrome was under water and it was getting dark and foggy. H.M. King of the Belgians viewed the machine at Evere.

Amsterdam was reached from Brussels in two hours. After circling round the E.L.T.A. Aerodrome for an hour till he understood from the authorities the best place to land, the pilot made a good landing.

The Handley Page and the Vickers Vimy cannot fly there on account of the bogginess of the aerodrome, but the Kangaroo has been taking up passengers, seven at a time, all day since its

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arrival there. Numbers of people wish to fly in the Kangaroo, and many offers have been made for seats for the return journey to Leeds or Hull.

The Blackburn Co. may send another Kangaroo to the Exhibition. Their other exhibits are models of the Cuckoo torpedo-carrying aeroplane and the Nib, a small flying-boat.

INDIA.

The Indian Government had decided to carry aerial mails in its own aircraft. It has now reversed its decision and has decided that everything shall be done by contract. A large number of aviation experts is expected from England at the end of the year, when it is expected that the preliminary arrangements will be completed.

The British mails will be landed probably at Karachi, and will be distributed over the country by subsidiary aerial services.

Sites for the aerodromes have been selected at all the principal cities except Bombay, where land is very expensive.

ITALY.

Reuter states that the Italian dirigible "M.1" left Rome on Aug. 25th with 20 passengers on board, including a party of journalists. It arrived at Naples after a three hours' flight, and circled over the town. The dirigible was due to leave for Rome again in the afternoon.

Signor Gabriele D'Annunzio is giving his whole time to the organisation of the Rome-Tokio flight. Five SVAs. of the two-seater Vienna type, with big radiators and tanks, will compose the escadrille.

The journey is expected to take 15 days and will show the value of organisation and regular performance rather than of speed or brave expedients. It will not be attempted till October. They are arranging to stop at Salonika, Adalia, Bagdad, Bassorah, Raratti, Delhi, Agra, Benares, Calcutta, Rangoon, Bangkok, Handi, Canton, Shanghai, Kiao-Ciao, Pekin, somewhere in Corea and Osaka, and then Tokio.

A three Liberty-engined Caproni triplane piloted by Capt. Laureati flew from the Taliedo aerodrome, Milan, to Orly, having flown over the Alps. The journey was resumed next morning for Amsterdam, via London and Brussels.

With regard to Taddeoli's flight over the Alps on a Savoia—S.I.A.1—S.13 type seaplane with an I.-F. 250 h.p. engine from Lage Maggiore to Geneva, it is well to remember that Taddeoli, though in the service of Italy, is Swiss, and one of the first to do waterplane flying. A small sister machine was at the Taliedo Show.

The linking up of the Italian to the Swiss lakes was a scheme dear to Oscar Bider, lately deceased, who was hoping to promote a company with this object. One hopes his death will not cause the scheme he initiated to be dropped.

Messrs. Thos. Cook and Son have advised that the dirigible and aeroplane excursions over the Roman countryside are suspended. This is the natural result of the heat and the slack period of the year.

Messrs. Isotta-Fraschini, of Milan, have stated to the Press that neither of the three engines on the Caproni which crashed at Verona were products of their firm. Presumedly they were Fiats, or, possibly, Liberty engines.—T. S. H.

SOUTH AMERICA.

The American Consul at Buenos Aires reports that an aeroplane service will be established within a few months to connect Buenos Aires with Bahia, Brazil, and intermediate cities.

SPAIN.

Captain Truelove is on his way to Spain with a standard Avro machine painted with the Spanish national colours. This machine will give demonstrations before H.M. the King of Spain and in various parts of the country.

SWEDEN.

The Scandinavian correspondent of The Aeroplane writes:—

The first two flying-boats for the new Swedish Air Traffic Co. have arrived in Stockholm. They hope to start services soon to Helsingfors (Finland), Berlin, Malmoe and Gothenburg, the flying time to be respectively: Five, seven and a half, four and three hours.

SWITZERLAND.

Lieut. Ackermann with a passenger left Thun in an aeroplane at 5.30 a.m. on August 17th to fly to the Jungfrau. They flew round the Aletschhorn and the Eggishorn. The pilot was about to land near the Jungfraujoch, where a landing-ground had been prepared, when the machine nose-dived and fell into the snow on the side of a crevasse. The machine was scarcely damaged and can be repaired on the spot.

Another aviator attempted the same exploit on August 19th but also crashed, hitting the ground twenty yards from the landing-place.

A Commission, consisting of sundry Swiss Army officers and the aeroplane constructor, Largier, have visited Jungfraujoch, with a view to finding a suitable landing-ground thereon in order to open up a passenger service over the Jungfrau.

An aerodrome has been built at St. George's, near Geneva, with accommodation, so far, for four machines. It is rumoured that an English firm is about to run a regular service, London-Interlaken, with a landing at Geneva, with machines capable of carrying twenty passengers.

UNITED STATES OF AMERICA.

There were 62 entries for the New York-Toronto Air Race on Aug. 25th. Buffalo, Syracuse, and Albany are the intermediate landing places.

Out of the 45 machines due to start from New York, 40 started. Three of these were S.E.5. machines, and one carried a letter officially inviting the Prince of Wales to visit New York.

The American competitors started from Roosevelt Field, Long Island, at 1.55 p.m. The first machine to leave was a La Pere. The second machine, piloted by Capt. Foote, carried a message from President Wilson to the Prince of Wales, inviting him to visit America. The other competitors left at five-minute intervals. Capt. Foote was the first arrival at Albany, and reached there at 3.16 p.m. Colonel Barker, V.C., D.S.O., M.C., flew a Fokker machine.

Only 12 out of the 17 machines entered for the race, started from Toronto.

The Prince of Wales was to start the machines from Toronto.

The first arrival at Buffalo from Toronto reached there at 1.25 p.m. Another machine landed there one minute later.

The prizes, which were worth $10,000, were given by Mr. John McE. Bowman, the President of the Hotel Commodore Co. A committee, composed of members of the American Flying Club and the Aero Club of Canada, had charge of the arrangements.

The "Aerial Age Weekly" of August 4th states that the longest flight undertaken by civilian fliers in a flying boat since 1914 will start from New York early next month, when Majors S. E. Parker and G. Talbot Willcox, late R.A.F., will set out for New Orleans by the inland water route. They may continue their flight around the Gulf of Mexico to Panama and South America. The machine used will be a Curtiss "Seagull" equipped with wireless telephone and telegraph.

The U.S.A. Government proposes to establish three aerial mail routes radiating from Bogota, Columbia. Bids will be received from Nov. 20th from companies willing to provide aircraft to make trips on days designated by the Government. The bidders have to deposit 10,000 dols. with the bids and to give a guarantee of 40,000 dols. that they will carry out the contract. They must agree also to forfeit 5,000 dols. for each failure.

Secretary Daniels has authorised the sale of 265 surplus navy seaplanes of various types by public auction. They are in good condition. Seaplanes are in commercial service already between New York and Atlantic City, San Pedro and Santa Catalina, Key West and Habana, and Chicago and Milwaukee.

George White and Co., of Los Angeles, California, the manufacturers of the White seaplane, a monoplane, are going to attempt a flight over the following route:—Los Angeles—Francisco, Victoria (British Columbia), Sitka (Alaska), Petropavlovsk (Kamschatka), Yokohama, Shanghai. This is a total of some 5,780 miles.

Mr. George D. White is also planning to build a 660-h.p. three engined monoplane with which to cross the Pacific Ocean.

He will take the northern route from San Francisco to Shanghai. The journey is estimated to take three days, it now requires three weeks on the fastest boat.

The National Air Service Corporation of America has announced plans for an aerial passenger and freight service on the route New York-Bridgeport-New London-Boston. Two biplanes will be used.

Six large Missouri property-holders have purchased a Curtiss aeroplane for the rapid inspection of their ranches. The properties range in size between three and four thousand acres each.

Two aviation companies are in active business, and a third in the process of organisation in the vicinity of Spokane, Washington.

Over 1,000 radio stations, covering districts in all parts of the United States, have been established by the American Flying Club. Any aviator flying cross-country can always be in touch with any city or town in the United States. The district radio operator can procure assistance to any machine which has an accident or a forced landing in an inaccessible place.

The National Air Service of New York has announced an aeroplane passenger and commercial service between New York and Boston, with intermediate stations at Bridgeport and New London

A SALE OF AERO-ENGINES.

The Aircraft Disposal Department, the Ministry of Munitions, have a job-lot of aero-engines for sale. The engines include Hispano-Suizas, Sunbeams, and Gnomes, and are suitable for spare parts, ball-races, etc.

They can be viewed at the Waddon depot, near Croydon, and tenders are requested. Permits to view and all particulars may be obtained from the Controller, Aircraft Disposal Department, York House, Kingsway, W.C.2.

CONGRATULATIONS.

HIRST.—On Aug. 19th, the wife of Stuart A. Hirst, Esq., of the Blackburn Aeroplane and Motor Co., Ltd., of a son.

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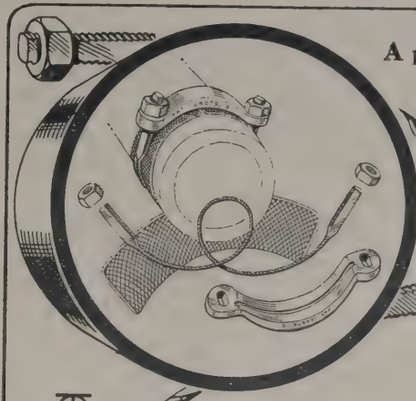
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AIRCRAFT FINANCE

CURRENT TOPICS.

A Step towards Normality.

It stands to reason that the removal of the embargo on international financial movements must straighten out the Industrial position generally. Therefore, the decision is to be welcomed for what it promises to accomplish, and the grumbling at the temporary disturbance, inseparable from the change over, is uncalled for. The Financial World will be all the better for this freedom: it is a question of time.

Whiteheads.

The reminder at the creditors' meeting that Whitehead Aircraft preference and ordinary shares obtain "something" out of the sale of the undertaking has failed to arouse any interest in the shares. The last transaction in the 10 per cent. cumulative and participating £1 ordinary shares was on the basis of 5s. 6d., and in the deferred 1s. shares at 1s. to 1s. 3d. There are possible buyers of large quantities of the former under 5s., which suggests that that will prove to be their real worth under terms to be offered. One cannot wonder at the reluctance of holders to sell; the shares were originally issued at 21s. 6d. each, and the average investor would rather hold on against the chance of getting more of the capital back than cut the loss now.

The Warings Investments in Aircraft.

There has been a slight rally in Waring and Gillow shares, the ordinary to 8s. 6d. and the preference to 13s. 6d., on what was said at the meeting. Some references were made to the subject of aircraft auxiliary. Thus, investments in subsidiary undertaking had increased, it was explained, from £140,112 on Jan. 31st, 1916, to £322,319, owing chiefly to the establishment of the Alliance Aeroplane Co. This was formed to carry out "very important Government contracts and to perpetuate the excellent reputation earned as builders of aeroplanes." At Acton new up-to-date works to carry on ultimately the aeroplane business are being erected, and, meantime, to engage in the manufacture of motor bodies, etc. Every step that human foresight could suggest had been taken to ensure a profitable career for the Alliance Aeroplane Co. For the present year, at any rate, there was sufficient business to make it a profitable undertaking.

Thornycroft's Capital.

John I. Thornycroft and Co., who are concerned principally with shipbuilding but also have interests in Aircraft, propose to increase the capital to £750,000 by the creation of 250,000 7½ per cent. participating preferred ordinary shares of £1 each. An Indian Auxiliary has been established with a capital of £160,000.

NEW COMPANIES.

The Norman Thompson Flight Co., Ltd., aeroplane manufacturers, Bognor, Sussex.

A largely attended meeting of the creditors of the above was held on July 28th at the Institute of Chartered Accountants, Moorgate Street, E.C., when the chair was occupied by Mr. H. J. Morland, of Messrs. Price, Waterhouse and Co., C.A., of 3, Frederick's Place, E.C. The chairman stated that the shareholders of the company had passed a resolution in favour of voluntary liquidation, and he and Mr. W. R. Clemens, of Aldermans House, Bishopsgate, E.C., were appointed to act as the liquidators. A statement of affairs was submitted showing the position as at July 10th last, and this disclosed assets estimated to realise £82,618.

The assets were as follows: cash in hand and at bank £736; bills receivable £350; book debts £51,690; sundries £5,520; expected to produce £2,719; stocks on hand £32,397, estimated to realise £11,623; land at Middleton, £2,914, valued at £500; workshops, etc., £15,273, valued at £7,500; plant and machinery, £12,968; expected to produce £2,500; and equity in new buildings valued at £5,000. No value was placed on the goodwill, which appeared in the books at £1,500. The new buildings were erected at a cost of £21,372, but the Ministry of Munitions were responsible for a third of the cost. The company was liable for £14,248 in connection with the new buildings, and the equity was valued at £5,000.

The assets were subject to preferential claims of £5,021. £34,498 was due on a prior lien and £14,248 was owing in respect of the new buildings. Those three items totalled £54,781, and after allowing for them the assets were reduced to £27,837. The prior lien was due to Messrs. Cox and Co., and that firm also held first Mortgage Debentures on which £32,291 was due. Under a scheme of arrangement previously come to Messrs. Cox and Co. had agreed to take in discharge of those debentures a sum equivalent to three-fourths of the balance of £27,838.

A sum of £20,878 would therefore go to them, which would represent a dividend of 12s. 11d. in the £ on their debentures, leaving £6,959 for distribution to the holders of the second Mortgage Debentures. The amount due to the latter was £50,846, and they would receive a dividend of 2s. 9d. in the £. It was pointed out that the second debenture holders were the old creditors of the company. The claims of the old creditors amounted to £47,962, and a debenture was issued to Mr. E. H. Hawkins, as trustee, on April 18th, 1918. There was interest due to the debenture holders of £2,883. The amount due to the sundry trade creditors was £279, and they would not receive any dividend.

The chairman said that to a considerable extent the figures in the statement of affairs were subject to variation. The liquidators would have to complete some of the work which was in hand.

Mr. Clemens explained the statement in detail and pointed out that the surplus of £27,837 available for distribution amongst the debenture holders was subject to the expenses of the liquidation and the cost of carrying on the business. The situation of the works at Middleton militated against the successful working of the company. The works were some six or seven miles from Bognor and there were practically no transport facilities. With regard to the new buildings they were practically erected at the command of the Government. They had never been used, having only just been completed at the date of the armistice. Owing to the cessation of hostilities there had been a great drop in the value of aeroplane stocks. The company had a large stock on hand which it was feared would not realise well at break-up prices. There was, however, a quantity of timber which should realise well.

Mr. Terry, solicitor, who appeared for one of the largest creditors, said that some time ago Mr. Handley Page offered 3s. in the £ to the creditors, and he understood that that offer was again being put forward. The creditors desired to be represented in the liquidation of the company, and he therefore proposed that an application should be made to the Court for the appointment of Mr. E. H. Hawkins, of Messrs. Poppleton, Appleby and Hawkins, 4, Charterhouse Square, E.C., as joint liquidator of the company. He also proposed that a committee should be appointed consisting of the representatives of Messrs. Joseph Owen and Sons, Ltd., Sellon Ltd., and the Palmer Tyre Co.

Mr. W. H. Cork, who seconded the motion, said he was surprised at the way in which the liquidators had written down the assets. They could not expect possible buyers to make good offers for any of the assets when they had been written down so drastically.

Mr. Houstoun, who supported the motion, said that the principal creditors were called together twelve months ago, and as a result of their efforts the general body of creditors were in a better position. It was as a result of the efforts of the principal creditors that they got a quarter of the amount which went to Messrs. Cox under the debentures held by that firm.

After some discussion the resolution was carried by a very large majority on a show of hands, only two creditors dissenting, and the chairman then announced that it was necessary for the motion to be carried by a majority of the creditors in number and value. A poll would therefore have to be taken.

The representative of Messrs. Cox and Co. said that they were by far the largest creditors and would vote against the resolution, and under the circumstances it could not be carried by a majority of the creditors in value.

It was, however, pointed out that Messrs. Cox and Co. were partly secured creditors and could only vote for the amount for which they were unsecured.

It was stated that the result of the voting would be reported to the Court when the application was made.

West of Scotland Aviation Co., Ltd.—Private company. Registered August 5th. Capital £2,000 in £1 shares. To carry on the business indicated by the title. The subscribers (each with one share) are:—F. W. French, J.P., Stayer House, Eye, Suffolk; Lt. J. Fryer, R.D.C., Kingsthorn, Ashford, Kent. The first directors are T. H. French, F. W. French, R. W. Reeve and J. Fryer. Qualification £100. Secretary, F. W. French. Registered office: Station Road, Eye, Suffolk.

Aerial Photos, Ltd.—Private company. Registered in Edinburgh, July 18th. Capital £18,000 in £1 shares. Objects: to carry on the business of (a) aerial photography, including cinematograph films, (b) aerial passenger transit and (c) commercial aerial advertising, etc. Agreement with Capt. R. S. J. B. Andrews, Major C. H. C. Smith, and Capt. O. Hardie. The subscribers (each with one share) are:—H. E. Haig, Clayton, Dairsie, Fife, papermaker; A. R. Wilson Wood, 7, Abbotsford Crescent, St. Andrews, Fife, gentleman; L. W. Allen, 77, Station Street, Coventry. The first directors are Capt. R. S. J. B. Andrews, C. H. C. Smith, and O. Hardie. Registered office: 81a, George Street, Edinburgh.

AIRCRAFT IN PARLIAMENT

The following written answer was given on August 18th :—

FEMALE CIVILIAN SUBORDINATE.

Major-Gen. SEELY replying to Lieut.-Commdr. Kenworthy said : The number of female civilian subordinates employed by the Royal Air Force (exclusive of the female staff at the Air Ministry) was as follows : January 1st, 1919, 1,823; July 1st, 1919, 2,547; August 1st, 1919, 2,500. This increase has been rendered necessary in order to facilitate the very rapid demobilisation of the Royal Air Force

* * *

The following oral answer was given on August 19th :—

ANTI-AIRCRAFT GUN DEFENCES.

Mr. FORSTER replying to Sir John Butcher said .—The numbers employed in this country in connection with anti aircraft defences on August 11th were : Officers, 273; other ranks, 2,319 The corresponding numbers on November 11th, 1918, were : Officers, 717; other ranks, 11,948. The work of removing the equipment from stations that are no longer required is in progress, and when this is completed the personnel will be further reduced.

* * *

The following written answers were given on August 19th :—

MISS DOUGLAS-PENNANT (INQUIRY).

Sir ROBERT THOMAS asked the Lord Privy Seal whether the Government are prepared, on certain conditions, to take part in the House of Lords Inquiry concerning the dismissal of Miss Douglas-Pennant; if so, whether he will inform this House what those conditions are; and will he state the reasons which have led the Government to take this course after refusing in this House the demand for a judicial inquiry.

Mr. BONAR LAW : The Committee has power to summon witnesses and to ask for papers. I am informed that the Air Ministry will assist the Committee in making any necessary arrangements for the attendance of witnesses, and will produce papers which the Committee wish to have. The Secretary of State has approved the appointment of counsel to represent the Air Ministry before the Committee.

CIVIL AVIATION.

Lieut.-Col. MALONE asked the Under Secretary of State to the Air Ministry whether he can give an assurance that, in taking every step to cut down expenditure and ensure economy in his Department, he will support and strengthen the Department of Civil Aviation in order to assist the development of British aircraft production, the success of which industry will add materially to the general prosperity of the country; and whether he will be prepared to give an account of the progress and work of that Department when Parliament reassembles.

Major-Gen. SEELY : With regard to the first part of the question, I am not at present in a position to add anything to the statement I made when introducing the Estimates, but my hon. and gallant friend may rest assured that the Government are fully alive to the importance of civil aviation to this country. The answer to the second part of the question is in the affirmative.

AERODROMES (TADCASTER AND SHERBURN-IN-ELMET).

Major-Gen. SEELY replying to Major Lane-Fox said :—The staff of officers and other ranks at July 31st, 1919, at the aerodromes referred to in my hon. and gallant friend's question was as follows :—

	Tadcaster	Sherburn-in-Elmet.
R.A.F.—Officers	48	2
Other ranks	159	58
W.R.A.F.—Officers	2	0
Other ranks	66	0
Civilian Subordinates—Male	2	22
Female	2	9
	279	91

Neither of these stations is included in the Royal Air Force post-war programme, but the use of one of them will have to be retained for civil aviation until a more suitable aerodrome, closer to the City of Leeds, has been provided. These aerodromes will shortly be handed over to the Disposal Board for disposal. The cost of construction has been : Tadcaster, £108,000; Sherburn-in-Elmet, £195,000.

ATLANTIC FLIGHT (EXHIBITION OF AEROPLANE).

Major-Gen. SEELY replying to Lieut.-Col Malone said that the Vickers-Vimy aeroplane which flew the Atlantic is the property of a private firm (Vickers Ltd.), and that he had not been informed officially whether the firm wished to part with it, so that it could be placed in the South Kensington Museum with other pioneer examples of locomotion. He was asking his right hon. friend whether he could arrange for the placing of it in the South Kensington or other suitable public museum, if the firm desired to present it to the nation

CIVIL AERODROMES.

The Air Ministry makes the following announcement.

The following lists are issued in order to provide the Aircraft Industry, pilots, and the public with information regarding aerodromes and landing-grounds open to civil aviation, and the location of Service stations which are not available to Civil Aircraft except in case of emergency.

It should be clearly understood that these lists are purely provisional, and are subject to alteration or addition from time to time. Such amendments will be duly published.

In those cases in which it is stated that " accommodation " does not exist, no facilities other than the actual landing-grounds are available. No guarantee can be given at the present time that personnel to handle aircraft is available either at the Service stations or at the privately licensed aerodromes.

The list of aerodromes published on April 25th as being available for Civil Aviation is now cancelled.

The schedule of prohibited areas published in Air Navigation Regulations, 1919, Schedule 6, remains in force for the present, but a revised list, considerably reducing the number of prohibited areas, will be issued shortly.

A map showing the Service stations and aerodromes and prohibited areas will be available shortly, and will be placed on sale to the public so soon as it is ready.

LIST A.

Service Stations Available Only for Civilian Machines in Emergency.

Aerodrome or Seaplane Station.	Nearest Railway Station and Distance in Miles.	Postal Town and Distance in Miles.
ANDOVER	Andover Junction (1½) (L. & S.W.)	Andover (2)
BALDONNEL	Lucan (2) (M.G.W. & G.S. & W. Rlys.)	Lucan (2)
BICESTER	Bicester (2) (G.W.R.)	Bicester (1)
BIRCHAM NEWTON	Docking (4) (G.E.R.)	King's Lynn (14)
BIGGIN HILL	North or South Bromley (5) (S.E. & C.R.)	Bromley (5)
BRACEBRIDGE	Boultham (1) (G.N.R.); Lincoln (3) (G.N.R. & G.E.R.)	Lincoln (2)
BROCKWORTH	Gloucester (4) (G.W.R.)	Gloucester (3½)
(S) CALSHOT	Brockenhurst (12) (L.S.W.R.); Southampton (15)	Southampton (15)
CRANWELL	Caythorpe (4) (G.N.R.)	Grantham (10)
CROYDON (Beddington)	East Croydon (2) (S.E.C.R. & L.B.S.C.R.)	East Croydon (2)
DETLING	Bearstead (2) (S.E.C.R.)	Maidstone (5)
DONIBRISTLE	Inverkeithing Bay (2) (N.B.R.)	Inverkeithing (2)
(S) DOVER (Marine Parade)	Dover Harbour (¾) (S.E.C.R.)	Dover
DOVER (Swingate Downs)	Dover Town (2) (S.E.C.R.)	Dover (2)
DUXFORD	Whittlesford (2) (G.E.R.)	Cambridge (12)
EASTCHURCH	Queenborough (5) (S.E.C.R.)	Queenborough (5)
FARNBOROUGH	Farnborough (2) (L.S.W.R.)	Farnborough (2)
FLOWER DOWN	Winchester (3) (L.S.W.R. & G.W.)	Winchester (3)
FORD JUNCTION	Ford Junction (1) (L.B.S.C.)	Arundel (5)
FOWLMERE	Royston (5) (G.E.R.)	Royston (4)
FRIESTON	Boston (5) (G.N.R.)	Boston (5)
GOSPORT	Fort Blockhouse (L.S.W.R.) (close at hand)	Gosport (½)
(A & S) GRAIN	Port Victoria (¼) (S.E.C.R.)	Sheerness (1¼)
HALTON	Wendover (1) (G.W.R.)	Aylesbury (5)
HARLAXTON	Grantham (4) (G.N.R.)	Grantham (4)
HAWKINGE	Folkestone (2½) (S.E.C.R.)	Folkestone (2½)
HENLOW	Henlow adjoining (M.R.)	Bedford (11)
KINGSNORTH	Beluncle Halt (S.E.C.R.)	Chatham (4)
LARKHILL	Amesbury (6)	Salisbury (12)
(S) LEE-ON-SOLENT	Lee-on-Solent (¼) (L.S.W.R.)	Southampton (11)
LEUCHARS	Leuchars Junction (½) (N.B.R.)	St. Andrews (5)
(x) MANSTON	Minster (1) (S.E.C.R.)	Ramsgate (3)
MARSKE	Marske (1) (N.E.R.)	Whitby (18)
MARTLESHAM HEATH	Bealings (1) (G.E.R.) Woodbridge (4) (G.E.R.)	Ipswich (6)
NETHERAVON	Bulford (5) (L.S.W.R.)	Salisbury (13)
NORTH WEALD BASSETT	North Weald Bassett (½) (G.E.R.)	Epping (2)
OLD SARUM	Salisbury (4) (L.S.W.R.)	Salisbury (4)
ORFORDNESS	Woodbridge (12) (G.E.R.)	Felixstowe (15)
(S) PORTLAND	Portland (300 yds.) (L.S.W.R.)	Weymouth (4)
SCAMPTON	Lincoln (5) (G.E.R., G.N.R., G.C.R.)	Lincoln (6)

List A (continued).

Scopwick	Scopwick (4) (G.N.R., G.E.R.)	Sleaford (9)
Shrewsbury	Shrewsbury (1½) (G.W.R.)	Shrewsbury (1½)
Smoogroo	Thurso (thence by boat) (G.N. of S.R.)	Kirkwall (8)
South Carlton	Lincoln (4) (G.E.R., M.R., G.C.R., G.N.R.)	Lincoln (3)
Spittlegate	Grantham (2) (G.N.R.)	Grantham (2)
Stonehenge	Amesbury (4); Salisbury (9) (L.S.W.R.)	Salisbury (8)
Sutton's Farm	Hornchurch (¾) (L.T. & S.)	Romford (5)
Tangmere	Drayton (1) (L.B.S.C.R.)	Chichester (4)
(S) Tresco	Penzance (thence by boat) (G.W.R.)	St. Mary's (2)
Upavon	Pewsey (5) (G.W.R.)	Salisbury (15)
Weston-on-the-Green	Bicester (6) (G.W.R.)	Bicester (4)
Worthy Down	Winchester (3) (L.S.W.R., G.W.R.)	Winchester (4)
Yate	Yate (1) (M.R.)	Bristol (9)

Notes.—(S) Seaplanes only. (A & S) Aeroplanes and Seaplanes. (x) Not available for civil use after 1919.

LIST B.

Service Stations also Available for Civil Use.

Aerodrome or Seaplane Station.	Nearest Railway Station and Distance in Miles.	Postal Town and Distance in Miles.
Castle Bromwich	Castle Bromwich (5) (M.R.)	Castle Bromwich (5)
Coal Aston	Beauchief (2½) (M.R.)	Sheffield (3)
(S) Dundee	Stannergate (¾) (N.B.R.)	Dundee (2)
Eastleigh	Eastleigh (1½) (L.S.W.R.)	Eastleigh (1½)
(S) Felixstowe	Felixstowe (G.E.R.)	Felixstowe (2)
Kenley	Upper Warlingham (1) (L.B.S.C.)	Kenley
(x) Manston	Minster (1) (S.E.C.R.)	Ramsgate (3)
Luce Bay	Stranraer (5) (G.S.W.R.)	Stranraer (5)
Pembroke	Pembroke (5) (G.W.R.)	Pembroke (4)
Renfrew	Fultar Street (1) (N.B.R.)	Glasgow (5)
Sherburn-in-Elmet	Sherburn-in-Elmet (1) (G.N.R.)	Selby (6)
Shotwick	Queensferry (1) (L.N.W.R.)	Chester (6)

Note.—(S) Seaplanes only. (x) Included in B List during 1919 only.

LIST C.

Stations Temporarily Retained for Service Purposes, but also Available for Civil Use.

Aerodrome or Seaplane Station.	Nearest Railway Station and Distance in Miles.	Postal Town and Distance in Miles
Aldergrove	Aldergrove (1) (G.N.R.)	Antrim (4)
(A & S) Brough	Brough (¼) (N.E.R.)	Hull (12)
Didsbury	Didsbury (1) (M.R.)	Manchester (3)
Filton	Filton (1) (G.W.R.)	Bristol (5)
Hendon	Hendon (1) (M.R.)	Hendon (1)
Hucknall	Hucknall (1) (G.C.R.)	Nottingham (6)
Lympne	Westonhanger (1) (S.E.C.R.)	Hythe (4)
Montrose	Montrose (1) (N.B.R.)	Montrose (2)
Newcastle (Town Moor)	West Jesmond (½) (N.E.R.)	Newcastle-on-Tyne (2)
Tallaght	Dublin (7) (G.S. & W.R.)	Dublin (7)
Turnhouse	Turnhouse (1) (N.B.R.)	Edinburgh (6)

Note.—(A & S) Aeroplanes and Seaplanes.

LIST D.

Civil Aerodromes Already Licensed.

(*a*) Aerodromes at which accommodation exists.

Aerodrome.	Nearest Railway Station and Distance in Miles.	Postal Town and Distance in Miles
(x) Hounslow	Hounslow Junction (1) (L.S.W.R.)	Hounslow (2)
Bournemouth	Bournemouth (3) (Central) (L.S.W.R.)	Bournemouth (3)
Cricklewood	Cricklewood (½) (M.R.)	Cricklewood (½)
Cheltenham	Churchdown (2) (M.R.)	Cheltenham (4)
Feltham	Feltham (½) (L.S.W.R.)	Feltham (½)
Kingsbury	Hendon (½) (M.R.)	Hendon (1)
Stag Lane	Edgware (½) (M.R.)	Edgware (½)
Southport (Sands)	Hesketh Park (¾) L. & Y.)	Southport (1)

Note.—(x) Government-owned, London terminus.

(*b*) Aerodromes licensed as suitable only "for Avro 504K and other similar types of aircraft." Except in a very few instances, accommodation does not exist. The licences have also been issued for limited periods only.

Aerodrome.	Nearest Railway Station and Distance in Miles.	Postal Town and Distance in Miles.
Blackpool (Squire's Gate)	Waterloo Road, Blackpool (2½) (L.N.W.R.)	Blackpool (2½)
Brean Down (Weston-super-Mare)	Bleadon and Uphill (1¼) (G.W.R.)	Weston-super-Mare (2)
(x) Burgh Castle	Belton (1) (G.E.R.)	Belton (1)
Cardiff (Ely Racecourse)	Ely Station (½) (G.W.R.)	Cardiff (1)
Chichester	Chichester (1½) (L.B.S.C.R.)	Chichester (1½)
Hardwick (near Cambridge)	Lords Bridge (3) (G.E.R.)	Cambridge (6)
Ladies' Mile (Brighton)	Preston Park (3) (L.B.S.C.R.)	Brighton (3)
Llanwrytd Wells	Llanwrytd Wells (½)) (L.N.W.R.)	Llanwrytd Wells, Breconshire (½)
Manstone (near R.A.F. Aerodrome)	Minster (1) (S.E.C.R.)	Ramsgate (3)
Porthcawl	Porthcawl (1) (G.W.R.)	Bridgend (5)
Preston	Preston (1½) (L.N.W.R.)	Preston (1)
Scarborough	Scarborough (1½) (N.E.R.)	Scarborough (1)
Southsea	East Southsea (½) (L.S.W.R.)	Southsea (¼)
(x) Stray (Harrogate)	Harrogate (½) (N.E.R.)	Harrogate (½)
Sunderland	Monkwearmouth (1) (N.E.R.)	Sunderland (1½)
	Situated on Sands—i.e., Not Available at High Tide.	
Blackpool	Waterloo Road (½) (L.N.W.R.)	Blackpool (1½)
Douglas (Isle of Man)	Douglas (¼) (Isle of Man)	Douglas (½)
Fleetwood	Fleetwood (½) (L.N.W.R.)	Fleetwood (¼)
Morecambe Bay	Morecambe (½) (L.N.W.R.)	Morecambe (1)
Rhyl	Rhyl (½) (L.N.W.R.)	Rhyl (½)
St. Andrews	St. Andrews (¼) (N.B.R.)	St. Andrews (½)
Waterloo-with-Seaforth	Bootle (1) (L. & Y.)	Bootle (1)

Note.—(x) Licensed for all but larger types of aircraft.

NAVAL & MILITARY AERONAUTICS

NAVAL.

Admiralty Appointments and Promotions.

The following promotion has been made :—
Aug. 21st.—Engr. Lieut. (Temp. Capt., R.A.F.).—R. G. Parry, D.S.O., to rank of Engr. Lieut.-Commdr., seny. Aug. 1st.
The following appointments have been made :—
Aug. 19th.—Sub-Lieut.—C. F. B. Arthur, to "Furious," Aug. 18th.
Aug. 23rd.—Artfr Engrs.—F. H. Causfield, to "Argus," Aug. 22nd.

It is now stated that in the recent Naval action off Kronstadt, when some British C.M.Bs. sank two Bolshevik battleships and a destroyer, the C.M.Bs. were accompanied by three aeroplanes. No mention of aircraft was made in the official communiqué on the subject.

On Aug. 18th British aeroplanes, supported by some C.M.Bs., attacked the fortress of Kronstadt. One of the aeroplanes was forced to descend at the Styrsudd Lighthouse. The pilot was unhurt.

* * *

Mr. John Pollock, the "Daily Mail" correspondent, writes of the Kronstadt affair of Aug. 18th :—

"The attack was opened on Monday afternoon by aeroplanes, which dropped incendiary bombs on the harbour and photographed the positions. The entire attention of Kronstadt was concentrated on the attack from the air. All the batteries and search-lights were directed against the flying peril; but the aeroplanes' assault was merely a blind. The airmen wirelessed to the Fleet, giving the exact positions of the ships in the harbour.

"At 2 a.m. on Tuesday four British high-speed motor-boats approached the harbour. The attack with aeroplane help met with extreme success, and was carried out to the minute, the object being to deliver a blow at all points simultaneously."

* * *

To commemorate the work done during the war by the Metropolitan Observation Service, under Comdr. Paget, it is the intention of the members of this corps to endow a cot in the new Children's Ward at the Charing Cross Hospital. Donations may be sent to the hospital. £276 3s. 6d. has already been subscribed. This corps was formed to give information of the presence and position of hostile aircraft.

MILITARY.

From the "London Gazette."

War Office, August 18th.

Regular Forces.—Infantry.—4th Bn. Gord Highrs.—Sec. Lt. J. W. Mennie (Lt., R.A.F.) to be Lt., and to remain secd., Sept. 28th, 1918.
Oversea Forces.—Canada.—Can. Forestry Corps.—Temp. Lt. H. E. Rosborough ceases to be secd. for duty with the R.A.F., June 4th (substituted for "Gazette" notification, March 14th, page 3465).

War Office, August 19th.

Regular Forces.—Royal Army Chaplains Department.—The Rev. R. N. O'Shaughnessy, temp. Chapln. to the Forces, relinquishes his comm. on transfer to the R.A.F., Aug. 1st
Oversea Forces.—Canada.—Commands and Staff.—Memorandum.—Temp. Capt. D. R. MacLaren, D.S.O., M.C., D.F.C. (Br. Columbia R.). to be actg. Maj., and to remain secd. whilst empld. as Liaison Officer, vice temp. Capt. (actg. Maj.) F. A. Landry, May 16th.

War Office, August 20th.

Regular Forces.—R.A.F.—Mil. Wing.—The following appointment is made :—Flying Officer.—Temp. Sec. Lt. (on prob.) N. A. Meintjes, Gen List, and to be confirmed in his rank, Oct. 14th, 1917.
Infantry.—Yorks L. I.—R. D. H. Draper (temp. Lt., R.A.F.) to be temp. Lt., Dec. 20th, 1918, seny. May 22nd, 1918.

War Office, August 21st.

Regular Forces.—Rif. Brig.—To be Lt.-Col.—Maj. and Lt. Lt.-Col. W. W. Seymour, vice Lt.-Col. (temp. Brig.-Gen., R.A.F.) B. H. H. Cooke, C.M.G., C.B.E., D.S.O., who is removed from Regtl. List, Aug. 22nd.

War Office, August 22nd.

Regular Forces.—Oversea Forces.—Canada.—Can. Engrs.—The following retire in the British Isles :—Temp. Lt. (actg. Capt.) J. F. D. Tanqueray, D.F.C., Aug. 12th; Temp. Lt. (actg. Capt.) J. F. D. Tanqueray, D.F.C., ceases to be secd. for duty with the R.A.F., Aug. 6th.
Westn. Ontario R.—Temp. Lt. F. L. Baker ceases to be secd. for duty with the R.A.F., June 13th (substituted for "Gazette" notification June 28th, page 8197, incorrectly specifying date as April 25th).
Manitoba R.—Temp. Lt. C. R. Gross ceases to be secd. for duty with the R.A.F., Aug. 8th.
Saskatchewan R.—Temp. Lt. L. A. Smith ceases to be secd. for duty with the C.A.F. as Lt., Flying, March 31st.
Alberta R.—Temp. Lt. A. Rose, M.M., ceases to be secd. for duty with the R.A.F., July 20th.
Infantry.—9th Bn. Hamp. R.—Sec. Lt. A. F. Harris (Sec. Lt., R.A.F.) to be Lt., and to remain secd., March 1st.

War Office, August 23rd.

Staff for R.E. Services.—Temp. I.O.W. and Capt. T. Ridge relinquishes his commn. on transfer to the R.A.F., Sept. 26th, 1918
Territorial Forces.—General List.—Qrmr. and Capt. A. E. Brooks resigns his commn. on transfer to the R.A.F., May 27th, 1918.

Official Communiqués.

The following communiqué was issued at Simla on August 18th :—
An aeroplane bombed the gang of Sulciman Khel Wazirs which raided a post on August 9th, inflicting 30 to 40 casualties.
The following communique was issued at Simla on Aug. 19th :—
An aerial reconnaissance from Fort Sandeman on the 17th inst. saw no hostile gatherings

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It has been brought to light during the compilation of the official aerial history of the war, that several R.F.C. Squadron Record Books, which are of great value for historical purposes, are missing.

The Air Ministry requests that any such books as may be in the possession of demobilised officers or others should be returned, at once, to the Officer in Charge, Air History Branch, Offices of the War Cabinet, 2, Whitehall Gardens, S.W.

AIR FORCE.

From the "London Gazette."

Air Ministry, August 19th.

R.A.F.—Permanent Officers.—Promotions.—Air Vice-Marshal Sir Hugh Montagu Trenchard, Bart., K.C.B., D.S.O., to be Air Marshal, Aug. 11th.
The following temp. appointments are made at the Air Ministry :—Staff Officer, 1st Class (Air).—Lt.-Col. J. A. Chamier, C.M.G., D.S.O., O.B.E., Aug. 1st.
Staff Officer, 2nd Class (Air).—Maj. B. E. Sutton, D.S.O., O.B.E., M.C., July 31st, vice Capt. W. A. A. Chauncy.
Staff Officer, 3rd Class (Air).—Capt. W. A. A. Chauncy, from (S.O.2), July 31st.
The following temp. appointments are made :—Staff Officers, 1st Class (P.)—Lt.-Col. C. T. MacLean, D.S.O., M.C., Aug 15th. (T.)—Maj. A. Levick, from (S.O.2), Aug. 2nd.
Staff Officers, 2nd Class (Q.).—Lt. C. E. Hodgson, M.B.E., May 5th. (T.).—Maj. A. Levick, June 14th.
Staff Officers, 3rd Class (P.).—Capt. G. M. Broadburn, April 30th; Sec. Lt. J. M. McEntegart, and to be actg. Capt. till April 30th (substituted for the notification in "Gazette," Jan. 21st), Dec. 20th, 1918. (T.).—Lt. J. A. H. Savage, Feb. 14th.
Staff Officers, 4th Class (2nd Grade).—Capt. A. W. Hammans, June 2nd.
The notification in "Gazette," July 18th, concerning Sec. Lt. (actg. Lt.) J. M. McEntegart is cancelled.
The notification in "Gazette," Aug. 5th, concerning Maj. R. C. Lane is cancelled.
Flying Branch.—Capt. F. D. Lord Doune, M.C., to be Capt. (A.), from Aide-de-Camp, July 22nd.
Capt. E. J. D. Routh to be Capt. (A.), from (S.O.), July 1st.
Lts. to be actg. Capts whilst empld. as Capts. (A.) :—L. H. Browning, M.C., N. C. Buckton, F. H. Davies, M.C., C. J. S. Dearlove, W. F. J. Harvey, D.F.C., G. L. Hobbs, M.C., C. L. King, M.C., D.F.C., H. F. Nicholls, D.F.C., A. D. K. Perkins, May 1st.
Lts. to be graded for purposes of pay and allowances as Capts. whilst empld. as Capts. (A.) :—C. T. Black, F. W. Clark, J. Cottle, D.F.C., H. G. W. Debenham, G. Eastwood, I. G. Elias, M. M. Freehill, D.F.C., R. J. Gammon, D.F.C., R. A. George, M.C., J. G. Gillanders, D.F.C., R. Grice, C. W. Hamilton, T. Hayes, A.F.C., F. R. Hockney, L. N. Hollinghurst, D.F.C., J. W. Jones, S. Jones, D.F.C., H. P. M. Kesterton, M.C., H. P. Lale, D.F.C., A. O. Lewis-Roberts, D.F.C., J. McBain, D.F.C., B. McEntegart, A. McGregor, D.F.C., W. F. Mayoss, H. Murden, D.F.C., G. S. Peffers, D.F.C., H. B. Pett, M.C., F. J. Phillips, W. O. Phillips, S. L. Pope, A. W. E. Reeves, D.F.C., G. T. Richardson, E. L. Roberts, T. Roberts, C. D. Skinner, S. J. Stewart, W. D. B. Taylor, S. H. Wallage, M.C., F. G. C. Weare, M.C., May 1st.
Lt. E. D. Harding to be graded for purposes of pay and allowances as Capt. whilst empld. as Capt. (O.), May 1st.
Sec. Lts. to be graded for purposes of pay and allowances as Capts. whilst empld. as Capts. (A.) :—O. A. P. Heron, D.F.C., C. H. Howitt, May 1st.
Sec. Lt. (Hon. Lt.) J. F. D. Tanqueray, D.F.C., to be graded for purposes of pay and allowances as Capt. whilst empld. as Capt. (O.), May 1st.
Sec. Lts. to be Lts. :—(Hon. Lt.) L. R. Wheeler, April 21st, 1918; R. T. Tarrant, March 26th.
Flight Cadet 64479 C. R. Humphries is granted a temp. commn. as Sec. Lt. (O.), Nov. 8th, 1918.
The following relinquish their commns. on ceasing to be empld. :—Sec. Lt. (Hon. Lt.) D. M. Layton (Lt., W. Ont. R.), Jan. 10th; Lt. G. B. Wootten (Lt., New Brunswick R.), May 21st; Maj. C. M. Murphy (Lt.-Commdr., R.N.), July 24th; Lt. W. L. Christian (Lt., R.G.A.). Lt. J. E. Cole (Lt., Quebec R.), Lt. T. I. Findley (Lt., Can. F. Art.). Lt. H. N. Price (Lt., Nova Scotia R.), July 31st; Lt. C. R. Gross (Lt., Manitoba R.), Aug. 8th; Lt. A. C. S. Irwin (Lt., R.I. Rif.), Aug. 9th.
Transferred to unempld. list :—Sec. Lt. J. P. Downey, Feb. 1st; Sec. Lt. A. Boyd, Feb. 8th; Sec. Lt. W. H. Avery, Feb. 12th; Lt. E. B. Lee, Feb. 16th; Sec. Lt. F. T. Boland, Feb. 23rd; Lt. W. H. Kilbourne, March 1st; Lt. F. James, March 7th; Sec. Lt. T. C. Lewis, March 10th; Sec. Lt. J. A. Sherrett, March 11th; Lt. A. M. Rosenbleet, March 12th; Sec. Lt. A. G. Grenchley, March 14th; Lt. B. Farmer, March 20th; Sec. Lt. W. I. Howie, Lt. W. Joyce, Capt. (actg. Maj.) D. U. McGregor, Lt. D. G. Russell, April 1st; Sec. Lt. B. Spaven, April 6th; Lt. W. Allan, April 12th; Lt. A. C. Hardy, Sec. Lt. R. B. Jones, April 13th; Lt. E. W. Bell, April 14th; Lt. (actg. Capt.) H. A. Oakes, April 15th; Lt. T. W. Sclater, April 16th; Lt. C. M. Holbrooks, Lt. C. F. Russell, April 17th; Sec. Lt. C. H. Shallcross, Sec. Lt. P. Stalker, April 18th; Sec. Lt. J. H. Lee, April 19th; Sec. Lt. J. C. Elsworth, April 20th; Capt. H. M. Sison, M.C., April 24th; Lt. E. G. Jones, April 25th; Lt. W. Rodger, Sec. Lt. A. H.

Stent, April 29th; Sec. Lt. W. A. R. Speight, April 30th; Lt. R. S. Jameson, May 2nd; Lt. G. E. Johnson, Sec. Lt. R. W. Jones, May 10th; Lt. E. T. Rogers, May 15th, Sec. Lt. W. K. Hogg, May 18th; Lt. E. G. Rooks, May 20th; Sec. Lt. J. D. Russell, May 23rd; Sec. Lt. G. W. T. Latimer, May 27th; Lt. R. Musgrave, May 29th (substituted for notification in "Gazette," June 6th); Lt. H. M. Gibbs, May 31st; Lt. G. Lacey, June 2nd; Lt. L. S. Birkbeck, M.C., June 3rd; Lt. V. T. Normington, June 4th; Capt. E. S. Moulton-Barrett, June 6th; Lt. A. A. Harris, June 10th; Lt. R. E. Quesnel, June 11th; Sec. Lt. A. Anderson, Lt. C. P. Lowry, Sec. Lt. F. H. N. Marson, June 12th; Lt. H. J. McKenzie, Sec. Lt. C. A. Robertshaw, June 13th; Sec. Lt. J. G. Rodwell, June 14th (substituted for notification in "Gazette," July 22nd); Lt. H. E. Elsworth, June 22nd; Lt. E. H. Ralling, June 27th; Sec. Lt. A. R. Heaver, July 1st; Sec. Lt. G. L. Bell, July 5th; Sec. Lt. M. W. M. Burnside, Sec. Lt. G. W. Shepherd (substituted for notification in "Gazette," Aug. 5th), July 10th; Sec. Lt. C. H. Dickson, July 11th; Sec. Lt. E. M. Faris, Capt. J. L. Gordon, D.F.C., Sec. Lt. W. C. Jakes, Lt. G. Raney, Sec. Lt. W. R. Reid, Capt. W. E. Robinson, Sec. Lt. N. W. Russell, Lt. F. J. Wolno, July 12th; Sec. Lt. J. F. Heydenrych, July 13th; Lt. E. W. T. Fassell, Sec. Lt. A. E. Robertson, Sec. Lt. (Hon. Lt.) J. B. Appleton, Sec. Lt. H. J. G. Rudolf, July 16th; Sec. Lt. J. F. Bates, Lt. E. Brewer, Capt. W. P. Cort, M.B.E., July 24th; Lt. W. Algie, D.S.O., Lt. W. Dancy, Lt. D. R. Douglas, Lt. M. A. Rosenblatt, July 25th; Sec. Lt. A. O. Cox, July 27th; Lt. H. W. Collier, Lt. R. S. Davies, Sec. Lt. (Hon. Lt.) J. A. Parkinson, July 29th; Sec. Lt. W. H. Bland, Sec. Lt. P. E. Bullock, Sec. Lt. J. W. Sole, July 30th; Lt. E. P. Graves, Lt. C. E. Howell, D.S.O., M.C., D.F.C., July 31st; Sec. Lt. P. Bushell, Capt. E. B. Cowell, D.F.C., Sec. Lt. R. P. Hicklin, Maj. M. H. B. Nethersole, D.S.O., Aug. 1st; Lt. J. H. Maingot, M.C., Aug. 2nd; Sec. Lt. D. M. Brown, Lt. S. H. Wrinch, Aug. 3rd; Lt. V. M. Grantham, Aug. 4th; Lt. H. A. Keyser, Aug. 6th; Sec. Lt. J. C. Garlake, Sec. Lt. (Hon. Lt.) F. J. Kisbey-Green, Aug. 7th; Lt. J. Daniel, Sec. Lt. K. H. Ridgway, Aug. 10th; Sec. Lt. F. Ray, Aug. 11th; Sec. Lt. W. T. Armstrong, Lt. C. T. Aulph, Sec. Lt. W. E. Baxter, Sec. Lt. R. H. Gowan, Sec. Lt. S. J. Shaw, Sec. Lt. L. J. Shepbard, Aug. 14th; Lt. L. M. Isitt, Aug. 15th; Capt. D. W. Gray, Aug. 16th; Lt. A. D. Reid, A.F.C., Sec. Lt. D. G. Malhebe, Sec. Lt. R. L. Richards, Aug. 19th.

Capt. C. H. W. Godfrey relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Aug. 8th.

Lt. L. Francis relinquishes his commn. on account of ill-health, and is permitted to retain his rank, May 20th (substituted for notification in "Gazette," March 25th and April 29th)

The following Sec. Lts. relinquish their comms. on account of ill-health, and are permitted to retain their rank :—L. F. Chisenhall (contracted on active service), May 20th (substituted for notification in "Gazette," May 13th); R. J. Acheson, July 3rd (substituted for notification in "Gazette," May 23rd); J. D. Fitzsimmons, Aug. 8th

The rank of Lt. A. E. Baxter is as now described, and not Sec. Lt. as stated in "Gazette," June 17th.

The rank of Lt. J. G. Angus is as now described, and not Sec. Lt. as stated in "Gazette," Aug. 8th.

The name of Lt. G. P. Packenham-Walsh is as now described, and not "G. P. P. Wash" as stated in "Gazette," July 18th.

The surname of Lt. D. F. Cox is as now described, and not "Fox" as stated in "Gazette," Aug. 1st.

The notification in "Gazette," Aug. 23rd, 1918, concerning T. J. Southern (Lt., W. Yorks. R.) is cancelled.

The notification in "Gazette," Feb. 14th, concerning Sec. Lt. C. H. Wilcox is cancelled.

The notification in "Gazette," April 11th, concerning Sec. Lt. W. T. Leonard is cancelled. The "Gazette" of May 16th stands.

The notification in "Gazette," July 8th, concerning Sec. Lt. D. J. Brooks is cancelled.

The notification in "Gazette," July 11th, concerning Sec. Lt. G. J. Ellsmere is cancelled.

The notification in "Gazette," July 18th, concerning Sec. Lt. F. H. Newton is cancelled.

Administrative Branch.—Maj. C. S. Danby, M.C., to be Maj., from (A.), March 24th.

Capt. D. S. Jillings, M.C., to be graded for purposes of pay and allowances as Maj. while empld. as Maj., May 1st

Capts. to be Capts. :—H. Thompson, from (T.), Jan 18th; W. J. Coombes, from (S.O.), F. E. B. Whitfield, M.B.E., from (S.O.), July 1st.

To be actg. Capts. while empld. as Capts. :—Lt. F. R. C. Davidson, from Aug. 29th, 1918, to April 30th; Sec. Lt. W. Rollinson, May 1st.

Lts. to be graded for purposes of pay and allowances as Capts. while empld. as Capts. :—H. G. Bellamy, T. D. S. Purdey, May 1st.

Lt. W. E. N. Growden to be graded for purposes of pay and allowances as Capt. while empld. as P.T. Officer, May 1st.

Lts. to be Lts., from (S.O.) :—L. V. Boxer, June 13th; J. C. Nairn, July 1st; R. B. Fricker, July 10th.

Lt. R. R. Money to be Lt., from (A.), July 14th.

G. Heard (temp. Lt. and Qmr., Gen. List) is granted a temp. commn. as Lt., April 1st, 1918.

Sec. Lt. S. A. E. Cowell to be Lt., Aug. 7th.

Sec. Lt. (Hon. Capt.) R. Hodge to be graded for pay and allowances as Lt. while empld. as Lt., May 1st.

T. J. Southern (Lt., Yorks. Hrs.) is granted a temp. commn. as Lt., Aug. 7th, 1918, with seny. April 1st, 1918 (substituted for notification in "Gazette," May 2nd).

Sec. Lt. A. C. Cunison to be Sec. Lt., from unempld. list, May 5th, precd. next below W. Borland.

Sec. Lt. J. G. Renshaw to be Sec. Lt., from (A.), July 11th.

Sec. Lt. (Hon. Lt.) G. F. A. Lewin, M.C., to be Sec. Lt. (Hon. Lt.), from (K.B.), April 15th.

Sec. Lt. S. J. Dodson to be Sec. Lt., from (S.O.), June 16th

Sec. Lt. D. D. Carcary (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt., Nov. 9th, 1918.

Transferred to unempld. list :—Sec. Lt. J. H. P. Kither, Jan. 28th; Sec. Lt. (Hon. Lt.) J. G. C. Jones, M.C., Feb. 20th; Sec. Lt. H. N. Bennett, Sec. Lt. S. Rendle, Feb. 28th; Lt. T. L. Green, March 3rd; Lt. N. Smith, April 15th; Sec. Lt. (actg. Lt.) G. N. J. Shaw, April 19th, Lt. R. V. Hope, April 20th; Sec. Lt. (Hon. Lt.) F. A. Herron, May 4th; Sec. Lt. A. Johnson, May 18th; Sec. Lt. R. H. Curtis, June 3rd; Lt. F. W. Alderton, June 14th; Lt. H. W. G. Ripley, June 28th; Lt. B. G. Brown, Lt. A. C. N. Spicer, June 30th; Sec. Lt. A. Engers, July 4th; Sec. Lt. A. H. Jones, Capt. D. P. Rowland, July 12th; Lt. N. J. Mitchell-Innes, July 25th; Lt. H. R. M. Dodd, July 26th; Lt. G. Barr, July 28th; Lt. F. S. E. May, July 29th; Sec. Lt. T. R. Raisley, Lt. J. Harper, Lt. F. L. De S. La Terriere, July 31st; Capt. (Hon. Maj.) J. W. Aldridge, Sec. Lt. F. A. Bird, Sec. Lt. S. H. Coronel, Capt. E. E. R. Heathcote, Lt. A. N. Mercer, Aug. 1st.

Lt. C. Baines relinquishes his commn. on account of ill-health caused by wounds and is granted the rank of Capt., Aug. 7th.

Lt. R. H. Harmer relinquishes his commn. on account of ill-health caused by wounds and is permitted to retain his rank, Aug. 7th.

The surname of Maj. R. Money is as now described, and not "Honey" as stated in "Gazette," Aug. 1st.

The date of resignation of commn. of Sec. Lt. H. W. Gallagher is April 16th, and not March 15th as stated in "Gazette," April 15th.

The notification in "Gazette," April 1st, concerning Sec. Lt. J. H. P. W. Hither is cancelled.

The notification in "Gazette," April 1st, concerning Sec. Lt. E. Rendle is cancelled.

The notification in "Gazette," July 15th, concerning Lt. C. Baines is cancelled.

The notification in "Gazette," July 25th, granting C. H. Haward a temp. commn. as Sec. Lt. is cancelled at his own request.

The notification in "Gazette," March 18th, concerning Sec. Lt. D. J. Brookes is cancelled.

Technical Branch.—Lt. (Hon. Maj.) W. R. Bernard to be actg. Maj. whilst empld. as Maj., Grade (A.), from Sept. 9th, 1918, to April 30th.

Capts. to be graded for purposes of pay and allowances as Majs. whilst empld. as Majs., Grade (A.) :—G. L. Gooden, D. MacK. P. Riach, M.B.E., O. V. Thomas, O.B.E., May 1st; J. Robinson, July 20th.

Capt. H. G. Ford, O.B.E., to be graded for purposes of pay and allowances as Maj whilst empld. as Maj., Grade (B.), from May 1st to June 24th.

Capt. A. J. Hurst to be Capt., Grade (A.), from (S.O.), May 1st.

Lt. P. M. Brambley to be actg. Capt whilst empld. as Capt., Grade (B.), May 1st

Lts. to be graded for purposes of pay and allowances as Capts. whilst empld. as Capts., Grade (A.) :—D. Drover, H. W. G. Drummond, W. B. Everton, P. R. Hutchinson, N. Liddall, A. W. H. Phillips, C. A. Stevenson, J. D. Whiteman, May 1st.

Lts. to be graded for purposes of pay and allowances as Capts. whilst empld. as Capts., Grade (B.) :—C. H. Boyle, H. L. Connor, A. H. Dye, F. Hitchins, from (Ad.), H. Stansfield, W. Yonge, May 1st.

Sec. Lts. to be graded for purposes of pay and allowances as Capts. whilst empld. as Capts., Grade (A.) :—F. A. Dickinson, N. B. Helmsley, M.B.E., J. W. Jean, D.S.M., May 1st; J. R. Brown, M.C., from May 12th to July 14th; T. E. H. P. Kennedy, May 22nd; (Hon. Lt.) J. K. M. Dodds, June 16th.

Sec. Lts. to be graded for purposes of pay and allowances as Capts. while empld. as Capts., Grade (B.) :—C. F. Chinery, J. V. Martyn, N. Openshaw, H. H. Williams, May 1st.

Sec. Lt. (Hon. Lt.) T. E. Pennington to be actg. Capt., without pay and allowances of that rank, while spec. empld., June 28th

Lt. A. E. W. Finch to be Lt., Grade (A.), from Grade (B.), May 1st.

Sec. Lts. to be graded for purposes of pay and allowances as Lts. while empld. as Lts., Grade (A.) : N. F. Burch, F. O. Burnley, J. O. Cooper, R. M. Duke, M. B. Fitzgerald, (Hon. Lt.) R. A. Law, W. St. J. Littlewood, G. J. H. Stein, E. J. Wilkins, May 1st.

Sec. Lts. to be graded for purposes of pay and allowances as Capts. while empld. as Capts., Grade (B.) :—(Hon. Lt.) H. Allsebrook, F. Adams, R. Fell, H. Haworth, F. Hembley, (Hon. Lt.) R. Kearton, C. H. N. Nunn, C. G. A. Poole, W. R. Tuddenham, May 1st.

Sec. Lt. C. F. B. Bassil to be Lt., Oct. 13th, 1918 (substituted for notification in "Gazette," Jan. 3rd).

Sec. Lt. E. L. M. Emtage to be Lt., Aug. 12th, 1918 (substituted for notification in "Gazette," Jan. 3rd)

Sec. Lt. A. E. Firth to be Lt., without pay and allowances of that rank, Dec. 10th, 1918.

Sec. Lt. F. W. Corbett to be Sec. Lt., Grade (A.), from Grade (B.), May 21st.

Sec. Lt. I. Van N. Reynecke to be Sec. Lt., Grade (A.), from (Ad.), Nov. 28th, 1918.

Sec. Lt. A. K. Murray to be Sec. Lt., Grade (B.), from (S.O.), July 21st.

Sec. Lt. W. Z. Grandi to be Sec. Lt., Grade (B.), from (A.), July 10th.

Transferred to unempld. list :—Sec. Lt. (actg. Capt.) D. H. Moore, Feb. 15th (substituted for notification in "Gazette," April 1st); Maj. B. M. Jones, March 1st; Sec. Lt. (Hon. Lt.) (actg. Lt.) J. C. Lathan, March 26th; Lt. (Hon. Capt.) (actg. Capt.) W. E. Smith, April 13th; Sec. Lt. K. G. Moffatt, April 15th; Lt. H. A. Heaton, M.C., Sec. Lt. E. Hodgson, May 1st; Sec. Lt. A. A. F. De Jonquet, Lt. A. H. Johnson, May 20th; Lt. R. F. Rowbotham, May 31st; Capt. A. J. G. Anderson, June 3rd; Sec. Lt. (Hon. Capt.) J. G. Russell, June 12th; Capt. A. H. Horsfield, June 27th; Maj. A. R. Low, Sec. Lt. W. M. Russell, July 11th; Sec. Lt. N. B. Capes, July 12th; Lt. E. W. Bowen, July 13th; Sec. Lt. W. J. Bramley, July 17th; Sec. Lt. (Hon. Lt.) N. W. Birkett, Sec. Lt. W. D. Geddes, July 18th; Sec. Lt. A. E. Fallon, July 21st; Lt. G. A. Harrison, July 23rd; Lt. G. T. Beer, July 25th; Lt. B. H. England, July 28th; Sec. Lt. P. H. Paton, July 30th; Sec. Lt. W. A. Bradwell, Sec. Lt. C. Duffy, July 31st; Maj. R. B. Berkeley, Capt. E. I. David, Aug. 1st; Lt. R. Leedal, Aug. 2nd; Sec. Lt. R. B. Aitken, Aug. 6th; Lt. B. E. Lecson, Aug. 7th; Lt. H. J. Burns, Aug. 15th.

Sec. Lt. (Hon. Lt.) C. N. Smith relinquishes his commn. on account of ill-health caused by wounds and is permitted to retain the rank of Lt., Aug. 9th.

Sec. Lt. C. Rawdon-Schofield relinquishes his commn. on account of ill-health contracted on active service and is permitted to retain his rank, Aug. 7th.

The initials of Maj. J. P. Elsden are as now described, and not "J. R" as stated in "Gazette," April 1st.

The notification in "Gazette," April 29th, concerning Sec. Lt. E. W. Bell is cancelled

The notification in "Gazette," July 8th, concerning Sec. Lt. E. B. Saunders is cancelled.

The notification in "Gazette," Dec. 13th, 1918, concerning Sec. Lt. (Hon. Lt.) J. D. Robinson is cancelled.

Medical Branch.—Lts. to be Capts. :—C. T. Costello, March 26th; G. M. Mellor, May 15th; H. C. Cox, G. Meadows, June 1st; L. C. Broughton-Head, H. B. Troup, H. T. Prys-Jones, June 6th; J. Coulter-Smith, R. Mugliston, P. E. Williams, June 10th; C. Lambrinudi, June 14th; A. Kirkhope, June 17th; P. M. Carroll, June 18th; J. P. Horsford, July 5th; A. K. Soutar, July 6th; G. Dunderdale, J. P. Hennessey, July 12th; G. W. Harbottle, M. J. Whelton, July 15th; J. Valerie, July 22nd; J. P. Wells, July 24th; A. St. I. Hennessey, July 29th; G. W. J. Bonsfield, Aug. 5th.

Transferred to unempld. list :—Maj. C. F. Bainbridge, Feb. 5th; Lt. N. Homewood, March 20th; Capt. K. B. Aickman, Aug. 6th.

Dental Branch.—Lts. to be Capts. :—G. Warner, May 20th; R. Fyson, May 25th; C. M. Shirreff, June 6th; H. L. Thorn, June 10th; N. H. Medhurst, June 17th; N. L. Smallbone, July 1st; C. M. John, July 18th; G. Hughes, July 22nd; G. F. H. Bloom, Aug. 10th.

Memoranda.—The following Oversea Cadets are granted temp. commns. as Sec. Lts., with effect from Feb. 15th, and relinquish such commns., with permission to retain the rank from the day following termination of the standardised voyage in the case of those claiming immediate repatriation, and from the day following demobilisation in England in all other cases :—179145 L. L. C. Field, 602078 W. J. Holley, 316825 R. C. MacNiven, 179493 R. G. Porter, 182603 W. Pitts-Brown, 154928 H. J. Quinn.

The following Cadets are granted hon. commns. as Sec. Lts. :—183669 A. R. Wilkins, Jan. 7th; 178035 J. S. Adam, 176857 E. E. Allsop, 177346 E. H. Arm, 177561 E. T. Amers, 177243 W. F. Anderson, 178452 R. C. Andrew, 176302 G. Aspinall, 178610 L. R. Anson, 178613 C. G. Buckeridge, 178667 R. L. Bell, 178747 L. G. E. Becching, 177398 E. F. Beard, 175171 G. E. Brown, 177044 P. Bradley, 177313 W. W. Barry, 176174 E. J. Buckley, 176218 W. J. Bowley, 176439 J. W. Biglin, 176744 J. O. Baker, 176749 A. P. Bray, 176405 G. A. Broadbridge, 176901 H. C. Barraclough, 176003 R. Baillie, 177521 H. Barclay, 176931 W. K. C. Chalk, 177005 W. W.

Cook, 120312 R. M. Campbell, 176247 J. Craig, 176862 J. H. Clark, 176863 L. Cartear, 176933 C. C. Cowley, 176920 D. Campbell, 177318 H. Chapman, 177654 C. Coupe, 177097 W. J. Canner, 177193 L. C. Carr, 177405 R. W. Cunningham, 177453 A. L. Clarke, 177771 J. J Chivers, 178344 J. Crowe, 177814 S. A. Dickman, 176414 R. E. Davis, 176621 F. W. Dickson, 177100 H. Droneneld, 177497 C. J. Davies, 137483 J. H. Dickinson, 142243 J. H. Dickin, 137180 W G. Duties, 176756 E. Donnelly, 177021 W. Dinwoodie, 178545 E. Fawthrop, 176767 W. Fitzgerald, 176859 H. C. Ford, 177103 A. C. Francis, 177492 R. H. Freeman, 177395 W. G. Faulkes, 177741 C. E. Forryan, 177625 C. H. Farnill-Scott, 175200 I. Gibson, 177504 W. M. L. Gray, 177457 W. Gartshaw, 177529 F. A. Gander, 176003 F. H. Grylls, 177001 T. Gaskell, 177511 P. F. Grundy, 177507 W. A. Houghton, 175205 S. E. Holt, 175206 R. L. Hardie, 177109 W. E. Hallett, 177204 G. E. H. Harris, 177270 J. W. Harrison, 177476 W. G. Hyneld, 177305 A. J. Hill, 177410 A. J. T. Hurst, 177499 W. J. Houchin, 177595 M. J. Hubbell, 177692 J. D. Hogg, 177578 J. Hampson, 176738 T. J. Hewison, 176877 J. H. Hodkinson, 177309 W. Hammond, 176775 T. L. Impey, 177057 H. Johnson, 177170 J. F. F. James, 177574 S. G. Jackson, 177411 G. Jarvis, 177095 T. J. Janes, 176183 R. S. Jones, 175271 C. N. Knowles, 176347 H. H. Knowles, 177538 C. W. Link, 177634 J. Lawrence, 177635 R. D. Langford, 175199 C. G. Leadbetter, 176939 L. C Lishman, 177012 G. B. Latore, 177413 J. Lockhead, 177416 F. Lacerby, 177890 W B. Lewis, 177700 A G. Murray, 97209 A. L. Mann, 175339 J. N. Martin, 176968 T. M. Moses, 177014 C. B. McGuire, 177417 S. Mellom, 177666 P. G. Martin, 175283 E. R. Mitchell, 176359 H. V. Minet, 176971 D. B Mirk, 177866 A. E. McCormick. 178055 A. S. McQueen, 176972 J. A. R. Macdonald, 176681 R. McArthur, 177668 H. S. Mills, 177070 W. Nelson, 177494 D. D. Neilson, 177219 H. Nichols, 176426 E. G. Neary, 128484 F. H Nye, 177639 A. S. Overgaine, 177426 J. Oakes, 177425 W. Orr, 157505 M. A. O'Connor, 177606 J. F. Page, 176809 J. Plenderleith, 176852 N. A. Parker, 176943 F. Phillips, 177381 F. G. Prime, 178588 W. F. Payling, 177223 C. L Reed, 177430 G. C Rhys-Jones, 177704 D. O. Russell, 175616 R. J. N. Rayner, 176022 P. Rugg, 176982 A. E. Roberts, 177121 L. J. Rowse, 177382 J. R. Randall, 177432 W C. Ridley, 177509 W. S. Reid, 177670 J. Rallston, 177834 C. Rushforth, 177981 A. E. Reynolds, 177705 C. F. Robinson, 177433 W. A Robertson, 177838 W. S. Sharp, 177982 H. Stansfield, 178101 C. H. Smith, 177294 R. C. G. Stott, 106037 T. P. Smith, 177548 R. W. Savage, 177675 R. Stewart, 175781 D. F. Stewart, 177122 G. R. Smith, 177296 S. Sherratt, 175150 T. H. Sudlow, 175550 A. J. L. Seacombe, 177293 A. D. A. Stearns, 177571 R. Shipperbottom, 178393 W. L. Stewart, 178399 H. M. Spiers, 178434 J. R. Sinclair, 178386 F. A. Tuck, 177235 H. O. V. Turner, 177512 L. D. J. Turnbull, 177643 W. S. Thenson, 137035 R L. Travers, 175502 K. Topping, 176032 V. R. Thomas, 176947 S. Tapper, 177184 A. J. Trenouth, 177298 A. Todd, 175783 N. G. Thrall, 177388 H. S. Taylor, 177991 G. H. Tarling, 177337 L. J. Tidmarsh, 177474 S. G. Veignaux, 176402 G. H. Wrigley, 177188 W. A. Waygood, 175790 R. Woodhall, 176288 A. Wagstaff, 177037 W. R. Walters, 177078 J. Walton, 177132 H E. Woodhead, 177343 J Watson, 177610 A. C. West, 175027 C. V. Willett, 176443 C. P. Walton, 177145 A. P. S. Welsh, 177559 A. Williamson, 177846 E. F. Wooley, 177994 H. M. Wood, Jan. 16th; 128336 F. A. Andrews, 177041 F. Allan, 176737 A. F. Allen, 64491 S. G. Bond, 177632 S. G. Bryson, 128784 S. Barker. 176747 E. C. Bowes, 177092 J. W. Bezzant, 177093 E. H. Begley, 177353 A Collis, 176909 F. Cooper, 176934 D. Crawford, 177360 A. Davidson, 137187 B. W. Davies, 177449 F. W. Elliott, 177490 W. J. Flint, 177593 W. R. Gaitley, 176063 H. R. Green, 176962 J. N. Gwynne, 176665 W. Higginson, 177376 G. R. C. Hunt, 177011 R. S. Keightly, 177328 V Longie, 176185 H. S. Little, 177059 A. M. Lenox, 176259 A. V. Mitchell, 177463 A. K. Matthew, 177502 R. G. Morris, 177175 H E. L. Markham, 175289 L. T. Pirie, 176978 W. Pratt, 177021 H. J. Perrin, 176429 A. W. Pearce, 178402 J. C. W. Rumbold, 176979 F. Rogers, 177288 A. V. Robson, 177384 G. S. Richardson, 177434 J. Rutson, 176431 W. L. Routledge, 175661 G. H. M. Roberts, 177126 A. L. Stevens, 177228 H. W Stoneman, 177437 J. H. Spencer, 177295 R. Sempio, 177335 W. E. Stone, 175004 F A. Smith, 175467 J. W. Thompson, 176033 L. A Turney, 176287 F. Taylor, 177028 E. E. Turner, 177029 H Taylor, 177030 W. Tomlinson, 177129 H. H. Thomas, 177553 C. H. Tester, 176946 G. A. Thompson, 176894 J. G. Vince, 177504 A. W. Willis, 176950 R. P. White, 176298 A H Wakefield, 177444 E. N. Wood, Jan. 18th; 177050 G. F. Ainge, 178546 R. Bailey, 177900 H. B. Barber, 178770 F. W. Ball, 137337 H O. D. Edmonds, 177455 L. Glancey, 176805 R. C. Philips, 177506 W. H Pirie, 178061 G. Stone, 177391 R. R. Wheeler, Jan. 19th; 240698 D. G. Frost (deceased), Jan. 20th; 97074 M. J Finklestone, Feb. 8th; 181150 V. H. W. Pullar, Feb. 12th; 1802 J. W. Clarke, Feb. 26th; 94798 J W. Shaw, March 2nd; 300099 V F. Spong, March 12th; 137226 A. James, March 26th; 91452 J. H. Roberts, April 9th; 99482 G. E. Coupland, April 26th; 219712 S. G. Shaw, May 5th, F/320051 S. A. Huddlestone, May 7th.

Transferred to unempld. list:—Capt. P. P. C. Penberthy, O.B.E., from (S.O.), April 30th (substituted for notification in "Gazette," Aug. 8th). Capt. H. P. Maybury, O.B.E., from (S.O.), July 10th.

Capt. R. H Parkinson (Capt., R.E., T.F.) relinquishes his commn. on account of ill-health contracted on active service, and is granted the hon. rank of Maj., Aug. 19th.

The surname of Capt. W. B. Callaway is as now described, and not "Galloway," as stated in "Gazette," Jan. 3rd.

The Christian names of 531407 Herbert James Blackwell are as now described, and not as stated in "Gazette," July 15th.

AIR MINISTRY, August 22nd.

R.A.F.—PERMANENT OFFICERS.—The attention of the officers named in this "Gazette" is directed to Air Ministry Weekly Orders Nos. 866 and 942 of 1919, relating to the grant of permanent commns. and to the rates and conditions of pay and other emoluments.

The following are granted permanent commns. in the R.A.F. in the ranks stated, with seny. as shown in the current Air Force List:—

Cols.—H. R. Brooke-Popham, C.B., C.M.G., D.S.O., A.F.C., (actg. Brig.-Gen.) B. C. H. Drew, C.M.G., C.B.E. (S.O.).

Lt.-Cols.—A. D. Warrington-Morris, C.M.G., O.B.E. (S.O.), R. E. M. Russell, C.B.E., D.S.O. (S.O.), J. L. Forbes (A.P., T.), P. Ranken (A.P., T.), C. T. Maclean, D.S.O., M.C (A.), O. H. K. Maguire, D.S.O. (A.).

Majs.—R. H. Verney, O.B.E. (A.P., T.), A. H. W. E. Wynne, O.B.E. (S.O.), A. J. Miley, O.B.E. (A.P., T.), R. Hilton-Jones, O.B.E. (S.O.), R. M. Hill, M.C., A.F.C. (A.), G. H. Norman (A.), H. J. F. Hunter, M.C. (A.), V. S. Brown (A.P., T.), F. W. Scarff, M.B.E. (A.P., T.), W. A. McLaughry, D.S.O., M.C., D.F.C. (A.).

Capts.—R. Addenbrooke-Prout, O.B.E., M.C. (S.O.), A. S. C. MacLaren, M.C., A.F.C., (A.) K. M. St. C. G. Leask, M.C. (A.), O. M. Sutton, M.C. (A.), J. Noakes (A.), O. Stewart, M.C., A.F.C. (A.), G. S. M. Insall, V.C. (A.), H. J. Edgar (A.), G. Barrett, A.F.C. (A.), G. L. Godden, O.B.E. (T.), C. Turner, A.F.C. (A.), J. F. Roche (A.), M. F. Browne (T.), R. F. L. Dickey, D.S.C. (A. and S.), W. J. de Sabis, D.S.C. (A. and S.), G. T. R. Hill (A.), J. G. S. Candy (A.).

Lts.—R. S. Capon (A.), A. G. Mathew (A.), J. W. D. Leigh, M.C. (A.), T. C. Lake, M.C. (A.), C. G. Mathew (A.), J. H. Iephson (A.), Aug. 1st.

The following temp appointment is made:—Staff Officer, 3rd Class.—(T.).—Sec. Lt. H Norrington, May 1st (substituted for notification in "Gazette," July 22nd).

FLYING BRANCH.—Lt S. L. Pope relinquishes the grading for purposes of pay and allowances as Capt., Aug 4th.

The following relinquish their commns. on ceasing to be empld.:—Lt. P. W. Taylor, D.C.M. (Lt., R.G.A.), April 30th; Lt. D F. Lawson (Lt., Dorset R.), July 23rd; Sec. Lt. (Hon. Lt.) W. L. W. Dryland (Lt., Northants R.), Lt. A. D. MacDonald (Can. Engrs.), July 29th; Lt. W. E. Lambert (Lt., B. Col. R.), July 31st.

Transferred to unempld. list:—Sec. Lt. T. C. Sutcliffe, Jan. 27th; Capt. S. Bell, A.F.C., Jan. 30th; Sec. Lt. J. R. Paird, Feb. 1st; Lt. C. G. Brock, Feb. 9th; Sec. Lt. D. Smith, Feb. 12th; Sec. Lt. W. H Salmon, Feb. 27th; Lt. J. P. Edwards, March 7th; Lt. L. C. Spaven, March 25th (substituted for notification in "Gazette," Aug. 5th); Lt. H. G. Robinson, March 30th; Lt. F. H. Sillem, April 9th; Sec. Lt. T. V. Smyter, April 10th; Lt. J. A. Beeny, D.F.C., Sec Lt. K L. Kirkby, April 11th; Sec. Lt. S. H. Smith, April 15th; Sec. Lt. (Hon. Lt.) J. S. Smith, Sec. Lt. H. M. Smith, April 17th; Lt. A. R. Brassington, April 18th; Lt G. P. Alexander, Lt. W. H. Brown, Sec. Lt. A. G. M. Strowger, Sec. Lt. W. J. Scudamore, April 19th; Lt. (Hon. Capt.) S. J. Read, April 24th; Lt. W. M. Smith, April 29th; Sec. Lt. A. Smethurst, May 6th; Sec Lt. H. L. Smith, May 8th; Sec. Lt. W. R. Gilmartin, May 11th; Lt. C V. Kerpen, May 17th; Sec. Lt. L. Scholes, May 22nd; Lt. A. W. Bennett, May 28th; Lt. M. H. Rattray, May 30th (substituted for notification in "Gazette," July 22nd; Lt. S. A. Gibbons, June 3rd; Lt. C W. Sowter, June 5th; Lt. I. C. G. Simpson, June 7th; Sec. Lt H A. Sanders, June 10th; Lt. P. A. H. De Metz, Lt. J. L. Tibbetts, June 11th; Capt. R. T. H Duff, June 12th; Sec. Lt. M A. Watts, June 15th (substituted for notification in "Gazette," July 8th); Sec. Lt. H. Toms, June 24th; Capt. M. O. F. England, Lt. C. G. Gilbert, June 30th; Lt J Wallace, July 6th; Sec. Lt. C. R. Murray, July 9th; Sec. Lt. J Donnan, July 11th; Sec Lt. C. D.



The decoration on the left is the Distinguished Flying Cross (obverse) and that on the right the Air Force Cross (obverse). These photographs were supplied by the Air Ministry. No details were given and no illustrations of the reverse of these decorations have so far been received. It is understood that these Crosses are cast in silver.

Gile, Sec. Lt. H. McK. Gordon, Sec. Lt. W. J. Spicer, July 12th; Lt. F. D. H. Samms, July 13th; Sec. Lt. G. M. Scarfe, July 16th; Capt. G. H. S. Dinsmore, Lt. K. F. De Long, July 18th; Sec. Lt. H. Bates, Sec. Lt. G. Roberts, July 23rd; Sec. Lt. H. G. Wepener, July 25th; Second Lieutenant H. G. Dixon, Lieutenant C. L. J. Garrad, Lieutenant F. E. Gibson, July 26th; Maj. J. R. Gould, Sec. Lt. P. S. Tennant, July 27th; Capt. S. Blackley, Sec. Lt. (Hon. Lt.) R. Simpson, July 28th; Sec. Lt. G. Godley, July 29th; Lt. N. J. Dakers, July 30th; Lt. H. Good, Lt. E. H. Menhenitt, Sec. Lt. S. J. R. Smith, July 31st; Lt. S. M. Sproat, Aug. 1st; Lt. A. E. Morgan, Sec. Lt. J. Mortimer, Aug. 2nd; Sec. Lt. W. H. Gladwell, Sec. Lt. R. L. H. Valentine, Aug. 3rd; Sec. Lt. W. F. A. Snell, Aug. 6th; Sec. Lt. J. H. E. Biggs, Lt. H. G. D. Ereckson, Lt. H. R. Sayers, Aug. 7th; Sec. Lt. J. H. Ashton, Lt. T. G. Reed, Sec. Lt. I. F. Stott, Aug. 8th; Lt. (Hon. Capt.) T. Edwards, Sec. Lt. S. E. Gillmar, Aug. 10th; Sec. Lt. B. Rooke-Cowell, Lt. A. D. McBride, Aug. 13th; Sec. Lt. R. S. S. Chaffe, Capt. E. W. C. Corry, Capt. J. A. G. Gilray, Sec. Lt. W. S. Phelps, Sec. Lt. E. W. C. Sharpe, Sec. Lt. F. M. Stieber, Sec. Lt. A. Tapping, Sec. Lt. I. B. Williamson, Aug. 14th; Sec. Lt. W. M. Baber, Sec. Lt. C. I. McFadden, Aug. 15th; Lt. O. L. Vetter, Aug. 16th; Capt. E. M. King, D.F.C., Aug. 18th; Sec. Lt. G. L. C. Beattie, Lt. J. P. Bosman, Capt. W. Buckingham, Sec. Lt. T. Dunn, Sec. Lt. G. M. Van Der Merwe, Sec. Lt. W. G. Staples, Sec. Lt. G. Vaughan, Sec. Lt. F. N. Winskill, Sec. Lt. A. Wright, Aug. 19th; Sec. Lt. A. S. Bottom, Sec. Lt. H. W. McL. Hammond, Sec Lt. F. Krockel, Lt. T. P. Morgan, Lt. A. H. Peile, Lt. E. Scholtz, Sec. Lt. F. R. Schmidt, Sec. Lt. E. H. C. Steeds, Lt. J. K. Stewart, Sec. Lt. C. B. De Villiers, Lt. O. E. Ward, Aug. 20th; Lt. E. T. Simpson, Aug. 21st (substituted for notification in "Gazette," July 29th); Sec Lt. J. G. Munro, Sec. Lt. M. Segel, Aug. 22nd.

The following Lts. resign their commns. :—L. L. Grant, July 23rd, 1918 (substituted for notification in "Gazette," June 11th, 1918); G. B. E. Norburn (Lt., R.I. Rif.), Aug. 22nd.

Lt. T. J. Donovan is cashiered by sentence of a Gen. Court Martial, August 1st.

Sec. Lt. C. L. Stewart relinquishes his commn. on account of ill-health and is permitted to retain his rank, July 28th.

Sec. Lt (Hon. Lt.) W. S. McLean (R.F.A.) relinquishes his commn. on account of ill-health contracted on active service, Aug. 21st

The initials of Lt. H. A. Wallace are as now described, and not "A. H." as stated in "Gazette," July 8th.

The surname of Lt. S. H. Wallage is as now described, and not "Wallace" as stated in "Gazette," July 8th.

The surname of Sec. Lt. B. G. Whatmough is as now described, and not "Wattmough" as stated in "Gazette," July 8th

The initials of Sec. Lt. R. T. North are as now described, and not "N. T." as stated in "Gazette," July 29th

The surname of Sec. Lt. (Hon. Capt.) E. E. Carrall-Wilcocks is as now described, and not "E. E. C. Wilcocks" as stated in "Gazette," June 13th.

The notification in "Gazette," July 8th, concerning Sec. Lt. C. S. Gregg is cancelled.

Administrative Branch.—Lt. (Hon. Capt.) H. G. White to be Lt. (Hon. Capt.), from unempld. list, prec. next below Lt. E. King, Aug. 9th.

The following are granted temp. commns as Sec. Lts. :—S. P. Jacoby (temp. Lt., K.A. Rif.), Nov. 13th, seny. April 1st, 1918, and to be Hon. Lt.; W. A. Hatchett, Aug. 18th; A. G. Owen, Aug. 19th

Transferred to unempld. list :—Maj. G. G. Gold, Jan. 28th; Sec. Lt. R. W. F. Smee, Feb. 23rd; Lt. J. R. S. Spearing, Feb. 27th; Lt. L. Abraham, March 6th; Lt. F. C. Smith, April 1st; Lt. J. Edwards, April 24th; Lt. L. C. Messiter, May 16th; Sec. Lt. C. B. Dove, May 30th; Lt. W. S. Scatterty, June 3rd; Lt. H. Shaw, June 5th; Capt. J. R. Fox, June 12th; Sec. Lt. A. Turnbull, July 13th (substituted for notification in "Gazette," March 25th); Sec. Lt. W. Giddings, July 18th; Lt. P. C. Ward, July 30th; Sec. Lt. C. C. Dance, Lt. (Hon. Capt.) J. Woulds, D.C.M., Lt. C. B. Whelan, July 31st; Sec. Lt. (Hon. Lt.) J. E. Saunders, Aug. 1st; Lt. A. D. R. Jones, Aug. 7th; Sec. Lt. J. E. W. Billings, Aug. 9th; Capt. M. L. Fitzgerald, Aug. 14th (substituted for notification in "Gazette," July 1st).

Lt. J. Dudley relinquishes his commn. on account of ill-health contracted on active service and is permitted to retain his rank, Aug. 7th.

Sec. Lt. (Hon. Lt.) J. D. C. Curtis, M.C. (Lancashire R.), relinquishes his commn. on account of ill-health caused by wounds, Aug. 21st.

The initials of Sec. Lt. J. G. Elliott are as now described, and not "J. T." as stated in "Gazette," June 3rd

The Christian names of Harold Clyde Thomas are as now described, and not "H. C." as stated in "Gazette," Aug. 1st

The surname of Lt. P. R. Mallinson is as now described, and not "Mattinson" as stated in "Gazette," Aug. 12th.

The surname of Sec. Lt. K. Draco is as now described, and not "Drago" as stated in "Gazette," July 29th

The surname of Lt. G. Wallas is as now described, and not "Wallis" as stated in "Gazette," July 8th.

The notification in "Gazette," July 18th, concerning Sec. Lt. H. Smith, D.F.C., is cancelled.

The notification in "Gazette," July 29th, concerning Sec. Lt. A. Challins is cancelled.

Technical Branch.—Capt. C. J. Smith to be actg. Maj., Grade (B), from Aug. 16th, 1918, to April 30th

Capt. C. J. Smith to be graded for purposes of pay and allowances as Maj. whilst empld. as Maj., Grade (B), May 1st.

Sec. Lt. E. A. Blundell to be Sec. Lt., Grade (A), from (A'ship), June 26th, 1918 (substituted for notification in "Gazette," June 3rd).

Transferred to unempld. list :—Capt. (actg. Maj.) B. T. Metcalfe, Feb. 16th (substituted for notification in "Gazette," March 28th); Capt. G. M. Johnstone, April 15th; Sec. Lt. R. G. Wells, April 23rd (substituted for notification in "Gazette," May 20th); Sec. Lt. A. Spille, April 25th; Capt. A. Scott, April 30th; Capt. I. McK. Bellaires, May 28th; Lt. G. Glen, June 4th; Lt. E. A. Gulson, June 12th; Sec. Lt. A. I. Morris, June 17th; Sec. Lt. L. J. Grant, July 11th; Lt. P. R. Garner, June 17th; Lt. H. B. D. Grazebrook, July 21st, Capt. E. Brown, Sec. Lt. E. J. Coor, July 22nd; Capt. D. N. Gillmore, July 23rd; Lt. F. H. E. Nash, July 24th; Capt. S. Clark, July 28th; Lt. F. J. F. English, July 31st; Sec. Lt. H. W. Davidson, Sec. Lt. W. Higson, Aug 5th; Lt. W. A. Haslem, Lt. A. F. St. J. Kinsey, Aug. 6th; Capt. A. G. Buckham, Sec. Lt. J. E. Kingham, Capt. R. P. T. McCoy, Aug. 7th; Lt. T. F. Northcote, Aug. 20th

Lt. J. T. Rossiter resigns his commn. and is permitted to retain his rank, July 31st, 1918.

The notification in "Gazette" April 1st, concerning Lt. C. A. Elliott is cancelled (sustituted for notification in "Gazette," June 27th)

The notification in "Gazette," July 30th, 1918, concerning Lt. J. T. Rossiter is cancelled.

The notification in "Gazette," Aug. 15th, concerning Sec. Lt. E. L. M. Emtage is cancelled.

Medical Branch.—C. P. V. MacCormack is granted a temp. commn. as Capt., Aug. 22nd

Lt. C. Duggan to be actg. Capt. whilst empld. as Capt., without pay and allowances of that rank, June 20th.

G. H. H. Maxwell is granted a temp. commn. as Lt., Aug. 22nd.

T. H. K. MacLaughlin is granted a temp. commn. as Lt., Aug. 7th.

Transferred to unempld. list :—Capt. J. W. Brash, March 1st; Capt. G. Sparrow, May 19th; Lt. N. C. Cooper, June 23rd; Capt. N. C. Graham, M.C., Aug. 13th.

Chaplains Branch.—The Rev. A. S. Bishop relinquishes his commn. on ceasing to be empld., April 26th.

Memoranda.—The following temp. Hon. Lts. relinquish their commns. on ceasing to be empld. :—P. J. Boucher, May 31st; F. J. Lynes, Aug. 20th.

Transferred to unempld. list :—Sec. Lt. R. J. Walker, July 17th; Sec. Lt. C. A. Russell, Aug. 14th.

Capt. C. F. Greaves relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, Aug. 12th.

Air Ministry, August 23rd.

The King has been pleased to give orders for the following appointment, in recognition of distinguished services to aviation :—

C.B.E. (Military Division).

Major George Herbert Scott, A.F.C., Royal Air Force, Commander of H.M. Airship R34 on the outward voyage to United States of America and also on the homeward journey.

The King has been pleased to confer the following rewards in recognition of distinguished services rendered to aviation, in the successful voyages of R34 from the United Kingdom to the United States of America and back.

Outward journey.—Left East Fortune at 1.42 a.m., July 2nd, 1919, and arrived at Hazlehurst Field, Long Island, at 1.54 p.m. (G.M.T.), July 6th, 1919. (Duration, 108 hours 12 minutes.)

Homeward journey.—Left Long Island 3.54 a.m. (G.M.T.), July 10th, 1919, and arrived at Pulham, Norfolk, at 6.57 a.m., July 13th, 1919. (Duration, 75 hours 3 minutes.)

Air Force Cross

Col. (actg. Brig.-Gen.) Edward Maitland Maitland, C.M.G., D.S.O.
Capt. (actg. Maj.) Gilbert George Herbert Cooke, D.S.C.
Lieut. Guy Harris.
Sec. Lieut. John Durham Shotter

Air Force Medal.

No. 206345 Flt. Serjt. William Rose Gent.
No. 200965 Serjt.-Maj. H. Walter Robert Mayes, D.S.M.
No. 314353 Flt. Serjt. Walter James Robinson.
No. 200079 Flt. Serjt. Reginald William Ripley.
No. 201741 Flt. Serjt. Norman Albert Scull
No. J./3349 Serjt. Herbert Murray Watson, D.S.M.

FOREIGN DECORATIONS.

The King has granted unrestricted permission for the wearing of the following decorations, conferred on the officers and other ranks indicated for valuable services rendered in connection with the war :—

Conferred by the President of the French Republic.

Legion d'Honneur, Officier.—Maj.-Gen. Sir F. H. Sykes, K.C.B., C.M.G. (Ret. List).

Legion d'Honneur, Chevalier.—Lt.-Col. G. W. F. Fraser, O.B.E.; Capt. (actg. Maj.) G. Gude, O.B.E.; Maj. C. A. L. Harrison, O.B.E.; Capt. L. E. Innes-Baillie (R.M.L.I.).

Croix de Guerre, avec Palme.—Capt. (actg. Maj.) E. J. Briscoe, O.B.E.; Capt. C. B. Dalison, A.F.C.; Lt.-Col. R. B. Davies, V.C., D.S.O.; Maj. C. Draper, D.S.O.; Capt. W. L. Elder, C.M.G., R.N. (formerly R.N.A.S.); Lt. W. J. Gillespie (41st Sqdn.); Capt. J. A. Glen, D.S.C.; Maj. H. P. L. Higman, D.F.C.; Lt. J. D. Newberry (deceased); Capt. L. V. Pearkes; Lt. E. C. Potter; Wt. Offr., Cl. II. (now Sec. Lt.) J. Rees.

Croix de Guerre, avec Etoile, en Vermeil.—245207 Serjt.-Mech. J. P. Hazell (107th Sqdn.).

Medialle d'Honneur avec Glaives, en Argent.—216604 Serjt. Obsr. W. J. Middleton, D.F.M.

Medialle d'Honneur avec Glaives, en Bronze.—25970 Pte. A. Weickers; 8259 A./Mil. C. H. Cobden.

Conferred by the King of Italy.

Officer of the Order of St. Maurice and St. Lazarus.—Lt.-Col. (actg. Brig.-Gen.) R. H. More, C.M.G., C.B.E.

Cavalier of the Order of St. Maurice and St. Lazarus.—Maj. A. McAlister, Lt. L. F. de Peyrecave.

Cavalier of the Order of the Crown of Italy.—Maj. R. P. Whitehead.

Conferred by the King of the Belgians.

Medialle de la Reine Elizabeth.—Asst. Admtr. Miss M. S. Cole-Hamilton, W.R.A.F.

Conferred by the King of Rumania.

Officer of the Order of the Crown, with Swords, and Knight of the Star of Rumania, with Swords.—Capt. (actg. Maj.) F. S. Moller, M.C., D.F.C.

Conferred by the Bey of Tunis.
(For Services at Bizerta.

The Order of Nichan Iftikhar, Third Class.—Lt. F. H. Bell (Flying Officer); Lt. A. V. Gash; Lt. A. Smith (Flying Officer).

Order of Nichan Iftikhar, Chevalier, Classe I.—209246 L.A.C. Blight (St. Austell); 208551 A./C.1 G. C. Crane (Stratford); 206142 L.A.C. F. Coward (Ventnor); 211479 L.A.C. S. Reeve (Norfolk); 209464 L.A.C. A. F. Mason (Newmarket); 206403 L.A.C. E. Thompson (Wimbledon).

Correction.

Maj. James Percy Carre Cooper, O.B.E., M.C. (10th Bde., France) is the correct description of the officer awarded the Star of Roumania, Officier, in "Gazette," July 15th, 1919.

As a considerable number of officers and other ranks of the Royal Air Force have been awarded a foreign decoration during the war, and have not yet received the insignia, a list of such cases is being compiled by the Air Ministry with a view to the decorations being obtained.

Officers and other ranks concerned (a) who have now been released from the Service, or (b) who are not serving either abroad or in the area commands at home, are accordingly requested to communicate with the Secretary, Air Ministry, quoting A.M.W.O. 946, and giving the following particulars :—Air Force number; rank; full Christian name and surname; designation of decoration not received; date (approx.) of "Gazette" in which notification of award was made; and full postal address.

Pilots of aircraft are warned by the Air Ministry that kite-balloons will be flown from time to time for purposes of meteorological observation at the following places:—Merifield (Tor Point); Larkhill (Salisbury); Caldafe (Orkneys); North Queensferry (near Edinburgh).

The cables of these balloons when flying will be marked by streamers at intervals of not more than 500 ft.

* * *

It is notified by the Air Ministry that in the event of R.A.F. officers on duty landing at aerodromes not owned by the Government, the aerodrome authorities, having charges to be paid, should render a bill to the Officer Commanding the Unit to which the officers belong. Officers have been instructed to sign a receipt for services obtained in these circumstances.

The Air Ministry announces that the aerodrome at Guston Road (Dover), and the landing ground at New Holland (Yorks), are being relinquished by the R.A.F.

* * *

In future, visitors to R.A.F. aerodromes must first obtain permits from the Air Ministry.

Requests for permits should be addressed to the Secretary, Air Ministry, and should state clearly the purpose for which a permit is required. The permits, if granted, will be issued subject to such restrictions as the Air Ministry may direct.

* * *

It is announced by the Air Ministry that Sir H. H. Shephard, father of the late Brig.-General G. S. Shephard, D.S.O., M.C., R.A.F., has, in memory of his son, placed a sum of money in trust, the income of which is to be applied to the provision of annual prizes for essays by Officers, N.C.Os., and Men of the R.A.F.

The subjects for the essays will concern the airman's work in the air, and this year separate prizes will be given for essays on (1) Sea and Fleet Reconnaissance, and (2) Aerial Navigation and Pilotage.

The administration of the yearly competitions will be carried out by the Air Council.

* * *

The Danish correspondent of The Aeroplane writes:—

A British flying officer has passed Bergen en route for Spitzbergen. He will be stationed there with an air mechanic.

* * *

A British aeroplane operating with the forces of General Denikin was recently brought down at Tcherny, on the Volga, South-East of Tsaritsin. Another British aeroplane, which was returning to the British lines with a punctured petrol-tank, seeing the aeroplane land and noticing the approach of enemy troops, also landed and opened fire on the Bolsheviks with its machine-gun while the pilot and observer of the first aeroplane set light to their machine. They then boarded the second aeroplane, which contrived to ascend, and returned to the British lines.

The observer, by standing on the right wing of the aeroplane, largely saved the situation by plugging the hole in the petrol tank with his finger.

* * *

An air station is being established at St. Raphael (Var), and has been placed under the command of Sqdn. Leader A. S. MacLaren, R.A.F. This station, which is situated near to the French Naval Air Station at Frejus, will form an important landing-ground on the England-India aerial route. It is stated that Flt. Lt. Berwick, R.A.F., is the second in command.

Three flying-boats arrived at St. Raphael on Aug. 18th on their way to India from England.

Another British aeroplane (Lieut. Halliwell, R.A.F.) arrived on August 25th on his way to India.

* * *

The construction of big rigid airships appears to have been stopped by the authorities. Short Bros. have three ships under construction and are stopping work on one.

* * *

No. 1 Aircraft Constructional Wing at Camden Road has developed very greatly. It is fortunate in having the personal interest of officers of the highest rank in the Air Ministry, who do everything they can for the furtherance of the scheme. Two of these officers are Air Marshal Sir Hugh Trenchard, K.C.B., D.S.O., and Group Captain Philip Game, C.B., C.M.G., D.S.O.

On July 23rd the Mayor of St. Pancras received the Military and Air Attachés of the Belgian Legation at the Headquarters, and among those present were the Right Hon. Lord Rothschild, F.R.S., Brig.-Gen. Lord Montague of Beaulieu, C.S.I., Sir Horace Byers, K.C.M.G., and Col. L. Rees, V.C., D.S.O., M.C.

On July 26th a guard of honour of the Wing turned out to welcome General Corvisart (the French Military Attaché), Captain Finsi (the Italian Air Attaché), the French Air Attaché, and representatives of the Esthonian Army, the Military Mission, and the Russian War Office.

Major F. G. Moore, T.F.A., the Officer Commanding this Wing, is the Chief Technical Inspecting Officer for the County of London, and has been lucky in getting as his second in command Major C. W. F. Morgan, of the Martinsyde firm. There is now a complete staff of 28 officers who instruct the cadets in rigging, engines, gunnery, etc. In September classes will be held every night except Saturdays.

As mentioned in a previous issue of The Aeroplane, the Air Ministry have given to the Wing many drawings and small parts, and many big aircraft firms have given aeroplanes and engines. If only there were more accommodation at the Wing, advantage could be taken of the offers of these firms to give and lend more aeroplane parts, etc. The Marconi Company have supplied a complete wireless telephony and telegraphy set with a range of 600 miles which is to be erected over the headquarters

On Aug. 2nd some 200 cadets went down to Eastbourne for a week. They were housed in the huts on the aerodrome, and were given practical instruction on the aeroplanes and seaplanes there. At present they are enjoying a month's leave, until the classes start again in September.

Great attention is given to games, and later on a football club will be run on Service battalion lines by the cadets themselves.

A second Aircraft Construction Wing is being formed in Hackney, affiliated to the 10th London Regiment (Hackney Rifles). Major Moore states that before Christmas five or six more Aircraft Wings will be in existence in various parts of London.

On leaving the Wing the cadets, many of whom worked during the war in aircraft factories in N. and N.W. London, are free to join the R.A.F., an aircraft firm, or anything they please. The wireless set will doubtless make many keen to become wireless operators at sea or on land for the Marconi Company.

In the second week in September another function is taking place at which those interested in the scheme at the Air Ministry, and many leading men in the Aircraft Industry will be present. The work will then be carried out on a far bigger scale than hitherto.

A scheme having so many men high up in the Aeronautical World interested in it, and having attained so much since its official opening by Major-Gen. Trenchard on June 20th, must continue to grow until Aircraft Constructional Wings are in operation all over the country.—G. L. O.

* * *

On Aug. 21st the Royal Air Force held their annual athletic meeting at Stamford Bridge. The King's Cup was won by the South-Western Area after keen competition, the Midland Area running them very close. This Cup is given to the Area with the greatest number of points.

Three Mile Race.—Capt. Irwine (Northern Area), 1; Serjt. C. I. Clibbon (Halton), 2; A./C. Pratt (S.E. Area), 3; Capt. Austin (R.A.F., Rhine), 4. Won by a yard. Time, 15 min. 15 3-5 sec.

W.R.A.F. Relay Race (440 yards).—S.-W. Area, 1; Halton, 2; Northern Area, 3. Won by eight yards. Time, 57 1-5 sec.

440 Yards Race.—Capt. A. P. Mitchell (Halton), 1; Cpl. Bosberry (R.A.F., Rhine), 2; Serjt. Poigndestre (S.-E. Area), 3; Lieut. Jones (R.A.F., Rhine), 4. Won by 12 yards. Time, 51 4-5 sec.

One Mile Race (open to members of Imperial Allied Forces).—Lieut. R. D. Chalmers (A.I.F.), 1; Drvr. W. G. Battersbie (R.F.A.), 2; H./C. H. Ashby (late R.A.F.), 3; Serjt. R. H. Geary (R.A.F.), 4. Won by 20 yards. Time, 4 min. 51 1-5 sec.

880 Yards Race (open to former members of the R.A.F.).—Cpl. P. A. Beard, 1; Cadet J. Noble, 2. Won by 10 yards. Time, 2 min. 9 4-5 sec.

One Mile Race (R.A.F.).—Capt. Gibbs (Midland Area), 1; A./C. Nix (S.-W. Area), 2; Flight Serjt. Darlington, 3. Won by 15 yards. Time, 4 min. 34 1-5 sec.

100 Yards Race.—Serjt.-Maj. Mawby (Midland Area), 1; Serjt.-Maj. Kressler (Northern Area), 2; Cpl. Bosberry (R.A.F., Rhine), 3. Won by half a yard. Time, 10 3-5 sec

880 Yards Race.—Flying Officer Shaw (S.-W. Area), 1; A./M. Morris (Midland Area), 2; Lieut. Catchpole (Northern Area), 3. Won by 10 yards. Time, 2 min. 3 2-5 sec.

120 Yards Hurdles.—Flying Officer Fraser (S.-W. Area), 1; Flight Lieut. Scott (S.-W. Area), 2; Lieut. Bellin (R.A.F., Rhine), 3 Won by five yards. Time, 17 1-5 sec.

880 Yards Race (for Enlisted Boys).—Snaith (Northern Area), 1; T. Weatherall (S.-E. Area), 2; Fox (Midland Area), 3. Won by six yards. Time, 2 min. 9 1-5 sec.

220 Yards Race.—Serjt.-Maj. Mawby (Midland Area), 1; Capt. A. P. Mitchell (Halton), 2; Serjt. Clarkson (Midland Area), 3. Won by three yards. Time, 23 1-5 sec.

100 Yards Race (Imperial and Allied Forces).—Serjt. Wilson (New Zealand), 1; Drvr. L. J. Hume (Australia), 2; Lieut. N. V. Webbe, 3. Won by a yard, after a dead-heat. Time, 10 3-5 sec.

Tug-of-War.—Midland Area beat R.A.F., Rhine, by two pulls to none.

High Jump.—Lieut. F. C. Penny (Irish Group) and Serjt.-Maj. Miller (Midland Area), tied at 5 ft. 7 in. for first place; Lieut. Walmsley (Midland Area), 5 ft. 3 in., 3.

Putting the Weight.—Serjt.-Maj. Mawby (Midland Area), 32 ft. 3 in., 1; Lieut. Fish (Midland Area), 32 ft., 2; Capt. Jones (Northern Area), 31 ft. 8½ in., 3.

Long Jump.—Flying Officer Fraser (S.-W. Area), 21 ft. 4¾ in., 1; Flight Lieut. Lieut. Scott (S.-W. Area), 20 ft. 7 in., 2; Maj. Saul (R.A.F., Rhine), 20 ft. 6¼ in., 3.

One Mile Relay Race.—South-Western Area, 1; Northern Area, 2. Won by 12 yards. Time, 3 min. 47 1-5 sec.

Composite Relay Race (Field Officer, Officer, Warrant Officer, N.C.O., or Man, each to run 100 yards; W.R.A.F. to run 40 yards).—Midland Area, 1; Northern Area, 2; R.A.F., Rhine, 3; South-Eastern Area, 4. Won by six yards. Time, 49 4-5 sec.

FRANCE.

It is announced Lieut. de Vaisseau Sablé has been appointed Air Attaché to the French Embassy in London.

GERMANY.

On Aug. 18th a German aviator bombed Sosnowice, Poland. Several people, including some civilians, were killed. The Polish Government ordered its Mission in Berlin to make a protest and to demand satisfaction from the German Government. The Note was handed in on Aug. 20th.

The following is an extract from the Memoirs of General Ludendorff which have been recently the subject of some four articles in the "Times" newspaper:—

"The battle cost me a great deal also. My wife's youngest son fell on the 23rd. He was a flying officer, and was at first reported missing. On the battlefield we found a grave with the English inscription, 'Here rest two German flying officers.' I had the sad task of identifying my son. Now he rests in German soil. The war has spared me nothing."

A message from Dortmund states that Lieut. Bongartz crashed from a height of about 150 ft. during an exhibition flight at Neheim. His condition is said to be hopeless. Lieut. Bongartz brought down 39 Allied machines during the war, and was brought down by a British aviator in May, 1918.

The Danish correspondent of THE AEROPLANE writes:—

A Commission to control and represent German flying sport has been formed after negotiations with the Government Air Ministry. The President is Major von Tschudi, the former manager of the Johannisthal aerodrome. Lieut.-Col. Siegert, who was the second in command of the German Air Forces during the war, is on the Committee.

ITALY.

On Aug. 23rd four Italian military aviators were killed at the Aspern Aerodrome, near Vienna, owing to their machine crashing.

SWEDEN.

A correspondent in Sweden writes that the first German machine for the Swedish Air Force has arrived in Sweden.

RUSSIA.

OFFICIAL COMMUNIQUÉ (BOLSHEVIK).

AUG. 19TH.—A flotilla of fast enemy ships having broken into Kronstadt Harbour, our guard ships sank three of them by artillery fire. At the same time a considerable number of enemy aeroplanes made an attack on Kronstadt.

* * *

On Aug. 18th the Bolshevik Forces carried out what is claimed to be a retaliatory air-raid upon Teri Joki. It is stated that this raid was a reprisal for the sinking of the Bolshevik warships by the British. No casualties were caused.

U.S.A.

It is understood that the U.S. Navy are entering N.C.4 (Lt. Cmdr. A. C. Read) for the trans-Pacific Competition. The prize is again £10,000, and there is again two alternative routes, and once again Lt. Cmdr. Read will probably take the Southern route, which means refuelling at sea, so that history may be given another opportunity of repeating itself.

* * *

The two U.S. Army aviators, Lieuts. Petersen and Davis, whose capture by Mexican bandits has been already reported, returned to the States under the escort of a Capt. Matlock, U.S. Cavalry, who had successfully paid but half the ransom money to the bandits. These latter are now being pursued by U.S. Cavalry and aeroplanes, but hitherto have, despite the pursuers' advantages, managed to get away.

A flying base for this expedition has been established at Presidio.

It was announced later that Jesus Renteria, the leader of the bandits, was shot from an aeroplane during a skirmish between the American troops and the bandits. The U.S. troops returned to the States on August 24th.

PERSONAL NOTICES.

NAVAL.

ENGAGEMENT.

ELLWOOD—MATTHEWS.—The engagement is announced between Capt. Aubrey B. Ellwood, D.S.C., R.A.F., youngest son of the Rev. C. E. and Mrs. Ellwood, Cottesmore Rectory, Oakham, and Lesley Mary Joan, daughter of Mr. and Mrs. W. P. Matthews, The Old House, Walmer, Kent.

MILITARY.

BIRTHS.

O'BRIEN.—On Aug. 16th, 1919, at Nakuru, British East Africa, the wife of Maj. A. K. O'Brien, late Queen's Bays and R.A.F., of Mtaragon, Lumbwa, British East Africa, of a son.

HEAD.—On Aug. 17th, to Peggy, (nee Grant), wife of Lieut. I. Laurence Head, Royal Sussex Regt. and R.A.F., a son.

AIR FORCE.

MARRIAGES.

HALL-SMITH—HUTCHINSON.—On May 13th, 1919, at St. George's Church, Hanover Square, London, Lieut. Philip Hall-Smith, R.A.F. (since killed), eldest son of the Reverend Philip Merton Smith, of Vancouver, British Columbia, was married to Marjorie Emma Hutchinson, widow of Capt. J. S. Hutchinson, 2nd South Lancashire Regiment, and daughter of Frederick Wrigley, Esq., of Broadoaks, Bury, Lancashire, by the Rector.

OMMANNEY—CHAMBERS.—The marriage took place on July 15th, at Brompton Parish Church, of Major Patrick Gream Nelson Ommanney, R.A.F., younger son of Admiral Sir Nelson and Lady Ommanney, and Miss Pansy Nina Grace Chambers, daughter of Major Grahame Chambers, R.A.F. Prebendary Gough performed the ceremony.

POLLARD—CHEETHAM.—On July 31st, 1919, at St. Martin's Church, Brighouse, Capt. George Reginald Pollard, R.A.F., youngest son of Sir George H. Pollard and Lady Pollard, "Sundown," Southport, was married to Sarah Dorothy, youngest daughter of Mr. and Mrs. John A. Cheetham, "Oaklands," Brighouse, by the Rev. Canon Hone, Vicar.

SANDERS—SPROT.—On July 23rd, at St. Baldred's, North Berwick, Capt. Denis C. W. Sanders, A.F.C., R.A.F., eldest son of Dr. and Mrs. Gordon Sanders, Villa Martha, Cannes, France, was married to Nancy M. G., widow of the late Ivan B. Sprot, Lieutenant, 1st Bn. The Queen's Own Cameron Highlanders, and daughter of Sir George and Lady Berry, Drumsheugh Gardens, Edinburgh, and King's Knoll, North Berwick, by the Right Rev. the Lord Bishop of St. Andrews, assisted by the Rev. T. A. Hughes, M.A., Rector.

SNOW—COLWELL.—On July 29th, at St. Jude's, Southsea, Capt. C. C. Snow, D.F.C., R.A.F., only son of Mr. and Mrs. C. Snow, South Kirkby, Wakefield, was married to Gladys Burton, eldest daughter of the late General Colwell, C.B., Royal Marines, and Mrs. Colwell, Claremont Lodge, Southsea, by the Rev. C. E. Matthews, C.F., the Right Rev. Bishop Ingham, D.D., Vicar, and the Rev. W. R. Musselwhite.

STEDDY—HARVEY.—On July 23rd, at Chartham Parish Church, Capt. Edwin Seymour Steddy, R.A.F., youngest son of Mr. and Mrs. G. T. Steddy, of Sarre, Kent, was married to Elsa Dorothy, younger daughter of Mr. and Mrs. W. R. Harvey, of Hatch House, Chartham, Kent, by the Rev. E. W. Taylor Jones.

TOZER—DAVIES.—On July 30th, at St. Peter's, Parkstone, Lieut. Philip H. S. Tozer, R.A.F., was married to Margaret E. H., younger daughter of the late Edward Davies, Machen House, Mon., and of Mrs. Davies, Bruffe Lodge, Parkstone.

BIRTHS.

ALLEN.—On August 11th, at nursing home, Colchester, the wife of Claude A. B. Allen, Chaplain R.A.F.—a son.

CURTIS.—On July 28th, 1919, at 40, Alwyne Road, Wimbledon, the wife of James Stanley Curtis (late Capt. R.A.F.), of a daughter.

ELPHICK.—On Aug. 7th, at 10, Coates Crescent, Edinburgh, the wife of Capt. R. Elphick, R.A.F., of a son.

GOODE.—On July 17th, at 24, Walpole Street, S.W., the wife of Captain H. M. Goode, R.A.F., of a daughter.

LOWE.—On Aug. 1st, at Baston Lodge, St. Leonard's-on-Sea, the wife of Lieut. L. G. Lowe, R.A.F., of a son.

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SEPT. 3, 1919.

THE AEROPLANE

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ON THE AERONAUTICAL PROSPECTS IN CANADA.

It seems that the British Aircraft Industry and the Civil Aviation Department of the Air Ministry are showing a regrettable lack of interest in the prospects of aeronautics in Canada. There is in that country a vast opportunity for British enterprise, and a few facts on the subject deserve the attention of all concerned with Commercial Aeronautics.

There was introduced into the House of Commons in Canada, on April 29th, Bill Number 80, entitled "An Act to Authorise the Appointment of an Air Board for the control of Aeronautics." This Bill passed the Committee stage without amendment on May 6th. It was drafted by Mr. J. A. Wilson, the Assistant Minister of Naval Service, and was introduced by Mr. Maclean of Halifax.

The Act provides for the appointment of a Minister of the Crown to be Chairman of the Air Board and for another member of the Air Board to be Vice-Chairman. One member of the Air Board shall be a representative of the Department of Militia and Defence and one a representative of the Department of Naval Service.

The text of the Bill is as follows:—

THE HOUSE OF COMMONS OF CANADA.

BILL 80.

An Act to authorise the appointment of an Air Board for the control of Aeronautics.

His Majesty, by and with the advice and consent of the Senate and House of Commons of Canada, enacts as follows:—

SHORT TITLE.

1. This Act may be cited as "The Air Board Act."

AIR BOARD.

2. (1) There shall be a Board on Aeronautics (hereinafter called the "Air Board") which shall consist of not less than five and not more than seven members, who shall be appointed by the Governor in Council.

CHAIRMAN AND VICE-CHAIRMAN.

(2) The Governor in Council shall appoint a member of the Air Board who is one of the Ministers of the Crown to be Chairman of the Board, and shall appoint one of the other members of the Air Board to be Vice-Chairman.

REPRESENTATIVES OF MILITIA AND DEFENCE AND NAVAL SERVICE DEPARTMENTS.

(3) One member of the Air Board shall be appointed as a representative of the Department of Militia and Defence and one as a representative of the Department of the Naval Service.

TERM OF OFFICE.

(4) The members of the Air Board shall be appointed for a term of three years, and shall be eligible for reappointment.

SALARIES.

(5) The members of the Air Board shall be paid such salaries as the Governor in Council may determine.

DUTIES OF AIR BOARD.

3. It shall be the duty of the Air Board:—

(a) to supervise all matters connected with aeronautics;

(b) to study the development of aeronautics in Canada and in other countries, and to undertake such technical research as may be requisite for the development of aeronautics, and to co-operate with other institutions in carrying out such research;

(c) to construct and maintain all Government aerodromes and air stations, including all plant, machinery and buildings necessary for their efficient equipment and upkeep;

(d) to control and manage all aircraft and equipment necessary for the conduct of any of His Majesty's Services;

(e) to operate such Services as the Governor in Council may approve;

(f) to prescribe aerial routes;

(g) to co-operate with other officers of His Majesty, and to assist in the carrying out of any Services under their jurisdiction which may require aerial work of any nature, and to collaborate with the officers employed in existing Air Services of His Majesty in such extension of their present work as the development of aeronautics may require;

(h) to take such action as may be necessary to secure, by International Regulation or otherwise, the rights of His Majesty in respect of his Government of Canada in International Air Routes;

(i) to co-operate with the officers of the Departments of Militia and Defence and of the Naval Service on all questions relating to the air defence of Canada;

(j) to co-operate with the Air Staffs or Authorities of other Governments or countries for any purposes pertaining to Air Services;

(k) to investigate, examine and report on all proposals for the institution of commercial Air Services within or partly within Canada or the limits of the territorial waters of Canada;

(l) to consider, draft, and prepare for approval by the Governor in Council such regulations as may be considered necessary for the control or operation of aeronautics in Canada or within the limits of the territorial waters of Canada; and,

(m) to perform such other duties as the Governor in Council may from time to time impose.

POWERS OF AIR BOARD TO MAKE REGULATIONS WITH APPROVAL OF GOVERNOR IN COUNCIL.

4. (1) Subject to approval by the Governor in Council, the Air Board shall have power to regulate and control aerial navigation over Canada and the territorial waters of Canada, and in particular, but not to restrict the generality of the foregoing terms of this section, it may, with the approval aforesaid, make regulations with respect to—

(a) licensing pilots and other persons engaged in the navigation of aircraft, and the suspension and revocation of such licenses;

(b) the registration, identification, inspection, certification, and licensing of all aircraft;

(c) the licensing, inspection, and regulation of all aerodromes and air-stations;

(d) the conditions under which aircraft may be used for carrying goods, mails, and passengers, or for the operation of any commercial service whatsoever, and the licensing of any such services;

(e) the conditions under which goods, mails, and passengers may be imported and exported in aircraft into or from Canada or within the limits of the territorial waters of Canada, or may be transported over any part of such territory;

(f) the prohibition of navigation of aircraft over such areas as may be prescribed, either at all times or at such times or on such occasions only as may be specified in the regulation, and either absolutely or subject to such exceptions or conditions as may be so specified;

(g) the areas within which aircraft coming from any places outside of Canada are to land, and the conditions to be complied with by any such aircraft;

(h) aerial routes, their use and control;

(i) the institution and enforcement of such laws, rules and regulations as may be deemed necessary for the safe and proper navigation of aircraft in Canada or within the limits of the territorial waters of Canada; and,

(j) organisation, discipline, efficiency, and good government generally of the officers and men employed under the Air Board.

Penalty.

(2) Any person guilty of violating the provisions of any such regulation shall be liable, on summary conviction, to a fine not exceeding one thousand dollars, or to imprisonment for any term not exceeding six months, or to both fine and imprisonment.

Publication of Regulations.

(3) All regulations enacted under the provisions of this Act shall be published in the "Canada Gazette," and, upon being so published, shall have the same force in law as if they formed part of this Act. Such regulations shall be laid before both Houses of Parliament within 10 days after the publication thereof if Parliament is then sitting, and if Parliament is not then sitting, then within 10 days after the next meeting thereof.

Officers and Men.

5. The Air Board shall have power to employ such officers and men under this Act as may be authorised by the Governor in Council, under such conditions as to discipline and pay as the Governor in Council may determine, and may make such arrangements for their proper training, housing, board, clothing, and equipment as may be deemed necessary and as may be approved by the Governor in Council.

Civil Staff.

6. Subject to the provisions of the Civil Service Act, 1918, the Air Board shall have power to employ such officers, clerks, and employees as may be necessary for attending to the business of the Air Board.

Payment of Expenses, etc., under Act.

7. All salaries mentioned herein and all expenses incurred under the provisions of this Act shall be paid out of such money as may be appropriated by Parliament therefor.

Since that Act came into force a number of offices have been created under the Canadian Air Board, as was duly recorded in this paper recently, but so far the names of the officials appointed to those offices have not been made known. The future of aeronautics in Canada, so far as the British Aircraft Industry is concerned, will depend largely on whether these officials are pro-British or pro-American in their sympathies. But to a far greater extent it will depend on whether the British Aircraft Industry has the energy to go and get the Canadian business, or whether it is to be left entirely to the enterprise of cute business men from the United States.

Vast Opportunities.

Although undoubtedly Aeronautics in Canada must develop comparatively slowly, there seem to be very many people in that Dominion who are not merely enthusiastic about flying as such, but who believe firmly in its commercial future. In this they are fully justified because of the fact that Canada is a country of vast expanses with very imperfect communications. The waterways and the plains of Canada afford great opportunities for flying-boats and land-going aeroplanes, and aerial traffic can be established long before railways can be developed.

In this connection it is interesting to note that a trans-Continental route has already been mapped out for aeroplanes. The instructions to those who were given the job of mapping were to keep within reach of a railway as nearly as possible. The particular point of interest in the route chosen is that it is peculiarly suitable for waterplanes of modern type in that, excepting in the Rocky Mountains, there is only one gap between lakes of as much as 150 miles. In most cases the distances between lakes is not more than 20 miles.

Another matter of interest is that, with a view to educating Canadian Members of Parliament as to the uses of aircraft, waterplanes have been told off to make a photographic survey of forest lands between Ottawa in order to check the existing topographical land survey.

Yet another use for water-going aircraft is to be found in communication between the old trading points of the Hudson Bay Company which were originally established so as to give inter-communication by canoes. The great Quebec Company of Reville Frères, who trade with hundreds of these Hudson Bay stations, have been lent a waterplane of some sort to test its possibilities for an exhibition of inter-communication this summer.

In all these cases, one is told, the machines so used are low-powered Curtiss flying-boats which, though good enough in their day, are now utterly obsolete, and would be despised by any pilot with experience of modern seaplanes. Consequently they are much more likely to do harm than good by their evolutions.

Forest patrol, as a safeguard against fires, has been mentioned on various occasions as one form of activity for aircraft in Canada, and it is interesting to learn that two American flying-boats have been lent to the St. Lawrence Forest Protective Association to patrol the large districts north of the St. Lawrence River, and the Quebec Government has made a substantial subsidy to support these boats. It is very much to be regretted that no British firm of seaplane builders had the enterprise to send machines and men to Canada to demonstrate to all and sundry the capabilities of the machines of to-day.

New Activities.

A Canadian evening paper reports that the firm of Greenshields is bringing out a big Canadian company for the manufacture of Handley Page machines. Nothing has been heard of the flotation on this side of the Atlantic, but it is possible that the business may have been achieved. If so, one would like to hear more of it.

Another sphere of activity is disclosed by the fact that the Canadian Pacific Railway about a month ago took out a charter for a flying department, the duties of which would be to organise aeroplane services as auxiliaries or feeders to the railway.

Those interested in flying in Canada would do well to note that practically every Canadian country town has an exhibition ground or racecourse which in most cases is actually suitable for a landing-ground, and in any case could be easily adapted to the purpose.

The Political Situation.

The Canadian House of Commons is utterly lethargic, as one would expect in such a thoroughly British institution, and the expenditure of money is more necessary in developing business in Canada than it is in England, but the business is certainly there to be done.

One point which British manufacturers should particularly note is that the group of Toronto people which is interested in aviation is very largely Americanised, and that if the British Aircraft Industry is to get business in America it will have to make up its mind to fight strenuous American competition.

It must be remembered that a group of American speculators bought 400 Curtiss aeroplanes which had been built either in America or Canada for the training of the Canadian Air Force, and that these machines have been planted on Canadian buyers. In the end this may very possibly work to the advantage of the British Aircraft Industry, as proving that British aeroplanes are the best in the world, but it is bound to give aviation in Canada a set-back unless the British Industry gets to work immediately. Without in the least decrying the quality of material or workmanship in the Curtiss machines, it must be obvious to anybody who knows anything of aviation that, good as a 90 h.p. or 120 h.p. Curtiss machine may be for training purposes, it is not the type of machine with which to develop serious aviation in a vast country like Canada.

The Need for British Enterprise.

If the Canadian business man is to be impressed with the practical utility of aircraft he must be convinced by means of demonstrations with the very latest and best types of British commercial aeroplanes, and not by means of converted war machines, and most certainly not by means of elementary training machines.

British firms who want to do business in Canada must not expect Canadians to fall upon them with entreaties to be allowed to buy British aeroplanes; they have got to go and get the business. They have got to convince the Canadians that aeroplanes are practical vehicles; they have got to remove any bad impression which may have been given by failures of inferior machines; and they have got to do a great deal of the actual operating of the aeroplanes with their own money during that period. When British aeroplanes and British transport services have made good in Canada, then Canadian money will be forthcoming for further developments.

THE SAVING CLAUSE.

Happily there is a strong pro-British element among those in Canada who are interested in aviation; for example, a new Association has recently been formed in Montreal which embraces 300 ex-flying people of the R.A.F. who have broken loose from the Americanised Canadian Aero Club, and who are full out to support British enterprise, but they in turn must be supported by British enterprise.

The British Aircraft Industry has a great opportunity in Canada if it will only lay itself out to grasp that opportunity; but the Industry will wreck the progress of aviation in Canada as well as all its own prospects of future business there if it leaves the field at the moment to get-rich-quick Americans who are only intent on planting what in this country would be low-grade salvage stuff on the innocent Canadian buyer.—C. G. G.

"ECONOMY" IN AIRSHIP CONSTRUCTION.

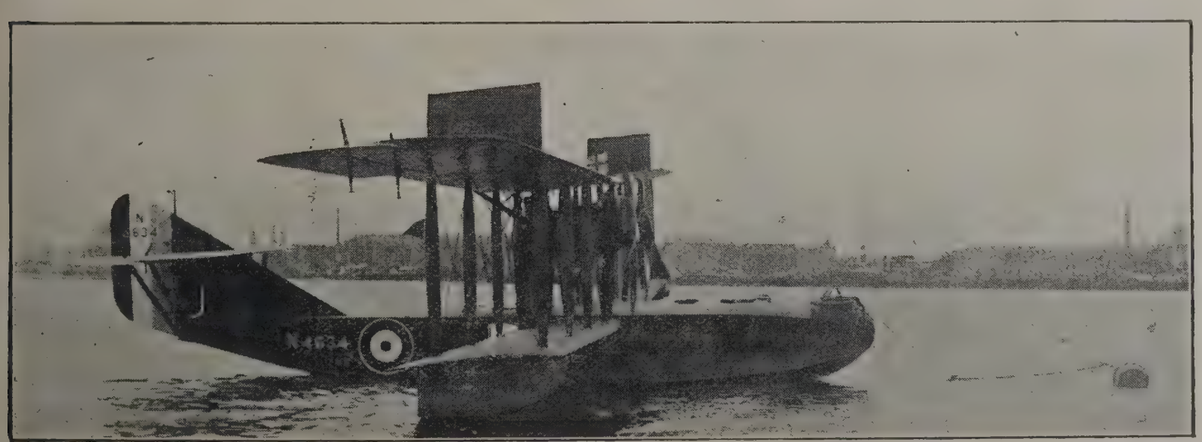
In earlier and happier days the more popular news-prints, deprived of the humour of Parliament, the thrill of murder, or the absorbing charms of Divorce Court drama by the placid instincts of late summer and autumn, resorted to a form of amusement aptly termed "Silly Season Topics." Started by an an intriguing letter written by a member of the editorial staff, though signed by "A Father of Nine" or "A Tooting Cyclist," leaders, correspondence columns, and news pages were each day charged with argument and enthusiasm as to some such subject as "Paper-Bag Cookery" or "Are Tomatoes Nourishing?" The amusement served its purpose. It filled the columns and helped music-hall comedians, while it did no harm to the public, as none of discrimination ever read one single line of all that was written.

To-day, in sadder times, there are greater subjects with which to fill the summer hours of idleness. The war is over, the debt of life is paid, and all that remains is to settle that part of the bill which money alone will satisfy. The paying of the bill gives a happy opening to the editors of "Silly Season" columns, and they have not failed to avail themselves of the opportunity. Each day the cheaper news-prints are filled with heavily leaded columns demanding retrenchment and economy without ever suggesting any reasonable method of obtaining either. The public, angered by the price of beer or butter, has accepted readily the opportunity to criticise in tube, tram, and dining-room those who are charged with the care of the national finances. All humankind are spending wildly in the reaction of peace, but none approve of the governing classes in their methods of settling the national accounts.

There is waste—and colossal waste—in many branches of the Government Services, but it is entirely the result of war. If the nations demand war, the nations must pay for war. All amusements are expensive, and after the joy is dead regrets are only too apt to linger. It was necessary in war-time to order far in advance of immediate requirements, and with no knowledge of the time when such material would cease to be necessary. War is not like the shooting season, with a definite calendered beginning and end. It ends only with victory or defeat, and either of these are in the hands of Fate alone.

But the news-prints and popular clamour have scared Mr. Lloyd George, whose dislike of unpopularity amongst the proletariat is the prevailing instinct in his life. The fear of downfall has driven him to incite his colleagues to ruthless "economy." At the same time he is forming new Ministries to control everything except the sea tides, which even his mental predecessor, King Canute, found unamenable to his will.

At his direction works begun during the war and rapidly nearing completion are being destroyed at vast expense. Staffs are being reduced in every working department of State, regardless of the morrow. The machinery of government is suffering from the pruning of an amateur gardener, whose only true knowledge is oratory. But the future disasters will be camouflaged for the present, while the public happiness is increased



The F5 Flying-boat (two 350 h.p. Rolls-Royce engines) built by the Gosport Aviation Co., which was exhibited and demonstrated by that company at the E.L.T.A., Amsterdam, by permission of the Air Ministry. The photograph shows the boat moored off Amsterdam. This Flying-boat has now returned to England.

by the sight of widespread destruction wrought in the name of "economy." (It would do Mr. Lloyd George but little harm if he were to look up the word "economy" in the New English Dictionary. He would then perhaps realise its meaning.)

But that side of the "economy" campaign which interests the aeronautical industry is the action taken this week by the Admiralty in the practical stoppage of all work on airships.

Before the war we were a decade behind the Germans in the theory and practice of airship design. Where we had argued they had done the work. With the war came the realisation of the value of airships, and in a curiously haphazard way we began to make up for lost ground. Against innumerable difficulties the Airship Department of the Admiralty carried through a programme which in the last year of war produced rigid airships but little behind the best German rigid airships in design and performance, whilst in the non-rigid classes we lead the world.

As a result of the experience gained, several rigid airships of large size were at the beginning of this week under construction in the works of Armstrongs, Vickers, and Shorts. All work has now ceased at these three places, though the R37 at Shorts may be completed at a later date. As a result about 1,400 workpeople experienced in the intricacies of airship construction are out of work, and will disperse to other industries more stable of existence. Their training is wasted, and shortly they will forget all they have learned.

The one industry in which Great Britain can gain and maintain a world supremacy is that of aeronautics. Yet now as a measure of economy we are to throw aside one part of our leadership. Airship design is in its infancy—that period in which careful nurture is most essential. The child industry cannot live by itself. It must be supported. Yet that support is being removed.

The immediate prospects of profit from the employment of airships are not promising. Further progress, both in design and performance, is essential before an airship transport service can be safely and profitably maintained. And the Government alone can bring about that progress by the economical (in the proper sense) production of a series of airships.

If these airships are completed, they will possess a certain capital value. If they are left in their present state, they are entirely valueless. The expense of shutting down the works will be almost as great as that of completing the ships.

Cannot the public, who are mainly responsible for the shutting down of construction, wake up a little from its drugged dream of "economy" and demand that here at least we shall not waste future prosperity through present parsimony.

It is useless to blame the Admiralty. The airship programme would still be carried out were it not for the effect of public clamour on the thoughts of Mr. Lloyd George. Therefore as Mr. Lloyd George is so easily influenced, it is the duty of the people, if they are to show that democratic rule has any advantages at all, to insist that the Admiralty decision must be reconsidered at once.

W. E. DE B. W.

AN HONOUR FOR MAJOR-GENERAL SIR F. H. SYKES, K. C. B., C. M. G.

The appointment of Major-General Sir Frederick Hugh Sykes, K.C.B., C.M.G., to be Knight Grand Cross of the Order of the British Empire (Military Division) was gazetted on August 26th. This award has been made specifically because of his services to aeronautics. He has been a loyal servant of the new science since the very early days of practical successes in aviation, and he has by his efforts contributed largely to the attainment of the position now held by the Royal Air Force.

All who appreciate the work he has done will congratulate him on the honour the King has chosen to bestow upon him.

THE RETIREMENT OF SIR RICHARD GLAZEBROOK, C.B., F.R.S.

It is officially announced that Sir Richard Glazebrook, C.B., F.R.S., retires from the Directorship of the National Physical Laboratory, on reaching the age limit on Sept. 18th, and that Professor Joseph Ernest Petavel, D.Sc., F.R.S., has been appointed to succeed to that position.

Sir Richard Glazebrook, who is a scientist of world-wide renown, and a recognised authority upon methods of accurate physical measurement, has, both as Director of the N.P.L. and as a member of the National Advisory Committee on Aeronautics, exercised an important influence upon the progress of the science of aerodynamics in this country.

It is to be held to his credit that the experimental measurements made at the National Physical Laboratory, both in the Aeronautical Department and elsewhere, bear a universal reputation for accuracy and reliability.

Whether the deductions which have been drawn therefrom are equally accurate and reliable is a matter with which the late Director of the N.P.L. has probably had little to do.

In Professor Petavel the N.P.L. has a worthy successor to Sir Richard Glazebrook, and it may safely be expected that under the new Directorship the existing high standard of accuracy will be maintained by the establishment.

THE JACQUES SCHNEIDER INTERNATIONAL SEAPLANE RACE.

The following communiqué has been issued by the Royal Aero Club :—

This race will be held at Bournemouth on Wednesday, Sept. 10th, 1919, and machines representing France, Italy and Great Britain will compete. The course is 200 nautical miles, over a circuit of 20 miles (10 times round) in Bournemouth Bay. The start of the race will take place about 2.30 p.m.

The Royal Aero Club has obtained the loan of the T.S.Y. "Ombra" (350 tons) to accommodate the members on the day of the race. This yacht will be anchored off Bournemouth Pier, and will be the official starting and finishing point, the competitors passing 10 times during the race. Tickets, £2 each, including luncheon and tea on board.

Members are requested to make early application to the Club for tickets.

Motor launches will convey members from the pier to the yacht between 12 noon and 2 p.m. on the day of the race.

Arrangements have also been made for a members' enclosure at the head of the pier, Bournemouth, and tickets admitting to the pier and enclosure may be obtained from the Club.

The following are the competitors :—

GREAT BRITAIN.

Sopwith (450-h.p. Cosmos 'Jupiter"), pilot, H. G. Hawker; Supermarine (450 h.p. Napier "Lion"), pilot, Squad-Comdr. B. D. Hobbs, D.S.O., D.F.C.; Avro (Siddeley-Deasy "Puma"), pilot, Capt. Hammersley; Fairey (450 h.p. Napier "Lion"), pilot, Lieut.-Col. Vincent Nicholl, D.S.O.

(Three competitors from the above are being selected by the Royal Aero Club to represent Great Britain.)

FRANCE

Nieuport (300-h.p. Hispano-Suiza), pilot, M. Malard; Nieuport (300-h.p. Hispano-Suiza), pilot, M. Casale; Spad (300-h.p. Hispano-Suiza), pilot, M. Sadi Lecointe.

ITALY.

Savoia S.13 (250-h.p. Isotta-Fraschini), pilot, Sig. Janello.

OFFICIALS OF THE RACE.

STEWARDS OF THE MEETING (Commissaires Sportifs).—Brig.-Gen. Sir Capel Holden, K.C.B., F.R.S. (Royal Aero Club); Mr. G. B. Cockburn (Royal Aero Club); Lieut.-Col. Alec Ogilvie (Royal Aero Club); M. Paul Rousseau (Aero Club de France).

STARTERS.—Lieut.-Col. F. K. McClean; Lieut.-Col. Spenser D. A. Grey, D.S.O.

TIMEKEEPERS.—Mr. A. V. Ebblewhite and Mr. A. G. Reynolds.

PRESS STEWARD.—Lieut. B. Stevenson.

MARK-BOAT OBSERVERS.—Mr. Howard T. Wright; Lieut.-Col. H. T. Tizard; Squadron Leader T. O'B. Hubbard, M.C., R.A.F.; Major R. H. Mayo; Major R. E. Nicoll.

BRITISH MOTOR-BOAT CLUB PATROL.—Mr. R. H. Cobb; Mr. T. Desnos; Mr. B. S. Millard; Col. C. Pierce.

CLERKS OF THE COURSE.—Group Captain C. R. Samson, C.M.G., D.S.O.; Lieut.-Com. Harold E. Perrin.

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THE RIFF-R.A.F.

By "THE SNIPE."

Many years ago one remembers talking to an American journalist who had come to London under the impression that British newspapers needed what in those days was called "hustling." He had the idea—common in that country at the time—that British newspapers were dull because they did not contain coloured pictures and did not appear with front pages that looked like posters owing to the magnitude of the type used for headings.

When he had become accustomed to the fact that we preferred reading-matter to contents-bills and examples of the draughtsman's lack of art he became a fairly broad-minded critic—of the Yellow Press of his own country.

Regarding the different policies, he said he was most impressed by the fact that in England the Press seemed to be entirely engaged in the work of deriding everything British and in pointing out how much better all things are done in other countries. The American Press, on the contrary, stroked their readers until they purred. They derided the institutions of other nations and pleased their readers by telling them that everything in God's own country was the best. If tales of appalling political corruption had to be told, the newspapers would console the public by saying that for ingenuity and vastness of design the world could show nothing to equal American corruption and political crime.

American thieves were the most brainy, American drunkards the most drunken, and American grafters the graftiest in the universe.

SELF-DEPRECIATION.

To some extent the war has opened the eyes of America to the perils of self-adulation, but Britain retains her fondness for self-deprecation. Our newspapers, almost without exception, ooze pessimism. The national sport is the baiting of the public servant, who, because he has an official ring through his nose, is unable to hit back.

All through the war we were slanged by every morning paper, by special editions throughout the day, and by three-halfpenny editions on Sunday. Up to the very moment of the Armistice we were told that we were losing the war; after the war we were told that our enemies would beat us yet, and that if they did not our victory would ruin us for ever and ever, amen. One is getting rather tired of it.

The story of the Flying Services and the R.A.F. is a never-ending serial of abuse. Our critics in the daily Press would lead the public to believe that the greater part of the Force is made up of wild, overpaid officers given to drunken orgies and less respectable crimes, that the airman is an undisciplined lazy Cuthbert who tunnelled his way into the Force by influence in order to escape the trenches, and that every action of the Air Ministry has been inspired by lunatic minds.

Our dirty linen has not been washed in public; it has been flaunted unwashed. If any paltry charge can be trumped up, it is "An Amazing R.A.F. Scandal." If, in the terrible struggle we had to gain the mastery of the air, a little more money was spent than the ignorant Press think necessary, we have accusations of bribery and graft. If a youthful R.A.F. officer makes a slip from virtue, specially trained muck-rakers of the Press expend their iron and gall over him, and we have articles on the immorality of the R.A.F. written by "Our Own Co-respondents," judging by the knowledge displayed regarding such matters.

It is easy to say that there is no smoke without fire; but it is equally true to say that a very small spark may become a big blaze if fanned maliciously.

The campaign of calumny has been carried out so effectively that it seems likely that the Force will be known as the Riff-R.A.F. for ever.

Of course, there have been scandals; there always will be. Of course, there have been muddles; the only people who never make mistakes are those who never do anything. Of course, we are open to criticism because we dared to serve and take the pay of those who succeeded in avoiding service. Of course, we had black muttons among us—some of these ebon rams were damned good fighters.

THE OTHER SIDE OF THE PICTURE.

But in the post-mortem on the war that is now sitting we hear nothing of the other side. Our critics know nothing of the difficulties under which we laboured in the days when all seemed dark. While the outsiders jeered at the "Rabbits" in vast hotels and derided the beauty show of uniformed flappers and called down the wrath of Heaven because they took afternoon tea, the foundations were laid of the final victory in the air.

It is so easy to criticise and so hard to build up a vast organisation in the stress of a world war. It is so easy to raise a cheap laugh over a departmental letter dictated by an overworked amateur official who has had to learn his job at a moment's notice, and which has been typed by an uneducated flapper because no trained typists are available.

Of course, we blundered and muddled. It is so easy to be wise now and to see our mistakes, but most of us blundered in good honest ignorance—not through slackness. The will to win was there.

We worked with tools that were not the best. Our airmen were mostly low-categoried men, throw-outs from the other Services, but the percentage of slackness among them was probably lower than in the Army, though perhaps they did not look so smart when off duty.

One wearies of the "scandals," the fault-finding, and the heart-burnings over blunders that cannot be remedied now. It is all very well to be modest and self-deprecatory, but, hang it all, we might as well remember that, in spite of all the difficulties and muddles, we did reach the stars in the end.

THE NEW R.A.F. TITLES.

It is notified by the Air Ministry that an Order has been promulgated directing that the new titles for officers of the Royal Air Forces are to be brought into use in the Force forthwith.

The new titles, which were published on Aug. 4th last, apply to all officers of the R.A.F., whether permanent or temporary, attached to or seconded for service with the R.A.F.

ANOTHER TEA-CUP STORM.

According to information sent to the "Daily Express" by one of its readers:—"At the Eastchurch Aerodrome, near Sheerness, on the occasion of an official inspection last Wednesday, many workers, male and female, earning from 52s. 6d. to 60s. per week, were granted a half-holiday, so that they should not be seen.

"Men who have a job waiting for them are being retained, while men who have nothing to do are being demobilised. Demobilised men who cannot find employment are, of course, entitled to out of work pay, while the retained man costs the Government a considerable sum."

This merely strikes one as another example of the prominence given by the newspapers to the small "scandals," while no attention is given to the great ones.



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The WORLD of AERONAUTICS

NEWS OF THE WEEK FROM ALL QUARTERS

The Schneider Cup Race.

The British eliminating trials for the Schneider Cup race are being held on the afternoon of Wednesday, Sept. 3rd—too late to be reported in this issue of THE AEROPLANE.

The Avro seaplane made its first trial flight on Aug. 29th at Hamble. The tests were successful in that the machine was in excellent trim and showed a good turn of speed. On landing one float was damaged, but clever handling by the pilot, Capt. Hammersley, brought her safely to the beach.

The Fairey competitor has made a number of test flights at Hamble. It is understood that the speed attained was quite appreciably in excess of the design estimates, and that this machine will be a serious competitor even if the sea at Bournemouth on the day of the race is glassy smooth.

No details of the foreign competitors are available at the time of writing—other than those already published. It is, however, gathered that the two Nieuports entered will be, to all intents, of the type used by Lieut. Casale in the height and speed records recently chronicled, fitted with a light float undercarriage. The Spad is believed to be the Spad Herbemont type—illustrated in this paper recently—similarly adapted to the race.

For the Nieuport Company, M. Prévost—whose deeds were famous in pre-war days—and M. Kirsch will be the reserve pilots. It would be interesting to see M. Prévost again take the air in a great race, and his appearance would be popular.

The Savoia—Italy's sole representative—will probably be of the flying-boat type, but no details are yet to hand.

The England to Australia Competition.

There are four entries up to the present for the £10,000 prize offered by the Australian Government for the first successful flight from England to Australia by an Australian. The "Newcastle Chronicle" gives the names of one group of competitors. They are Lieuts. C. P. Rendle and D. R. Williams (pilots), G. H. Potts (engineer), and Capt. Wilkins, M.C. (navigator). All but Lieut. Rendle, who served in the R.A.F., were members of the Aus. F.C.

Capt. Wilkins was a member of Steffensen's Polar Expedition (1914-16), and for two years, at the end of the war, he was an official photographer for the A.I.F. on the Western Front.

They will use a Blackburn "Kangaroo," fitted with 240 h.p. Siddeley-Puma engines. They are taking no spare parts. According to the conditions of entry the journey must be completed in 30 days, and a stop must be made at Singapore.

The route to be taken is as follows:—London, Turin, Crete, Cairo, Karachi, Calcutta, Singapore, Surabaya, Timol and Port Darwin (Australia). This is approximately 10,000 miles by air.

No attempt can be made before Sept. 8th, the date on which the monsoon season in India normally temperates.

A Fatal Accident.

One regrets to record that Brig.-General Charles Lee (late R.A.F.), was killed at Weston-Super-Mare on Monday evening, September 1st. He was flying a machine and had with him two passengers, both of whom were injured. It appears that when at a height of between one and two hundred feet the engine failed, the machine sideslipped, and then nose-dived on the Weston-Super-Mare golf links.

The passengers were Lt. A. J. Andrews, of the 20th London Regiment, and Mr. Roderick Smith. The former is suffering from concussion and abrasions, and the latter from severe facial injuries, but both are progressing favourably.

Brig.-General Lee was at one time at the Air Ministry. He had seen service overseas, and was head of the British Aviation Mission to the United States of America, and did much good propaganda work for the British aircraft industry. Recently he was appointed air transport manager to A. V. Roe and Company.

The British Association at Bournemouth.

At the meeting of the British Association to be held at Bournemouth from Sept. 9th to Sept. 13th there will be discussed, among many other subjects, aviation during the war, aerial routes, aerial photography, and wireless telegraphy. The general meeting will be held in the Winter Gardens Pavilion, commencing with the presidential address by the Hon. Sir Charles Parsons, on "Engineering and the War."

The New R.A.F. Ribbon.

The following letter appeared in the "Times" of Aug. 30th.

Sir,—The changes in the ribbons of the Royal Air Force crosses and medals have come at a time when economy should be the order of the day. I am not aware of the contract prices of the ribbons in question, but it would be interesting to know what the alteration will cost—(1) the Government for the free issue of the new ribbon and the "scrapping" of the old; (2) to firms who possess many hundreds of yards of the old ribbon, which is now useless. The change from horizontal to diagonal bars of colour and white was presumably introduced for simplicity, but the orders as to the wearing of the new ribbons are complicated in the extreme, while both varieties are equally tasteless. The range of colour combinations is infinite. It would have been quite possible to design ribbons of the ordinary sort which, while distinctive, do not resemble the covering of a mattress or the material commonly used for braces. Moreover, the designers of the D.F.C. and the A.F.C. cannot be congratulated upon their taste, for the crosses are unnecessarily large, undignified, and vulgarly decorative. Those responsible for such things, however, do not appear to have much originality, for the new R.A.F. long service medal ribbon, half blue, half red, with white edges, must be suspiciously like the special H.A.C. Territorial ribbon, half blue, half red, with narrow yellow edges. ARIEL.

A Difficult Flight.

The Porte type Gosport F5 flying-boat that was at the E.L.T.A. Exhibition at Amsterdam had a very rough return voyage to England. The flight from Amsterdam to Felixstowe was made against a 50 or 60-miles an hour wind, and at times it was necessary to steer 35 degrees west of the true course. The crossing was, however, made in just under three hours.

When the flying-boat alighted at Felixstowe the sea was so rough that green waves washed over the lower planes and one hour and a half passed before a boat was able to take off the crew, which consisted of Col. R. Hope Vere, A.F.C., the pilot, Mr. H. Volk, Mr. Nicholson, and two others.

The Rolls-Royce Eagle VIII engines ran perfectly throughout. The seaworthiness of the flying-boat was very thoroughly demonstrated, for in spite of the rough sea which submerged the lower planes no damage of any kind was done to the machine.

Alleged Smuggling by Air.

At Trelleborg a case against Dr. Stockhausen and the Countess of Solms-Wildenfels is being heard. They are charged with smuggling valuables into Sweden by aeroplane. Some of the articles belonged to Prince William of Wied.

M. Lidfors, of Stockholm, who is counsel for the accused persons, explained that the Prince of Wied had a permit to export his fortune to Switzerland, but considered Sweden a safer place. The numerous German railway robberies induced him to carry his valuables by aeroplane. M. Lidfors declared that the charge of attempting to deceive the Customs authorities was ludicrous, as the duty only amounted to kr.265 (£14 14s.).

The evidence showed that Dr. Stockhausen and the Countess of Solms-Wildenfels tried to escape, and that they denied before the police that they had any valuables in their knapsacks.

The 14th Wing, R.A.F., Italy.

A dinner has been arranged for officers of the 14th Wing, R.A.F., Italy, at the Imperial Restraurant, Regent's Street, at 7.45 p.m., on Sept. 20th. Any officer of the unit who wishes to attend should forward a cheque for £2 4s. to Officer Commanding, No. 2 (Training) Group, R.A.F., Uxbridge.

No. 40 Squadron, R.A.F.

A dinner is being arranged by 40 Squadron, R.A.F., for Friday, Sept. 26th. Those who wish to attend should communicate before Sept. 19th with Capt. H. C. Todd, R.A.F. Club, 13, Bruton Street, W., or Major the Rev. B. W. Keymer, H.Q. Midland Area, R.A.F., Leamington Spa.

The Paris Aero Salon.

The organiser of the Paris Aero Salon to be held in December is M. Granet, Commissaire-General du 6E Salon Aeronautique, 12, Rue Anatole de la Forges, Paris.

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In addition to Aircraft Radiators the following are some of this year's Gallay Successes.

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This letter constitutes a fine testimonial to Gallay Workmanship and Material.

We supplied these radiators in the ordinary course of business, and had no idea of the strenuous use to which they were to be put, until this report of their faultless performance came to hand.

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Dear Sirs,

You may be interested to know that the Radiators supplied by you were used in the construction of the "SEABIRD", the machine designed and built by this Company for commercial purposes, which recently made a non-stop flight to Madrid, a distance of 900 miles, in 7¾ hours.

This is the first direct flight from London to the Spanish Capital, and with the exception of the Vickers "Vimy" machine which flew the Atlantic, we believe we are correct in stating that our machine is the only one of British design which has completed a non-stop flight to its destination after covering as great a distance.

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The WORLD of AERONAUTICS (continued)

A South Pole Expedition.

The British Imperial Antarctic Expedition will set out in June, 1920, for five years of exploration in the Antarctic. Mr. John L. Cope, who accompanied the Imperial Trans-Antarctic Expedition to the Ross Sea in 1914-17, is leading the expedition. An aeroplane is to be taken, and both it and the ship will be equipped with wireless telegraphy.

After leaving England in June they propose to sail for Wellington (New Zealand), and then proceed to Macquarie Island, where a geological survey is to be made. Wireless and meteorological stations will be established at Scott Island, and headquarters will be made at New Harbour.

The distance of the Pole from the base from which the aeroplane will start is 750 miles. A sledge and extra provisions will be carried on the machine in case it breaks down. Consequently, a minimum of fuel only can be taken.

High mountain ranges have to be crossed, so it is proposed, on the journey to the Pole, to dump half the petrol before they are reached.

It is hoped to use directional wireless from the base, and so get "tail bearings" on the aeroplane.

Aerial navigation is greatly dependent on meteorological forecasts. Antarctic information would help tremendously in making long-range weather charts.

One would think that rather than carry a sledge on the aeroplane another machine might well be taken on the expedition. This could locate the first if it had any trouble and carry petrol and spares to it from the base.

A more sensible way of making a dump of petrol would appear to be to make it on a trip previous to the attempt to reach the Pole. If the sledge were then dispensed with a good quantity might well be carried over the mountains and dumped on the other side.

From Propellers to Watches.

A news-sheet stated recently that "the myriad aircraft factories which turned out fuselage and propeller and aileron during the war have gone back to the manufacture of pianos and watches and perambulators."

The machinery for the manufacturing of propellers, etc., would not appear to be easily adaptable to the production of watches, but the British are an ingenious race.

A Change of Address.

The Technical Supply Branch, Canadian Air Force, is moving from 245, Oxford Street, London, to Ottawa. Letters for the branch should in future be addressed to "The Chairman, Canadian Air Board, Ottawa, Canada," and marked "for attention of O/C. Technical Section."

For the Amateur Aviator.

Writers who had the enormous advantage that ignorance gives to those who trade in fiction were fond of stating that after the war thousands of people would buy aeroplanes for private use and be their own pilots, just as ten of thousands of people own and drive their own cars.

These sanguine prophecies do not seem likely to be realised for some time. Thousands of demobilised pilots have bought cars or motor-cycles with their gratuities, in spite of high prices, but one hears of very few who have bought aeroplanes, although the Air Ministry has been almost ready to give them away.

The fact is, of course, that the machines designed for the war are quite unsuitable for private use owing to the expense of upkeep The enthusiastic amateur requires something that he can keep in tune himself without the assistance of half-a-dozen mechanics. Generally speaking, machines designed during the war were so planned that even the smallest adjustment to the engine was a matter of extreme difficulty. In some cases a machine had to be partially dismantled before any adjustment could be made to the carburetter or magneto. No motorist would tolerate a car so designed that the body had to be removed and the engine taken out of the chassis before the points of the magneto could be adjusted.

For commercial and pleasure purposes in order to save labour it will be necessary for aeroplane designers to give much more attention to "get-at-ability." A few post-war low-powered machines show that some consideration has been given to this point, but there is still much to be done.

An Altitude Record Claimed.

On July 25th, Roland Rohlfs, a Curtiss test pilot, claimed an American altitude record by ascending to a height of 31,100 ft. The machine used was a Curtiss "Wasp" triplane with a 400 h.p. Curtiss engine. Under Government tests it has attained the speed of 160 m.p.h.



An Aerial Photograph of Boulogne taken during the trip of the first machine to fly to Paris on the London-Paris Air Service.



BRITISH RECORD.

The Royal Aero Club has informed D. Napier & Sons, Ltd., that the speed attained by Captain Gathergood when he won the Aerial Derby with a 450 h.p. Napier "Airco" machine on July 21st has been accepted as a British Record for a closed circuit; the speed on that occasion was 129.3 miles per hour.

The magnetos used on the above-mentioned aeroplane were B.T.H. type AC.12s.

The British Thomson-Houston Co., Ltd.,
Lower Ford Street, Coventry, England.
Member of the British gnition Apparatus Association.

B T-H

The WORLD of AERONAUTICS (continued)

Much Pay and No Work.

A Flight Serjeant of the R.A.F. has written to the "Times" as follows :—

". . . I . . . have earned nothing in the Air Force for months, and have been paid 9s. 3d. a day for it. I have applied on six occasions for demobilisation, and have stated my willingness to forfeit all bounty and pay, quite £50, for an Army discharge. The peace establishment of my present section is one Serjeant; there are now three Flight Serjeants and two Serjeants doing this one-man job. The difference in actual pay is £2 4s. 9d. a day, exclusive of rations, clothing, separation allowances, and accommodation. There are dozens here in a like state. Why we are not demobilised is a mystery. A telegram sent from the Air Ministry on June 3rd, 1919 (Reference A.M.T./950/Demob.) authorised the discharge of N.C.Os. and men enlisting before June, 1916. I enlisted in February, 1916."

Air News.

The "Central Airnews," of 104, High Holborn, W.C.1, is a new venture for the supply of aviation news to the public Press. According to the prospectus :—

"The universal demand for aviation news and articles has led many non-technical editors to accept penny-a-line trash from the pens of office-desk airmen, usually dwelling on the sensational side of flying—such as stunts, crashes, etc. "Central Airnews" was founded to combat this tendency by supplying popularly written yet high-class articles, for the benefit of aviation; and, at the same time, to pay its way by the sale of these articles, news paragraphs, photos, etc."

The venture has one's good wishes.

The Truth.

In an article upon the use of aeroplanes for mail carrying "Truth" says :—

"The aeroplane is a machine that must do its work quickly, and then be put on the scrap-heap. The life of its engine is only about 100 hours, but if in the 10,000 or 12,000 miles it travels in that time it can earn its own cost and a fair profit for its owners it is all to the good of trade and progress to scrap it for something newer and better. A point that Mr. Illingworth and others who think in terms of efficiency would do well to bear in mind is that the aeroplane in flight is, by reason of its vastly superior speed, more efficient than any other vehicle of locomotion, and that is surely worth something in these days."

One agrees with most of the views expressed, but one can assure "Truth" that the life of a modern aero engine is considerably more than 100 hours.

Grumbles.

The new rank titles have not been received with pæans of joy by the R.A.F. It was not to be expected that the changes would be welcomed, for we are all inclined to be conservative. Critics say that the rank titles are an unpleasing mixture of those of the Navy and Army, for example, Marshal is distinctly an Army rank, Commodore Naval, Commander suggests the Navy, and Squadron Leader turns over thoughts to Cavalry.

The junior ranks appear to be most disturbed. Sec. Lieuts. say that Pilot Officer does not sound like a commissioned rank; it suggests Petty Officer or Warrant Officer. Flight Lieutenant is generally considered a poor substitute for Captain, which was a rank that the general public understood.

The prefix "Flight" to the public does not imply a unit; to them it means aviation. It may possibly please a few administrative Captains to bask in the glamour of a title that implies to the populace that they fly, but they are by no means pleased to return to the rank of Lieutenant which they held for dreary years before promotion came.

One has not met many Majors who are pleased with the new title of Squadron Leader. Again, this seems a step back. Colonels who become Group Captains are equally unhappy.

In time the R.A.F. may become accustomed to the new rank titles, but it is useless to pretend that they are popular at present. As somone remarked at the R.A.F. Club the other day, "the only decent thing they can do is to give us all a step up to compensate us. At present it seems that we have all been demoted."

No statement has yet been made as to the position of demobilised officers. A very large proportion of them hold letters from the Air Ministry stating that they are permitted to retain the ranks of Colonel, Major or Captain, as the case may be. Most of them value this courtesy, and the apparent retrogressive step is anything but pleasing. A Colonel who has been given the right to retain that honourable rank for life cannot be expected to feel flattered if he is in future to be known as a Group Captain, a title which, for many years to come, will not indicate to the world the rank he held in the war.

Aeroplane versus Motor-Car.

The "Aircraft Journal" of America tells how an aeroplane was used for the purpose of catching a motorist at Los Angeles.

A motor-cycle officer tried to overtake a speed maniac going at 60 miles an hour or thereabout in one of the suburbs of the city. He was forced to stop due to engine trouble, but being near a commercial aviation field and being an air pilot himself, he obtained the use of an aeroplane and went after the offending motorist at the rate of 90 miles an hour. He made a good landing two miles ahead of the motor culprit, and the latter, slowing down, thinking the pilot was in trouble, was coolly informed that he was under arrest. It was the first case in the court records there of an arrest for automobile speeding by aeroplane.

Out of Work.

An officer, late of the R.A.F., who has been seeking employment since he was demobilised last March, was offered recently a job as commercial traveller for a drapery house. He regarded this as an insult. One knows of others, however, who are acting in the right spirit by taking any work that offers a living wage while they are looking for the position to which they think they are entitled. There is no doubt that many of the stories one hears of hard luck are due to the fact that large numbers of young pilots have been spoiled by the high pay and rank they enjoyed in the R.A.F. and are not ready to take positions that they would have accepted gladly before the war. One meets hundreds who idle the time away so long as their gratuities hold out, and then wail about the treatment they receive from an ungrateful country. These are not the type needed to-day for the work of reconstruction, and it is not surprising that when they do come to the end of their ready money they find themselves unable to obtain positions of any sort. There are some cases that are deserving of sympathy, but not these.

A Sports Meeting.

The staff and employees of the Weybridge Works of Vickers, Ltd., held a successful second annual sports meeting at Byfleet on Aug. 23rd, which was organised by Mr. C. Choate.

Although the ground was not an ideal one for the purposes of an athletic meeting, good tracks were prepared, and some 2,000 spectators witnessed keen running and close finishes.

The finish of the final of the 100 Yards Open Handicap was very close, S. Usher (of the Army Gymnastic Staff and Surrey Athletic Club) just beating W. A. Hill (Amateur 100 and 220 Yards Champion) by a foot in 9 4-5 sec.

Prior to the sports an informal luncheon was served in a large marquee erected on the ground.

Included among the company who sat down were Sir Arthur Whitten Brown, K.B.E., Lady Brown, Sir John Alcock, K.B.E., D.S.C., and his fiancée, Capt. Vickers, Capt. Acland (Chief of Vickers Aviation Department), Mr. and Mrs. Raynham, Mr. and Mrs. P. Maxwell-Muller, Capt. Green, Lieut. Wilson, Mr. A. Knight (Works Manager), and Mr. R. K. Pierson (Chief Designer).

There were no speeches, but one might almost say that it was a farewell luncheon to Sir A. Whitten Brown, as he is leaving England on Sept. 20th for America, where he will take part in some special flying.

Perhaps the most attractive feature of the proceedings was the exhibition of the Vickers "Vimy" Transatlantic biplane, which had been thoroughly overhauled. Capt. Sir J. Alcock and Lieut. Sir A. Brown, who were given a great reception, were kept busy accompanying visitors to the machine and explaining the functions of the "joy-stick," etc., to them.

COMING EVENTS.

AUGUST.

Amsterdam Aircraft Exhibition. (Still open.)

SEPTEMBER.

Wednesday, September 3rd.—Henlow Recruiting and Repair Depot, R.A.F. Second annual Sports at the R.A.F. Cricket Ground, Henlow.

Wednesday, September 10th.—Schneider Cup Competition, Bournemouth.

Saturday, Sept. 20th.—14 Wing, R.A.F., Italy. Dinner at the Imperial Restaurant, Regent Street, London.

Friday, Sept. 26th.—40 Squadron, R.A.F. Dinner at place to be announced.

DATES TO BE ANNOUNCED LATER.

Hendon-Paris-Hendon Air Race.

The "Daily Express" £10,000 Prize Competitions.

Hendon-Manchester-Hendon Air Race.

Are Motorists Lazy?

A well-known writer says:

"The A.A. is helping to make them so."

"Speaking as one who has never looked for a salute from A.A. patrols, but who has invariably received it, I have always appreciated their unfailing courtesy and willingness even to go out of their way to assist,



and that is, I think, the experience of most road users, but all the same, I confess to a feeling that in wanting to do so much for the motorist in roadside repairs and tyre changing, the A.A. is quite unconsciously helping to make motorists the laziest people on the road."

The above paragraph, taken from a motoring article in a London daily paper, though acknowledging the efficiency of the Automobile Association's Road Service does not do justice to its comprehensive character.

The khaki-clad A.A. patrol also gives reliable road information, warns members of bad road conditions and indicates alternate routes, renders first aid to man and machine, recovers property dropped on the road, procures replacements, and generally assists members in road difficulties.

The Roadside Telephone Service—of which the A.A. was the pioneer and remains the sole provider—includes a telephone installation in each patrol's sentry box which is at the service of any member passing.

Officially appointed A.A. Repairers undertake repairs in an efficient manner and provide replacements at reasonable charges whilst A.A. Hotels can be depended on for accommodation really satisfactory to Motorists.

In addition the A.A. supplies members with special routes to any part of the country and provides Free Legal Defence in any police court in the United Kingdom to answer charges under the Motor Car Act or D.O.R.A.

Whether the above privileges tend to make motorists lazy is a debatable point, but there is no denying the fact that they are of great benefit to and much appreciated by members of the Automobile Association.

If you are not a member of the A.A. send a post card to-day to the Secretary, The Automobile Association, 41, Fanum House, Whitcomb Street, London, W.C.2 for a free booklet and other information which will show you how to motor in comfort and safety.



CIVIL AERODROMES.

The following lists of aerodromes are issued by the Air Ministry as an addition to the lists recently published. It may be seen that in the majority of cases the aerodromes referred to below can only be considered as possible emergency landing-grounds. Attention is again drawn to the fact that these lists are purely provisional and subject to alteration or amendment from time to time.

LIST C (2).

Stations Temporarily Retained for Service Purposes.

It should be assumed that no facilities normally exist at these stations for dealing with civil aircraft. The aerodromes, however, may be considered as emergency landing grounds.

Aerodrome.	Nearest railway station and distance in miles.	Nearest town and distance in miles
BEVERLEY	Beverley (1), N.E.R.	Beverley (1)
BOSCOMBE DOWN	Amesbury (1½), L.S.W.R.	Salisbury (8)
BROOKLANDS	Weybridge (2), L.S.W.R.	Weybridge (2)
CATFIRTH (S)	Thurso, in Scotland, by boat	Lerwick (9), Shetland Isles
CHATTIS HILL	Stockbridge (2), L.S.W.R.	Stockbridge (2)
COLLINSTOWN	Portmarnock (5), G.N.R.I.	Dublin (6)
COVENTRY	Coventry (2), L.N.W.R.	Coventry (1)
CRAIL	Crail (½), N.B.R.	Crail (½)
CRAMLINGTON	Cramlington (1), N.E.R.	Newcastle-on-Tyne (7)
DONCASTER	Doncaster (1), G.N.R.	Doncaster (1)
DRIFFIELD	Driffield (2), G.N.R. and G.E.R.	Driffield (2)
EASTON-ON-THE-HILL	Stamford (3), M.R. and G.N.R.	Peterborough (12)
EAST RETFORD	East Retford (3), G.N.R.	Gainsborough (10)
FELTWELL	Lakenheath (1½), G.E.R.	Brandon (5½)
GORMANSTON	Gormanston (1), G.N.R.I.	Drogheda (6)
GULLANE	Gullane (1), N.B.R.	North Berwick (4)
HARLING ROAD	Harling Road (¼), G.E.R.	Thetford (6)
HARPSWELL	Kirton Lindsey (5), G.C.R.	Gainsborough (8)
HELPERBY	Brafferton (1), N.E.R.	Ripon (8)
HOOTON PARK	Hooton (2½), L.N.W.R. and G.W.R.	Chester (6)
KILLINGHOLME (S)	Harbrough (6), G.C.R. (Siding on Site)	Grimsby (9)
LAKE DOWN	Amesbury (5), L.S.W.R.	Salisbury (7)
LEIGHTERTON	Tetbury (6), G.W.R.	Stroud (10)
LINCOLN	Lincoln (1), G.N.R. and G.E.R.	Lincoln (1)
LONDON COLNEY	Radlett (2), M.R.	St. Albans (4)
LOPCOMBE CORNER	Grateley (4), L.S.W.R.	Salisbury (9)
MINCHINHAMPTON	Chalford (1), G.W.R.	Stroud (6)
NARBOROUGH	Narborough (2½), G.E.R.	Swaffham (5)
NEWHAVEN (S)	Bishopstone (¼), L.B.S.C.R.	Newhaven (2)
NORTHOLT	Northolt Junction (½), G.W.R. and G.C.R.	Uxbridge (1)
NORWICH	Norwich Thorpe (1), G.E.R.	Norwich (2)
PENSTON	Macmeray (1), N.B.R.	Haddington (5)
PORT MEADOW, OXFORD	Oxford (2), G.W.R.	Oxford (1)
RENDCOMBE	Foss Cross (2½), M.R. and L.S.W.R.	Cirencester (6)
ROCHFORD	Rochford (1), G.E.R.	Southend (5)
SEATON CAREW	Seaton Carew (1), N.E.R.	West Hartlepool (6)
SEDGEFORD	Sedgeford (1), G.E.R.	Hunstanton (5)
SHAWBURY	Hadnall (3), L.N.W.R.	Shrewsbury (10)
SHOREHAM	Shoreham (1), L.B.S.C.R.	Shoreham-by-Sea (1)
SHREWSBURY	Shrewsbury (1½), G.W.R.	Shrewsbury (1)
TADCASTER	Thorrer (2), N.E.R.	Tadcaster (4)
TERNHILL	Ternhill (2), G.W.R.	Market Drayton (5)
THETFORD	Thetford (2), G.E.R.	Thetford (2)
THROWLEY	Charing (4), S.E.C.R.	Faversham (6)
UPPER HEYFORD	Lower Heyford (2), G.W.R.	Bicester (6)
WADDINGTON	Waddington (1½), G.N.R.	Lincoln (5)
WESTGATE (S)	Westgate (¾), S.E.C.R.	Westgate-on-Sea (¼)
WHITLEY ABBEY	Coventry (2), L.N.W.R.	Coventry (2)
WITNEY	Witney (2), G.W.R.	Oxford (12)
WITTERING	Stamford (3), G.N.R. and M.R.	Peterborough (10)
YATESBURY	Calne (5), G.W.R.	Marlborough (9)

LIST D (a).

Aerodromes Licensed for all but larger types of Aircraft.

YEOVIL	Yeovil (1½), G.W.R. and L.S.W.R.	Yeovil (½), Somerset.

LIST D (b).

Aerodromes Licensed as suitable for "Avro 504 K and similar types of aircraft" only. Except in a very few instances accommodation does not exist. The licences have also been issued for limited periods only.

Aerodrome.	Nearest railway station and distance in miles.	Nearest town and distance in miles
ABERYSTWYTH	Aberystwyth (½), G.W.R.	Aberystwyth (½), Cardigan.
CHESTERFIELD	Chesterfield (2), M.R.	Chesterfield (2), Derby.
CONWAY	Conway (1), L.N.W.R.	Conway (1), Carnarvon.
DERBY	Normanton (1½), M.R.	Derby
HERNE BAY	Herne Bay (1), S.E.C.R.	Herne Bay (½), Kent.
NOTTINGHAM	Nottingham (2), M.R., G.N.R., and G.C.R.	Nottingham

Situated on Sands Not Available at High Tide.

HUNSTANTON	Hunstanton (½), G.E.R.	Hunstanton (½), Norfolk.
LLANELLY	Llanelly (1), G.W.R.	Llanelly (½), Carmarthen.
RAMSEY, I.O.M.	Ramsey (½), I.O.M.	Ramsey (½), I.O.M.
ROTHESAY, ETHERICK BAY	By boat to mainland	Rothesay (4), Isle of Bute.
SOUTHPORT	Southport (1), L.Y.R.	Southport (½), Lancs.
SWANSEA	Swansea (1), G.W.R.	Swansea (½), Glamorgan.
WESTON-SUPER-MARE	Weston-super-Mare (½), G.W.R.	Weston-super-Mare (½), Somerset

ROLLS ROYCE

WARNING

Changes to Rolls-Royce Cars

Rolls-Royce Ltd. have recently learned that attempts are being made by certain persons to "bring up to date" pre-war Rolls-Royce chassis by substituting for Rolls-Royce Springs of old type cantilever springs which are not of Rolls-Royce manufacture; also by substituting other radiators and bonnets which are not of Rolls-Royce manufacture. Some of these changes have been brought to the attention of the Company, who have found them to be not only unsatisfactory but possibly dangerous to the users. Owners who are asked to have such changes made to their Rolls-Royce cars, or potential purchasers of Rolls-Royce cars on which such changes have been made or may be suspected, should communicate with Rolls-Royce Ltd., 15, Conduit Street, London, W.1, and the Company will, for a small fee, inspect the chassis in question and inform the applicant what parts, if any, are not supplied by Rolls-Royce, and what the effect of such parts in their opinion is likely to be. Furthermore, any such alterations which interfere with or depart from Rolls-Royce standards will probably put the car out of action for an indefinite period in cases of accident or breakage, as Rolls-Royce new parts cannot be expected to replace foreign broken parts in a "bedevilled" chassis.

ROLLS-ROYCE Ltd., 14 & 15, Conduit Street, London, W. 1.

Telegrams: "Rolhead, Reg., London." Telephone: Gerrard 1654, 1655, 1656.

LIST E.

Stations No Longer in Use by the R.A.F.

These stations have been passed to the Government Surplus Property Disposal Board. They will be relinquished as soon as the Government property thereon has been disposed of. In many cases the aerodromes are now under cultivation, but it is probable that the sites still form the best emergency landing grounds in the immediate neighbourhood.

Aerodrome.	Nearest railway station and distance in miles	Nearest town and distance in miles
ALDEBURGH	Aldeburgh (2), G.E.R.	Aldeburgh (2)
ASHINGTON	Longhirst (1), N.E.R.	Morpeth (5)
ATHLONE	Athlone (2), M.G.W.R.	Athlone (2)
ATWICK	Hornsea (3), G.N.R.	Driffield (10)
AYR	Ayr (1), G. & S.W.R.	Ayr (1)
BACTON (c)	North Walsham (4), G.E.R.	Norwich
BEAULIEU	Brockenhurst (6), L.S.W.R.	Southampton (10)
BEKESBOURNE	Bekesbourne (1), S.E.C.R.	Canterbury (4)
BEMBRIDGE	Bembridge (½), I. of W. Rly.	Ryde (6)
BEMBRIDGE (s)	Bembridge (¼), I. of W. Rly.	Ryde (6)
BURGH CASTLE	Great Yarmouth (2), G.E.R.	Great Yarmouth (2)
BUTLEY	Melton (3), G.E.R.	Woodbridge (5)
CATTERICK	Catterick Bridge (1½), N.E.R.	Richmond (6)
CHICKERELL	Weymouth (1), G.W.R. and L.S.W.R.	Weymouth (1)
CHINGFORD	Ponders End (½), G.E.R.	Chingford (2)
COPMANTHORPE	Copmanthorpe (¼), N.E.R. and G.N.R.	York (5)
COVEHITHE (c)	Southwold (5), G.E.R.	Southwold (5)
EDZELL	Edzell (2), Cal. Rly.	Montrose (9)
ELMSWELL	Elmswell (2), G.E.R.	Bury St. Edmund's (10)
ELSHAM	Elsham (3), G.C.R.	Barton-on-Humber (6)
FAIRLOP	Fairlop (1), G.E.R.	Romford (4), Essex
GOLDHANGER	Maldon (3), G.E.R.	Maldon (3)
GORING-BY-SEA (c)	Goring-by-the-Sea (½), L.B.S.C.R.	Worthing (2)
GREENLAND TOP	Stallingborough (1½), G.N.R.	Grimsby (7)
HADLEIGH	Ipswich (9), G.E.R.	Ipswich (9)
HAINAULT FARM	Goodmayes (1¾), G.E.R.	London (8)
HAMBLE (s)	Netley (3), L.S.W.R.	Southampton (5)
HOLT	Holt (4), N. & G.N.J.R.	Norwich (11)
JOYCE GREEN	Dartford (2), S.E.C.R.	Dartford (2)
KIRTON LINDSEY	Kirton Lindsey (1½), G.C.R.	Gainsborough (12)
LEADENHAM	Leadenham (1), G.W.R.	Grantham (12)
LILBOURNE	Cliftonmill (1½), L.N.W.R.	Rugby (3)
MACHRIHANISH (c)	Campbeltown (2), on Campbeltown and Machrihanish Light Rly., from Campbeltown by Steamers	Campbeltown (2)
MANYWELL HEIGHTS	Bradford (5), G.N.R.	Bradford (5)
MARDEN	Marden (1), S.E.C.R.	Tonbridge (6)
MATTISHALL (c)	East Dereham (5), G.E.R.	East Dereham (5)
NEW HAGGERSTON (c)	New Haggerston (2¾), N.E.R.	Berwick-on-Tweed (7)
NEW HOLLAND	New Holland (¼), G.N.R. and G.C.R.	New Holland (¼)
NEWMARKET	Newmarket (1), G.E.R.	Newmarket (1)
NEWLYN (s)	Penzance (2), G.W.R.	Penzance (2)
OMAGH	Omagh (2), G.N.R.I.	Omagh (2)
OWTHORNE	Withernsea (¼), G.W.R.	Hull (16)
PADSTOW (c)	Padstow (2), G.W.R.	Bodmin (12)
PENSHURST	Penshurst (1), S.E.C.R.	Tunbridge Wells
PETERHEAD (s)	Peterhead (1), G.N. of S. Rly.	Peterhead (1)
PORTHOLME	Huntingdon (1), G.N.R.	Huntingdon (1)
PRAWLE POINT	Kingsbridge (7), G.W.R.	Plymouth (22)
REDCAR	Redcar (1½), N.E.R.	Middlesbrough (6)
RIPON RACECOURSE	Ripon (2), G.N.R.	Ripon (2)
RUSTINGTON	Angmering (1), L.B.S.C.R.	Littlehampton (2)
SCALE HALL	Lancaster (1), L.N.W.R.	Lancaster (1)
SEAHOUSES	North Sunderland (1), N.E.R.	Alnwick (12)
SOUTHBOURNE (c)	Southbourne Halt (½), Emsworth (2), L.B.S.C.R.	Chichester (6)
STENNESS (s)	To Thurso by boat	Kirkwall (10), Orkney Islands
STOW MARIES	Cold Norton (2), G.E.R.	Maldon (5)
STRATHBEG (s)	Lomax (6), G.N. & S.R.	Peterhead (8)
TYDD ST. MARY (c)	Tydd (2), M.R. and G.W.R.	Long Sutton (3)
TYNEMOUTH	Tynemouth (1), N.E.R.	Newcastle-on-Tyne (8)
TURNBERRY	Turnberry (½), G.S.W.R.	Ayr (14)
UPWOOD (BURY)	Ramsey (2), G.E.R. and G.N.R.	Wyton (6)
USWORTH	East Boldon (1), N.E.R.	Sunderland (6)
WALMER	Walmer (1¼), S.E.C.R.	Walmer (¼)
WEST AYTON	Forge Valley (½), N.E.R.	Scarborough (5)
WESTWARD HO!	Northam, via Bideford (1), L.S.W.R.	Westward Ho (1)
WHITEBURN	Grants House (4), N.B.R.	Duns (8)
WYE	Wye (1), S.E.C.R.	Ashford (4)
WYTON	Huntingdon (5), G.N.R.	Huntingdon (5)

REFERENCES.—(s) Seaplane station. (c) Known to be under cultivation or otherwise unsuitable for landing.

AN AERODROME FOR SALE.

It is announced that the Ford aerodrome near Littlehampton, Sussex, is for sale as an aerodrome. It covers 167 acres, and has accommodation for three squadrons.

The Disposal Board of the Ministry of Munitions states that the buildings are of brick and timber. Water and electric power have been provided, the roads have been macadamised, and there is railway connection. The site is occupied by the Government under the Defence of the Realm Regulations, but can, if necessary, be purchased under, and subject to, the provisions of the Defence of the Realm (Acquisition of Lands) Act, 1916. Further information can be obtained at Charing Cross Buildings, London, W.C.2.

THE SALE OF BRITISH AIRSHIPS.

The Air Ministry announces that in view of the decision of the Government to curtail their airship programme, it has been decided to place certain airships, airship stations, stores, etc., on terms to be agreed, at the disposal of interested parties with a view to the commercial development of this type of aircraft. It is proposed as an initial step to hold a conference in connection with this matter on September 8th, at 3 p.m., in the Lower Hall, Australia House, at which the Under Secretary of State for Air will preside.

Bona fide applications from individuals or firms should be made to the Air Ministry (C.G.C.A.) for permits to be present.

Beardmore

THE WINGS OF COMMERCE will be vitally assisted by BEARDMORE AERO ENGINES

THE BEARDMORE IS NOT MADE FOR EXHIBITION STUNTS BUT FOR EVERY DAY SERVICE

Many leading Aircraft Manufacturers are adopting this famous engine as STANDARD POWER UNIT.

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AeroEngines

C.D.C.

AIRCRAFT FINANCE

Lloyd's and Aviation Methods.

Just now the sceptics are elated. Doubtless they magnify the deficiencies of the present-day aeroplane as an economically sound commercial proposition, as the unsullied enthusiasts exaggerate its capabilities. In both cases one can diagnose mental astigmatism.

Possibly the enthusiast is to be blamed equally as much as the sceptic, if not more so. Any way, it is maintained that commercial aviation is metaphorically trying to jump before it has learned how to walk.

Landing-Grounds Every Ten Miles.

On all long-distance aerial trade routes there should be landing-grounds every ten miles. These fields need not be exclusively devoted to aviation. They need not be owned by the aerial transport company or companies. So long as they are not under crop, but are used for cattle and sheep and physically conform to the requirements of grounding an aeroplane, they would serve the purpose excellently well.

Separated at intervals of ten miles in a defined aerial route, say, between London and Paris, they would be marked so as to be observable from "up above." Therefore, in the event of engine trouble or anything necessitating a forced landing, the pilot would be able to act with precision and without risking his own life and machine, etc., in a precipitate descent on unsuitable ground.

The Cost Would Not Be Large.

The cost would be trivial; in many cases it would not exceed a nominal rental. The effect would be beneficial because pilots, being acquainted with the existence of these reserved landing-grounds, would be more confident. This greater sense of security would obviously stimulate business, and insurance charges would be reduced automatically.

At first sight the idea may seem preposterously cautious; however, it is nothing of the sort. Great advances have been made with aero-engines, but, as everyone must candidly admit, they are not perfect, and frequently go wrong without warning.

The Registration of Navigators.

And there is another aspect of present-day commercial aerial transport that calls for serious consideration. It is the human factor. Quite true, there are regulations governing pilots and navigators; but, if one is to believe certain competent authorities connected with Lloyd's, such regulations are really of no intrinsic value.

Lloyd's—that is to say, those underwriters who specialise in aviation risks—demand a more business-like and scientific scheme regulating aerial navigators. They want something equal to the Board of Trade control over the officials of the mercantile marine. Having regard to the age of the new industry, perhaps they are asking too much. At the same time it must be admitted that the qualifications of a first-class fighting man are not necessarily those needed for an ordinary commercial venture.

A High Level of Intelligence.

What is wanted is a system of registration based on all that is known of the science of aviation. In order to secure the right to navigate a commercial aeroplane, the pilot must prove his competency by examination, as is the case with officers of the mercantile marine.

It is not fair, perhaps, to draw a strict comparison with the mercantile marine system; the aircraft pilot is half an engineer and half a navigator, whereas the two classes are quite distinct in the mercantile marine. This is a point that is overlooked by many people, who fail to recognise that, in order to obtain full qualification, the airman must be no ordinary person, but a bit of a scientist too.

In demanding an up-to-date system Lloyd's is thinking as much of its own interests as of the future of commercial aviation. Of course, as the losses diminish, the premiums on aviation risks must be reduced correspondingly, which is a goal worth striving for.

W. J. Davis.

CURRENT TOPICS.

Whitehead Aircraft, Ltd.

In pursuance of the provisions of the Companies (Consolidation) Act, a meeting of the creditors of the above was held on August 15th at the Cannon Street Hotel, London, E.C. The Chair was occupied by Mr. O. Sunderland, of the Automobile Trades Guardian Association, 15, Eastcheap, E.C.

The Chairman said it would be recollected that the company had passed resolutions in favour of voluntary liquidation and he had been appointed to act as liquidator to represent the interests of the creditors, while Mr. Oldham had been appointed to act with him to watch the interests of the shareholders. Meetings of the creditors had previously been held, at which figures from the last balance sheet of the company were presented. That balance sheet showed assets of £1,041,258, made up as follows: freehold and leasehold land and buildings, plant, machinery, fixtures, motor-cars, lorries, tools, jigs, flying-school equipment and goodwill as acquired from the vendor company with additions to date, less depreciation written off, £634,063; furniture, utensils, improvements, equipment and horses at cost with additions to date less depreciation written off, consumable stores and farm stock as valued by the company's officials £22,188; stock-in-trade and work in progress as valued by the company's officials £242,629; sundry debtors £54,855; amount due in respect of property sold with interest accrued thereon secured by second mortgage debenture £17,456; cash in hand £438; sundry unexpired portions of insurance, etc., £1,554; commission on shares issued £35,625; preliminary expenses £32,451.

On the liabilities side of the balance sheet were the following: share capital issued £518,697, less calls in arrears £1,652, leaving the net amount of issued capital at £517,044; first mortgage debentures and interest accrued thereon £147,015; advances by H.M. Government with interest accrued thereon secured by second mortgage debentures £203,009; cash due to bankers £10,301; sundry creditors £125,312; liquidator of Whitehead Aircraft, Ltd., £6,780; premiums on shares issued £21,310, and balance from profit and loss account £10,382. The authorised share capital of the company was £1,000,000, divided into 300,000 preference shares of £1 each, 650,000 ordinary shares of £1 each, and one million deferred ordinary shares of 1s. each.

Mr. Sunderland recalled the fact that two earlier meetings of the creditors had been held, when a committee was appointed to represent the interests of the creditors. That committee had suggested that the company should go into voluntary liquidation. He, as the chairman of the committee, was nominated as one of the liquidators to represent the interests of the trade creditors. Meetings of the shareholders were subsequently held, under the presidency of Lord Wemyss, when resolutions for the voluntary liquidation were carried by a very large majority. At the confirmatory meeting of the shareholders the resolutions were agreed to with practical unanimity. A petition for the compulsory winding up of the company had been presented, and had been before the Court on three occasions. He thought he could say that there was very little prospect indeed, judging from the remarks of the judge, of the petition succeeding. After the first meeting of the creditors at the First Avenue Hotel, the committee decided that they should get into communication with Mr. Ambrose Taylor, of the Cosmos Consolidated, Ltd., who negotiated for the taking over of the whole of the undertaking of the company at a figure which would allow of the creditors all being paid in full, while arrangements would also be made for the preference and ordinary shareholders in the concern to get something. Mr. Taylor had been given every facility to go down to the works of the company in order to make his own valuation of the assets for the purpose of making his offer. Within two or three days at the latest Mr. Taylor would

London-Paris Air Express

First Week's Record

			Offical Weather Reports.
Monday	Left London ...	12.30	Wind in Channel. Low Clouds with rain. Haze.
	Arr. Paris	2.45	
	Left Paris	12.30	
	Arr. London ...	2.45	
Tuesday	Left London ...	1.15	Forty miles an hour wind in Channel. Low Clouds. Rain.
	Arr. Paris	3.30	
	Left Paris	12.30	
	Arr. London ...	3.20	
Wednesday	Left London ...	12.43	35—40 miles an hour wind. Very gusty. Clouds only 800 feet nigh.
	Arr. Paris	3.10	
	Left Paris	12.30	
	Arr. London ...	3.20	
Thursday	Left London ...	——*	Hundred miles an hour hurricane in Channel. Continuous heavy rain.
	Arr. Paris	——*	
	Left Paris	12.30	
	Arr. London ...	2.20	
Friday	Left London ...	12.30	Rain at times. Low Clouds.
	Arr. Paris	2.45	
	Left Paris	12.30	
	Arr. London ...	3.0	
Saturday	Left London ...	12.30	North-westerly wind. Twenty miles an hour. Patches of low cloud.
	Arr. Paris	2.55	
	Left Paris	12.30	
	Arr. London ...	3.10	

* On Thursday the passengers and goods on this service were diverted to an alternate route because the wind was blowing in gusts at hurricane strength; rain was descending with torrential force, and masses of clouds were within 100 feet of the ground.

The attention of Bankers, Merchants, and firms who have houses both in London and Paris is drawn to the unique facilities afforded by the service, which will permit passengers, urgent documents, or express goods to be transported the 250 miles between London and Paris in an average time of 2¼ hours. The service, which has just been operated daily through a week of most tempestuous weather, has been started in order to demonstrate that, with the use of skilled pilots and fast machines, such an express air service can now be run with sufficient reliability to afford a definite, daily convenience to the business world.

LONDON:
AIRCRAFT TRANSPORT & TRAVEL, LTD.,
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PARIS:
COMPAGNIE GÉNÉRALE TRANSAERIENNE,
118, Champs Elysee,

Full particulars regarding Rates and Freights can be obtained from Aircraft Transport & Travel, Ltd., 27, Buckingham Gate, S.W.1., or from American Express Co., Queen Street and Haymarket; Thos. Cook & Son, Ludgate Circus, E.C.; General Transport, Ltd., 52, Crutched Friars; J. Jackson & Sons, 7-8, Charing Cross; Henry Johnson & Sons, 18, Byward Street; Lepaerial Travel, Piccadilly Circus (Criterion corner); Carter Patterson & Co., 6, Maddox Street, W., and 3, Cannon Street, E.C.; and Hernu Peron & Co., 98-100, Queen Victoria Street, E.C.

be making his offer. The latter would undoubtedly be one that would allow of all the creditors being paid in full.

A creditor asked how much was due to creditors at the present time, and Mr. Sunderland said that the amount due to the creditors was in the neighbourhood of £60,000. The liabilities shown in the balance sheet included the issued share capital of the company. The amount due to the debenture holders was £143,000, while £60,000 was owing to the Ministry of Munitions. The assets shown in the balance sheet were in excess of a million sterling.

Mr. A. Houston said he understood that a receiver had been appointed to act on behalf of the debenture holders. He inquired if the receiver was well disposed towards the creditors, and pointed out that if he was not he might have power to wreck any scheme.

Mr. Sunderland said the debenture holders were the Investment Registry, whose claim amounted to more than £140,000, and it was at the suggestion of the committee of the creditors that a receiver was appointed. The committee recommended that that course should be followed in order that the assets might be protected as proceedings had been commenced against the company.

Mr. Houston asked if more than one petition had been presented to the Court, and the chairman said it would be recollected that one of the petitioning creditors had already intimated that he would work with the other creditors in the matter. He suggested that the meeting should agree to an application being made to the Court for the appointment of a Committee of Inspection, and that the committee should also have power to apply for a supervision order. If a supervision order was made that would be a direct answer to any petition that was presented.

Mr. E. H. Hawkins (Messrs. Poppleton, Appleby and Hawkins) said it was not an ordinary meeting of creditors as they were all to be paid in full. He proposed a resolution confirming the voluntary liquidation of the company with Mr. Sunderland and Mr. Oldham as liquidators, and the appointment of a Committee of Inspection consisting of the representatives of the Palmer Tyre Co., Austers, Ltd., Matthews and Yates, Falcon Airscrew Co., and Bruntons and Co. Power was also given for an application being made to the Court for a supervision order.

The resolution was duly seconded and carried unanimously.

The following are creditors:—

	£
Anglo-American Oil Co...	3
Boyer, W., and Sons	14
Barber, E. L.	105
Consolidated Pneumatic Tool Co., Ltd.	5
Canning, W., and Co.	7
Ellis, C., and Sons	9
Earle Bourne and Co., Ltd.	57
"Financial World"	43
Forward Sparking Plug Co.	6
Grove Chemical Co., Ltd.	6
Oriental Tube Co., Ltd.	13
Royal Aircraft Factory	2654
Triplex Safety Glass Co., Ltd.	3
Westinghouse Cooper Hewitt Co., Ltd.	12
Aircraft Press, Ltd.	72
The British Trade Review	8
Willing and Co., Ltd.	3
"Flight"	64
Aeroplane and General Publishing Co.	99
The Joy-Stick	120
Jackson, E. H., and Co.	78
Scott, T. G., and Son	10
Scott, T. G. ("Aeronautical Journal")	6
Vaus and Crampton, Ltd.	3
"Merchant Service Review and Empire Trade Gazette"	32
"Aeronautics"	119
Indian and Eastern Eng.	23
Speke, L. V.	11
Tinlings, Ltd.	21
Taylor, W.	63
Wasley, R.	7
West Indian Producers	25
White, R., and Sons	21
Wright, J.	10
Yeates, A., and Sons	25
Bird, A., and Sons	8
Burrows, W. and J., Ltd.	53
Batger and Co.	11
Burroughs and Watts, Ltd.	46
Broad and Co.	20
Hopton and Sons	136
British Fire Appliances Co., Ltd.	16
Bristow, G., Ltd.	14
Benson, J.	4
British Patent Perforated Paper Co.	11
T. W. Breach	48
Brentnall and Cleland	17
Blundell, J., and Sons	15
Boilerine, Ltd.	7
Brunton and Son	21
Bluebell Polish Co.	3
Beacon Stone Co., Ltd.	147
Barimar, Ltd.	17
Brown Lenox and Co., Ltd.	33
Cash Supply Stores	71
Cellon, Ltd.	634
Cobbetts Newling and Co., Ltd.	9
Carborundum Co., Ltd.	17
Collings, F.	4
Cockburn, W.	8
Curtiss and Harvey, Ltd.	20
Cannon, B., and Co., Ltd.	42
Crypto Electrical Co.	8
Commercial India Rubber Manufacturing and Supply Co., Ltd.	23
Cort, A., and Co.	3
Connolly, J. W. and T., Ltd.	24
Camroux, Q. M., and Co.	111
Cavilla, Chas.	5
Connolly Bros. (Curriers), Ltd.	10
Clark, Forster and Co.	19
Cording, C., Ltd.	40
Doulton and Co.	103
Dewrance and Co.	9
Dunhills, Ltd.	21
Dick, W. B., and Co., Ltd.	305
Dawe, C. C., Ltd.	52
Dart Spring Co.	10
Dental Manufacturing Co., Ltd.	17
Dawbarn, A. G.	38
East London Rubber Co.	85
Christie, B. B., and Co.	14
Dankes and Co., Ltd.	36
Davis, R., and Sons	4
Dennis, E.	5
Ferguson Holness and Co., Ltd.	126
Howitt, A.	54
Harden and Co.	11
Isleworth Brewery	186
Lyons, J., and Co., Ltd.	16
Purtons	4
Acetylene Equipment Co. Ltd.	12
Ashby, W., and Sons	55
Aston Construction Co., Ltd.	12
Associated Portland Cement Manufacturing (1900), Ltd.	25
Aluminium Corporation Ltd.	101
Acetylene Corporation of Great Britain, Ltd.	42
Albert Wicker Manufacturing Co.	56
Aspinalls Enamel, Ltd.	177
Austin, E., and Sons	145
Ariel Motors and General Repairs	8
British Emaillite Co. Ltd.	772
British Oxygen Co., Ltd.	125
Brown Bros., Ltd.	100
British Aluminium Co., Ltd.	4
Baxter and Wray	4
Broad, J. M., and Co.	87
Berry, F., and Co.	39
Donne and Williams (1909), Ltd.	10
Electric Hose and Rubber Co., Ltd.	9
"Engineering"	2
Ensor, L.	3
Economic Electric, Ltd.	7
Edge, J.	125
Edison Swan Electric Co., Ltd.	150
Edwards and Son	16
Electric and Ordnance Accessories Co., Ltd.	7
Evershed and Vignoles, Ltd.	3
Educational Supply Association, Ltd.	6
Fielding and Platt, Ltd.	8
Ford Motor Co., Ltd.	6
Ford Motor Co., Ltd.	4
Froy, Wm., and Sons, Ltd.	11
Falcon Airscrew Co.	1167
Fletcher Russell and Co.	2
French, E. O.	792
The Fairbanks Co.	2
Gridley and Co.	5
Gledhill Brook Time Recorders, Ltd.	2
Glenfield and Kennedy	6
Wm. Good and Son	43
Greening, N., and Sons, Ltd.	2
Goldberg, Y.	152
Gasson, H. J.	3
Guilliet and Co.	4
Goodwin, A., and Son, Ltd.	5

(To be continued.)

VOLUNTARY LIQUIDATION.

Nicholson and Lord, Ltd., aeroplane manufacturers, etc., Walsall, Staffordshire.

The creditors herein were called together on Aug. 26th at the Institute of Chartered Accountants, Moorgate Street, E.C. The Chair was occupied by Mr. T. G. Mellors, C.A., of Nottingham, who stated that he had been appointed to act as the liquidator in the voluntary liquidation of the company. He added that there were three businesses carried on, and it was extremely difficult to ascertain the liabilities and assets of the different concerns. He had, therefore, included all the assets and liabilities of the three businesses in the statement of affairs. The statement showed unsecured liabilities of £20,577, while there were fully secured creditors for £14,999.

The securities held were estimated to realise £32,830, or an apparent surplus of £17,830. In addition, there were contingent liabilities of £155,000, but, at the moment, it was impossible to estimate what portion would rank for dividend. The assets were estimated to realise £34,752, from which had to be deducted £602 for preferential claims, leaving net assets of £34,149, or a surplus as regarded the unsecured creditors of £13,572.

The issued share capital of the company was £60,000, and as regarded the contributories there was a deficiency of £46,427. The principal secured creditors were Messrs. John Dawson and Co. (Newcastle), Ltd., who claimed £12,000 in respect of certain bills and cash advanced. Lieut.-Gen. Sir Arthur Sloggett was also a secured creditor for £2,000, for money lent. The contingent liabilities were in connection with large orders which had been placed in this country and America for the supply of goods, some portion of which had been delivered. During the year ended June, 1916, a profit was made of over £700, but in the following 12 months there was a loss of about £4,000. Messrs. John Dawson and Co. (Newcastle), Ltd., had financed the business.

A proposal seemed to have been made for the present concern, John Dawson and Co. (Newcastle), Ltd., and some other concerns to be amalgamated into one large company, but that had not taken place. The company of Nicholson and Lord, Ltd., was only registered on April 30th of the present year, and the agreement for the sale of the business to the company was dated May 14th, 1919. The consideration for the transfer of the business to the company was £60,000, which was discharged by the issue of shares, and the company agreed to discharge the liabilities and take over the assets. The creditors decided that an application should be made to the Court for the appointment of Mr. G. G. Poppleton, of Messrs. Poppleton, Appleby and Hawkins, 4, Charterhouse Square, E.C., and Birmingham, and Mr. A. C. Vincent, of 13, Queen Street, E.C., to act as joint liquidators in the winding-up of the company with Mr. Mellors. A committee of three of the principal creditors was also nominated.

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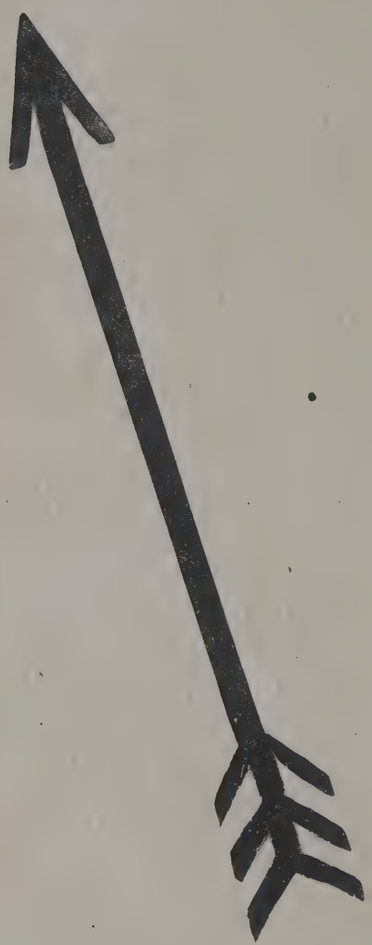
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INCORPORATING AIRCRAFT ENGINEERING, AERODYNAMICS, AIRCRAFT FINANCE AND COMMERCIAL AERONAUTICS AND MATTERS PERTAINING TO THE AERONAUTICAL ENGINEER AND THE AIRCRAFT TRADER.

THE WEEKLY COMMENTARY.

In a leading article Captain Sayers discusses some possibilities of the man-powered aeroplane, and suggests a new sport which may lead to considerable additions to the present knowledge of atmospheric conditions.

The machines built and projected by the Nieuport and General Aircraft Co. are dealt with in this week's instalment of "Modern British Aeroplanes."

The article upon the work of the American "Altitude Laboratory" is continued. The result of a series of tests on a Hispano-Suiza engine under conditions which correspond to altitudes of up to 30,000 ft. are given. These results are of very great value, and should enable aeroplane designers to estimate, with greater confidence than heretofore, the performance of projected machines at high elevations.

A note and some illustrations, by "Anglo-Dane," give interesting information as to the use of aircraft for civil purposes in Germany, and to the methods adopted to convert war-type machines to that purpose. These methods, it is interesting to note, differ in no way from those practised in this country.

A PROMISING FIELD FOR EXPERIMENT.

By Capt. W. H. SAYERS, late R.A.F.

The daily news-sheets have lately given a considerable amount of space to the feat of the French racing cyclist Poulain, who has succeeded in making a flight of 12 metres upon a flying bicycle.

The idea of the man-propelled flying machine is of great antiquity—there can be little doubt that even prehistoric inventors have come to happy ends in attempts at man-propelled flight—and since the advent of the aeroplane many and wondrous attempts have been made to solve the problem.

So far, most of these have been the work of uninformed enthusiasts carried away by the idea that the secret of flight was to be discovered with the aid of some new mechanism, and the subject has received little consideration from practical aeronautical engineers.

A Question of Speed and Power.

It is well worth while devoting a little time to an elementary investigation of what is and what is not possible. The whole problem is essentially one of power, weight, and speed.

An efficient modern aerofoil may have a ratio of lift to drag of 20 to 1 at its most efficient altitude.

An efficient modern aeroplane complete might reach a gliding angle of nearly 1 in 10.

Allowing for the fact that any aviette, or man-powered aeroplane, must be a slow-speed machine, and that at low speeds, owing to the effect of what are commonly known as "scale corrections," the ratio of lift to drag becomes lower, and that, on the other hand, the man-motor will not require either air or water cooling, and need not, therefore, be burdened with the head-resistance of radiators or their equivalent, it may safely be assumed that an aviette can be built with a gliding angle of at least 1 in 8.

Thus the thrust which must be exerted to maintain level flight under the conditions of minimum resistance is ⅛ of the total weight of the machine and the man.

Therefore the useful power required to maintain flight is equal to $\frac{W \times V}{8}$ ft.-lb. per sec., where W is the total weight and V is the speed of flight in feet per second.

This is at the rate of 0.023 h.p. per 100 lbs. of total weight per foot per second air speed.

The total horse-power which a man can exert is a very variable quantity. Under certain conditions, as running up a flight of stairs, a man may exert nearly 1½ h.p. for a short time. Some short-distance sprint cyclists can undoubtedly exceed this output considerably for 20 sec. or so.

No man can continuously exert 1 h.p. for any long time. Possibly some road-racing cyclists in the best of their form might maintain that power for half an hour or so, but very few men could go on working at any rate over ½ h.p. for an hour. Some very crude experiments made by the writer before the war, on a pedal-cycle turned into a dynamometer, indicated that to get the maximum power output from the cycle-pedalling movement required a very accurate gear adjustment, and that this adjustment varied greatly with the individual and with the conditions.

This is in accord with cycling experience, and the gear which will enable a man to give the maximum continuous output will not allow of his developing his greatest possible output during a few seconds.

If one assume that a man may give ½ h.p. for some appreciable time, and that a man-driven airscrew may develop 60 per cent. efficiency, the product of the total weight which he can support in the air and of the speed at which it is supported will be $\frac{1 \times 550 \times 60 \times 8}{2 \times 100} = 1{,}320$ at a gliding angle of 1 in 8.

The Possibilities.

That is, he might just support 1,300 lb. at 1 ft. per sec., or 650 lb. at 2 ft. per sec., or 130 lb. at 10 ft. per sec.

Even 10 ft. per sec.—about 7 miles per hour—is too

slow an air speed to be practicable. With a gliding angle of 1 in 8 it would not be possible to support much more than 1 lb. for every 4 sq. ft. of wing surface at this speed. As the permissible total weight at that speed is less than that of the average man, flight under these conditions seems impracticable.

Taking, however, the case of an athlete in good condition, capable of exerting, say, 1½ h.p. for a minute or so and 1 h.p. for half an hour, he would be able to keep a 200 lb. machine in level flight at 13 ft. per sec. for an appreciable time, and get a machine of the same weight to just fly at 20 ft. per sec. for a short time.

Now, at 20 ft. per min., the postulated gliding angle of 1 in 8 could probably be reached with a load of 1 lb. per sq. ft., or a machine of 200 sq. ft. and 200 lb. loaded weight; and if a 200 sq. ft. machine can be built for a total weight of 50 lb., a 150 lb. man might be just able to fly on it at 20 ft. per sec. for a few minutes.

It is not impossible to build a 200 sq. ft. glider for a total weight of 50 lb., even including a pedal gear and airscrew. Such a machine would not have the factor of safety demanded from the constructors of modern war machines, but then it will scarcely need it.

The figures which have been given are, of course, very rough estimates of what is possible—they are rather conservative if anything—and they show that, given careful design, it should be possible for a man to maintain himself in the air, for a short time and at a low air speed, by his own exertion. At the first glance this would seem to indicate that there is little use in pursuing the subject, except purely from a sporting point of view.

This, however, is not an entirely correct interpretation.

Soaring.

Most people who are in any way interested in aeronautics have heard of soaring flight. Many of them—even amongst those resident in this country—have seen the phenomenon and have watched birds holding their position, and even rising to a very considerable height—one sufficient to allow of a glide of several miles before landing—under favourable conditions, particularly in fairly hilly country.

It is also fairly well known that soaring flights have been made by man-carrying gliders, and that the accumulated evidence of experience with gliders, power-driven aeroplanes, and of that obtained from the observation of birds, show that soaring flight is undubitably—in the majority of cases—a phenomenon associated with rising currents of air.

Soaring flight of this type can only occur when the rate of ascent of the air current is equal to or greater than the minimum speed of descent of the aircraft.

The speed of descent of an aeroplane which has a gliding angle of 1 in 10 at a speed of 60 m.p.h. (88 ft. per sec.) is 8.8 ft. per sec., and at that speed and gliding angle it cannot soar in an up current of less vertical velocity than 8.8 ft. per sec. Up currents with this velocity are scarce in this climate, except as momentary occurrences, and soaring flight in such an aeroplane is therefore impracticable.

A man-powered aeroplane with a gliding angle of 1 in 8, at 20 ft. per sec., could soar in any up current whose vertical velocity exceeded 2½ ft. per sec.

There are grounds for believing that upward currents of fair extent and reasonable steadiness of about this velocity are not uncommon in England, and that soaring flight in such a machine would be quite possible under the conditions in which birds are found to soar with fair regularity.

Attempts to soar in a non-powered glider have never been conspicuously successful. Generally the evidence points to suitable air conditions occurring only over ground unsuitable for taking off and landing on with a glider.

On the other hand, there are many places in this country, and many more in some others, where it would be quite possible to take off on the top of fairly high ground and reach a landing ground in a valley below upon any reasonably controllable and fairly low speed glider, and where it would be possible, if one were able to fly level, or nearly level, after taking off, for half a mile or so, to reach positions where birds are known to soar without going out of gliding range of the landing ground.

Thus just that capacity which the aviette promises would be of immense help in investigating the possibilities of soaring on very lightly loaded aircraft, and such an investigation might lead to really useful results.

Any really successful solution of the soaring-flight problem has obvious possibilities from the sporting point of view, and even this aspect promises a very fair return for the expenses of experimentation.

Under certain conditions there might be a commercial value attached to this form of locomotion, but, over and above these possibilities, an aeroplane capable of soaring would be an extremely useful instrument for exploring the air and investigating the very complex local disturbances which occur therein.

A New Sport.

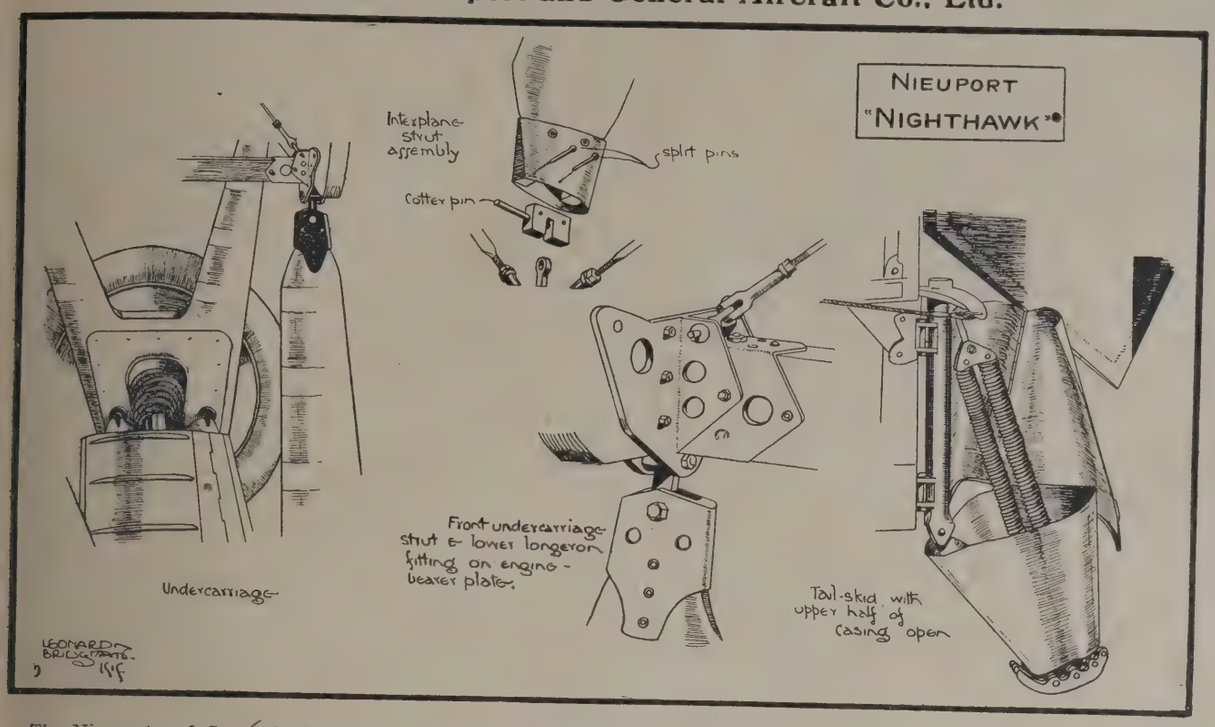
In its early stages "soar-hunting" will probably be a fairly dangerous pastime, but in the present state of aeronautical engineering, and with the enormous number of skilled pilots who are seeking for an outlet for their abilities, it should be possible to carry out a large amount of experimental work in this direction at a risk much smaller than that which attended the efforts at power flight of ten years ago.



The "Airco" 16—a DeH9a re-designed for passenger-carrying.

MODERN BRITISH AEROPLANES.

XIII.—The Nieuport and General Aircraft Co., Ltd.



The Nieuport and General Aircraft Co., Ltd., was founded some time prior to the outbreak of the late war mainly to build Nieuport designs in this country.

During the earlier part of the war the company came under the management of Major Heckstall Smith, who had been Assistant Superintendent of the Royal Aircraft Factory and Farnborough, and it has since then acquired from that establishment most of the more competent of the early technical staff thereof.

Of the products designed by the Nieuport Company since this occurred the Nieuport "Nighthawk" is the best known, but a number of other designs of the same origin are well worthy of attention.

THE NIEUPORT "NIGHTHAWK."

The Nieuport "Nighthawk" was designed in October, 1918, by the (British) Nieuport and General Aircraft Co., Ltd., to meet the requirements of the first R.A.F. Type 1 specification for the 1919 programme and was officially accepted from six other competitive designs. It was naturally intended primarily as a fighting scout, and as such was equipped with two fixed Vickers guns firing through the propeller, but owing to the cessation of hostilities it can now be supplied as a commercial or fast mail carrier, the space which would ordinarily have been taken up by ammunition boxes and chutes, in front of the pilot, being replaced by a compartment capable of holding a dead weight load of from 180 to 200 lb.

In general design the machine is a single-seater biplane fitted with a 320-h.p. A.B.C. "Dragonfly" engine.

The fuselage is built up in the customary manner of four one-piece longerons, cross strutted, and wire-braced throughout, fitting at the front end into special box fittings on the 11-ply engine bearer-plate and terminating at the rear at the rudder post. The fuselage is streamlined throughout its length by means of formers and bearers, over which the fabric is placed.

The engine is bolted direct to the engine bearer plate and as an additional precaution four tubular stays are fitted, running from the front edge of the crankcase to a fitting on the front of the engine bearer plate corresponding to the longeron fitting on the opposite side of the plate.

The pilot's seat is situated under the trailing edge of the upper plane, and on either side of the fuselage on the streamline are carried the two main petrol tanks capable of holding 17 gallons each which are held in place by steel bands. An additional tank is carried on the centre section which holds 6 gallons, making a total of 40 gallons or sufficient fuel for a flight of 3 hours at 20,000 feet.

Above the fuselage in the streamlining are carried the two fixed Vickers guns under which are the fibre ammunition boxes and chutes.

On the left-hand side of the pilot's cockpit is situated the tail plane operating gear, which consists of a continuous cable running over three pulleys, one on the left-hand side of the fuselage in the pilot's cockpit, and the other two on threaded spindles on two upright members immediately in front of the leading edge of the tail plane. Attached to the leading edge of the tail plane are two internally-threaded collars working on the spindles, which give vertical motion to the leading edge of the tail plane on forward and backward action of a vertical lever which is anchored to the cable in the pilot's cockpit.

The elevators are fixed to a single tube running through the fuselage and have a central operating lever, the hinges consisting of four steel bands running round the tube.

The rudder is balanced and there is fin area both above and below the fuselage. The tail skid is similar to the type employed in the SE5 and SE5a and is illustrated by a sketch.

The main planes possess no outstanding constructional features, being built up in the usual manner. Small transparent panels are inserted in the plane covering over all aileron pulleys, thereby facilitating inspection.

Two sets of interplane struts are fitted on each side of the fuselage. Ailerons are fitted to the upper and lower planes and are operated in the usual manner. The wing bracing throughout is of Rafwire, all flying wires as well as the landing wires in the inner bay being duplicated.

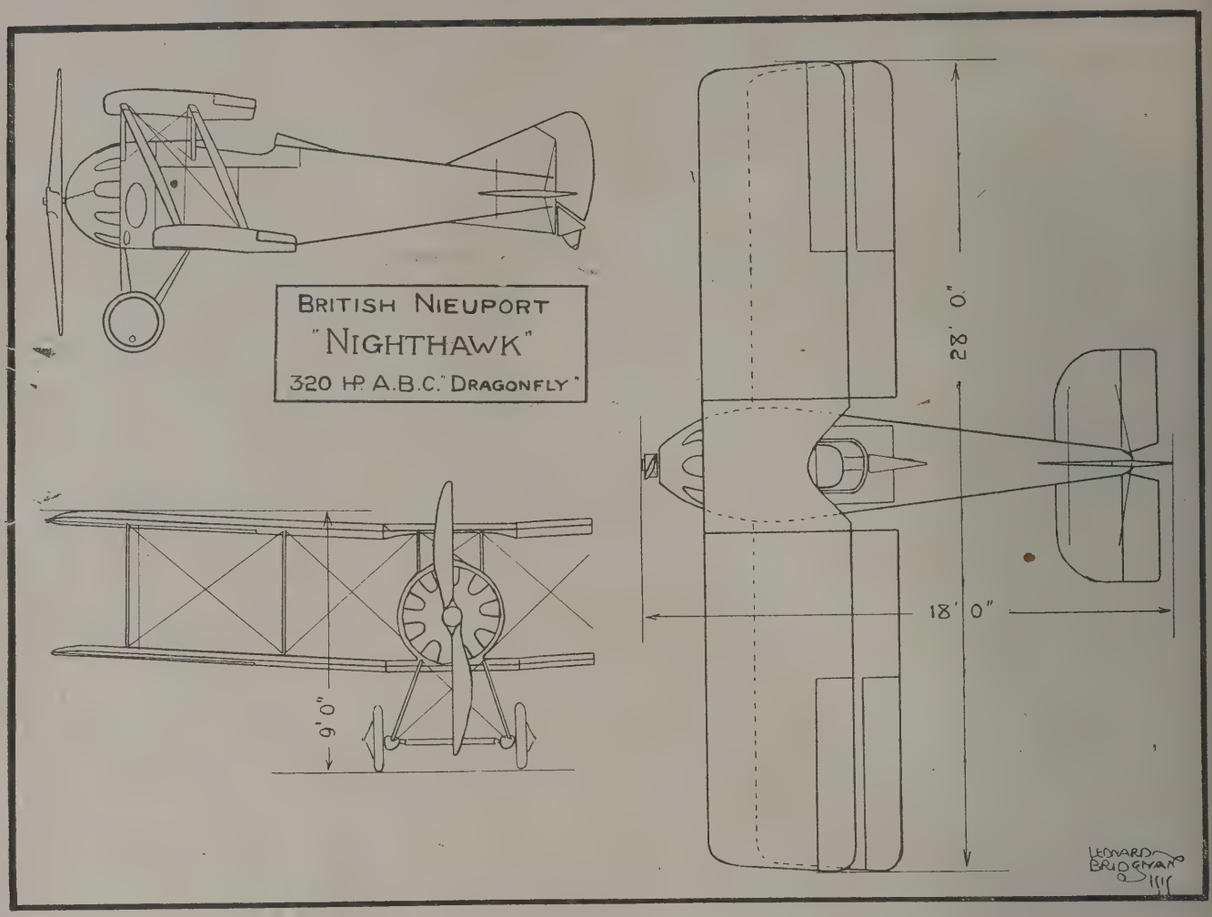
The undercarriage is of the usual Vee type, the Vees being braced at the apex by two cross struts, the axle being slung between on rubber shock-absorbers. The axle and cross-struts are enclosed in streamline fairing.

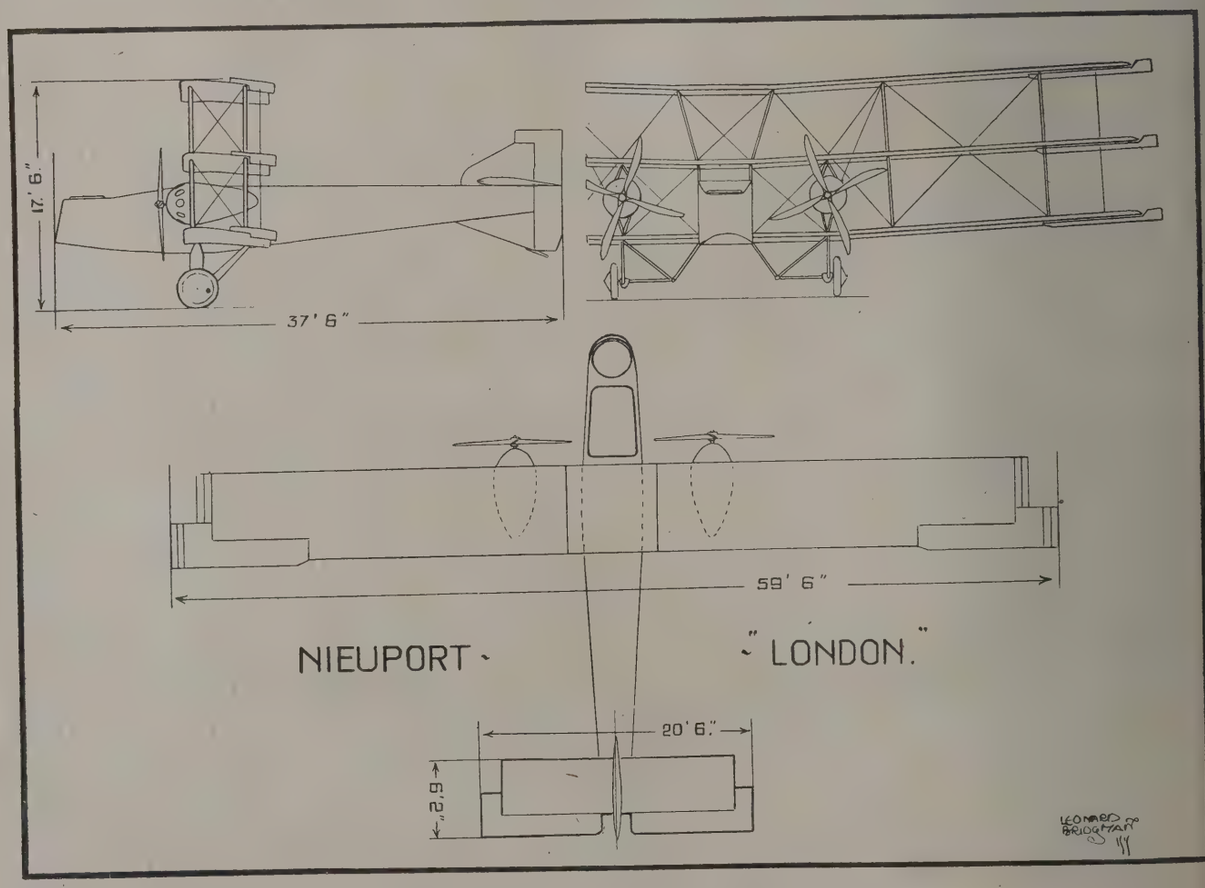
A two-seater edition of the "Nighthawk" is also being produced, the passenger being situated in front of the pilot. It can either be supplied as a dual-control very advanced training machine or purely as a passenger carrier with one set of controls.

It was one of these machines, one believes, that, converted to a single-seater by having the passenger seat covered in, put up such a creditable performance in the last Aerial Derby.

SPECIFICATION (2-seater).

Type of machine	British Nieuport 2-seater biplane
Name or type No. of machine	2-seater "Nighthawk"
Purpose for which intended	Training or Commercial
Span	28 ft.
Gap	4 ft. 6 in.
Overall length	18 ft.
Maximum height	9 ft.
Chord	5 ft. 3 in.
Total surface of wings	276 sq. ft.
Span of tail	9 ft.
Total area of tail	28 sq. ft.
Area of elevators	10 sq. ft.
Area of rudder	5.3 sq. ft.
Area of fin	5.2 sq. ft.
Area of each aileron and total area	9.3 sq. ft.—37.2 sq. ft.


BRITISH NIEUPORT
"NIGHTHAWK"
320 H.P. A.B.C. "DRAGONFLY"
28' 0"
18' 0"
9' 0"
LEONARD BRIDGMAN


17' 6"
37' 6"
59' 6"
NIEUPORT - "LONDON."
20' 6"
2' 6"
LEONARD BRIDGMAN

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Telephone:
Kensington 6520 (4 lines).

Engine type and h.p.	230-h.p. A.B.C. "Dragonfly"
Airscrew, diameter and pitch and revs.	9 ft. 6 in.
Weight of machine empty	2180 lb.
Load per sq. ft.	8.05 lb.
Weight per h.p.	6.8 lb.
Tank capacity in hours	3 hours at 20,000 ft.
Tank capacity in gallons	40 gals.
Performance—	
Speed at 10,000 ft.	138 m.p.h.
Climb—	
To 20,000 ft.	20 min.
Disposable load apart from fuel	360 lb.

THE BRITISH NIEUPORT B.N.1.

The B.N.1 was a fast single-seater scout designed in March, 1918. In general constructional details it follows very closely the "Nighthawk," the fuselage and tail unit being almost identical, with the exception that it is adapted to take the 230-h.p. B.R.2 engine, which necessitates a different engine bearer plate and also a different cowling. A large conical spinner is fitted to the airscrew boss. The planes are of equal span, but the upper has a greater chord than the bottom plane. Two single streamline struts, which are splayed out at the top and bottom to fittings on the front and rear spars of both planes, are carried on each side of the fuselage and are braced in the usual manner from the spar fittings. The undercarriage is the "Nighthawk" type already described. The armament consists of two fixed Vickers guns firing through the propeller, and one pivoted Lewis gun on the top plane within easy reach of the pilot.

SPECIFICATION.

Type of machine	British Nieuport single-seater tractor biplane
Name of machine	B.N.1
Purpose for which intended	Single-seater fighting scout
Span	28 ft.
Gap	4 ft. 3 in.
Length	18 ft. 6 in.
Height	9 ft.
Chord	6 ft. (top) 4 ft. 2 in. (bottom)
Total surface of wings	260 sq. ft.
Total area of tail	28 sq. ft.
Area of elevators	10 sq. ft.
Area of rudder	5 sq. ft.
Area of fins	5.2 sq. ft.
Area of each aileron and total area	10 sq. ft. (top) 5 sq. ft. (bottom)—30 sq. ft. total
Engine type and h.p.	230-h.p. B.R.2
Airscrew diameter	9 ft. 3 in.
Weight of machine	2030 lb.
Load per sq. ft.	7.8 lb.
Tank capacity in hours	3 hr. at 15,000 ft.
Tank capacity in gallons	36 gals.
Performance—	
Speed at 15,000 ft.	127 m.p.h.
Climb—	
To 15,000 ft.	16 min.
Maximum height	26,000 ft.
Useful load	410 lb.

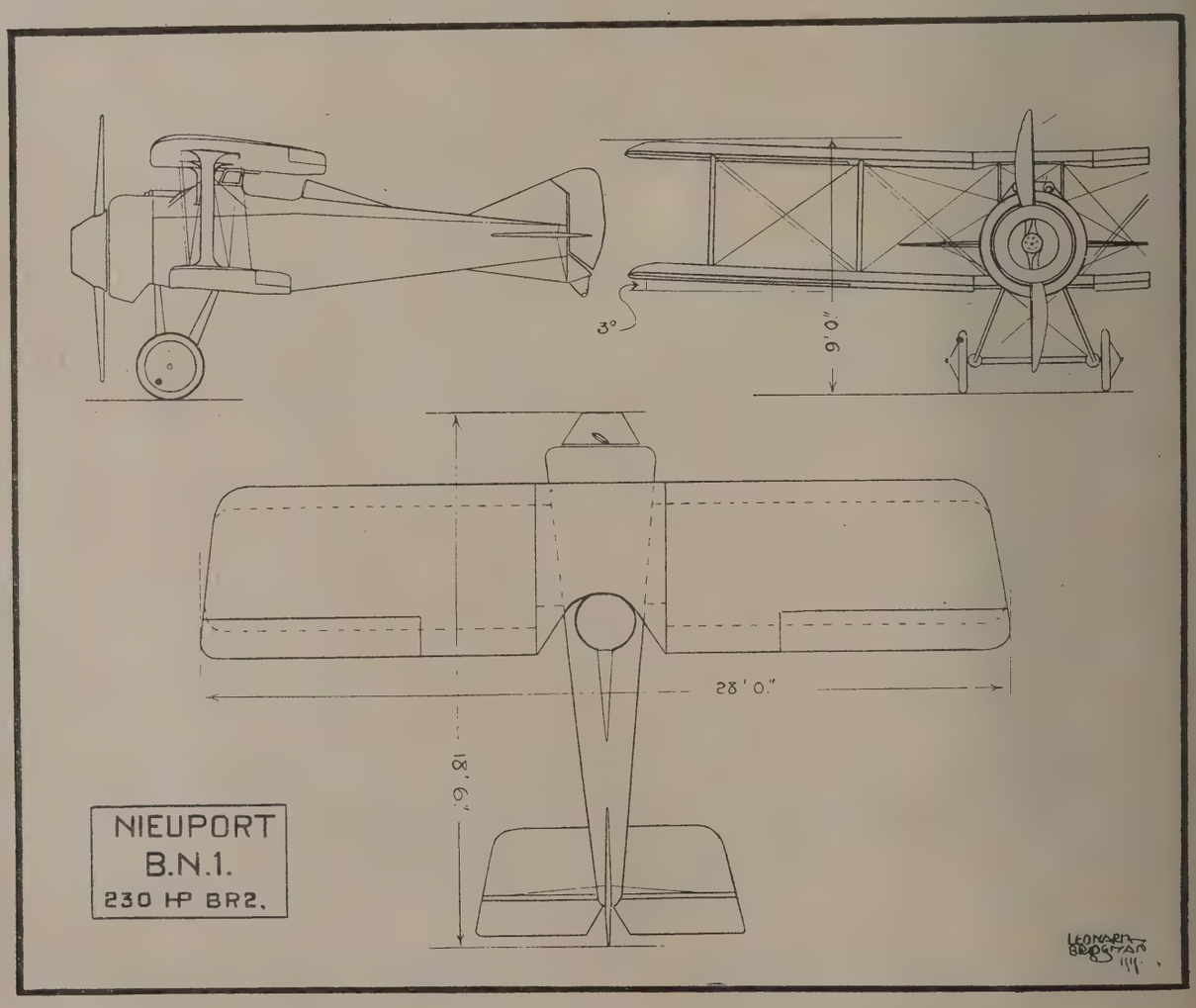
THE NIEUPORT "LONDON."

The Nieuport "London" was designed this year as a quick production night-bomber, and, as such, has the minimum number of metal fittings, and parts are made as simply as possible. The machine is also to be produced as a passenger-carrying or commercial machine, and in lieu of the war load consisting of a crew of four, one Lewis gun and nine 250-lb. bombs, accommodation will be allowed for one pilot and 13 passengers, or a useful load of 2,685 lb. of mails or goods.

The specification given is that of the commercial edition.

SPECIFICATION.

Type of machine	Twin-engined tractor triplane
Name or type No. of machine	Nieuport 12-seater triplane
Purpose for which intended	Commercial, etc.
Span	60 ft. 8 in.
Gap	5 ft. 10 in.
Overall length	39 ft. 6 in.
Maximum height	17 ft. 6 in.
Chord	6 ft. 8 in.
Total surface of wings	1,100 sq. ft.





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Span of tail	20 ft. 6 in.
Total area of tail	64 sq. ft.
Area of elevators	40 sq. ft.
Area of rudder	20 sq. ft.
Area of fin	30 sq. ft.
Area of each aileron and total area	20 sq. ft.—120 sq. ft.
Engine type and h.p.	Two 320-h.p. A.B.C. "Dragonfly"
Weight of machine empty	8530 lb.
Load per sq. ft.	7·75 lb.
Weight per h.p.	13·55 lb.
Tank capacity in hours	4 hr. at 10,000 ft.
Tank capacity in gallons	175 gals.
Performance—	
Speed low down	100 m.p.h.
Climb—	
To 10,000 ft.	30 min.
Disposable load apart from fuel	2,685 lb.

In addition to these machines, and purely as a post-war development, the firm have designed and are to construct the machines hereafter described.

THE BRITISH NIEUPORT SINGLE-SEATER BIPLANE.

This machine is a small fast single-seater biplane suitable for police and customs work or sporting purposes.

It has been designed with a view to simplicity in erection and maintenance and to this end the whole machine has been built to jig as a non-adjustable but rigid structure so that the machine merely fits together like a jig-saw puzzle, the parts being held in place by pins. There is no external wire bracing, the principal loads being taken whilst in flight by two inclined struts running from the wings' roots where they join the fuselage to the top of the interplane struts. A two-seater side-by-side edition of the machines is also being brought out which has the same characteristics and mode of assembly. Both machines are fitted with the new 100-h.p. Cosmos "Lucifer" engine.

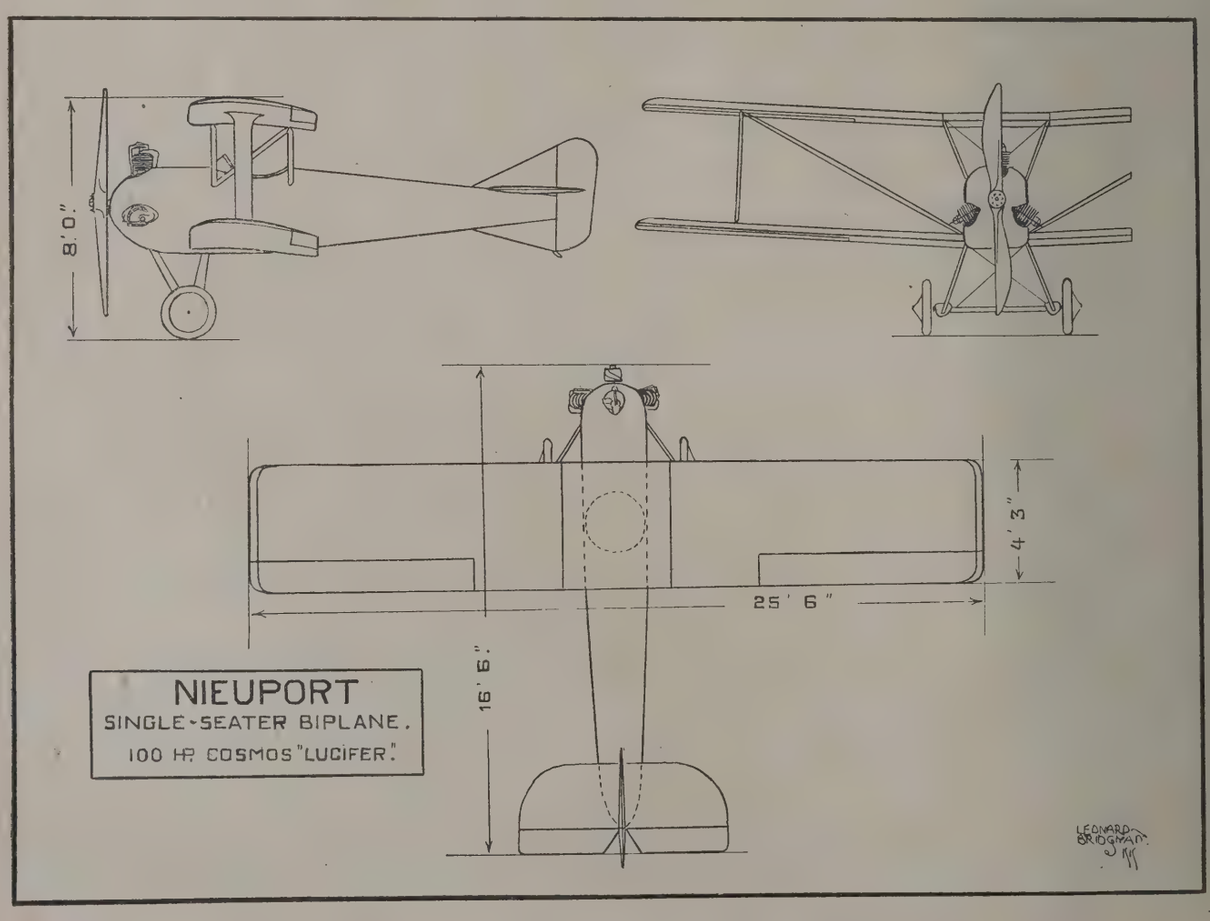
SPECIFICATION.

Type	Single-seater tractor biplane
Purpose for which intended	Sporting, etc.
Span	25 ft. 6 in.
Gap	4 ft.
Length	16 ft. 6 in.
Height	8 ft.
Chord	4 ft. 3 in.
Total surface of wings	200 sq. ft.
Total area of tail	24 sq. ft.
Area of elevators	9 sq. ft.
Area of rudder	4 sq. ft.
Area of fins	3.6 sq. ft.
Area of each aileron and total area	5 sq. ft.—20 sq. ft.
Engine type and h.p.	100-h.p. Cosmos "Lucifer"
Weight per sq. ft.	5.25 lb.
Weight per h.p.	10.5 lb.
Tank capacity in gallons	20 gals.
Tank capacity in hours	3 hr.
Performance—	
Speed	100 m.p.h.
Climb—	
To 10,000 ft.	13 min.
Ceiling	20,000 ft.
Useful load	205 lb.

THE NIEUPORT TWO SEATER.

SPECIFICATION.

Type of machine	Two-seater tractor biplane
Purpose for which intended	Sporting, commercial, etc.
Span	26 ft.
Gap	4 ft. 3 in.
Length	18 ft.
Height	7 ft. 9 in.
Chord	4 ft. 6 in.
Total surface of wings	220 sq. ft.
Total area of tail	21 sq. ft.
Area of elevators	10 sq. ft.
Area of rudder	6 sq. ft.
Area of fin	42 sq. ft.
Area of each aileron and total area	5 sq. ft.—20 sq. ft.
Engine type and h.p.	100-h.p. Cosmos "Lucifer"
Weight of machine	1,230 lb.
Load per sq. ft.	5.6 lb.
Load per h.p.	12.3 lb.
Tank capacity in hours	3 hr.
Tank capacity in gallons	20 gals.
Performance—	
Speed	90 m.p.h.
Climb—	
To 10,000 ft.	20 min.
Maximum height	18,000 ft.
Useful load	383 lb.



AMERICAN ENGINE TESTS UNDER HIGH ALTITUDE CONDITIONS

(*Continued.*)

GENERAL NATURE OF RESEARCH UNDERTAKEN.

The problem first presented by the National Advisory Committee for solution by the use of the Altitude Laboratory was that of the performance of different grades of gasoline at high altitudes in typical aircraft engines. The Lubrication Division of the Signal Corps requested also the preservation of samples of the lubricating oil to determine the effect of fuel composition and of altitude, on the deterioration of such oils. A staff of two or three men were detailed by the Lubrication Division to assist in securing the desired data.

As different grades of fuel affect engine-power and performances only to a very slight extent, the satisfactory solution of this problem required the highest possible accuracy in obtaining complete data on engine performance, as previously outlined. Thus, a practice was established by which all the measurements of power, speed, fuel consumption, barometric pressure, air and water flow, temperature, and pressure, provided for by the apparatus, are customarily made, no matter what is the immediate purpose of the test in hand. The result is, in addition to the data directly desired, an accumulation of valuable supplementary data on engine performance, much of which has not yet been analysed

Observations have been made to determine specifically the following relations :—

1. Horse-power-altitude relation for engines at normal speed.

2. Horse-power-speed relation at a range of altitudes up to 20,000 feet.

3. Horse-power-compression ratio for normal speed, using compression ratios of 4.7, 5.3, and 6.2 to 1 at a range of altitudes up to 30,000 feet.

4. Horse-power-inlet air temperature at a range of speeds and altitudes.

5. Effect of variation of intake pressure on horse-power at a range of altitudes, to simulate the effect of supercharging equipment.

6. Effect of exhaust back pressure on horse-power, over a limited range of pressures.

7. Mechanical losses at various speeds, altitudes, and engine temperatures.

8. Metering characteristics of a number of different types of carburetters, with and without altitude compensation or control, for the full range of speeds and altitudes.

9. Optimum mixture ratios for maximum power over the range of speeds and altitudes, with several different carburetters.

10. The performance of a number of automatic and hand-operated altitude compensation devices for different carburetters.

11. The total heat distribution for all speeds and air densities at full throttle.

12. The performance of special fuels; "Hector," a combination of cyclo-hexane and benzol; 'Alco-gas," a combination of alcohol, benzol, gasoline, and other, at a compression ratio of 7.2 to 1.

Other relations have been investigated from time to time. Moreover, the detailed records taken for each test include much information bearing on other characteristics of engine performance, such as, for instance, the behaviour of spark plugs and ignition systems under conditions of low air pressure and temperature.

THE NEW DYNAMOMETER AND ALTITUDE LABORATORY.

As has been previously stated, the Altitude Laboratory will soon be housed in a permanent building, which is being erected near the present temporary structure. The new building has a rectangular floor plan measuring 50 ft. by 150 ft., and is constructed of brick and concrete in a thoroughly substantial manner.

This building will contain two altitude chambers upon similar lines to the one described. In testing a single large engine at high altitudes the doors between the two chambers may be left open, which permits the use of the two vacuum pumps and banks of cooling coils, thus greatly increasing the capacity of the plant.

In connection with one of the chambers two 300 horse-power electric dynamometers, and with the other one 400 horse-power dynamometer will be used. The foundations of the dynamometers are provided with extension bed-plates at the ends opposite the chambers, on which to mount engines for test purposes when it is not necessary to conduct the test at other than ground conditions.

A space is provided in the centre of the floor plan for the installation of either a drum or tractor type dynamometer, on which to test motor vehicles and transmission assemblies. The power delivered to the drums or caterpillars may be transmitted by chains to two electric dynamometers. Like the ones for the Altitude Laboratory, they are arranged with extension bed-plates, so that they may be used to test separate engines when required.

A third dynamometer with a capacity of 50 horse-power is arranged for coupling to any type of small engine or to the drive-shaft of a rear axle assembly for test purposes.

The exhaust gases from the different engines, except those in the altitude chambers, will pass to an underground duct, from which they will be withdrawn by an exhaust fan discharging through a pipe in the roof.

For about one-third of its length at the east end the buliding is divided into a basement, main and mezzanine floors. In the basement is placed the refrigerating plant for the Altitude Laboratory, with space left for other machinery. The north side of this portion of the main floor is occupied by the machine shop, designed to care for all the ordinary repairs to the plant and engines. On the south side are located the office, toilet and wash-room, and the tool and store-room. The mezzanine floor is divided into two laboratory rooms, which may be used for any of the lighter testing apparatus.

The plant will be equipped with travelling chain hoists for the convenient handling of engines and other apparatus, and with the necessary work benches, etc.

It is planned to have the laboratory in running order this summer.

THE VARIATION OF POWER WITH HEIGHT.

Of the experiments carried out in the Altitude Laboratory before described, the subject of the first report yet published—No. 7—is the variation of engine horse-power with altitude, and with varying compression ratios.

The series of tests upon which this report is based were made upon an 8-cylinder 150 h.p. Hispano-Suiza engine built by the Wright-Martin Aircraft Corporation. For the purposes of these tests this engine was furnished with three sets of pistons, giving compression ratios of 4.7 (low), 5.3 (high), and 6.2 (extra high) respectively.

The engine was run throughout on a single grade of fuel (Grade X), and with a Claudel carburetter adjusted by hand to give maximum power under each set of conditions.

All tests were made at an approximately uniform speed, and all results were corrected to a standard speed of 1,500 r.p.m.

In the earlier tests the horse-powers were corrected to O°C., while in the later ones they were corrected to standard temperatures for given barometric pressures, that is to say, to the standard temperature, which, in conjunction with the barometric pressure, correspands to a given altitude in the standard—or average—atmosphere.

Thus, these later tests were carried out under conditions simulating those of certain definite "standard" altitudes.

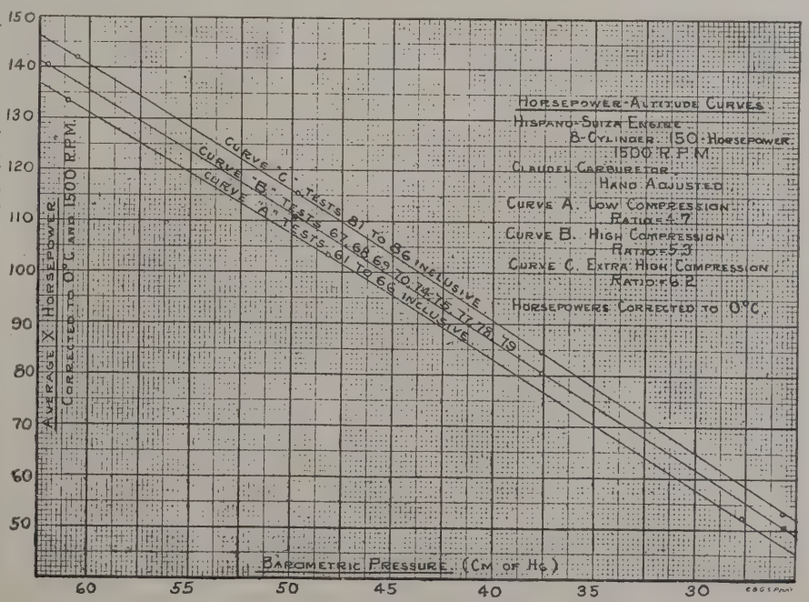


Fig. 1.

Actually four such "standard" altitudes were simulated in these later tests—as shown in the following table:—

Barometric pressure in centimetres of Mercury.	Temperatures in Degrees Cent.	Approx mate altitud in feet?
62.1	10.1	5,500
49.8	-- 0.1	11,500
37.6	—15.1	19,200
25.6	—36.6	29,600

The figures for altitude are computed from the formula

$$H = 62,900 \log 10 \frac{76}{P}.$$

obtained from the Smithsonian Meteorological Tables for 1907, page, 100, in which H is the altitude in feet, and P is the atmospheric pressure in centimetres of mercury.

This formula is slightly different from certain expressions in use in this country, but the differences are relatively unimportant.

The general result of these tests is exhibited in the curves shown herewith.

Fig. 1 gives the effective h.p. of the particular engine with low, high and extra high compression ratios corrected to a temperature of O.°C. plotted against barometric pressure in cms. of mercury.

Fig. 2 shows (Curve B) the experimentally determined temperature correction to be applied in order to reduce the developed h.p. at any actually observed temperature to the h.p. which would be developed at O.°C. Upon the grounds of elementary theory the h.p. developed by an internal combustion engine under varying atmospheric conditions should be directly proportional to the air density, which is in its turn (a) directly proportional to the barometric pressure, and (b) in inverse proportion to the absolute temperature.

The temperature correction factor (Fo in the figure) should thus be $Fo = \frac{273+t}{273}$ where t is the observed temperature (Cent.).

This theoretical factor is plotted on Fig. 2 (Curve A) and will be seen to diverge considerably from the experimental results.

These show that Fo in practice follows the equation

$$Fo = \frac{529+t}{529}$$

and that the developed h.p. rises at a slower rate with increase in temperature than does the air density.

Fig. 3 gives the ratio of the horse-power of the engine fitted with A, low compression, B, high compression, and C, extra high compression pistons, at various standard altitudes to the horse-power developed at standard sea level and at 1,500 r.p.m. with the high compression (ratio 5.3 to 1) pistons.

The curves of Fig. 4 illustrate the variation in horse-power with compression ratio at different altitudes.

The horse-power developed with the 5.3 or "high" compression ratio, at the different altitudes, was taken as 100 per cent., and the other two compression ratios were plotted as percentages of this curve. As will be seen upon examination, the gain in horse-power due to "extra-high" over "high" compression amounts to

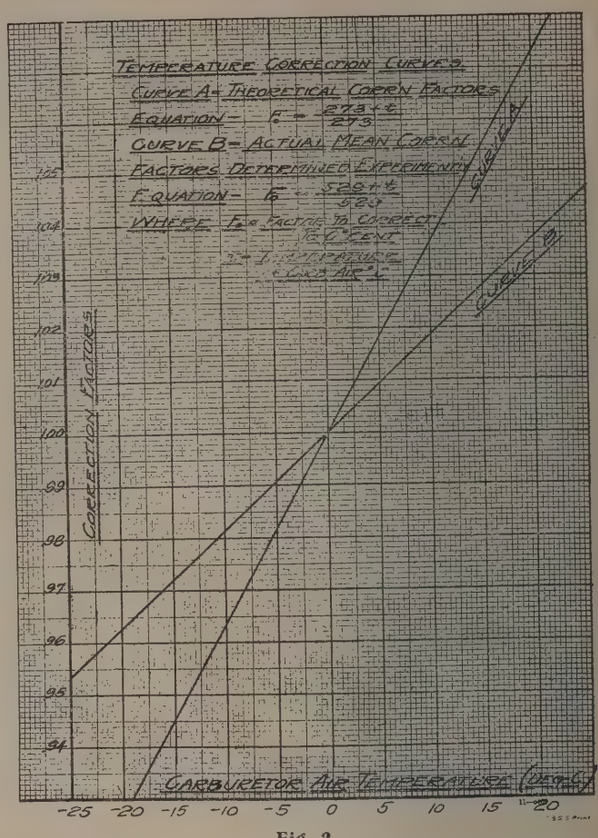


Fig. 2.

but 2.8 per cent. at 5,000 feet, while it increases to nearly 5.8 per cent. at 30,000 feet. Likewise, the decrease in horse-power due to "low" compression, while only 3.3 per cent. at 5,000 feet, amounts to about 7.3 per cent. at 30,000 feet.

It is evident, therefore, that the value of high compression is more apparent at high than at low altitudes.

It should be pointed out that any comparison of absolute horse-power for the different compression ratios may be misleading as the engine conditions, such as fit of piston and rings, condition of valves, etc., were not the same in each case. However, the manner in which the horse-power varies with barometric pressure in each case may be taken as characteristic for the given combination of engine, carburetter, and fuel with a given compression ratio.

The rate at which the engine h.p. of an aeroplane decreases with height is an important factor in the estimate of the limiting height which an aeroplane can reach and in predicting the rate of climb possible at high altitudes. It has been usual to assume that the h.p. variation was directly as the air density, i.e., directly as:—

$$\frac{P_H \times 273+to}{P_o \quad 273+tH}$$

where

P_H = Barometric pressure at height H
P_o = Barometric pressure at sea level
t_H = Temperature (Cent.) at height H
to = Temperature (Cent.) at sea level.

and to then introduce some factor, based on experience or guesswork to allow for the known inaccuracies—such as the fact that some portion of the mechanical losses in the engine were independent of the air density, and that with very low temperature of fuel and air there were considerable heat losses in warming these up to combustion temperatures.

The result of these tests is to give a definite expression for the variation in h.p. with alteration in barometer and temperature of one particular type of engine—which is probably fairly accurate for the generality of water-cooled engines.

This expression would be:—

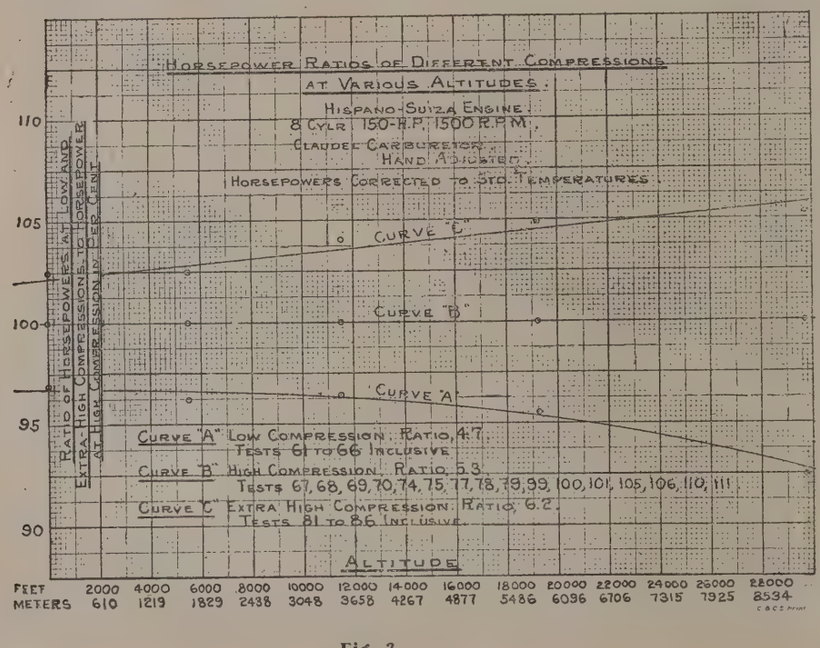
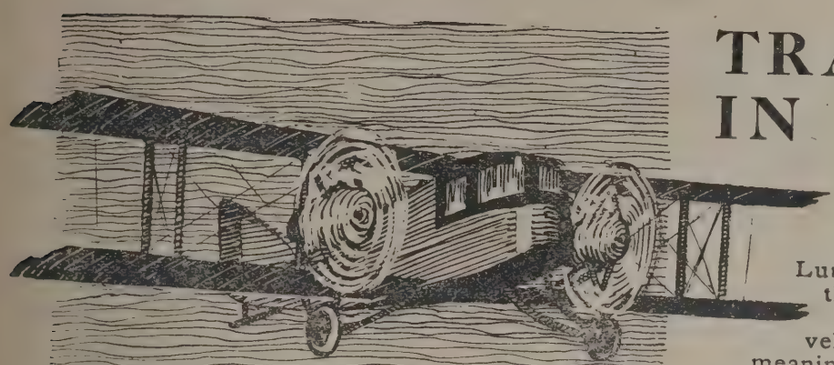


Fig. 3.



BRITISH
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TRANSITIONS IN TRANSIT

No. 4. **The South African Ox Wagon.**

Lumbering, jolting, squeaking along, the old Buck Wagon treks its cumbersome way across the high veldt—Discomfort to the uttermost meaning of the word. The stifling heat. The rough track. The flies. The unintelligible jargon from the kaffir driver. Oxen straining at the yoke to keep the two-mile-an-hour pace going.

All jarring one's nerves for hours on end. Yet for generations such mode of transport has held its own!

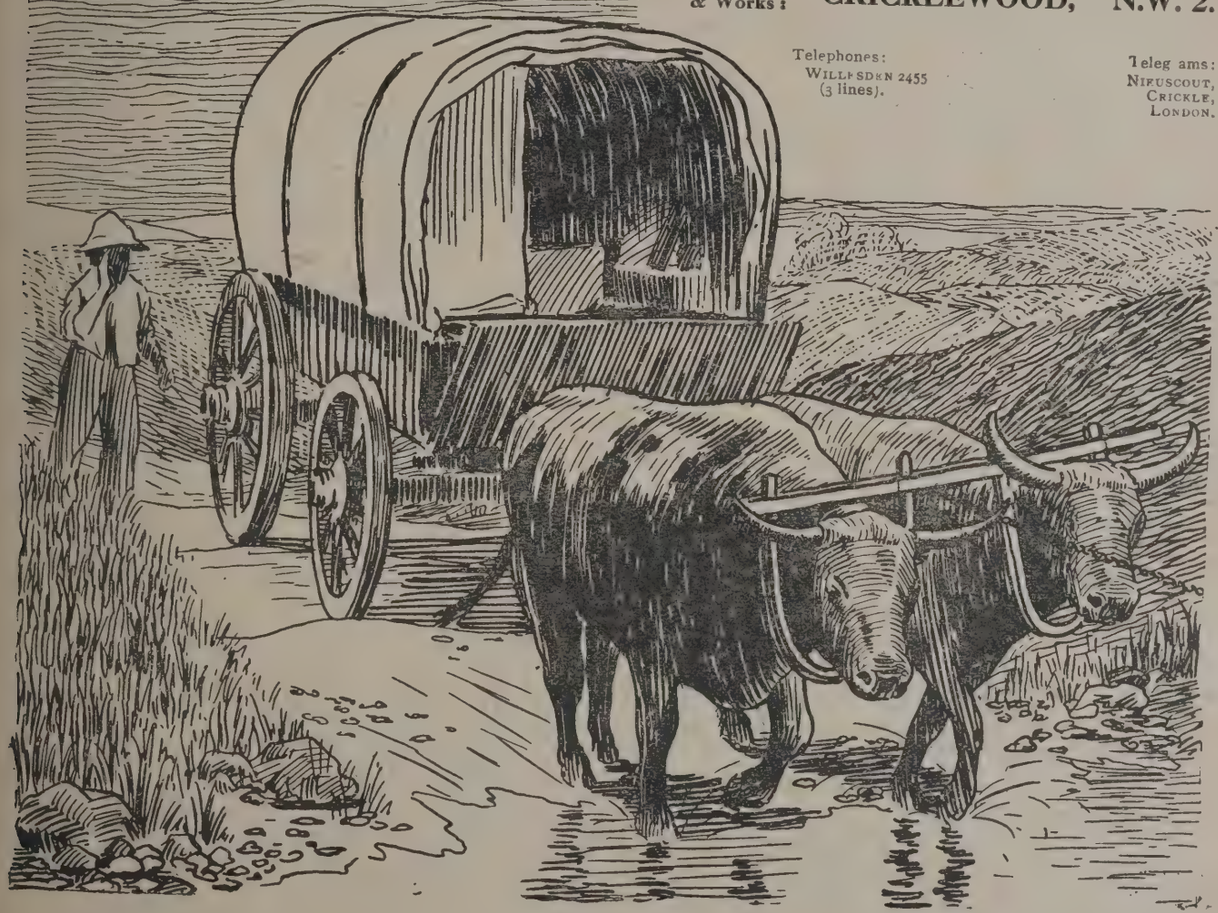
But now at last a rival appears on the scene—a rival that brings comfort and speed—the Aeroplane!

The machine illustrated above is the Nieuport 4-seater passenger and goods plane.

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H.P. varies as

$$\frac{P_H}{P_o} \times \frac{529+t_o}{529+t_H}$$

It may be assumed that this expression will be considerably modified with engines of radically different types, and that, in particular, the rotary type of air-cooled engine will conform more nearly to the theoretical direct variation with the density than is shown by this equation.

A further series of tests carried out on the same engine and upon a 180-h.p. Hispano-Suiza of the same make with three different carburetters showed some slight variation in the effect of temperature with the carburetter used, but generally agreed very closely with the temperature correction factors given in Report No. 7, which is mentioned above. The results of this later set of tests constitute the subject of a separate Report (No. 8), which, however, leads to nothing further than to a confirmation of the deduction made above.

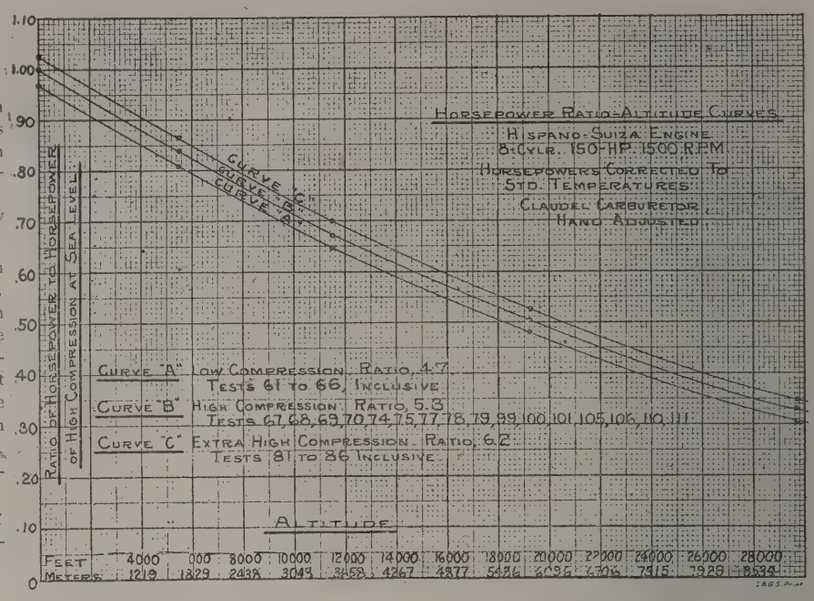


Fig. 4.

GERMAN COMMERCIAL AFTER-WAR AIRCRAFT.

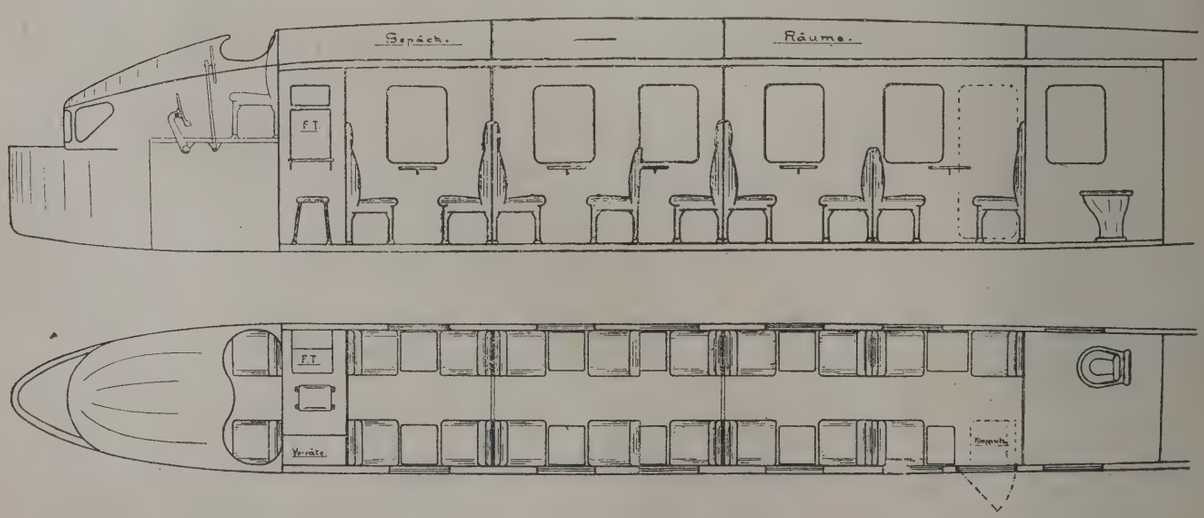
The end of the war has given Germany a good opportunity for developing civil and commercial aviation, as a start did not have to be made with joy-riding. Owing to the total breakdown of the railways more than other things, aircraft have come to the fore as the speediest, the most certain, if not the safest means of transportation. The cost of aerial travelling cannot be helped for those who, perforce, have to travel, but most people are not travelling at all, owing to the present railway troubles. Should the re-establishment of the railways to something like normal conditions not bring the cost down to the earthbound regions soon, which does not seem possible, as the railroad inefficiency is owing to lack of materials, and as the locomotive output is less than ever, thanks to strikes, then aircraft may have chances of developing into pure commercial types, in spite of the otherwise sad financial situation.

At present G and C class aeroplanes are chiefly used, i.e., the twin-engined A.E.G. five-seaters, made by the German Air Shipping Co., and their modern two-seaters, made by the Sablatnig and Rumpler works. These are the three foremost enterprises, and have Government licence for passengers, mail and parcel aerial service.

So far, services appear to have been successful, which means that delays have not been caused by technical or meteorological factors, but by strikes and the lack of petrol resulting from them. Thus the Deutsche Luftrederei has for some time only been able to maintain the main lines between Berlin and Weimar, and although it has acquired the former naval sheds at Aabenraa in Sleswig, it has been held up by fuel troubles. The Sablatnig Co. hopes to inaugurate a service from Sleswig to Copenhagen, though so far it has not the sanction of the Danish Government.

As they are the persons chiefly forced to travel these days the artists, actors and actresses are the best pioneers and advertisers of the various commercial aviation firms.

The Sablatnig enterprise employs its night-flying N model with good manœuvring capabilities. It is equipped with a 230 h.p. Benz engine, and has the front observer's cockpit transformed into an enclosed narrow cabin for four passengers, which makes the machine appear rather nose-heavy in landing. Various other aircraft works have adopted the Airco two-passenger limousine fashion fuselage for their modern light two-seater (C.L. class) biplanes, by raising the rear observer's cockpit. The



The Passenger Cabin of an Aviatic-built Staaken Giant of the R3 type. This diagram shows a general resemblance to British practice.

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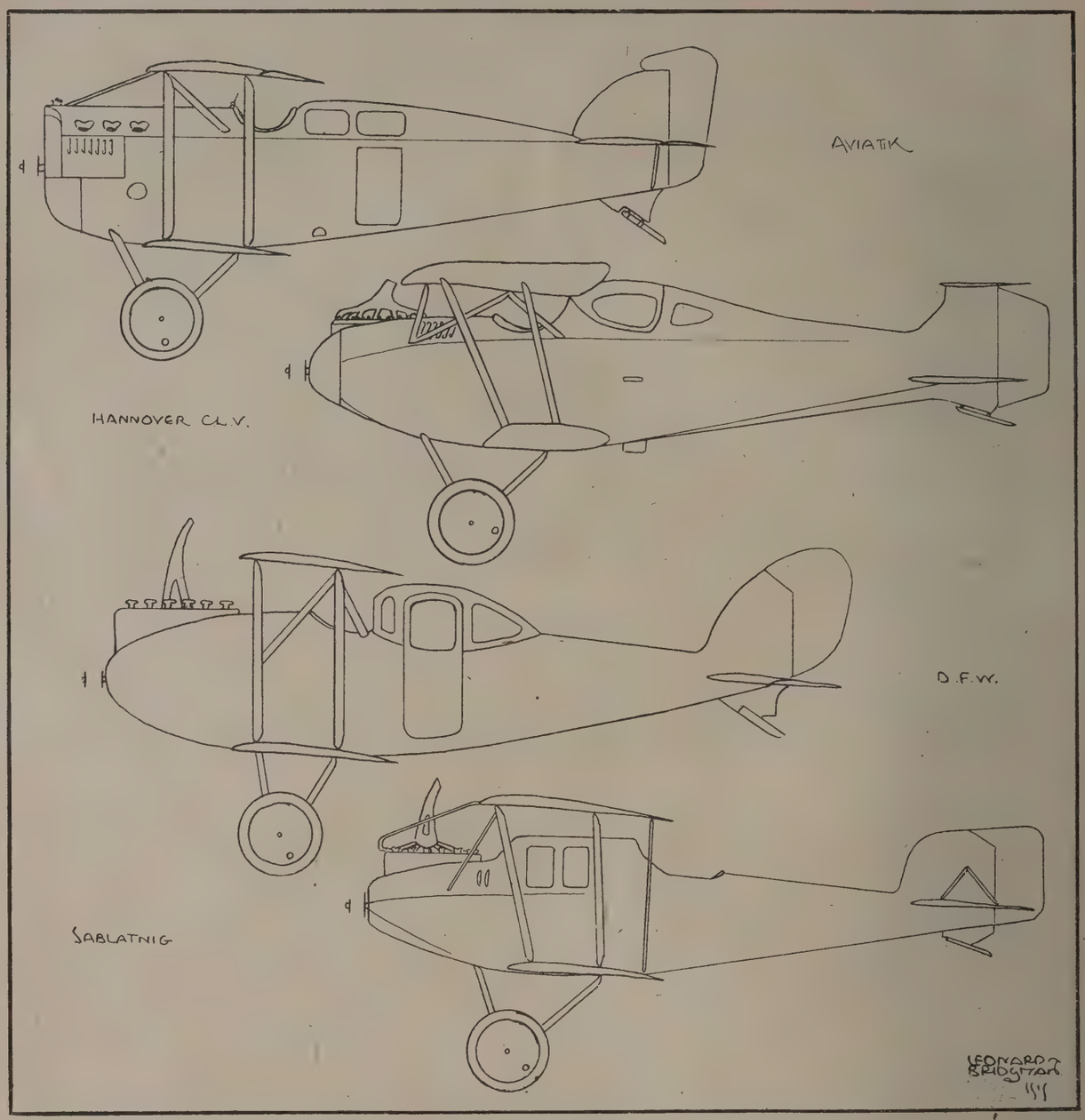
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MANUFACTURERS AND SOLE LICENSEES IN THE BRITISH EMPIRE

"CLERGET" PATENT AERO ENGINES

ENGINEERS, LONDON.

"GWYNNE LONDON."



Outline Drawings of German Passenger Machines.

D.F.W. works in Leipzig and the Hannoversche Waggonfabrik have done this.

Most other passenger-flying has been done with the Staaken giant type, which is now a combined tractor and pusher biplane with four engines in two interplane power-eggs. A regular week-end trip service, similar to the Farman-Goliath Paris-Brussels one, is run between Berlin and the seaside resort Swinemünde, and affords the wearied inhabitants of the capital some possibilities of fresh air. Both Staaken aeroplanes and seaplanes are employed with the fuselage nose made into a passenger cabin. One Staaken aircraft has with full passenger load crossed Mount Brocken.

Among the licensed builders of this well-employed type is the Aviatik works, now situated at Leipzig-Heiterblick. They manufacture for commercial, mail and passenger service a R.III model, with four 250 h.p. six-cyl. Benz motors. The main dimensions are: Span, 43½ metres; maximum length, 22½ m.; maximum height, 6½ m.; empty, weight, 9 tons; fuel and crew, 1,800 kg.; useful load, 1,800 kg.; total weight, 12,600 kg. The crew comprise: One captain, two pilots, two engineers, and one steward. The fuel capacity suffices for a 7 hours' flight, or a distance of 875 km. The speed is 125 kilometres per hour at an altitude of 7,500 ft., the climb being 10,500 ft. in 100 min.; 12,000 ft. is the ceiling. A part view of the aircraft showing well the arrangement of the passenger cabin and pilot's position is given.—Anglo-Dane.

THE WIRELESS SOCIETY.

The committee of the Wireless Society of London met recently under the presidency of Mr. Alan A. Campbell-Swinton, F.R.S., with a view to an early resumption of activities. The hon. secretary, Mr. R. H. Klein, having resigned and having been elected an acting vice-president, Mr. Leslie McMichael, of 30, West End Lane, West Hampstead, N.W.6, has been elected hon. secretary, and to him all communications should be addressed. Intending new members and those who were members at the outbreak of war who have changed their addresses are requested to communicate with the hon. secretary.

The Society is open to all those interested in the study and furtherance of wireless telegraphy, amateur or professional.

The Society is at present in communication with the Post Office on the subject of licences.

The finding of new club rooms is engaging the attention of the committee and it is hoped to secure premises where the wireless equipment of the Society can be installed and used.

A general meeting will be held in a few weeks' time, of which due notice will appear in the Press and will be sent to members and those who intend becoming members.

The Society's activities should make an appeal to the considerable number of readers of The Aeroplane who are interested in the application of wireless telegraphy and telephony to aeronautical needs.



¶ "GRIPOLY" Solid Woven Belting is made from Camel Hair Yarns, with a small percentage of cotton, and woven by a patent process which insures the greatest possible strength and evenly consistent wear.

¶ "GRIPOLY" has a triple twisted edge, interwoven with the belting which effectively resists fraying caused by guide forks.

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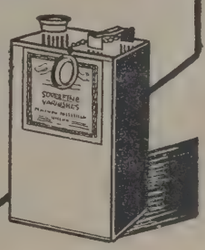
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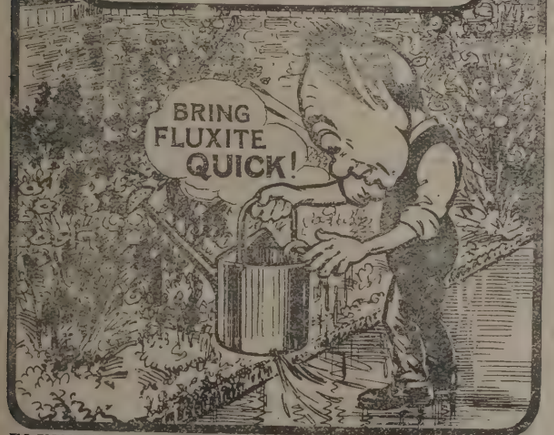
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but it's nevertheless a fact—a fact which every flying man and aircraft manufacturer should note—that the majority of the machines competing in the Aerial Derby, including the three which were placed 1st, 2nd and 3rd, at the end of the race, were fitted with

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COMMERCIAL AERONAUTICS & CIVIL AERIAL TRANSPORT

ARE AIRCRAFT ESSENTIAL?

By "MEDWAY."

A writer in the "Times," dealing at some length with the Government's policy in respect of commercial aviation, puts forward a half-hearted apology for our national neglect to put our backs into the job of getting the cream of the world's business in this new line. He remarks, "Strictly speaking, aircraft cannot be regarded as a necessity except in war. At present they are a luxury—at least in the sense that, if the choice in the last resort was between coal and an aeroplane, no wise man would choose the aeroplane."

Admittedly, the originator of this great thought does not seem to set much store by it himself, because the main trend of his argument is sufficiently reasonable and progressive. At the same time, it is to be supposed that, if he had regarded the remark quoted as being hopelessly inane, he would have refrained from making it. By working along his line of reasoning, one can reduce essentials to an absurd minimum. If the choice in the last resort was between coal and air, no wise man would choose the coal, partly because he would have to postpone any hopes of warmth until his arrival in the next world, and partly because the coal would not burn if the air were not existent. Similarly, of course, if we had no coal, we could not make any aeroplanes, or, for that matter, any other engineering products. The aeroplane, in fact, is part of the result of our having coal, but is not the whole result. Euclid has quite correctly informed us that the part is less than the whole.

We cannot very well complain of the contention that coal is more essential than aeroplanes, but one can fairly complain of the deduction therefrom that aeroplanes are not truly essential.

Regarded as a Luxury.

Our friend says that aeroplanes are at present a luxury. I suppose that just the same thing was thought in other days about the railway locomotive or the steamship. One might, perhaps, argue that no modern methods of transport are essential. We must admit that there was a time when people got on without them. Nothing that we manufacture can conceivably be altogether essential in its very early stages. It only becomes completely essential when it has so far established itself that competitive methods have been knocked out and there would be nothing to take its place if it were removed. The fact is that almost nothing is absolutely essential to the human race, with the exception of air, food, water, and heat.

This does not mean that everything else can be properly called a luxury. What is or is not a luxury depends mainly upon environment. What would be a luxury to a savage might be a commonplace necessity to a civilised man.

Perhaps we may define a luxury as something which we could do without and yet suffer no inconvenience whatever. The question is how long we must do without it in order to establish the case. I venture to suggest that, if we in this country did without aeroplanes for the next ten years, we should have dropped hopelessly out of our position as a great nation, not only on the score of our military feebleness, but because we should be entirely beaten in commerce, just as we should have been already had we refused to adopt railways, steamships, telephones, and so on.

A Game of Hide-and-Seek.

It is the business of the Government to look not 10 minutes but 10 years ahead. It is not the business of the Government to take unnecessary risks, such that, if things go wrong, the results are fatal, but rather to ensure in advance against anything of the kind by careful but adequate expenditure of public funds. We are told time and again that the Department of Civil Aviation lacks an adequate staff. This may be a good enough excuse for deficiencies on the part of the Department, but, after all, it merely shuffles the responsibility from one place to another. The average Government official spends his life playing a sort of hide-and-seek with the public. The public discovers that things are going wrong and complains. The official cannot deny that they are going wrong, but points out that the blame must rest on some other Department or Departments unidentified. Generally the poor old Treasury is the scapegoat, but I have an idea that when other Departments ask the Treasury for money they very often put their



The De Havilland 4R Biplane (450 h.p. Napier "Lion") which won the Aerial Derby. The machine is here seen leaving Hendon.

requests in such a form that a refusal goes without saying, and that this is done intentionally and is all part of the game.

Getting back to the question of luxuries, it seems to me that luxury consists very often in doing without modern improvements. To my mind, life in an office before the days of telephones, telegrams, or railway trains, must have been mainly a life of luxury and ease. There was seldom any immediate reason for doing anything at any particular moment. As long as it was done within a week or two it was all right. One's train of thought was not constantly upset by incoming telephone calls or one's temper by futile endeavours to ring up other people. Every step in the speeding-up progress makes life more worrying and the nerve-strain of business more acute.

The Curse of Luxury.

At the present moment we have hardly sacrificed any of the luxury that consists of doing without commercial aeronautics. When the new form of transport has developed it will only constitute another reason why we are obliged to think and act quickly and to be always on the spot.

I think that many people have at one time or another shared with the writer the feeling of relief that comes over one when a business letter is despatched, say, to Australia, and we realise that three months will elapse before the next move has to be made. The quicker our postal facilities, the more rapidly must we be ready to make our moves. Business is rather like a game of chess. You must look ahead, consider what the other fellow will reply and what you will reply afterwards. Given time, it should be possible to play the game without making many bad mistakes, but even the biggest experts would be in trouble if required to play chess with a five-second limit for each move, especially if, like the business man, they had about thirty different games going on at the same time.

So far as I am concerned, I should be only too glad to dispense with all modern accelerating systems, provided my competitors were compelled to do the same. To me they are not luxuries, but painful necessities, and this is the category into which I put commercial aeronautics from the business man's standpoint. The trouble is that, by doing without a thing ourselves, we cannot compel our competitors to follow suit. They will inevitably take the opportunity of getting in ahead of us. This is what will happen if we delude ourselves with the idea that aircraft are a luxury, and that, therefore, there is some kind of excuse to be put up if we make the fatal mistake of neglecting any means by which we can make ourselves the premier nation in aircraft production and in commercial aeronautics.

AIR SUPREMACY.

During the ages England has maintained her greatness and security by her sea supremacy. Without this sea supremacy in the present war victory would never have been possible for us and our Allies; the least that could have happened would have been that all the Powers of the Entente would have starved both for rations and munitions of war. In all probability this country would have been successfully invaded by the enemy, and our armies isolated in France.

The Hun realised that although he could not land troops on our shores in large numbers, because of our sea supremacy, he could cause great demoralisation throughout the country by air raids, more particularly in large towns where munitions of war were being produced.

The Hun, therefore, made frantic efforts to gain and maintain air supremacy; but he failed. And we beat him both at home and overseas in the air, just as we beat him on the sea; in fact, we gained supremacy of the air. We became again, that is to say, an island people, inaccessible to the enemy, and we were enabled by sea and air supremacy to concentrate all our energy at home on backing the armies in the field.

If we had failed to gain this air supremacy, the ever-increasing intensity of enemy air raids must eventually have so paralysed our home industries as to have rendered it impossible for us to win or even continue the war. It was the failure of the U-boats and the super-Gothas which marked the turning point in the war and we began to win; we were not, in other words, to be starved by piracy or demoralised by wholesale air raids into surrender.

The air supremacy which we have gained and maintained during this war we must keep; whatever platitudes people may talk concerning disarmament are very nice in theory, but it must not be forgotten that although might is not necessarily right, the strong man is more able to maintain order than the weak.

We need not denude ourselves of our strength in order to be just and peaceful. However just the weak man's cause, he cannot avoid war being thrust upon him, but with a combination of justice and strength any nation is in a position to prevent war.

If on August 4th, 1914, the Hun had known that this country would enter the war and succeed in raising the fine armies which have been raised, there would have been no war; the Hun took advantage of what he erroneously supposed to be our national weakness.

The geographical position of this country makes us safe from invasion so long as we maintain our sea and air supremacy; as soon as we give up either or both of these factors of national safety we increase the possibility of war in the world by laying ourselves open to invasion by either or both of these means.

We owe it, therefore, to future generations to maintain this supremacy, both for the preservation of this country and its independence, and for prevention of wars in the world.

Navies, armies, and air fleets must be made weapons of the law, and not a means of war. Piracy disappeared from the seas with the appearance of strong, well-trained and organised sea fleets. Criminal slaughter from the air will be made impossible for all time by the maintenance of strong, well-trained air fleets.

Disarmament will not bring about the end of war any more than the abolition of the police force would bring about the end of crime in society. There is always a criminal bully somewhere, seeking for a disarmed fool to rob. Let the fool arm himself and he will be able to prevent the bully from breaking the peace.

The Air Force should be maintained in peace time for mail-carrying and commercial purposes; it should be so organised that, if war be thrust upon us, it can be immediately converted into a means of giving us such air supremacy as will cut that war down to the shortest possible duration.

Nothing is gained by cutting down without reason the expense of maintaining the Navy, Army, and Air Force, which are for the explicit purpose of securing us against wars, and not waging unprovoked wars. War is the most expensive of all things both in life and property.

We will totally disarm when all the world has done so. Our geographical position in the world compels us to be the last nation to disarm.

Aerial navigation has annihilated time and space. In the next war we shall be as vulnerable from China as we have been in this war from Germany—if unarmed.

When the remotest races in the world have joined the League of Nations, and shown their good faith by disarmament, then is the time for us to disarm, and not before.—V. S.

AERONAUTICAL INTELLIGENCE.

The first (statutory) ordinary general meeting of the Aeronautical Intelligence Bureau was held at the registered offices, 30, Bedford Row, London, W.C.1, on Aug. 11th.

The aims and objects of the Bureau (although this was only incorporated on June 13th, 1919), are obviously becoming known far afield, which is shown by the applications for admission to membership received from Continental firms. Negotiations are being made for linking up with a sister organisation in the U.S.A. which, if brought to a satisfactory conclusion, will amplify the Bureau's commercial records of the firms interested in aeronautics in the States.

The accession of Mr. A. P. Newall, of the Woodside Engineering Co., Ltd., to the Council of Management makes that body completely representative of six of the principal sections of the trade. The experimental stage having been passed and the value of the organisation being amply proved, Mr. P. P. Nicholl has entered into a prolonged agreement to continue his work as secretary and manager.

A REMOVAL.

The Blackburn Aeroplane and Motor Co., Ltd., of Olympia, Leeds, are removing their aeroplane factory to Brough, near Hull, where there is an aerodrome. It is also intended to enlarge their works at Brough. The old works at Olympia will be used for the manufacture of motor-cars, etc.

"Machines must be capable of being started from the Cockpit or Cabin without undue muscular exertion on the part of the pilot."

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CIVIL AERIAL TRANSPORT NOTES.

GREAT BRITAIN.

London-Paris Air Services.

The air service to Paris maintained by Aircraft Transport and Travel, Ltd., during the week ending Aug. 30th ran from Le Bourget to Hounslow every day, and from Hounslow to Le Bourget every day except Thursday.

In the middle of the week the weather rendered flying nearly impossible. On Thursday, Aug. 28th, there was a hundred miles an hour hurricane over the Channel according to the official weather report.

Under these conditions Lieut. H. Shaw (late R.A.F.) flew an Airco D.H.4a from Paris to London and did the journey 25 minutes under the scheduled time. A number of parcels and two passengers were carried. The C.G.C.A. (Major-Gen. Sir F. H. Sykes) has conveyed his congratulations to the company in respect of this flight, which he considers a very meritorious performance.

Parcels containing various goods have been carried on every trip. Towards the end of the week business men awoke to the fact that the service would be maintained despite the weather, and much space has been booked in advance for passengers and goods.

It is hoped that the arrangements between the British and French Post Offices will soon permit the carrying of express letters by air. It is understood that the fee will be 2s. 6d. This will include the Post Office charges for express collection and delivery by motor-cycle and special messenger. By the speeding up of land connections it is expected that a letter posted in London during the morning will reach its recipient in Paris during the early afternoon.

Details of the flights made to and from Paris are given in the following table :—

Date.	Type.	Left Hounslow	Arr. Paris	Left Paris	Arr. Hounslow	Pass	Weather
Aug. 25th	D.H 4a.	9.10 a.m.	11.40 a.m.	12 40 p.m.	2.45 p.m.	1	Wind and haze
	D.H.16.	12.30 p.m.	2 45 p.m.			4	
,, 26th	D.H.4a.	1 5 p.m.	3.20 p.m.			2	40 m.p.h. wind
	D.H 16.			12.30 p.m.	3.39 p m.	4	
,, 27th	D.H.9.	12 43 p.m.	3 10 p.m.			1	Do. and 800ft. clouds
	D H.4a.			12.30 p.m.	3.20 p.m.	2	
,, 28th	D.H 4a.			12.30 p.m.	2.20 p.m.	2	100 m.p.h. wind
,, 29th	D.H.4a.	9.0 a m.	11.15 a.m.			2	Low clouds, rain, gusty
	D.H.16.	12.30 p.m.	3.0 p.m.			4	
	D.H.9.	12.30 p m.	2.45 p.m.			2	
	D.H.9.			12 30 p.m.	3.0 p.m.	2	
,, 30th	D.H.4a.	12.30 p m.	2.55 p.m.			2	20 m.p.h. N.W. wind
	D.H.9.			12.30 p.m.	3.10 p.m.	2	
	D.H 4a.			12.40 p.m.	3.20 p.m.	2	

On August 27th, Lady Muriel Paget flew from Paris in the D.H.4a. She was the first woman passenger to cross the Channel since the inauguration of the service.

On August 29th the D.H.16, which flew to Paris, carried four passengers : Sir Sydney Lee, Bt., Mr. and Mrs. Leonard Aldridge, and Mr. A. H. Davies. Mrs. Aldridge was the first woman passenger to fly from London to Paris since the Governments have allowed flying between the two countries.

Carter Paterson and Co., Ltd., and the American Express Co. are agents for the collection and delivery of express parcels and goods for the London-Paris Air Service, run by Aircraft Transport and Travel, Ltd.

With the service starting from Hounslow at 12.30 p.m., parcels will be accepted at Carter Paterson's City office, 3, Cannon Street, up to 10.30 a.m. They will be accepted at Maddox Street, Regent Street, up to 9.45 a.m.

The American Express Co. will also accept parcels in London at their offices in Queen Street, City, and Haymarket at times corresponding to those above. Parcels will also be accepted by the Paris branch of this firm.

The Handley Page machine, carrying 11 journalists, which left Cricklewood for Paris at 8.30 a.m. on Aug. 25th, reached Hounslow at 9.30 a.m., and arrived at Le Bourget aerodrome at 1.5 p.m.

Owing to Customs delays and the weather conditions, it did not leave Paris until 1 p.m. on the next day, Aug. 26th. It then crossed the Channel, and, on account of the gale blowing, landed at Lympne at 3.30 p.m.

On Aug. 27th it left Lympne at 4.40 p.m., and arrived at Cricklewood at 5.35 p.m.

Handley Page, Ltd., arranged to start their alternate day service to Paris on Tuesday, Sept. 2nd. A machine will leave Cricklewood at 12 noon on Tuesdays, Thursdays, and Saturdays, and will return from Le Bourget on the alternate days.

As no agreement has yet been made between the English and Belgian Governments, the London-Brussels service did not start on Monday, Sept. 1st. Arrangements are being made for it to start on Monday, Sept. 8th. On this service flights to Brussels will be made on Mondays, Wednesdays, and Fridays, with return journeys on the alternate days. All these services will start from the aerodromes at noon.

The "Daily News" Free Flights.

The last of the free flights was given on Saturday, August 30th. Since the scheme was started in the beginning of June at Cricklewood, over 2,500 passengers have been given flights.

These flights have given some idea of what flying is like to many people. Although the "Daily News" has done a great deal to popularise flying, in most cases the type of person who has been given a flight has not had any power to do anything to help on civil aviation.

Avro Northern Stations.

There were 17 machines at work on all stations; 246 flights were made, and 546 passengers carried during the week ending August 30th.

The Great Northern Aerial Syndicate.

The Great Northern Aerial Syndicate of Liverpool has planned three routes for their Transatlantic airships to follow :—

(1) Liverpool to York, Hull, Copenhagen, Stockholm, Petrograd, Tomsk, Pekin, San Francisco, New York, Queenstown, and Dublin.

(2) Liverpool to London, Paris, Cairo, Colombo, Perth and Melbourne or Sydney.

(3) Liverpool to Cardiff, Lisbon, Sierra Leone, Cape Town, and Buenos Ayres.

The cost of travel is estimated to be only 4d. a mile. The passage from Liverpool to New York is expected to take two and a half days, and Australia may be reached in seven days.

The proposal is to land large airships from New York at Liverpool, and transfer the passengers for other places to smaller craft.

Negotiations have been completed for the lease of landing grounds at different parts, one being at Kingston-on-Thames.

Aberystwyth.

An Avro aeroplane carrying two passengers, and piloted by Lieut. David (late R.A.F.), crashed near the landing ground at Aberystwyth on August 28th.

The passengers were not injured, but the pilot was taken to the infirmary suffering from injuries to the head and limbs.

Birmingham.

Vast crowds flocked to the Billesley Aerodrome, King's Heath, on August 19th-24th, and 30th-31st, to witness the passenger flying exhibition held there by Vickers Ltd.

Many passengers have been carried in the three-seater Avros. On Saturday, August 23rd, 600 passengers were taken up, and on the next day this number was doubled.

Blackpool.

Owing to four days of continuous rain, sometimes accompanied by storms of hurricane violence, there was not much flying in the north last week. An extraordinary storm sprung up one night about 12 o'clock, increasing in violence till the wind reached a speed of between 65 and 85 miles an hour.

The Avros pegged down on the sand at Blackpool, Southport, and Rhyl suffered considerable damage, the machines, complete with sandbags and pegging-down gear, being carried away and partially wrecked. In one case the machines was lifted up over a fence and carried 50 yards away. One of the night watchmen at Blackpool saved a machine by hanging on to it from 3 a.m. till assistance came at 6 a.m.

This storm was most interesting from a meteorological point of view. The air station in Anglesey, which sends daily reports to the Avro aerodrome in Lancashire, received, and, of course, sent, no warning of the storm, which was only felt in N.W. Ireland, and then burst in full fury on the Lancashire coast, apparently abating considerably as it travelled inland.

Despite the damage to the machines at Blackpool flying took place as usual when the storm had passed. Many messages of regret were received as to the company's bad luck.

Brighton.

Sixty-one passengers were carried in 33 flights in Avro machines during the week ending Aug. 30th. Two cross-country flights were made—one to Bexhill and the other to Birmingham. The weather only allowed three days' flying during the week.

Telephones:
Gosport 217.
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GOSPORT AIRCRAFT Co.

DESIGNERS AND BUILDERS OF

FLYING BOATS

FOR

OCEANIC AND OTHER ROUTES

An F 5 Type FLYING BOAT as constructed by the Gosport Aircraft Co. is now on exhibition at the Dutch Aero Show, Amsterdam. (By kind permission of the Air Ministry.)

A Gosport Design Dual Control Two-seater FLYING BOAT is also being exhibited.

Both these Flying Boats were flown by the Gosport Aircraft Company's Pilots direct to Amsterdam from their Southampton Works.

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ISLE OF WIGHT.

There was only one day's flying during the week, and the Avro stations were closed on Aug. 28th as the season was over. Twelve passengers were carried in seven flights.

LONDON.

CRICKLEWOOD.—One is informed by Handley Page, Ltd., that the week-end London-Bournemouth service has been discontinued. The contract expired on Aug. 18th.

Although a few people were carried on these trips, the service was not advertised enough to make it a success. The journeys were very delightful, but the fare was not warranted by the very small saving of time over the railway.

A Handley Page will leave for Spain in a few days, whence it is going on a special mission.

The following numbers of passengers were carried by Handley Page, Limited, during the stated weeks ending :—Aug. 16th, 127; Aug. 23rd, 123, including the Maharajah and Maharanee of Cooch Behar and their two children; Aug. 30th, 130.

On Sunday, the 17th ult., 650 members of the Indian Army visited the works of Handley Page, Ltd., and 60 native officers were given short flights. Two parachute descents were made to the great delight of the troops.

HOUNSLOW.—On August 28th, General Sir W. S. Brancker, K.C.B., A.F.C., flew from Amsterdam to Hounslow in an Airco D.H.10, piloted by Capt. Gathergood. A very rough crossing was experienced. The journey took 3 hours 35 mins.

Ninety-one passengers were taken up in Avro machines during the week ending Aug. 30th, and two cross-country flights were made—one to Newmarket and return and the other to Swansea and return.

NOTTINGHAM AND DERBY.

Sites at Nottingham and Derby have been licensed, and flying weeks will be arranged at these towns by some of the Blackpool and Southport Avro pilots. A popular flight should be the journey between these two Midland towns and return.

SCARBOROUGH.

The North Sea Aerial Navigation Co., Ltd., of Olympia, Leeds, are going to start services from Scarborough to Middlesbrough, Stockton, and Darlington (single fare £5), to Hull (£5 15s.), and to Harrogate (£7 10s.). All these journeys can be completed within the hour.

Three-seater machines will be used. The Company are prepared to quote prices for any journey. Applications should be sent to the agents, Messrs. Rowntree and Sons, 33, Westborough, Scarborough.

Sixty-five passengers have been carried recently by the Company at Scarborough in nine days, notwithstanding the indifferent weather conditions.

The racecourse is constantly crowded with people who wish to see the flying.

An arrangement has been made with the "Daily News" to give 75 free flights.

SWANSEA.

During the week ending Aug. 30th 60 flights were made and 109 passengers were taken up in Avro machines.

WARRINGTON.

According to the "Warrington Examiner," Mr. H. W. Griffin, the Hon. Sec. of the Infirmary Fund, has arranged with the Golden Eagle Aviation Co., Ltd., that they shall visit Warrington to give exhibition flying, and to take up passengers at a guinea a flight. Half the proceeds are to be given to the Infirmary Fund. Mr. Griffin hopes to fix the flying week for the end of September.

WREXHAM.

At the request of the local authorities the Air Ministry recently sent a representative to Wrexham in connection with the proposed establishment of a landing-ground there. The racecourse is the only suitable site in the locality, and before it can be licensed the surface will have to be improved.

ETTRICK BAY, SCOTLAND.

Aerial Photos, Ltd., of Edinburgh, have had a busy week, their machines being commissioned by the "Bulletin" newspaper for a week at Ettrich Bay. The meeting was arranged by Capt. Bond Andrews. His staff of pilots are Capt. Simpson and Lt. Rendle Woodcock, both late R.A.F.

Provost McMillan opened the proceedings. Successful coupon-holders of the "Bulletin" were taken up by the score, and flying went on daily until Wednesday night, August 27th, when a gale of extreme violence which swept over Scotland and the north of England destroyed the machines.

In spite of being sand-bagged down, these machines were lifted into the air and overturned 20 yards away. This naturally concluded the flying for the remainder of the week.

IRELAND.

The Great Northern Aerial Syndicate, Ltd. (Liverpool), have written a letter to the Queenstown Urban District Council stating that they have practically decided to establish a base for their Transatlantic airship service at Queenstown. It is stated that these airships will have accommodation for 150 passengers. Smaller airships to carry 50 persons will be used to take the American passengers to Dublin, Liverpool, Manchester, York, Hull, Norway and Denmark.

CANADA.

The Labrador Forest Surveying Expedition was referred to at some length in the issue of THE AEROPLANE, dated Aug. 20th. The expedition has now returned to Montreal. They discovered vast reserves of pulpwood lands, which previously were believed to be of little value.



HOUNSLOW AERODROME.—A photograph taken from D.H.16, piloted by Major Cyril Paterson, M.C., D.F.C. The first machine to fly from London to Paris on the London-Paris Air Service.

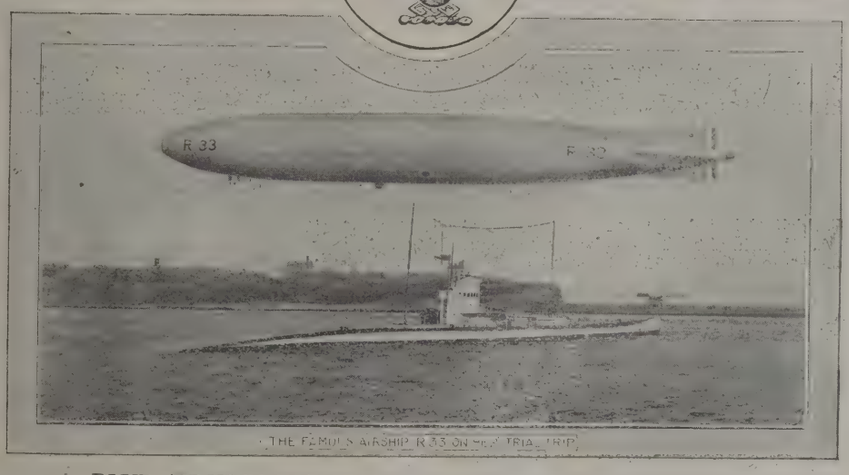


H.R.H. THE PRINCE

of Wales has paid a much appreciated compliment to the new "Victory" Arrol-Johnston Car by purchasing the first model delivered to the public. The car supplied to H.R.H. was standard from all points of view, and differed in no way from the stock type as sold to the ordinary purchaser.

Catalogues from Arrol-Johnston, Ltd., Dumfries, or from London Agents, Messrs. Leverett, Thorp & Kearton, Ltd., 122, New Bond Street, W.1.

TRADE MARK



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The aeroplanes made many flights and travelled 400 miles inland. Numerous photographs were taken and a series of maps were made. It is expected that the discoveries made by the expedition will lead to the exploitation of large areas of land bearing wood suitable for the manufacture of pulp.

BRAZIL.

Handley Page, Ltd., have secured the first complete aerial concession from the Brazilian Government. They are to carry passengers and mails between Buenos Aires and Pernambuco (2,725 miles), and the intermediate towns. It is hoped to begin the service very soon. At first flying will take place only during the daytime, and the trip will take four days. It is expected that the time of the service will be reduced later to two days by flying by night as well as by day.

DENMARK.

The Danish correspondent of THE AEROPLANE writes :—

On August 24th Major T. Gran, with nine passengers, in a Handley Page, attempted a flight from Copenhagen to Aarhus, 85 miles away, but owing to weather conditions it was found impossible to reach the city, and a landing was made at Aalborg. Christiania was reached from there on August 25th, and a landing was made on the Gardermoen military drilling field.

Nielsen and Winther, Ltd., have closed their aviation department owing to lack of business and great loss. The achievements of their latest production, a 160-h.p. vertical type motor, have not been published. Their last action was to send a 90-h.p. Thulin engined two-seater Nieuport scout to Bolivia, *via* Buenos Aires, for the Danish Lieut. Jarfelt, chief of the Bolivian air service, who will accept the machine if it will climb to the height of the mountains, 18,000 feet.

FRANCE.

M. Clemenceau in June had formed a General Co-Ordination Board. The Decree appointing the Board was signed by President Poincaré and seven Ministers, who were charged to carry out its provisions. General Duval, the Director of Military Aeronautics, was appointed to control the Board.

As a result of the Board the French Government is constructing four rigid airships for commercial purposes, and will run an experimental service with them. The airships and the information obtained will be handed over to a civil transport company when sufficient data and experience have been gained from the service. The Government will make arrangements with the company regarding a subsidy and various charges.

Seaplane and aeroplane services will also be subsidised. Already a contract is being made with a company to start an air service between Toulouse and Rabat (Morocco), with intermediate stations at Barcelona, Alicante and Malaga or Madrid and Seville. A definite number of services each way has to be maintained, and the Government will pay a subsidy for mail space in each machine.

The type of machine and engine to be used is laid down and the prices for passenger and goods traffic are fixed. After a certain sum has been earned by the contractor the Government participates in the profits. The use of Government aerodromes and hangars is granted to the contractor at fixed annual charges.

The announcement that the British Government has set aside £64,600 and 80 aerodromes for the encouragement of commercial aviation has made a deep impression in France.

The energy with which civil aviation is being developed in England is causing the French aircraft constructors to complain that they are being neglected by the financiers and commercial business men. The starting of a London-Paris air service on the first day that flying was allowed between the two countries seemed to come as a surprise.

In the "Temps" of Aug. 25th the following appears :—

"We congratulate our friends on the other side of the Channel on their rapidity. At the same time, we regret that no French organisation is capable of such swift realisation. There seems to be a lack of *liaison* between our directors of aeronautics and our French industrialists, whereas in England the parties interested were informed of the negotiations between the two Governments long beforehand. Proof of this is to be found in the publication made last week in numerous English journals of the whole organisation for this service. Once more our French industry has been placed in a situation of manifest inferiority."

It is now known that the failure of the Farman aerobus "Le Goliath" to reach Dakar on Aug. 13th was due to the shearing of the bolts securing the right propeller, while the machine was flying along the coast at a point about 90 miles north of St. Louis, Senegal. For 35 minutes the flight was continued with the starboard engine running alone. This engine overheated, and it became necessary to land on a patch of sloping beach when the tide was high. The machine after landing ran into the sea and was badly damaged. The crew were alone for six days before parties of natives from neighbouring villages discovered them. They had a limited quantity of food in their possession, and water was obtained by distilling sea water.

The Commission Sportive Aeronautique announced that all claims (presumably by French pilots only) for records said to have been established during the war must have been submitted to them before Aug. 31st last.

At 5.30 a.m. on September 1st Poulain (the cyclist who recently flew fifteen yards in an Aviette), was to have made an official trial on the Longchamps racecourse, before members of the Aero Club. Unfortunately the machine was damaged before the trial began.

HOLLAND.

E.L.T.A. NEWS

H.M. Queen Wilhelmina and the Prince Consort paid a visit to the E.L.T.A. Exhibition at Amsterdam on Aug. 27th. They viewed the stands in the Exhibition. Demonstrations were given by several pilots, among whom were Mr. W. R. Kenworthy, Major Draper, and Capt. Hinchcliffe. The last-named pilot smashed the right wing of his machine when landing.

The E.L.T.A. still proceeds in fairly lively fashion, at least, so far as the flying is concerned, performance in eating and drinking showing a marked decline since the opening days.

On the 28th the B.A.T. Limousine, piloted by Major Draper, and containing Mr. Koolhoven and Mr. Lawford, the Airco pilot, departed for London against a gale. It duly reached its destination in 4½ hours, including a stop at Marquise. The weather conditions were such that the passengers had to rig up a rope arrangement en route to hang on to. The return trip was made on the following Saturday, the passengers being Mr. Koolhoven, Mr. and Mrs. Wallace Barr, and Commander Ramsey, U.S.N. The time taken from London to Soesterberg was 2½ hours.

Further arrivals during the week were the Vickers commercial "Vimy," piloted by Capt. Cockerell, a Caproni biplane, "'commercialised" by the addition of a glass house for 10 people on the fuselage, a 2-seater Morane "Parasol," two Portuguese Bréguets, and a Morane monoplane, piloted by Fronval. The latter is putting up some exceedingly fine shows of trick flying.

On the 25th the sensation of the day was provided by the arrival of a Caproni triplane, complete with omnibus attached, containing a further detachment of the Italian Flying Corps, numbering about 16. On the roof, which is formed by the original nacelle, six more persons, including the pilot, are established. It was met over Amsterdam on arrival by the big B.A.T., which made circles round it till the descent took place.

A competition in stunt flying was held on the 26th, a committee of ladies forming the judges. There were 10 competitors. The result was a win for Major Draper on the B.A.T. "Bantam," Mr. Kenworthy, on the "Kangaroo," being second, while Mr. Duke, on the "Bantam," and Ferrarin, on the Italian "Balilla" (a S.V.A., with ordinary single bay bracing), tied for third place. A very amusing performance was given by Capt. Hammersley on the Avro "Baby," which, however, appeared to make more impression on expert spectators than on the judges.

The "Kangaroo" and the five Avros are steadily working through their daily queue of passengers in fine style. The big B.A.T. has made a good many flights, with important passengers, top-hatted representatives of the Dutch Government evidently appreciating the comforts of the cabin.
—R. B. N.

On August 29th the public swarmed onto the landing-ground at Winschoten, Groningen. Captain Hinchliffe, with three passengers, in an Avro machine, attempted to land there. Two spectators were killed and three injured.

The North Sea Aerial Navigation Company of Olympia, Leeds, are carrying passengers at the E.L.T.A. Exhibition in Blackburn "Kangaroo" machines. Sixty to seventy passengers are carried daily.

Flights between Amsterdam and London are to be arranged when the demand justifies them.

In the issue of THE AEROPLANE, dated August 20th, it was stated that a company had been formed for air transport in Holland. Vickers Ltd. have some interest in it. According to the "Haagsche Courant" of August 30th regular air services in Holland will be started next spring. The machines to be used will carry two, three and twelve passengers. Twopence each will be charged for carrying letters in Holland, and fivepence to England.

ITALY.

The Italian correspondent of THE AEROPLANE writes :—

The Seaplane Circuit of Sicily, promoted by the Automobile Club of Sicily, and the great sportsman, Chev. Florio, is to take place on or about Sept. 14th. The pilots are to be men who actively participated in the defence of Sicilian



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S.B.A.C. THE SOCIETY OF BRITISH AIRCRAFT CONSTRUCTORS

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coasts during the war. The French pilots from the Marsala Escadrille are, of course, included in this category.

It is rumoured that a 3,000 h.p. C.A. triplane may yet visit Amsterdam in time for the E.L.T.A. Exhibition.

There is news from Naples of a new enterprise in the completely civilian line. Signor Baliero and Doctor Longo are reported to have alighted there with the first of a batch of aviatics (one presumes S.A.M.L. brand) to set up a flying school with a passenger-carrying and trip department.

The Association of Aviators and Aeronauts of Italy held the first of a long projected series of fêtes for popularising flying on Aug. 24th at the Ansaldo flying ground at Turin. Everything was excellently done.

It is announced that Japan is placing contracts for the supply of large numbers of single-engined aeroplanes in Italy.

Further detailed news of the Rome-Pekin SVA Reliability Squadron trip being organised by D'Annunzio has been communicated to the Press.

Of the five machines starting, three will carry a passenger each. The other two will take luggage containing spares, food and comforts, which will be sent down by parachute to any pilot forced to land in an unaccessible position. Should a pilot go down in a place where landing is possible, one of the luggage machines will descend, throw out the luggage and take the pilot on board.

The length of the trip is about 10,500 miles, and it is to be made in 19 stages in 12 days. Engines may be changed at Bassora, Calcutta, and Shanghai.—T. S. H.

Reuter states that on Aug. 27th the steamer "Nippon" left Spezia for Tokio. It is carrying spare parts of aeroplanes and aeronautical instruments which will be unloaded at various points on the route to be followed by the squadron of Signor d'Annunzio on their flight to Tokio.

A Caproni aeroplane crashed near Vienna shortly before noon on Aug. 23rd.

The machine had taken off from the aerodrome at Aspern to fly to Rome *via* Turin, when it fell to the ground from a less height than 1,000 ft., and was totally wrecked. The occupants, a pilot, a mechanic, and two officers of the Italian Armistice Commission, were killed.

NORWAY.

The Danish correspondent of THE AEROPLANE writes :—

A number of fishermen on the west coast of Norway have combined to buy a seaplane to go in search of the herring shoals; their choice is a German Brandenburg three-seater, with the naval Capt.-Lt. Christiansen as pilot.

Having bought a new and larger Curtiss flying-boat the Danish-American millionaire, Mr. Larsen, sold his small flying boat of the same make, which was piloted by Capt. Batts, and engined by a Curtiss 6-cyl. vertical type aluminium motor, by auction at the Norwegian capital. Although it cost £3,300, only £1,000 was obtained from the Christiania firm, "Norsk Luftkraft," who are using it for their new flying school.

This firm has already been referred to. It was inaugurated at Gardermoen with Lieut. Haganæs as manager and Lieut. Vogt as instructor. They have six 70-h.p. two-seater Caudron school machines, and three Avros for advanced training. They were all bought in England and tested by a British lieutenant, whose elegant flying drew much admiring comment. The school is attended by 50 pupils at a fee of £111.

SWEDEN.

On August 26th the Austrian Lieut. Ebner put up a new Scandinavian altitude record of 17,100 feet with two passengers, at the Thulin aerodrome in Ljungbyhed, presumably on a Phœnix aeroplane.

SWITZERLAND.

Taddeoli on the S.I.A.I. is continuing the exhibition flights for which he flew that machine to Lake Geneva. He has been flying over the Rhone valley end of the lake with passengers at great heights, thereby showing his caution.

Lts. Comte and Mittelholzer recently flew from Dubendorf to Samaden *via* Ragaz Oberhalbstein and the Magna and Berniria mountains. The affair was organised by the St. Moritz hotel people, who hope that when that lake is frozen —usually late in November—many landings will be made there.—T. S. H.

The Federal Council have partially modified the Decree of 1914 which forbade flights over Swiss territory. Though the Aerial Code is not yet definitely binding, permission to fly will be accorded to aviators willing to pledge themselves to observe certain conditions.

Lt. Pillichody, who flew to the summit of the Jungfrau on Aug. 19th last, was unable to attempt to leave for three days owing to the prevailing high wind. On Aug. 22nd he made an attempt, but was brought down by a gust of wind a few feet after leaving the ground. His machine fell into the snow and was seriously damaged.

Major Isler, the Chief of the Swiss Military Aviation Department, has announced that a new sport will be possible for tourists in the Alps next summer. He calls it "Alp-climbing by Air." Landing-places will be made on or near the summits of mountains, such as Mont Blanc.

Tourists will be able to make the trips by aeroplane in a very short time. At first the charges for these trips will be high, but they will be gradually reduced.

Private companies will be formed shortly for Alpine aviation.

SOUTH AMERICA.

The L.A.L.T.A.—Latin Alliance for Aerial Transport in South America—is doing well, especially in Brazil.—T. S. H.

UNITED STATES OF AMERICA.

At the start of the Aerial Derby from Toronto on Aug. 25th a Curtiss Oriole machine, piloted by Rholfs, turned on its back and delayed the start.

The first machine to arrive at Mineola, New York, from Toronto, was piloted by Coombs, and landed at 7.11 p.m. on Aug. 25th. Two other aviators landed a few minutes later. They were the only competitors to arrive from Toronto on that date, and started on the return journey on the next morning.

Colonel Barker, V.C., was the first to complete the flight from Toronto to New York and back. He was flying a Fokker, and finished the circuit at 9.35 a.m. on Aug. 27th.

None of the 40 machines which started from New York on Aug. 28th reached Toronto on the same day. Eight stopped the night at Syracuse and 16 at Albany. The remaining 16 had to land where they could.

Four machines reached Toronto from New York on Aug. 26th. The first machine to arrive back at New York was piloted by Lieut. Plumb. who, with two other aviators, reached there on the evening of Aug. 26th.

Eight machines completed the circuit at New York on Aug. 28th. Bad weather at Toronto and several crashes detained the others. A De Havilland has been missing since it left Buffalo for Toronto on Aug. 27th. It is feared that the aviators have fallen into Lake Ontario and perished.

Lieut. Maynard, a United States army officer, won the aerial Derby between New York and Toronto. Flying a D.H.4 fitted with a Liberty engine he covered the 1,042 miles in 7 hours, 45 min., 15 sec. flying time.

Two other American officers, Lieuts. H. H. George and D. B. Gish, also in D.H. machines, were respectively second and third in 8 hours 40 min. 5 sec. and 8 hours 44 min. 15 sec.

The winners, under the United States army regulations, cannot accept the cash prizes, which will go to civilians who made the next best time. Lieut. Maynard, however, will receive the Canadian Exposition trophy for the fastest round trip, and the Aero Club of Canada trophy for the Roosevelt Field entrant, making the best time one way, which he did in 3 hours, 20 mins., 45 sec.

During the six weeks, ending Aug. 2nd, 56 fires were discovered in the California forests by the aerial forest fire patrol. The fires were reported promptly and quickly extinguished, having caused only nominal damage.

The corps of aviators from the three flying stations, Mather Field, Sacramento; March Field, Alessandro; and Rockwell Field, San Diego, have made 373 flights over the forest, covering a distance of 45,376 miles.

The U.S. Army Balloon School at Arcadia have kept a balloon up all day and night, and have discovered and reported many fires.

The Director of Air Service had authorised on Aug. 5th the extension of the forest patrol over parts of the Oregon forests. The headquarters have been established at Salem Ore, where eight aeroplanes will be stationed.

The U.S. Department Agriculture Weather Bureau has prepared a map of the United States divided into 13 zones. Weather forecasts are made in each zone at 9.30 a.m. and 9.30 p.m. to cover 24 hours. These forecasts were available for aviators and balloon pilots from Aug. 10th.

Similar forecasts have been made with the country divided into seven zones since July 21st with very satisfactory results.

The Superintendent of the Western Division of the New York-Chicago Air Mail has stated that the service will be extended from Chicago to St. Louis in about the middle of September. The distance is approximately 400 miles, and will be covered in a single flight from Chicago.

One of the new Curtiss H.A. mail machines recently broke all records on a stage of the New York-Chicago air mail service. The speed averaged 120 m.p.h.

This machine was built for the Liberty engine. It carries 900 pounds of mail, and in a test flight attained a speed of 145 m.p.h. with a full load.

The Philadelphia Aero-Service Corp has started commercial aerial transport. The aerodrome is situated in the suburbs of Philadelphia. Four aeroplanes have been purchased and a flying school has started.



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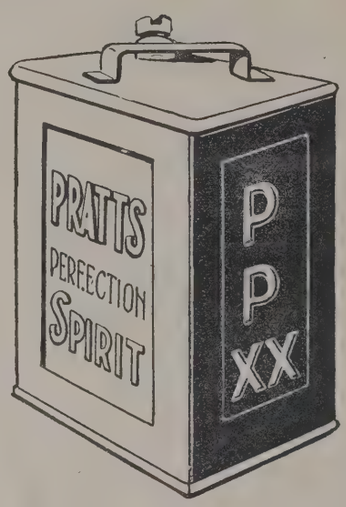
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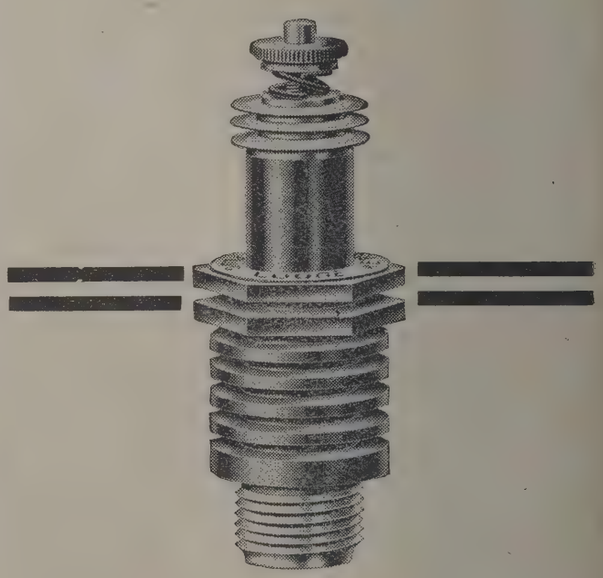
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NAVAL.

FROM THE "LONDON GAZETTE."

ADMIRALTY, Aug. 14th.

R.M.L.I.—The commissions of the following officers are terminated on transfer to the Royal Air Force:—Maj. K. Gordon, C.M.G., D.S.O., Maj. E. L. Gerrard, C.M.G., D.S.O., Maj. C. E. Risk, D.S.O., Maj. C. F. Kilner, D.S.O., Capt. C. E. H. Rathborne, D.S.O., Capt. I. T. Courtney, O.B.E., Capt. A. G. Bishop, A.F.C., Aug. 1st.

ADMIRALTY APPOINTMENTS AND PROMOTIONS.

The following appointment has been made:—

SEPT. 1st.—WT. SHIPWTS.—E. E. Back, to "Argus."

* * *

Reports from Viborg state that a violent bombardment was heard there on the 27th ult. lasting for two hours, from the direction of Kronstadt.

It is supposed that the British Naval and Air Forces were in action. Thick clouds of smoke were seen afterwards above Kronstadt.

It is officially reported that an aeroplane coming from Kronstadt appeared over Terijoki recently and dropped six bombs, which, however, caused no damage.

MILITARY.

FROM THE "LONDON GAZETTE."

WAR OFFICE, August 26th.

REGULAR FORCES.—INFANTRY.—R. Fus.—Lt. R. L. G. May (attd. R.A.F.) resigns his commn., Aug. 27th.

Gord. Highrs.—Sec. Lt. J. MacGeorge (attd. R.A.F.) resigns his commn., Aug. 27th.

GENERAL LIST.—Sec. Lt. to be Lt.:—W. Sharpe, A.F.C.

ROYAL ARMY CHAPLAINS DEPARTMENT.—The Rev. A. McHardy, temp. Chapln. to the Forces, 4th Class, relinquishes his commn. on transfer to the R.A.F., Aug. 1st.

WAR OFFICE, Aug. 27th.

REGULAR FORCES.—R.F.C.—Mil. Wing.—Flying Officer.—The date of appointment of temp. Sec. Lt. R. G. Berwick, Gen. List (since killed), is July 6th, 1917, and not as in "Gazette" of Oct. 26th, 1917.

OVERSEAS FORCES.—CANADA.—CAN. ENGRS.—Temp. Lt. A. D. Macdonald, D.F.C., ceases to be secd. for duty with the R.A.F., July 29th.

W. ONT. R.—Temp. Lt. D. McD Northcombe ceases to be secd. for duty with the R.A.F., Aug. 13th.

MANITOBA.—Temp. Lt. J. Cave ceases to be secd. for duty with the R.A.F., Aug. 13th

CAN. MACH. GUN CORPS.—Temp. Lt. H. W. Pearson ceases to be secd. for duty with the R.A.F., Aug. 12th

WAR OFFICE, August 30th.

TERRITORIAL FORCE.—INFANTRY.—7th Bn. W. Rid. R.—Sec. Lt. H. H. Lockwood (Sec. Lt., R.A.F.) to be Lt., and to remain secd., Feb. 28th.

THE CASUALTY LIST.

Reported August 29th.

CANADIAN FORCES.—DIED.—Williams, Lt. P. E., Cent. Ont. Regt., attd. R.A.F.

OFFICIAL COMMUNIQUÉ

The following official communiqué was issued by the War Office on August 30th concerning operation on the Archangel front:—

General Ironside reports that aircraft co operated with the Royal Fusiliers in recapturing Emptsa (Vomtsa), by dropping bombs on barracks and armoured trains.

* * *

Mr. Lloyd George will unveil a statue in memory of Captain Albert Ball, V.C., on his visit to Nottingham in October.

* * *

The second day of the Army Championship Meeting concluded on Aug. 29th at the Queen's Parade, Aldershot.

In the 220 yards race for demobilised officers and soldiers, W. J. Thompson (late serjt., R.A.F.) was first by four yards, 24 3-5 sec. H. Dear (late lieut., R.A.F.) was third, and two yards behind the second in.

AIR FORCE.

FROM THE "LONDON GAZETTE."

AIR MINISTRY, August 26th.

His Majesty the King has been pleased to make the appointment to the Most Excellent Order of the British Empire:—

KNIGHT GRAND CROSS.

Major-General Sir Frederick Hugh Sykes, K.C.B., C.M.G., Retired List, late R.A.F., for distinguished services to aviation in general, and in particular for invaluable work as former Chief of the Air Staff.

R.A.F.—The following temp. appointments are made at the Air Ministry:—Staff Officers, 3rd Class (P.).—Flying Officer E. N. D. Worsley, Sec. Lt. H. Baker, August 1st

Staff Officer, 4th Class (T.).—Lt. E. H. Eldridge, Aug. 20th.

The following temp. appointment is made:—Staff Officer, 1st Class (P.).—Lt.-Col. C. T. Maclean, D.S.O., M.C. (substituted for notification in "Gazette," Aug. 19th).

FLYING BRANCH.—Maj. R. B. B. Colmore, O.B.E., to be Maj. (A'ship), from (S.O.), May 12th (substituted for notification in "Gazette" Aug. 5th).

Capts. to be graded for purposes of pay and allowances as Majs whilst empld. as Majs. (A.):—R. M. Drummond, D.S.O., M.C., May 1st; C. W. Hyde, from May 1st to 11th.

Capt. (actg. Maj.) R. S. Booth, A.F.C., to be Capt. (A'ship), and to relinquish the actg. rank of Maj., from (S.O.), Aug. 10th.

Lts. to be actg. Capts. whilst empld. as Capts. (A.):—C. S. Stonehouse from Oct. 25th, 1918, to April 30th, W. L. Fenwick, June 1st.

Lts. to be graded for purposes of pay and alowances as Capts. whilst empld. as Capts.:—W. L. Fenwick, from May 1st to 31st; T. H. French, D.F.C., from May 1st to July 1st; T. S. Ivens, from May 1st to July 15th; J. R. Milne, D.F.C., from May 1st to July 15th; F. V. Way, A.F.C., from May 1st to June 22nd; S. Baker, S. E. Faber, A.F.C., E. M. Henderson, R. C. Jenkins, M.C., S. P. Marcus, H. V. Pendavis, D.S.O., W. K. Sutton, R. L. Lyster-Smythe, H. E. Walker, M.C., D.F.C., E. W. White, May 1st.

Lt. R. A. Denne to be Lt. (A.), from (Ad.), April 15th.

Sec. Lt. H. G. Pratt to be Lt., Aug. 31st, 1918

Sec. Lt. H. A. Castaldini to be actg. Lt. whilst empld as Lt. (O.), from Dec. 11th, 1918, to April 30th (substituted for notification in "Gazette," Jan. 24th); A. A. Phillips (temp. Sec. Lt. R. W. Kent R.) is granted a temp. commn. as Sec. Lt. (O.), Oct. 30th, 1918 (substituted for notification in "Gazette," Dec. 31st, 1918)

The following relinquish their commns. on ceasing to be empld.:—Lt. H. Seymour, and is permitted to retain his rank, Aug. 31st, 1918 (substituted for notification in "Gazette," Aug. 30th, 1918); Lt. (Hon. Capt.) D. Owen (Capt., Nova Scotia R.), May 31st; Lt. E. C. L. Copner (Lt., Devon R.), July 30th; Lt. J. M. Leach (Lt., York R.), Aug. 6th; Sec. Lt. (Hon. Lt.) D. McD. Northcombe (Lt., W. Ont. R.), Aug. 13th; Lt. (Hon. Capt.) A. M. Mitchell (Capt., R.A.S.C.), Aug. 20th.

Transferred to unempld. list:—Sec. Lt. J. H. Hall, Jan 15th; Sec. Lt. A. Watson, Feb. 2nd; Sec. Lt. H. Roberts, Sec. Lt. J. Walker, Feb. 7th; Lt. G. L. Graham, D.F.C., Feb. 10th; Sec. Lt. F. H. T. Rudkin, Feb. 12th; Sec. Lt. S. A. W. Setchell, Feb. 14th; Sec. Lt. R. McDowall, March 12th; Lt. C. Unbcham, March 30th; Sec. Lt. L. H. Jackson, April 1st; Capt. P. G. Williams, April 4th; Sec. Lt. (Hon Lt.) W. Norris, April 10th; Lt. C. H. Harrison, April 12th; Sec. Lt. J. L. Killoran, April 13th; Lt. E. I. Wells, M.C., April 14th; Lt. L. S Harvey, April 16th; Capt. C. J. Hyde-Trutch, April 17th; Sec. Lt. T. L. Harding, Lt. W. E. Roe, April 19th; Sec. Lt. T. James, Sec. Lt. R. Ramsay, April 20th; Sec. Lt. W. H. Hoskings, Lt. (actg. Capt.) G. T. Williams, April 24th; Lt. P. C. Richards, May 1st; Lt. F. James, May 7th; Sec. Lt. C. S. Rathbone, May 10th; Sec. Lt. J. A. Reith, May 11th; Sec Lt. F. W. Radford, May 13th; Sec. Lt. H. Lyne, Sec. Lt. J. F. Rowbotham, May 15th; Lt. G. V. Learmond, May 16th; Lt. A. W. E. Reeves, May 18th; Lt. H. L. Whittome, May 19th; Lt. A. C. Aspinall-Howe, May 20th; Lt. F. Lynn, May 26th; Lt. D. L. Lynn, Lt. G. W. Lynn, June 3rd; Sec. Lt. (Hon. Capt.) L. R. Hibbert, June 4th; Sec. Lt. W. S. Weeks,, June 10th; Lt. J. C. Louw, June 13th; Sec. Lt. (Hon. Lt.) J. S. Smith, June 14th (substituted for notification in "Gazette," Aug. 15th); Lt. J. H. W. Clarke, June 15th; Lt. B. E. Randall, June 16th; Sec. Lt. (Hon. Lt.) I. B. Boyce, June 17th; Sec. Lt. (Hon. Lt.) W. Reid, June 20th; Lt. M. S. Lewin, June 25th; Lt. J. F. Bushe, June 27th; Lt. J. W. D. Leigh, M.C., June 28th; Sec. Lt. W. Endersby, July 1st; Sec. Lt. W. McCullagh, July 3rd; Sec. Lt. H. E. Hounsell, July 4th; Lt. G. Bryers, July 5th; Sec. Lt. H. C. Rochester, July 8th; Lt. I. A. Peers, July 10th; Sec. Lt. F. L. Hutchinson, Sec. Lt. S. H. Jacobus, Sec. Lt. W. S. Lawson, Sec. Lt. W. L. Taylor, July 12th; Lt. N. H. Colson, July 15th; Sec. Lt. (Hon. Lt.) H. L. Jackson, July 17th; Lt. A. E. Love, July 20th; Sec. Lt. G. M. Ross, July 22nd; Lt. G. S. Hankinson, Sec. Lt. F. J. Jackson, July 30th; Sec. Lt. N. C. R. Roberts (substituted for notification in "Gazette," July 25th); Sec. Lt. F. H. Wilcock, Sec. Lt. A. K. Doull, Maj. W. J. Tempest, D.S.O., M.C., Aug. 1st; Capt. Lord E. A. Grosvenor, Sec. Lt. H. B. Harmsworth, Sec. Lt. M. Imeretinsky, Lt. F. A. Rowe, Aug. 2nd; Sec. Lt. J. Leftwich, Aug. 4th; Lt. D. F. Burton, Sec. Lt. R. A. Molin, Aug. 5th; Sec. Lt. J. F. Greenwood, Sec. Lt. L. G. Lowe, Aug. 6th; Lt. D. P. Bees, Sec. Lt. D. W. Thornton-Inman, Aug. 7th; Lt. C. W. Harman, Aug. 8th; Sec. Lt. F. E. Green, Sec. Lt. G. J. Holdcroft, Lt. G. E. Hicks, Sec. Lt. E. C. M. Reid, Aug. 9th; Lt. H. H. T. Potter, Lt. M. Stuart-Menteth, M.C., Lt. W. E. Warden, M.C., Sec. Lt. R. J. Wood, Aug. 9th; Sec. Lt. J. H. Walton, Aug. 13th; Sec. Lt. W. K. Badenach, Sec. Lt. J. R. Baisley, Lt. B. Dawe, Lt. G. Richardson, Lt. H. T. Rushton, Sec. Lt. J. H. Sims, Lt. G. H. L. Woodley, Aug. 14th; Lt. H. S. Malik, Aug. 16th; Lt. R. J. Brownell, Aug. 19th; Sec. Lt. G. Fisher, Aug. 21st; Lt. A. W. Allan, Aug. 23rd

Capt. E. F. Elderton relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain his rank, Aug. 20th.

The following Lts. relinquish their commns. on account of ill-health and are permitted to retain their rank:—F. J. Taylor (caused by wounds), July 28th; A. N. Nesbitt (caused by wounds), Aug. 7th; A. Coombs, Aug. 13th; H. A. Smeeton, Aug. 15th.

Lt. J. MacGeorge (Gord. Highrs.) resigns his commn., and is permitted to retain his rank, Aug. 27th.

Sec. Lt. J. N. Hamman resigns his commn. and is permitted to retain his rank, March 6th (substituted for notification in "Gazette" Nov. 29th, 1918).

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—A. L. Fachnie, July 11th (substituted for notification in "Gazette," June 20th); S. Soothill (caused by wounds), G. E. Williams (caused by wounds) Aug. 14th; H. R. Messinger (contracted on active service), Aug. 16th; J. Levy, Aug. 20th (substituted for notification in "Gazette," Jan. 30th).

Sec. Lt. P. A. Templeton is antedated in his appointment as Sec. Lt. (A. and S.), May 15th, 1918.

The name of Sec. Lt. (Hon. Capt.) L. Wilmot-Johnson is as now described, and not "J. L. Wilmot" as stated in "Gazette," July 20th.

The initial of Sec. Lt. C. Crosthwaite is as now described, and not "G." as stated in "Gazette," Aug. 15th

The initials of A. C. D. Anderson are as now described, and not "A. C." as stated in "Gazette," Sept. 6th, 1918.

The notification in "Gazette," July 29th, concerning Sec Lt. W. R. Wright refers to "Walter Redvers Wright."

The surname of Lt. (Hon. Capt.) H. N. Witting is as now described, and not "Whitting" as stated in "Gazette," June 13th.

The notification in "Gazette," Dec. 31st, 1918, concerning Sec. Lt. M. Ross-Jenkins (deceased) is cancelled

The notification in "Gazette," March 28th, concerning Lt. E. Tasker, A.F.C., is cancelled.

The notification in "Gazette," April 1st, concerning Capt. E. J. B. Howis cancelled.
The notification in "Gazette," April 11th, concerning Sec. Lt. G. Gardner is cancelled.
The notification in "Gazette," May 6th, concerning Lt. J. Davidson is cancelled.
The notification in "Gazette," June 27th, concerning Sec Lt. J. Stopford is cancelled.
The notification in "Gazette," July 22nd, concerning Lt. H. S. Preston is cancelled.
The notification in "Gazette," July 25th, concerning Sec. Lt. R. Russell is cancelled.
The notification in "Gazette," July 29th, concerning Sec. Lt. W. Kinghorn (deceased) is cancelled.
The notification in "Gazette," July 29th, concerning Sec. Lt. H. J. Clark is cancelled.
The notification in "Gazette," July 15th, concerning Lt. J. H. Williamson is cancelled.
The notification in "Gazette," April 25th, concerning Lt. A. C. Anderson is cancelled.
The notification in "Gazette," July 18th, concerning Sec Lt. A. L. Fachine is cancelled.
The notification in "Gazette," Aug. 15th, concerning Lt. D. Cairns is cancelled.
The notification in "Gazette," Feb. 14th, concerning Sec. Lt. F. L. Roberts is cancelled.

ADMINISTRATIVE BRANCH.—Sec. Lts. to be Lts.:—H. J. Clark, Aug. 9th, 1918; (actg. Capt.) G. D. Ashby, Oct. 20th, 1918, and to retain the actg. rank of Capt. until April 30th (substituted for notification in "Gazette," July 18th).
Sec. Lt. H. F. Henry (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt., Aug. 26th, 1918.
G. J. Maunsell (Sec. Lt., Lond. R.) is granted a temp. commn. as Sec. Lt., April 1st, 1918.
Lt. S. McGaw (Lt., Gord. Highrs) relinquishes his commn. on ceasing to be empld., Aug. 1st.
Transferred to unempld. list:—Lt. E. Tasker, A.F.C., March 13th; Sec. Lt. F. S. Riley, March 26th; Lt. G. Wilson, April 11th; Lt. P. Cairns, April 23rd; Sec. Lt. J. P. Young, April 29th; Sec. Lt. J. R. Nicholson, May 1st; Lt. L. B. Lyle, May 7th; Sec. Lt. (Hon. Lt.) S. P. Jacoby, June 4th; Lt. G. H. Raitt, July 1st; Capt. H. F. Roberts, July 4th; Sec. Lt. T. Irvine, July 5th; Sec. Lt. A. C. Challans, July 12th; Maj. E. A. Noel, July 14th; Lt. V. G. Davis, July 15th; Sec. Lt. H. A. Hobbs, July 16th; Lt. J. R. Currington, July 23rd; Sec. Lt. W. J. A. Rogers, July 25th; Lt. H. Lambourne, July 30th; Capt. M. B. O'Brien, July 31st; Sec. Lt. J. E. G. Henchman, Sec. Lt. S. F. Marsh, Sec. Lt. C. E. Yates, Aug. 1st; Lt. L. V. Labrow, Aug. 2nd; Sec. Lt. C. J. Shapley; Sec. Lt. M. J. Wolseley, Aug. 8th; Lt. H. D. Scowcroft, Aug. 16th; Sec. Lt. H. C. Meade, Aug. 22nd; Lt. L. V. Nicholson, Aug. 23rd.
Lt. A. A. Denison, M.B.E., M.C. (Lt., York and Lanc. R.), resigns his commn. and is permitted to retain his rank, Aug. 27th
Lt. E. J. Street (Regular Army Officer) relinquishes his commn. on account of ill-health, Aug. 26th
Lt. (Hon. Capt.) K. E. Clayton (Somerset L. Inf.) is dismissed the Service by sentence of a General Court Martial, Aug. 6th.
Sec. Lt. H. B. Willoughby relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, Aug. 14th.
Sec. Lt. T. L. Davies (Dgn. Gds.) relinquishes his commn on account of ill-health, Aug. 14th.
The notification in "Gazette," April 4th, concerning Sec Lt. J. Sadler is cancelled.
The notification in "Gazette," May 23rd, concerning Sec. Lt. H. T. Bolt is cancelled.
The notifications in "Gazette," July 18th, concerning Sec. Lt. R. A. Smith, Sec. Lt. W. J. Bradshaw, and Capt. C. D. Smart, M.C., are cancelled.
The notification in "Gazette," May 20th, concerning Lt. A. L. Freeman is cancelled.
The notification in "Gazette," of Aug. 8th, concerning Lt. A. N. Nesbitt is cancelled.

TECHNICAL BRANCH.—Sec. Lt. (Hon. Capt.) J. R. Cassidy to be Lt. (April 23rd, 1918), without pay and allowances prior to Aug. 22nd, 1918.
Sec. Lt. C. C. Hicks to be Lt., without pay and allowances of that rank, April 20th.
The following relinquish their commns. on ceasing to be empld.:—Sec. Lt. A. L. Bird, April 6th, 1918; Capt. H. A. Saunders (Capt., R. Marines), May 24th.
Transferred to unempld. list:—Lt. W. H. Short, April 13th; Lt. (Hon. Capt.) C. D. Smart, M.C., April 22nd; Capt. G. W. A. Brown, May 21st; Capt. C. J. Smith, May 25th; Lt. N. Haig, May 28th; Sec. Lt. (Hon. Lt.) H. Scott, June 12th (substituted for notification in "Gazette," July 18th); Sec. Lt. F. T. Johnson, July 8th; Sec. Lt. T. Wright, July 17th; Capt. J. Inwood, July 18th; Lt. W. Hardcastle, Sec. Lt. J. Leyland, July 25th; Lt. A. E. Rampton, July 30th; Lt. J. R. Brown, M.C., Lt. A. E. Layton, Maj. S. J. L. Vincent, July 31st; Sec. Lt. F. B. Reed, Sec. Lt. A. T. Williams, Aug. 1st; Capt. J. D. Blyth, Sec. Lt. A. R. Conder, Sec. Lt. H. Cue, Lt. E. W. Vaughan, Aug. 2nd; Sec. Lt. E. C. G. Vines, Aug. 3rd; Sec. Lt. (Hon. Lt.) E. E. Hooper, Aug. 4th; Sec. Lt. G. A. K. Robertson, Aug. 6th; Sec. Lt. H. J. Lewis, Aug. 7th; Lt. F. A. Fyfe, M.C., Capt. A. G. Griggs, Aug. 8th; Sec. Lt. G. Cockburn, Capt. J. L. Luntley, Aug. 9th; Capt. A. M. C. Scott, Aug. 11th; Sec. Lt. R. H. Thomas, M.M., Aug. 12th; Capt. H. A. Whelen, Aug. 15th; Sec. Lt. D. A. Angus, Aug. 22nd.
Sec. Lt. F. L. Roberts relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Aug. 15th.
The surnames of Sec. Lt. (actg. Lt.) H. F. Weet is as now described, and not "West" as stated in "Gazette," June 10th.
The notification in "Gazette," Jan. 3rd, concerning Sec Lt. A. A. Davis is cancelled.

MEDICAL BRANCH.—The following are granted temp. commns. as Capts.:—J. G. Skeet (late Capt., A.I.F.), August 10th; G. M. Mellor, Aug. 21st.
Lt.-Col. E. O. B. Carbery, O.B.E. (Surg. Commander, R.N.), relinquishes his commn. on ceasing to be empld., Aug. 15th.
Transferred to unempld. list:—Capt. G. Visger, Aug. 1st; Capt. R. H. Robbins, Aug. 14th.

DENTAL BRANCH.—W. P. Bole is granted a temp. commn. as Lt., July 28th.

CHAPLAINS BRANCH.—The Rev. E. Roberts is transferred to unempld. list, April 9th.
The notification in "Gazette," Aug. 22nd, concerning Rev. A. S. Bishop is cancelled.

MEMORANDA.—The following Oversea Cadets are granted temp. commns. as Sec. Lts., with effect from Feb. 15th, and relinquish such commns., with permission to retain the rank, from the day following termination of the standardised voyage in the case of those claiming immediate repatriation, and from the day following demobilisation in England in all other cases:—171288 W. M. Hall, 2005826 F. G. Nesbitt, 183609 H. D. Scotton.
The following Cadets are granted Hon. Commns. as Sec. Lts.:—178600 G. S. Adam, 175569 W. Andrews, 177345 G. Astley, 177879 J. Adam, 177952 S. G. Bridger, 178406 G. E. Bagullay, 176746 F. D. Barker, 178070 J. W. Bower, 178331 G. V. Beedham, 178408 E. J. Black, 178409 P. A. Brown, 178460 F. D. M. Brown, 177100 G. V. Constantinidi, 176753 W. G. Cattell, 176755 S. P. Camplin, 178523 E. Chadwick, 176781 J. Curling, 177101 D. G. Denoon, 177405 E. Dennis, 177526 N. H. Dent, 178345 A. H. Doog, 176704 C. W. Doley, 177355 J. Dick, 178603 J. P. Evans, 176411 H. Ely, 178401 J. H. Edwards, 178735 S. A. French, 177164 W. J. Ferguson, 178249 J. A. Findlay, 176960 C. Flanagher, 177266 F. Goodfellow, 177283 T. H. Gwen, 177450 G. Gulliford, 177495 H. Gleave, 177589 J. Grimshaw, 177822 E. Glover, 178253 J. A. Graham, 178419 R. P. Gardener, 178774 L. Gregory, 178093 A. T. Harrington, 178252 F. J. Humm, 177106 C. W. Hopkins, 176239 J. E. Hargood, 177566 G. L. Harper, 178320 J. B. Ojnes, 177111 B. K. Johnson, 177139 E. J. Jack, 177208 H. J. Jones, 178013 H. Knox, 177329 H. Law, 177079 W. F. Lane, 178053 G. Lowther, 178054 W. R. Loyd, 178480 A. L. McQuire, 178031 G. McCallum, 177570 J. McMillan, 177593 W. M. Miller, 177421 W. H. Morgan, 177864 H. Moult, 177141 N. S. Parry, 178381 J. S. Precious, 178382 T. P. Powell, 178429 F. A. Perry, 175409 A. Rodgers, 177801 P. M. Russell, 177976 H. S. Rowse, 177072 C. A. B. Sewell, 177073 H. T. S. Strang, 175830 H. R. J. Smith, 177802 W. R. Simmons, 177985 W. A. Smith, 178027 W. Tait, 177471 E. G. Taylor, 177845 C. W. R. Taylor, 177872 W. J. Thompson, 177555 N. H. F. Unwin, 177079 B. E. Wilkinson, 177342 L. E. M. Wells, 177303 W. R. Walker, 177443 F. H. M. Winwood, 177574 E. F. Wainwright, 24969 L. T. Wells, 176296 T. R. Weston, 176715 B. J. Wright, 177760 G. E. Whitfield, 177910 S. Watts, 177948 A. S. Webber, 178068 C. S. Wilson, 178502 E. J. Walker, Jan. 18th; 177395 J. C. S. Ahern, 176308 H. Brook, 176314 J. S. Bell, 177350 A. D. Bourne, 177616 A. C. Braham, 160150 N. R. Champion, 176408 J. W. S. Coulter, 176725 E. S. Crocker, 176726 W. H. Cook, 177134 J. Clarkson, 177424 K. W. W. Cockenden, 177620 L. W. Causer, 177657 R. W. H. Cunningham, 176763 R. W. S. Drummond, 177659 E. P. Duffield, 175255 M. E. Elliot, 177407 W. Ferguson, 177690 W. J. Findon, 177306 P. Gillies, 177323 T. W. Gilmour, 117896 W. Heath, 176242 E. F. Holliday, 176099 A. B. Lavy, 176352 A. G. Litherland, 177309 R. C. Large, 177746 J. F. Latham, 137770 J. O. Mountney, 176881 W. L. H. Miles, 126078 C. D. Newman, 176362 P. G. Parker, 177176 E. Pinks, 177754 S. Parker, 176629 T. J. W. Stone, 176827 J. S. Snell, 177674 R. A. Smith, 176136 R. H. Tointon, 110057 J. Whyte, 177445 J. W. Wills. 177761 J. W. Wells, Jan. 20th; 223686 S. H. Metcalfe, March 9th; 100225 A. G. Webb, March 18th (substituted for notification in "Gazette," July 8th).
Lt.-Col. C. R. Finch-Noyes, D.S.O., A.F.C. (Paymaster-Lt., R.N.) relinquishes his commn. on ceasing to be empld., Aug. 16th.
The following temp. Hon. Lts. relinquish their commns. on ceasing to be empld.:—A. J. Mackay, May 16th; C. A. Packer, May 31st; W. R. V. Morgan, June 16th; R. Searle, July 31st; P. C. Thornton, Aug. 24th.
Transferred to unempld. list:—Sec Lt. W. J. Randall, March 13th; Capt. W. A. C. Ricketts, from (S.O.), May 4th; Lt. E. G. Clement, from (S.O.), Aug. 1st; Sec. Lt. M. L. Bisson, Sec. Lt. J. H. F. Hock, Sec. Lt. G. T. Thorne, Sec. Lt. S. J. Livingstone, Sec. Lt. W. E. May, Sec. Lt. E. Moorlands, Sec. Lt. L. M. Montgomery, Aug. 14th; Capt. F. Spencer, from (S.O.), Aug. 16th
The initial of 176681 Cadet K. McArthur is as now described, and not R. McArthur, as stated in "Gazette," Aug. 19th.

AIR MINISTRY, August 29th.

The following officers and other ranks of the Royal Air Force (including *personnel*, Women's Royal Air Force) have been brought to the notice of the Secretary of State in respect of the valuable services they have rendered in connection with the war, and a note to this effect will accordingly be made in the Official Records:—
Maj. C. R. Abbott, M.B.E., Lt. (actg. Maj.) F. B. Adams (Wilts. R.), Lt. (actg. Capt.) H. A. Adams (A.P.D.), Capt. (actg. Maj.) W. B. Adams, Lt. (actg. Capt.) P. E. D. Addis (Som. L.I.), Lt. G. J. E. Agnew, Capt. F. R. Aldford, M.C. (Can. M.G.C.), Sec. Lt. G. K. Alling, Lt. (actg. Capt.) C. E. Amoore, Sec. Lt. B. D. Anderson, Hon. Lt. (actg. Capt.) G. F. Antell (Can. Ord. C.), Lt. A. Appleby (R. Fus.), Lt. (Hon. Capt.) A. G. T. Appling, Lt. (actg. Capt.) C. F. Apthorp, Maj.-Gen. H. T. Arbuthnot, C.B. (R. Arty.), Capt. (actg. Maj.) C. L. Archbold, Lt. E. L. Ardley (K.R.R.C.), Lt. H. D. Arkell, Lt. J. A. Armstrong, Lt. G. D. Ashby (R.G.A., S.R.), Lt. N. H. Astley, Admstr. Miss M. A. Atkin, Sec. Lt. J. A. Atkinson, Capt. J. C. Atkinson, Sec. Lt. F. T. L. Avis.
Maj. (actg. Lt.-Col.) P. Babington, M.C., A.F.C. (Hants R., T.F.), Sec. Lt. L. Badger, M.M. (R.E.), Chapln. (Civil) Rev. W. A. Badger, Capt. E. P. L. Baker (S. Staffs. R.), Sec. Lt. H. Baker, Lt. (actg. Capt.) P. D. Baker (R.A., T.F.), Capt. C. W. Baldwin (Dur. L.I.), Lt. (actg. Capt.) M. Ballard, Capt. C. Banyard, Lt. J. H. Baring-Gould (N. Dev. Hrs.), Lt. A. H. Barnard, Lt. (actg. Capt.) A. W. Barnett, Deputy Admstr. Mrs. N. A. M. Barnett, Lt. J. C. Barrett, Sec. Lt. (actg. Lt.) D. Barron (R. Hdrs.), Lt. (Hon. Capt.) L. E. Barry (R.A.S.C.), Lt. E. V. Bashford, Sec. Lt. H. Bates, Lt. A. H. Beach (Can. Int.), Capt. E. A. Beaulah (Lincs. R.), Capt. B. F. Bedford, Sec. Lt. (actg. Lt.) C. E. Beeson, Lt. (Hon. Maj.) W. R. Bernard (R.N.), Lt. A. E. Biggs, Capt. A. A. Bisset (R.A.M.C.), Asst. Admstr. Miss I. Black, Lt. (actg. Capt.) P. G. Black, Maj. P. Blair (R.F.A.), Capt. M. B. Blake (Canada), Maj. (actg. Lt.-Col.) G. Blatherwick, Capt. E. C. Blight, Lt.-Col. R. G. Blomfield, D.S.O. (Washington); Lt. B. W. Blower (Shrops. L.I.); Capt. A. R. Boeree (Suff. R.), Capt. A. Bolton, M.C. (R. Sc. Fus.), Maj. R. J. Bone, D.S.O., Capt. J. E. Bonniksen, Maj. (actg. Lt.-Col.) H. B. Bonning, Sec. Lt. C. L. Booth, Lt. J. R. S. Borman (Bord. R.), Capt. H. G. Bowen, Maj. A. C. E. S. Bowlby (S. Staffs. R.), L. H. K. Boysen, Sec. Lt. (actg. Capt.) C. W. Braddy, Lt. J. W. Brash (R.A.M.C., S.R.), Capt. S. Brew, Lt.-Col. W. Briggs (Washington), Lt. H. Bristow (E. Surr. R.), Capt. W. C. Broadhead, Sec. Lt. W. J. Brooker (R.E.), Lt. (actg. Capt.) G. E. Brookes, Lt. (Hon. Capt.) A. E. Brooks (R. Dgns.), Sec. Lt. (actg. Lt.) E. W. Brooks, Lt. (Hon. and actg. Capt.) A. Broomer (3rd R.L.R.), Capt. E. B. Broughton (R. Fus.), Sec. Lt. G. A. Brown (E. Surr. R.), Lt. H. A. Brown, Lt. J. M. Brown (H.A.C.), Maj. V. S. Brown, Lt. W. A. Brown (North'd Fus.), Lt. C. P. Browne, Maj. R. W. Bruce (Can. Inf.), Lt. W. R. Bucknell (R. Hus.), Maj. (actg. Lt.-Col.) K. L. Buist (H.L.I.), Lt. E. J. A. Burke, Capt. E. E. N. Burney, M.C. (R. Berks.), Maj. W. Burningham-White, Lt. A. E. Bush, Lt. L. A. Bushe (24th Can. Inf.), Lt. W. N. Bussell (Mid'x R.), Lt. R. W. P. Butler (Rif. Bde.), Maj. (actg. Lt. Col.) C. A. J. Butter, O.B.E. (Scot. Hse. Yeo.).
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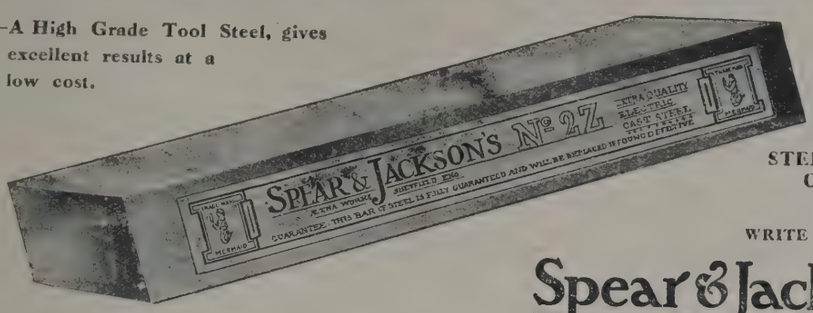
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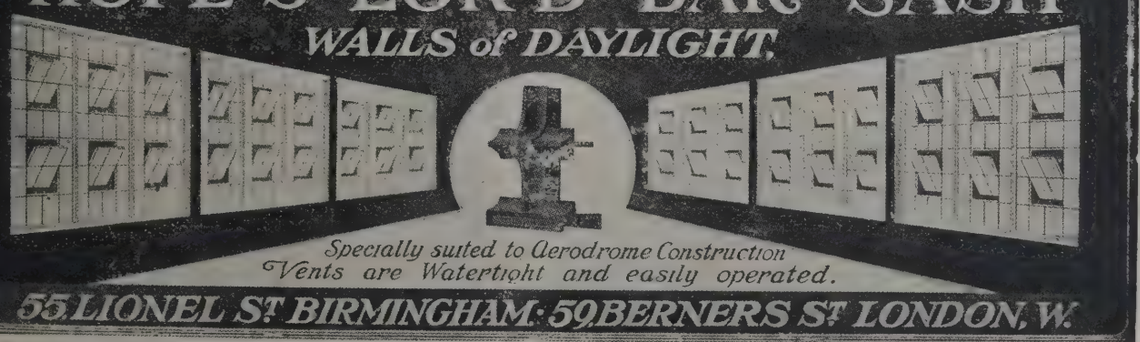
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42281 Sgt. A. R. Padwick, 187677 S.M.2 G. S. Palmer, D.S.M., 113821 A.C.1 J. Palmer, 16574 Flt. Sgt. F. D. Palser, 48066 Sgt. G. D. Parker, 126319 S.M.2 H. C. Parker, 3297 Sgt. Mec. R. Parker, 20537 Flt. Sgt. P. Parkinson, 220023 Cpl. H. Parr, 7090 Flt. Sgt. C. Parrott, 60240 Cpl. (actg. Sgt.) T. H. Parry, 203189 Flt. Sgt. J. W. Partridge, 72728 Cpl. (actg. Sgt.) H. Pascall, 11296 Flt. Sgt. H. E. Patching, 79606 L.A.C. (actg. Cpl.) C. Patrick, Can. 71494 Cpl. H. Patterson, 401026 Flt. Sgt. F. W. Pavey, 84651 Cpl. S. Pawsey, Can. 70631 Flt. Sgt. A. F. Paxton, 66271 Flt. Sgt. A. R. Pearce, 5377 Flt. Sgt. W. Pearman, 220177 Cpl. G. S. R. Pederick, 206818 Cpl. G. R. Peers, 200613 Ch. Mech. H. A. Percival, 210693 Flt. Sgt. A. J. Perry, 82263 Flt. Sgt. S. W. Pett, 3745 Sgt. H. F. H. Phelps, 205641 Actg. Sgt. Maj. C. E. Phillips, 205841 S.M. C. E. Phillips, 724 Flt. Sgt. F. J. Phillips, 38532 Flt. Sgt. H. A. Phillips, 36046 Flt. Sgt. C. H. G. Philpot, 1203 Member Miss A. Pickering, 105864 Actg. Sgt. Maj. S. E. Pike, 11597 Sgt. Maj.1 W. J. Pinder, 7655 Ch. Sec. Ldr. Miss B. Plowman, 8060 Actg. Flt. Sgt. S. Poole, 6409 Ch. Sec. Ldr. Miss F. M. Potter, 48455 Flt. Sgt. C. J. Pottier, 8995 Flt. Sgt. C. Powling, 202017 Sgt. Clk. W. Pratt, 185599 Flt. Clk. J. E. Prax, 2743 Staff Ldr. Miss A. Price, 43987 Flt. Clk. G. A. Pritchard, 130029 Cpl. Clk. H. E. Pritchard, 45129 Sgt. J. F. Proctor, 2672 Flt. Sgt. C. A. Prowse, 2417 Flt. Sgt. (actg. Sgt.-Maj.) C. Pryor, 207115 Sgt. Mec. G. M. Pullen.

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(To be continued.)

THE AIR FORCE DECORATIONS.

The Air Ministry made the following announcement on Aug. 28th:—

His Majesty the King has been graciously pleased to approve the ribbons, as described below, being substituted for those at present in use.

DISTINGUISHED FLYING CROSS.—One inch and a quarter in width; violet and white alternate diagonal stripes, each of one-eighth of an inch in width, running at an angle of 45 deg.

AIR FORCE CROSS.—One inch and a quarter in width; red and white alternate diagonal stripes, each of one-eighth of an inch in width, running at an angle of 45 deg.

DISTINGUISHED FLYING MEDAL.—The same as that for the D.F.C., except that the diagonal stripes are one-sixteenth of an inch in width.

AIR FORCE MEDAL.—The same as that for the A.F.C., except that the diagonal stripes are one-sixteenth of an inch in width.

The ribbons will be worn one half-inch in depth, the diagonal stripes running downwards from the centre of the tunic towards the left, and will be so arranged that:—

(1) Distinguished Flying Cross or Air Cross ribbon will show at the top corner nearest to the left arm, and at the bottom corner nearest to the centre of the tunic, triangles of equal dimensions of violet or red, as the case may be.

(2) Distinguished Flying Medal and the Air Force Medal ribbon will show at the top corner nearest to the left arm a triangle of white and at the bottom corner nearest to the centre of the tunic a triangle of equal dimensions of violet or red, as the case may be.

(3) The order of precedence will be the same as at present.

The new ribbons should be worn as soon as practicable by all officers and airmen awarded the decorations. The ribbons are now available, and a free issue will be made to those awarded these decorations.

In the case of demobilised officers and airmen, application for the ribbon should be made to:—

(1) Officers:—The Secretary, Air Ministry, Kingsway, W.C.2.

(2) Airmen:—The Officer i/c Records, Royal Air Force, Blandford, Dorset.

THE COLOGNE AERIAL MAIL.

The Air Ministry announced on Aug. 27th that:—

During the week ending Aug. 16th the R.A.F. aerial mail service from Lympne to Cologne carried no less than 7,090 lb. of letters and postal packets.

The service is carried on by two squadrons Nos. 18 and 120. The former is using D.H.9a machines with Liberty engines, and is working from the Cologne terminal, while the latter is equipped with the D.H.9 type with B.H.P. engines and works from Lympne.

The average time taken by machines of No. 18 on the journey is 3 hr. 14 min., while No. 120 with rather less powerful engines average 3 hr. 23 min.

The intermediate stage at Maisconcelle is now cut out, and the machines fly through without a stop. Out of 45 trips commenced, only in one case was there failure to complete the journey. The average weight carried per journey was 161 lb.

* * *

The R.A.F. aerial postal service established between Lympne and Cologne was discontinued on Sept. 1st. In view of the rapid demobilisation of our forces in Germany it was not considered necessary to continue the aerial post, especially as the service involved the maintenance of a number of wireless and directional stations.

* * *

The Air Ministry announces that the Royal Air Force landing-ground at South Denes (Yarmouth), has been relinquished.

* * *

A British aeroplane, while on its way from London to Bombay, fell into the River Capeau on Aug. 27th, near Salins d'Hyères. The crew of the machine, a Lieutenant and a Serjeant, were uninjured, and the machine was discovered to be very little damaged. The pilot is said to be one Lieut. Henfrey.

* * *

The recent raid on Kabul was carried out by the Handley Page machine, which, under the pilotage of Major MacLaren, R.A.F., with General McEwen, as a passenger, flew from England to India last January. The pilot on this voyage was Capt. Halley, R.A.F.

The machine started from Risalpur, and the distance flown was 400 miles, and apparently 8,000 ft. was the greatest altitude reached, and that only to pass over one ridge. The aeroplane remained over Kabul for 10 minutes, and the bombs dropped are stated to have caused a great deal of damage and panic among the people. The flight lasted six hours.

* * *

More than 1,000 women and girl workers at the R.A.F. Depot, Milton (near Abingdon, Berks, have received notice

The first account from **SIR JOHN ALCOCK'S** own pen of his **ATLANTIC FLIGHT** and his war experiences in the Near East appears in the September "BADMINTON MAGAZINE" The article is illustrated with hitherto unpublished photographs.



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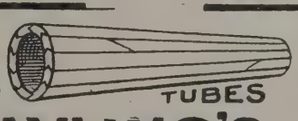
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that their employment will end in a few weeks. It is stated that only those willing to reside in camp will be retained.

* * *

An empty aeroplane, partly submerged, was found floating in the Solent near Yarmouth on August 29th. It was picked up by a War Department vessel.

It is thought that the machine possibly is one which, piloted by Capt. Cockey, R.A.F., fell into the Solent while on a flight from Plymouth to Southampton. Capt. Cockey was picked up unhurt by a yacht.

THE ARGENTINE.

An aerodrome was purchased at Buenos Aires by the Italian Government for the use of the Italian Air Force Mission some months ago. With the hangars and some of the aeroplanes, it has now been presented to the Argentine Government.

DENMARK.

The Entente Legations at Copenhagen have sent a Commission to inspect 90 German aeroplanes which have been bought by a Danish firm. The aeroplanes are in the hands of the Customs officials at Vandpupo. It is thought that these machines, which are new and bear Germany military marks, have been sent to Denmark in order to evade Article 202 of the Peace Treaty.

GERMANY.

It has been reported from Berlin that from 12 to 16 of the German airships that were to have been handed over to the Allies according to the provisions of the Peace Treaty have been destroyed by a young German naval officer.

The most circumstantial account has been sent from Berlin by Karl Wiegand, special correspondent of the Universal Service of America, whose message appeared in the "Daily Express" of Sept. 1st. In the course of his article, he said:

"About 16 Zeppelins were left of the 90 built during the war. The Peace Treaty provides for their surrender to the Allies. One, the Z72, is not completed, and is still intact at the Zeppelin works at Friedrichshafen. The other 15 were at various air harbours, chiefly in Northern Germany in the vicinity of the North Sea and Baltic coasts. Ten or 12 of the latter are said to have been sabotaged, and for all practical purposes are as good as destroyed.

"The naval officer, whose name has not yet been made known, acting, it is alleged, entirely on his own responsibility and initiative, is said to have ordered the cables by which the huge Zeppelins were suspended in their sheds to be cut, causing the airships to crash to the ground, crushing gondolas and engines, and twisting and bending the framework in such a way that they can be considered as good as 'sunk.'

"There is reason to believe that a plan to prevent the Allies getting the Zeppelins has been in contemplation in certain circles for some time. Indications suggest that the Government had no knowledge of the plan. The officer responsible is reported to have disappeared, but confirmation of this has not been obtained.

"One statement is that three of the oldest and obsolete type in sheds near the Baltic coast are unharmed. It is not yet certain whether the Z71, the last and largest Zeppelin completed, and one of those that attacked London, is among the airships wrecked.

"Something akin to consternation reigned at the Foreign Office when the report became known there. It is emphatically denied that the Government could have had any knowledge of it. On the contrary, officials saw only an attempt by certain elements to embarrass and make further trouble for the Government.

"In answer to my request for a statement, I was told at the Foreign Office that immediately the matter became known there the Government began an inquiry. The deed, it was stated, could only have been that of an irresponsible individual, who would be proceeded against as soon as it could be ascertained who was involved.

"In Nationalist circles the act is condoned as patriotic, whatever the consequences, and is compared to the sinking of the German Fleet at Scapa Flow."

ITALY.

If rumour is to be trusted, the Army rigid airship M6 is in September to fly from Rome to Brussels and back *via* Milan and Paris.

The Italian correspondent of THE AEROPLANE writes:—

Now that the Tripolitan rebels have been reduced to accept peace, the squadrons are turning their attention to postal work. It is officially communicated that the squadrons using C.A. machines are carrying on a coastal post service from Tripoli to Homs and Zuara. The F.B.A. people are doing the same from Tripoli to Sirte. Some sensational flights are being organised as well. Nothing seems to impress the Arab mind so much as speed.—T. S. H.

NORWAY.

On Aug. 29th Lieut. Jordan took Lieut. Stokke up in an Army Farman aeroplane at Vaernebmeren, near Trondhjem. When the machine had risen to about 50 metres it received a bad bump, got out of control and crashed. The petrol tank exploded on the machine hitting the ground. The machine burst into flames, and the aviators could not be rescued.

POLAND.

The first biplane built entirely by the Military Aeronautical Establishment at Warsaw is of the Roland type and passed its first flying tests at the Mokotow Military Aero Park on Aug. 22nd.

Reuter states that an American aviation squadron is being formed in Paris with the object of aiding the Poles in their fight against the Bolsheviks. Major Fauntleroy and Captain Cooper have received official authorisation from General Rosvedowski, head of the Polish Military Mission, to form a squadron which will consist of aviators who, like themselves, have seen service in the Air Force of the American Army. The squadron will be christened the Kosciusko Squadron, after the Polish national hero, and is expected to leave for Poland about Sept. 15th.

RUSSIA.

It is believed that a French aviation detachment has arrived at Krasnoyarsk, Siberia. The detachment will co-operate with Admiral Koltchak's Forces.

SPAIN.

The Ministry of War has ordered a large number of aeroplanes from the Caudron firm.

According to the "Times" of Sept. 1st, 20 aeroplanes are to be bought for the instruction of aviation pupils.

On Aug. 23rd and 24th a Spanish aviator dropped bombs on the fondak of Wadras in Spanish Morocco. On the 23rd two soldiers of Raisuli's regular army were killed, and five bombs were dropped. On the 24th 11 bombs were dropped, but there were no casualties.

The tribesmen state that the aeroplane was armoured, apparently because, although flying low, they could not bring it down. The actual type of machine is not known.

PERSONAL NOTICES.

NAVAL.

ENGAGEMENT.

COMPSTON—BARCLAY.—A marriage is arranged, and will shortly take place, between Capt. R. J. O. Compston, D.S.C., D.F.C., R.A.F., younger son of the Rev. H. F. Compston, Fellow of King's College, London, and Nina, only child of the late Arthur Hayward Barclay, Captain, 18th Hussars, and adopted daughter of Lieut.-Col. Hubert F. Barclay, of Essendon Close, Hatfield, Herts.

MILITARY.

DEATH.

KANN.—Capt. Raymond Victor Kann, R.A.F., who was killed in a flying accident at Stonehenge on Aug. 21st, at the age of 22, was the elder surviving son of Mr. and Mrs. R. Kann, 37, Lancaster Gate, and was married on June 19th last to Dorothy, the youngest daughter of Mr. and Mrs. Percy Love, Adelaide Road, Hampstead.

ENGAGEMENTS.

BALFOUR—SHEPPERSON.—The engagement is announced between Major Harold H. Balfour, M.C., late 60th Rifles and R.A.F., second son of Colonel and Mrs. Nigel Harington Balfour, of Belton, Camberley, and Barbara, only daughter of Claude A. Shepperson, A.R.A., A.R.W.S., and Mrs. Shepperson, of 5, Mulberry Walk, Chelsea.

ELLVERS—ELLIOTT.—The engagement is announced between Lieut. Victor Ellvers, R.F.A. and R.A.F., son of the Rector of Melbury Abbas, Shaftesbury, Dorset, and Audrey Guest, daughter of the late Mr. George Elliott, K.C., and Mrs. George Elliott, of 54, Cheyne Court, Chelsea.

GODDARD—BERNARD.—A marriage has been arranged between Capt. H. E. Goddard, R.A.F., late East Yorkshire Regt., younger son of Colonel W. F. Goddard, V.D., J.P., D.L., and Mrs. Goddard, Thwaite House, Cottingham, near Hull, and Enid Bernard, daughter of the late Mr. Edmund Bernard, J.P., and Mrs. Bernard, Snakemoor, Botley, Hants. The ceremony will take place very quietly in the country on Sept. 16th.

KINGSCOTE—PAUL.—The marriage arranged between Lieut.-Col. A. R. F. Kingscote, M.C., Royal Artillery, and Mrs. Percival Paul will take place at St. Margaret's Church, Westminster, on Tuesday, Sept. 9th, at 2.15 p.m.

BIRTH.

GRANDAGE.—On Aug. 29th, at "Edinburgh House," Brockhurst Road, Gosport, Hants, to Winifred (née Foster), wife of Norman A. Grandage, A.M.I.Mech.E. (Lt. R.E. (T), attd. R.A.F.)—a daughter.

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ON THE INTERNATIONAL AIR NAVIGATION CONVENTION.

Owing to the intervention of matters of greater immediate importance, comment on the International Air Convention which was published some weeks ago has perforce been postponed. It is now possible to return to the subject.

Taking it all round, the International Air Convention is a very fine affair, but there are in it what appear to be some appalling snags, which if they do not in years to come develop into actual *casi bellorum* will at any rate give rise to "diplomatic incidents" of some importance.

As that entertaining person the "Lincoln Imp" has already indicated, the High Contracting Powers have agreed that the air over each State belongs to that State. This is not an admission of the *usque ad cœlum* doctrine, but rather the institution of the doctrine as an international law. Its installation as such does not in the least entail its acceptance in an ordinary court of law for private consumption. So we can still fly with impunity over our neighbour's land.

Incidentally those who recall the "Imp's" great discovery that the *usque ad cœlum* doctrine has never been the law of the land will remember that all the precedents quoted in support of the doctrine referred solely to the ownership of trees, or birds in the trees, over certain land. In fact, the only applications of the doctrine which carried any legal weight seemed to imply that *cœlum* did not mean *heaven*, but merely what aviators understand by the word *ceiling*, that is to say the *highest reachable level*.

Thus the "ceiling" of a land-owner is merely the tops of his own trees. If this fact were ever established in a court of law, or if the Air Ministry had the pluck to make a regulation that anybody is at liberty to fly over anybody's land so long as he is above the owner's "ceiling," a whole lot of trouble would be saved, and yet the *usque ad cœlum* doctrine would be vindicated.

In International Law, on the other hand, there can be no doubt whatever about the ownership of the air. It is now agreed that "every State has complete and exclusive sovereignty in the air space above its territory and territorial waters." So that's that, and it is very necessary to remember it, for according to the wording of Article 1, Chapter 1, of the Convention the Law applies just as well to the air space above the territory of States which do not agree to the Convention as it does to States which sign it.

A Suppositious Case.

Thus, for example, if the free and independent Republic of Andorra refused to agree to the Convention and announced that it would not have the aeroplanes of other nations flying over its territory, there would be nothing to prevent it from organising an anti-aircraft corps and turning its Archie batteries onto any aeroplane which trespassed in its air space. If an aeroplane of foreign origin were brought down, and if the occupants were killed, it seems that no action would lie against the Government of Andorra. As a Sovereign State it would be within its rights in compelling respect for its own laws. In such a case the whole State would be a prohibited area, and the Andorran Archie-gunner would have as much right to shoot as would a British Archie-gunner who fired on an aeroplane flying over Woolwich or Spithead.

One does not on this account recommend demobbed Archie-gunners to dash straight off to Andorra (if they can find it on the map) and offer to organise an Andorran Air Defence Area, even though the said A.A.D.A. might be concocted after the latest recipe for L.A.D.A. *à la* Ashmore. They might be very welcome, and they would probably find out that Andorra's objection to aircraft was largely due to the fact that Andorra was not large enough to contain an aerodrome, and, moreover, that Andorra being mostly vertical, it would be impossible to find a flat place even if there were room for it, and that so the Andorrans, being mountaineers of a sporting nature, had decided to have a little aeroplane shooting, as a change from eagle and ibex.

But, the Archie-gunner would soon find himself in trouble, for he would also find that he could not fire at an aeroplane without his splinters and duds falling into the territory of other Sovereign States. It is alleged that Andorra once bought a Creusôt gun but has never fired it because if it were fired it must inevitably hit either France or Spain.

Nevertheless, without Andorra's consent you must not fly over Andorra. That is assuming that Andorra is anywhere on a line from anywhere in France to anywhere in Spain between which points anyone would want to fly. Which one doubts.

Prohibited Areas.

There is in the early part of the Convention one rather sportsmanlike clause which deserves attention. Article 3 says:—"Each contracting State has the right, for military reasons or in the interest of public safety, to prohibit the aircraft of the other contracting States, under the penalties provided by its legislation and subject to no distinction being made in this respect between its private aircraft and those of the other contracting States, from flying over certain areas of its territory."

That is to say an Archie-gunner protecting the Woolwich or Sheerness prohibited area has a perfect right to shoot down a French, Belgian, Czecho-Slovak or Jugo-Slav machine which flies over his area. But, he must, in common decency and fair play, also shoot down the next British machine which flies over his area—that is unless he is merely a temporary officer and gentleman.

Foreign air travel is evidently not going to be such a haphazard affair as foreign motoring used to be, for one reads further in Article 4 that "Every aircraft which finds itself above a prohibited area shall, as soon as aware of the fact, give the signal of distress provided

in Paragraph 17 of Annex D, and land outside the prohibited area as near to it as possible and as soon as possible at one of the aerodromes of the State unlawfully flown over."

Apart from the horrid grammar of that article one is put in doubt as to its precise meaning. Presumably it will be left to the local Archie to notify the offending aircraft whether it is over a prohibited area or not. Most pilots who fly over a prohibited area are diplomatically blind to its precise extent, and he would have to be a very conscientious person indeed who would take the trouble to land and report himself just because he found himself half a mile west of the famous chimneys at West Thurrock instead of half a mile to the east of them. And probably it would depend very much on the quality of Archie's shooting whether the pilot made the prescribed signal of distress or not.

But what is really fogging is the meaning of landing outside the prohibited area "as near to it as possible and as soon as possible at one of the aerodromes of the State flown over." Does this mean that the machine must land close to the edge of the prohibited area at once, and then land again at an aerodrome! Or does it mean that it must land as soon as possible at an aerodrome as near as possible to the prohibited area? And does "an aerodrome of the State" mean a Government aerodrome, or merely any aerodrome, private, public, or Government, near the prohibited area?

It strikes one that while a pilot was making up his mind what to do about it he would either be shot down or would be so far away on his journey that it would not be worth his while to land till he reached his destination. Also, be it remembered, under the Civil Aerial Transport regulations it is part of Archie's job to fire a warning shot if he sees an aircraft approaching a prohibited area, so there is nothing in the first shot to tell the pilot that he is doing anything worse than looking as if he were going to trespass over the sacred area.

Air Defence Areas.

On the whole it looks as if there is going to be quite a lot of quiet fun and probably a good deal of litigation over this question of prohibited areas. And certainly there is going to be heaps of work for the Archie-gunners and their searchlights and observer companies. In fact the protection of the prohibited areas in this country will demand the services of quite a large personnel.

Which seems to suggest that the excellent organisation which has been created under the G.O.C. and Staff of the London Air Defence Area ought to become a permanent institution for the defence of prohibited areas. There will certainly be plenty to keep it in even better practice than when it had only to deal with Hun raiders, and so it will become extremely expert in readiness for the next war.

Whether this Air Defence Force should be under the War Office or under the Air Ministry is an arguable point. Personally one inclines to the belief that it is the Air Ministry's "pidgin." The ground jobs might become in time a kind of home for officers whose flying days are done. The Home Defence squadrons that were (during the war) would become a species of aerial police to chase those who trespassed over prohibited areas and to take their numbers.

There may be reasons why such a force should come under the War Office, or even under the Admiralty. If so one would like those who think so to "give their reasons and draw a map." But in any case the Air Defence Force should now become a permanent institution.—C. G. G.

AN APOLOGY.

Our attention has been called to the article under the heading, "On the Harmsworth Press and the R.A.F. Vote," which appeared on page 654 in our issue of the 20th ult.

Messrs. Simmons and Simmons, solicitors to Brig.-General Livingston, inform us that the paragraphs under the sub-heading of "An Unfortunate Connection" have caused considerable annoyance to him owing to their defamatory nature.

We gladly take this opportunity of stating we had no intention of making any imputation whatsoever against the General. We unreservedly withdraw our remarks and offer to the General our sincere regret that the article appeared.

THE USE OF WIRELESS TELEPHONES AND TELEGRAPHS WITH AIRCRAFT.

The Air Ministry makes the following announcement:—

The form of licence to be granted for the use of wireless to and from aircraft, and the conditions under which such licences will be granted, are under consideration. In the meantime, pending the issue of the licence by the Postmaster General, temporary provisional authority for the installation and use of wireless apparatus in aircraft can be obtained, in approved cases, by application to the Secretary of the Post Office.

For the present the wave length suggested for wireless telephony is 480 metres. This is the wave length which the existing Air Ministry W/T Stations at present employ for work with aircraft.

For the benefit of designers and others interested, it may be said that the Postmaster-General's licence, when available, will probably contain provisions to the following effect:—

The sending apparatus installed at any aircraft station shall be constructed so as to be capable of using waves of 600 metres interrupted continuous wave, and 900 metres continuous wave; such of the following wave lengths, namely, 220, 300, 450 and 800 metres interrupted continuous wave, and 200-550 metres, 650-950 metres, 2,000-3,000 metres, continuous wave may also be used for transmission as are authorised in writing by the Postmaster-General.

The use of the wave of 600 metres (hereinafter referred to as the "aircraft-ship" wave) shall be confined to the use of the system known as "Interrupted Undamped Wave or Tonic Train, or I.C.W.," and the use of 900 metres hereinafter referred to as the "Aircraft Notmal Wave," shall be used only for continuous damped waves or wireless telephony.

Should an aircraft station be also fitted with a supplementary installation on long continuous waves, such installation shall be so constructed as to be capable of using the wave length of 2,400 metres.

The range of wave lengths for which the receiving apparatus may be constructed is not limited, but the apparatus must be capable of receiving on 600 metres and 900 metres, and on 2,400 metres when a transmitter working on this latter wave length is installed; it must also be made to embrace any other wave length on which a transmitter installed has been authorised to work.

The input of power to the licensed apparatus measured at the terminals of the power generator or battery shall not exceed 100 watts, provided always that when vacuum valves having heated filaments constitute a part of the sending or receiving apparatus, or both, the power employed for heating the said filaments shall be excluded in computing the said maximum input.

RELINQUISHMENT OF R.A.F. STATIONS.

It is announced by the Air Ministry that the following Royal Air Force Stations are to be relinquished and disposed of:—

Lowestoft (Balloon Base), Hicking Broad (Seaplane station), Bembridge (Seaplane Station), New Bembridge (Aerodrome), Seahouses (Aerodrome), Seaton Carew (Aerodrome), Marham (Aerodrome), Tynemouth (Aerodrome), Leadenham (Aerodrome), Upper Hoyford (Aerodrome), Usworth (Aerodrome), Helperby (Aerodrome), Ashington (Aerodrome), Scale Hall, Lancs. (Landing Ground), (after Oct., 1919).

GREAT BRITAIN AND FRANCE.

The Air Ministry announced on Sept. 3rd that in connection with the opening up of civil communication by air between Great Britain and France the French authorities have raised objections to the use of petrol and oil by civilian machines, which has been imported into France without payment of the ordinary dues, for military purposes. Aircraft companies and all others concerned must in future provide their own petrol and oil at Le Bourget through the ordinary commercial channels.

THE SCHNEIDER CUP ELIMINATING TRIALS.

The eliminating trials which were to have been held by the Royal Aero Club at Cowes on Wednesday, Sept. 3rd, to select the British team for the Schneider Cup proved rather a fiasco.

Three of the four entrants were known on Tuesday to be completed and to have taken the air. The Supermarine boat had not been out, and inquiries at Woolston on Tuesday evening showed that the machine had been delayed by the non-delivery of a propeller—due to a strike at the propeller makers—but that the missing article had safely arrived later on that afternoon, and that the last split pins in the propeller bolts were then being inserted. About 8 p.m. that night the Napier engine was given a run, and arrangements were made to take the machine out for a trial at 6 a.m. on Wednesday morning.

At six on Wednesday, Southampton was in a deluge, and the rain carried on steadily and hopelessly till nearly 11 o'clock, by which time the tide was too low to get the machine out at Woolston.

However, there was no doubt of the machine's readiness, and if the weather cleared sufficiently for the trials Major Hobbs was determined to be at Cowes for them.

Between Southampton and Cowes the steamer ran through steadily improving weather, and at Cowes at 12.30 there was no question of postponing the event on account of bad conditions. There was a light N. to N.E. breeze, no sea at all, and quite good visibility.

The Fairey with Clipped Wings.

Shortly after two o'clock an engine was heard approaching, and a seaplane appeared over Calshott making for Cowes. At first it was taken for the Sopwith—but it was soon recognised as the Fairey—fitted with clipped wings and a single row of struts at each side.

Lieut.-Col. Nichol made a very slow and perfect landing and taxied to the slipway at Saunder's yard. Just as the Fairey landed, a small flying-boat came in sight—which proved to be a three-seater Supermarine with 160 h.p. Beardmore, and not the Supermarine racer.

Then a small black speck on the horizon grew rapidly into the Sopwith racer—passed over, and landed on the East side of the harbour.

The landing was a fairly fast one, and the machine sank into the water in a quick and rather unhealthy looking manner, till the engine was opened up again, and the machine then made rapidly for the beach on the opposite side to the appointed rendezvous. It was brought over, Mr. Hawker sitting on the port wing tip, and a rowing boat under the starboard one, with floats nearly submerged and the tail plane awash.

On lifting the machine it was found that the starboard float was minus about 2 sq. ft. of bottom just under the rear chassis strut, and had, in addition, one or two minor holes, and that the port one was also punctured. Mr. Hawker's impression is that the main damage occurred at getting off at Hythe, and, in any case, the nature of the damage was such as to indicate that the float had hit something more solid than mere water.

A Bully Beef Tin.

After a long wait a motor-boat from Hamble brought over Mr. A. V. Roe, Capt. Hammersley, and Mr. Chadwick, who explained that the Avro had encountered a floating bully beef tin while getting off at Hamble, and had thereby been deprived of the step to one float.

Later a contingent from Woolston arrived, who explained that their three-seater boat had seen Mr. Hawker's mishap and had, therefore, concluded that the trials would be washed out, and they had, therefore, not brought their machine across.

Thereafter, Col. Nichol departed on the Fairey, Mr. Hawker returned by motor-boat with his two damaged floats to Hythe to collect a spare set. The Avro and Supermarine detachments returned to their homes and the rest of those present adjourned for tea.

So far as could be gathered upon the spot the Committee in charge of the trials, consisting of Col Ogilvie, Majors McClean and Mayo, and Lieut.-Commander Perrin, decided that the Fairey and the Sopwith are to be included in the British team, and that the Supermarine and the Avro should run a separate trial on Monday, Sept. 8th, to decide upon the third representative.



The Sopwith rising in Trials.

The Fastest Aeroplane One has Seen.

Of the two machines which did appear at Cowes it may be said at once that the Sopwith gives one the impression of being by far the fastest aeroplane of any type that one has yet seen. There is nothing freakish about it, it is very simple and clean in outline, and, in so far as a very small, light high-speed machine can be seaworthy, this should be. Therefore, given reasonably good fortune and fair weather, the Sopwith should win against everything.

The big Fairey—for it is a big machine, in spite of its 28-ft. wing span—looks capable of ploughing through anything in the way of a sea that a seaplane can stand up to, and it is not a slow machine by any means. If the gale that Mr. Fairey is hoping for does blow on Sept. 10th, his machine should put up an excellent show.

THE FRENCH AND ITALIAN COMPETITORS.

Yesterday (Tuesday), the Royal Aero Club stated that the two Nieuports (300 h.p. Hispano-Suiza), entered for the Schneider Cup race, had collided on the Seine. One was badly damaged and the other slightly. One of the machines, whether it is the slightly damaged one that had been repaired, or another, was not known, flew over and ran into a buoy, near Cowes, and was damaged, but it was expected that it could be repaired in time. Another machine was understood to be on the way, so that there may be two Nieuports in the race after all.

The Spad (300 h.p. Hispano-Suiza) and the Savoia (250 Isotta) were reported to have arrived.

THE AVRO ENTRY.

The details and dimensions of the Avro "Puma" racing seaplane entered for the Schneider Cup Race are now available.

They are as follows:—

Span of top wing	25 ft. 6 in.
Span of bottom wing	24 ft. 6 in.
Span of tail plane	9ft.
Height overall	9 ft. 9 in.
Length overall	21 ft. 4 in.
Chord of top wing	4 ft. 6 in.
Chord of bottom wing	4 ft. 6 in.
Chord of tail plane and elevators	3ft. 6 in. (mean)
Angle of incidence, top plane	1½ deg.
Angle of incidence, bottom plane	1½ deg.
Dihedral angle, top plane	0 deg.
Dihedral angle, bottom plane	3 deg.
Angle of incidence, tail plane,	adjustable from + 3 deg. to — 3 deg.
Area of main planes and ailerons	195 sq. ft.
Area of tail plane and elevator	28 sq. ft.
Area of rudder	5½ sq. ft.
Area of fin	8 sq. ft.
Loading of main planes	10.5 lb. per sq. ft.
Loading of engine (250 h.p.)	8.18 lb. per h.p.
Airscrew, "Avro"	8 ft. 6 in. dia., 8 ft. pitch, 2-blader
Petrol feed	pressure
Petrol capacity	25 gall.
Oil capacity	3 gall.
Water capacity	7 gall.
Controls type (machine)	joy-stick and rudder-bar
Controls type (engine)	single control
Weight bare (with water)	1,670 lb.
Weight loaded (pilot 170 : fuel and oil 279)	2,119 lb.

"SOME LOOP."

For some time past it has been a daily sight to see machines from the Cambridge School of Flying looping near Cambridge, and an Avro with its nose well down, preparatory to a loop, at once rivets attention. Recently the R.33 appeared over the town and suddenly put its nose down at a steep angle. A dear old lady in the crowd watching said excitedly, "Oh, look, it's going to loop the loop!"—G. D.

The WORLD of AERONAUTICS

NEWS OF THE WEEK FROM ALL QUARTERS

The Miss Douglas-Pennant Inquiry.

The inquiry into the dismissal of Miss Violet Douglas-Pennant from the position of Commandant of the Women's Royal Air Force will be opened at the House of Lords on Oct. 14th. The Chairman will be Lord Wrenbury, and the proceedings will be open to the public.

Miss Douglas-Pennant's statement of the case was filed at the House of Lords yesterday afternoon by her solicitors. Other persons interested are permitted to lodge statements up to Sept. 23rd, having an opportunity in the interval of seeing the exact nature of Miss Douglas-Pennant's complaints.

An Entertainment.

Major-General Seely, as Lord-Lieutenant of Hampshire, on Sept. 6th gave a luncheon to between 500 and 600 disabled sailors, soldiers, and airmen at Winchester Castle The King sent a message from Balmoral, in reply to a telegram from the gathering, stating that he much appreciated the loyal message from disabled men assembled to celebrate our victory, in which they had played so noble a part.

A Profitable Superstition.

According to the "Daily Mirror" many flying passengers are yielding to a superstition that if they throw a silver coin to earth as the aeroplane is ascending, luck will attend the flight. It is said that many passengers on the first of the Paris trips did this.

One wonders who was the enterprising groundsman who started this profitable idea.

168 Miles per Hour.

It is announced that Col. H. B. Clagett accomplished the feat of travelling from Washington to the Statue of Liberty in one hour and fifteen minutes on August 8th, at the rate of 168 m.p.h.

The flight was made in a De Haviland machine at a height of 4,000 feet. Sergeant Ralph Kratz flew with Colonel Clagett as a passenger.

The best previous record for the 210 mile flight was one hour and 24 minutes, or at the rate of 150 m.p.h.

To India and Back.

On Sept. 6th the "Daily Express" reminded its readers that the £10,000 prize for an Imperial Reliability Flight is to go to the entrant of the first aeroplane, seaplane, or airship which flies from England to India and back, and carries a load of at least a ton on both journeys.

The time occupied on either journey is not to exceed 12 days, and the return journey is to be begun within 14 days of arrival in India.

The competition is declared open as from May 1st, 1920, and will be closed on Oct. 31st, 1920.

The Advisory Committee, representing the Air Ministry, the Aeronautical Inspection Directorate, the Society of British Aircraft Constructors, the Royal Aeronautical Society, and the Royal Aero Club, at its second meeting expressed unanimous approval of the step taken by the "Daily Express" in offering the £10,000 prize for the return flight to India.

Entries are now in order, and should be sent to the Secretary, "Daily Express" Advisory Committee, £10,000 Imperial Reliability Flight, 3, Clifford Street, W.1. The fee for each entrant is £100.

Germany's Big Aeroplane.

Reuter reports that what is claimed to be the biggest aeroplane in the world is stated in the newspapers as having been built at the aviation works at Leipzig. It has made its first flight. It has a span of 134 ft., and is 69 ft. in length and 20 ft. in height.

It is equipped with two Benz motors of 500 h.p. and two of 250 h.p.

The aeroplane is capable of carrying a crew of six and 18 passengers with luggage.

Apparently, the Aviatic works are those to which the message refers.

How to obtain Efficiency.

The manager of a commercial aviation firm relates that at a northern aerodrome recently a pilot landed, paid the five shillings landing fee, and obtained the assistance of two airmen. In a few minutes he was ready to take off again, but only flew a few hundred yards before his engine failed. He looked round to beckon to the airmen and saw a Red Cross ambulance car rolling across the aerodrome with a number of W.R.A.F.s on board. The car stopped to pick up the two airmen and made off, leaving the pilot cursing on the deserted aerodrome. After much running about he discovered that it was one of the afternoons appointed for a mixed bathing parade and that until the ablutions considered necessary by the grandmotherly authorities had been carried out no more work would be done on that station.

It may be that one may live to see nationalised railways worked on the same principle and then one will occasionally find it impossible to obtain a ticket or the help of a porter because the equivalent of the adjutant has ordered a parade to teach the men on the establishment the arts of ticket punching and luggage smashing by numbers.

A Stunt.

Climbing on to a wing of an aeroplane flying 1,000 ft. above the Mersey near New Brighton Lighthouse on Sept. 6th, Professor F. Gadsby, a one-legged swimmer, jumped with a parachute.

As he was unable to free himself from the parachute he did not dive into the river as intended, but dropped gently and was picked up by a motor-boat.

The somewhat foolish stunt was cinematographed from another aeroplane.

Advice to Recruits.

The Washington Official News Letter has contained much advice to recruits. Recently it stated that :—

"The future commercial flying will, without a doubt, develop along the lines of lighter-than-air craft, and the man who goes into the balloon and airship game now and takes advantage of his opportunities will, at the end of a three-year enlistment, be able to step into a new field of endeavour in civil life, where, with a thorough knowledge of machines, gas, cordage, fabrics, or rigging, he will meet with no such competition as the airplane mechanic, whose training does not cover such a variety of phases of air navigation.

"That commercial airships are soon to become as ordinary a sight in the air as army airplanes are at present is an assured fact, as all of the balloon manufacturers in America and abroad are planning and actually building airships from a small "sport model" two-passenger ship up to the enormous 10,000,000 cubic ft. ship, fitted out for a world cruise with all the conveniences of an ocean liner. It is a new field that is only now opening up. The man who contemplates entering the air service and neglects to look into the airship (lighter than air) opportunities now offered him will be as short-sighted as some of those old conservatives who stayed in the bicycle game when automobiles first came into use."

The Truth.

The following letter has been received :—

Sir,—Probably it will interest you, in view of your quotation from "Truth" *re* life of aero engines, in the current issue of your most valuable and interesting paper, if I mention, to support your statement, an experience of mine.

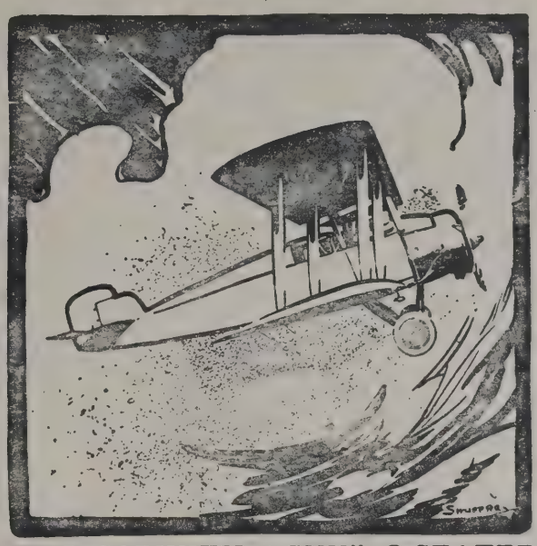
On August 20th, 1918, I set out on an altitude test on Avro 1808, 110 Le Rhone (No. 13734), and reached the ceiling at 15,000 ft. This engine at that time had done 80-90 hours' flying, and before overhaul had well over 100 hours to its credit. It will be unnecessary to practical minds to point out that engines overhauled, say, every 30-50 hours would have a much longer "life" than the above engine, which most of the time was flown by pupils.

An Aviation Meeting at Barcelona.

An aviation meeting will take place at Barcelona on Oct. 5th next, under the auspices of the Aero Club de Cataluna. The British Chamber of Commerce for Spain has been successful in securing the participation of foreign pilots in the race, which is to take place over a course of about 100 kilometres. The foreign pilots will be "hors concours" so far as the race for Spanish aeroplanes steered by Spanish pilots is concerned. In the case of more than three foreign machines taking part, a special prize will be reserved.

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Telephone: Mayfair 5803-4-5.
Telegrams: "Efficonomy, Phone, London."

Paris Office: 21, RUE DU MONT THABOR. Telephone: Central 80.44.
Australia: THE LARKIN-SOPWITH AVIATION CO. OF AUSTRALASIA, LTD., 18, GURNER STREET, ST. KILDA, MELBOURNE.

The WORLD of AERONAUTICS (continued)

A Transatlantic Souvenir.

To-day, Sept. 10th, is the last day on which the stamp souvenir of the Transatlantic flight may be secured. The much-advertised "Hawker" postage-stamp, initialled on the back by the Postmaster-General of Newfoundland, and encased in an album with the autographs of Lord Northcliffe, Capt. Sir John Alcock, Capt. Sir A. Whitten Brown, Mr. H. G. Hawker, Capt. K. Mackenzie Grieve, and Mr. T. Sopwith, is to be sold to the highest bidder; the total sum received will be handed to the Newfoundland Marine Disasters Fund.

The highest bid up to Monday last was £52 10s., which is offered by Mr. H. S. Saunders, of Lloyd's.

An Airship Bed.

Lady Sybil Grant is organising an exhibition to be called "Airships in Peace and War." It is to be opened at Prince's Galleries, Piccadilly, London, on Sept. 15th. It will contain models of airships, pictures and sections of ships. It is announced that the French authorities have sent a splendid exhibit. The profits of the exhibition will be used to subsidise an "Airship Bed" at St. Dunstan's.

Inspired into Song.

Miss Nellie Gibson, the parachutist, wrote recently to the inventor of the "Guardian Angel" parachute:—

"When I had the signal given me to drop from the Handley Page machine I dived without the slightest fear, and before I had the time to appreciate the fact that I had leapt from the 'plane, I felt myself gloriously and comfortably on the balance, just as if I were swinging in a hammock, being at perfect ease in my harness, and during the descent the happiness inspired me into song. I made a safe landing much to the joy of the Indian troops who witnessed the descent."

Whale-hunting with Aeroplanes.

Aeroplanes are being used on the west coast of Vancouver Island for spotting whales. The machines patrol the sea in the same way as did the submarine hunters during the war, and when the whales are spotted the news is wirelessed to the whaling ships.

£1,000 in Prizes.

Prizes to the value of £1,000 are offered by Kodak (Australasia), Ltd., for photographs taken *en route* by competitors in the England to Australia flight.

The first prize is £800, the second £150, and the third £50. Competitors are asked to apply to Kodak, Ltd., Kingsway, London, W.C.2.

A £200,000 Flight.

According to Reuter the cost of Gabriele d'Annunzio's flight from Rome to Tokio is estimated at £200,000. Italian officers and soldiers have already started for the places where d'Annunzio will refurnish himself with fuel on his journey—Asia Minor, India, Siam, Fusan, Korea, Osaka, and Tokio.

£300 Machines.

Inquiries made at the London branch of the United Aircraft Engineering Corporation, at 123, Pall Mall, S.W.1, show that so far only six of the ninety-eight D.H.6 machines bought a few weeks ago from the Aircraft Disposal Board have been sold.

The machines are fitted with 100 h.p. Curtiss ox.5 engines, and it is said that in this country a certain amount of prejudice against this engine seems to exist, though its performances have been good. Some of them have run as many as 250 hours before they have been taken down.

The machines complete have been offered for sale at £300. The D.H.6 machines without engines might be sold for about £130. Both machines and engines are absolutely new, as they have not been in the air since their test flights.

The First Women to Cross the Channel.

It was stated in THE AEROPLANE recently that Lady Muriel Paget, who flew from Paris to London on Aug. 27th, was the first woman-passenger to cross the Channel since the inauguration of the Cross-Channel Air Service under civil aerial transport conditions.

Apparently, this report was erroneous, for on Tuesday, Aug. 26th, Mrs. Sholto Douglas and Miss Gertrude Bacon flew from Cricklewood to Le Bourget on a Handley Page, piloted by Lieut.-Col. Sholto Douglas, M.C., so that these two ladies actually have the distinction of being the first two women-passengers to cross.

Miss Bacon is evidently determined to maintain her record as a pioneer of aviation, as she was one of the most distinguished of women balloonists in the days before flying, and she was actually the first English woman to fly in an aeroplane, her first flight being made at the great Reims Meeting in 1909.



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The WORLD of AERONAUTICS (continued)

The Inventor of the Balloon.

In the "Nieuwe Courant" there has been published an article on the first inventor of the balloon, who, it is stated, was not, as is commonly believed, the Frenchman Mongolfier, but the Portuguese Bartholomew Lourenco do Gusmao. Up to a few years ago no one even dreamed of his having ever existed. For two centuries the plan and description of his invention lay buried under the dust of Coimbra University, until Viscount de Faria, Portuguese Consul at Lausanne, brought them to light. Viscount de Faria is the grandson of the viscount of that name, who was Portuguese Minister at the Netherlands Court in 1840-44. A work from his pen, devoted to the first flying man, appeared in 1913, when he visited The Hague as delegate to the Aerial Navigation Conference.

Bartholomew Lourenco do Gusmao, Viscount de Faria tells us, was born in 1685 at Santos, in Brazil, as the son of a physician. He studied law at Coimbra University, and after successfully completing there his curriculum he devoted himself to mathematics and physical science. In the pursuit of these studies he hit upon a process of producing a gas much lighter than air, with which he expected to work wonders. He built a machine, remarkably like the present-day dirigible.

In order to protect himself against his invention being appropriated by others he applied to the King of Portugal for a certificate giving him the exclusive right to his invention before he gave a public demonstration of his balloon. Evidently he was diplomatic enough to represent to the King the very qualities likely to appeal to him. "By means of this machine," he wrote, "any orders can be carried without the enemy being able to prevent it, provisions of all kinds may be sent to beleaguered cities, whilst it would also be very useful to commerce."

The certificate was duly given him in April, 1709, and on Aug. 8th following he gave his public demonstration in the presence of the Court. The spectators were greatly impressed by the spectacle, and called him the "flying man," and his machine the passarola (sparrow)

The inventor met an untimely death in 1724. The Inquisition had got hold of his machine, ordered it to be destroyed, and its inventor to be cast into prison for sorcery. He died in hospital at Toledo.

War Memories.

Capt. Sir John Alcock, K.B.E., D.S.C., has contributed an article to the September number of the "Badminton Magazine." In it he relates some of his experiences during the time he was at Mudros. He writes :—

"Machines were scarce, and we were proud of the fact that a fighting scout was actually built by us at Mudros. And a very good machine it proved, and might have rendered a good account of itself had it not been accidentally destroyed by a following machine landing on top of it in the darkness. Of necessity we took chances in those days—or rather nights. It is easy to land a machine in the daytime, and with plenty of ground a squadron may be assembled; but to take a squadron over water and land them safely in the dark is hazardous, to say the least. It was in these circumstances that our Mudros machine was crashed and ruined. We had no time to grieve, however; accidents were part of the day's work, and we paid but little heed to our loss. There were now plenty of machines, and we were over the enemy all day and every day.

"But my bad day arrived. In the morning I had accounted for two German machines. They were acting as convoy to a camera-carrier. One I put straight to the ground. The other proved more difficult, but I stuck to him till I had him beat, and later his drifting propeller was picked up by our men with the pilot's last message written large on one of its blades. I have just received the following letter from the Bulgarian lady for whom—as it now transpires—this message was intended. Although rescued on this occasion, he seems to have met his fate later :—

" 'Dear Sir,—

' I apologise for having taken the liberty to write to you without being known by you—the liberty to write you and to have your attention just for a moment follow these lines.

' Therefore I must introduce myself to you. I am the young lady to whom the German pilot Muller, that you brought down two years ago, had written his last greetings on the propeller of the wrecked seaplane. Some time ago I received the number of the "Daily Mirror" which contains a picture of the propeller and your photo. I was very curious to know something about you, and Capt. Wildish and Comdr. Greig, who know you very well, told me what a good flier you are, and that just recently you gained the prize in a concourse for a flight over the ocean. I congratulate you for that.

' My friend Muller is a very good pilot, he was one of the best, and I see that he has had a worthy ending, more than that, you must have excelled him to have beaten him down.

' I myself have never been in an aeroplane, and don't know what the sensations may be when one is so high up, but there must be something that makes you risk your life so readily, you really must feel great having conquered the space.

' I began by introducing myself, and I must say something more to let you have a complete picture. I am a Bulgarian and am a graduate of an American college; I lived several years among English and American people, and learned to love your language and literature. Last winter we had great many English people here, and I had the chance to practice the language, and enjoyed it greatly.

' I shall be immensely pleased if you send me a good photograph of yourself, and if you add some snapshots of your seaplane too, I shall enjoy them none the less, and with the picture in the "Daily Mirror" I shall highly treasure. I shall not say how I would wish to possess the famous propeller, but rightly it belongs to you; it is your trophy, for it is you have risked your life.

' Believing you will answer my small request,

' I am, with very best wishes,

' Yours sincerely,

' (sd.) STRAOKO ILIEVNA.

' Varna, Bulgaria,
' 21 Vornishka,
' 1/8/19.' "

The Misunderstood Public.

Apropos the recent announcement that the aerial navigation regulations are being broken constantly by aviators who drop leaflets or take up and land passengers at unlicensed aerodromes, a writer in the "Field" remarks :—

"The Ministry solicits the assistance of the public in detecting offenders, and we are all asked to lay information against anybody whom we find doing these things. As we have said, we fear the Ministry has misjudged the British public. It will secure every assistance in this way when the offence appeals to the ordinary member of the public as deserving punishment, but we are not sanguine that the dropping of leaflets of other than an objectionable character, or the dropping of a passenger or taking up of such, save under decidedly suspicious circumstances, or even the obscuration of registration marks, will move the average man or woman to turn informer.

"These are matters which the police are responsible for in co-related affairs, and very few people somehow, and particularly motorists, are anxious to adopt the rôle of amateur policemen. Low flying will be reported and possibly flying over populous places, if the pilots are foolish to fly low enough to enable their registration marks to be discerned, but who is going to challenge the military or non-military character of an aeroplane, and how is it to be done? Surely it is the duty of the Air Ministry to see that no military or naval machine is sold out of the Service and allowed to retain its distinguishing marks. It is entirely characteristic of a Government Department to put the onus of such responsibility on the shoulders of others."

A Departure.

Among the passengers on board the "Aquitania," which left Southampton on Sept. 6th for America, was Commodore Beaumont, President of the American Aero Club in France.

COMING EVENTS.

AUGUST.

Amsterdam Aircraft Exhibition. (Still open.)

SEPTEMBER.

Saturday, Sept. 20th.—14 Wing, R.A.F., Italy. Dinner at the Imperial Restaurant, Regent Street, London.

Friday, Sept. 26th.—40 Squadron, R.A.F. Dinner at place to be announced.

Sunday, October 5th.—The Aviation Meeting at Barcelona.

Tuesday, October 14th.—The Miss Douglas-Pennant inquiry to be opened at the House of Lords.

May 1st, 1920.—The "Daily Express" £10,000 Prize Competition opens.

DATES TO BE ANNOUNCED LATER.

Hendon-Paris-Hendon Air Race.
Hendon-Manchester-Hendon Air Race.

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NAVAL & MILITARY AERONAUTICS

GREAT BRITAIN.

NAVAL.

The Atlantic Fleet separated into five groups on Sept. 6th and left Portland in the afternoon for an autumn cruise of the East and West coasts. In the morning 11 aeroplanes flew over from Gosport and eight of them discharged dummy torpedoes at the battleships riding at anchor under the screen of smoke-bombs dropped by the other machines. Of three torpedoes discharged at the "Queen Elizabeth" from some 500 yards distance two struck her forward.

MILITARY.

THE CASUALTY LIST.

Reported September 5th.

PREVIOUSLY REPORTED MISSING, NOW REPORTED KILLED.—McLaren, Sec. Lt. F. M., R.F.C.

OFFICIAL COMMUNIQUÉ.

The War Office issued the following communiqué on Sept. 2nd dealing with the operations in North Russia:—

MURMANSK FRONT.—A successful raid has been carried out on Rimkaya, on the east shore of Lake Onega, by Russian troops, assisted by the Lake Flotilla and the R.A.F.

THE LATE BRIG.-GEN. C. F. LEE, C.M.G.

The following notice as to the life of Brig.-Gen. C. F. Lee, C.M.G., is extracted from the "Times" newspaper:—

The death of Brigadier-General Charles Frederick Lee, C.M.G., in an aeroplane accident at Weston-super-Mare, is a serious loss to aviation.

General Lee was only 31 years of age, and was the son of Major W. F. Lee, T.D., J.P. He was educated at Eton, joined the King's Royal Rifles (60th), and was adjutant of the 2nd Battalion when he retired, about two years before the war, and joined the Somerset Yeomanry. He transferred to the Royal Flying Corps at the outbreak of war, and went to France in 1914 as adjutant to Air-Marshal Sir Hugh Trenchard (then a lieutenant-colonel commanding a wing). Afterwards he became brigade-major to Vice-Air-Marshal Sir John Salmond, and in July, 1916, he was appointed R.F.C. Staff Officer, 1st Class, and promoted lieutenant-colonel. When Sir John Salmond went to the War Office as Director-General of Military Aeronautics General Lee (then lieutenant-colonel) was sent to America in command of the British Aviation Mission, where he did very valuable work, and was promoted acting brigadier-general.

He was a first-class pilot, and his wonderful flying in the United States did much to promote the practical *liaison* between the two countries. He had only recently joined the Avro Company, having decided to devote the greater part of his time to the practical development of civil aviation. He was a thorough sportsman, a keen rider to hounds, and polo player, and will be deeply missed by a large circle of friends both in the Service and outside.

* * *

Aeroplanes were sent up to search for armed raiders in three motor-cars who killed a corporal and injured two men of the Shropshire Light Infantry on Sept. 7th at Fermoy, Co. Cork. The party of infantry consisted of 18 men who were about to enter a chapel. Their rifles were taken from them. Pursuit by motor-car was impossible, as the roads had been blocked by trees.

* * *

The Inter-Service Athletic Championships were held at Stamford Bridge on Sept. 4th. The Army won with 42 points. The R.A.F. was second with 37 points.

The following represented and won or obtained places for the R.A.F.:—

100 Yards Race.—(1) Serjt.-Maj. F. Mawby, won by 2 ft. Time, 9 9-10 sec. (3) Serjt.-Maj. L. Kessler.

220 Yards Race.—(1) Serjt.-Maj. Mawby. Time, 22 sec. (3) Serjt.-Maj. Kessler.

440 Yards Race.—(1) Capt. A. P. Mitchell. Time, 50 1-5 sec. (4) Cpl. C. E. Bosberry.

880 Yards Race.—(3) Lt. W. B. H. Shaw, 2 min. 4 sec. (4) A.M. A. E. Morris.

One Mile Race.—(3) Capt. Gibbs, 4 min. 31 4-5 sec.

Three Miles Race.—(2) Serjt. Clibbon, 14 min. 55 4-5 sec.

High Jump.—(1) Lt. F. C. Penny, 5 ft. 9 in. (2) Serjt.-Maj. J. Miller, 5 ft. 8 in.

Putting the Weight (16 lb.).—(3) Lt. P. Fish, 32 ft. 10 in.

120 Yards Hurdles.—(3) Lt. J. F. Fraser. (4) Lt. C. R. Fenton.

Long Jump.—(1) Lt. J. F. Fraser, 21 ft. 11½ in. (3) Capt. Scott, 21 ft. 3 in.

440 Yards Race. Women's Relay (teams of four, each to run 110 yards).—(1) W.R.A.F. team, 55 1-5 sec.

Three-Quarter Mile Relay (teams of four, two to run a furlong and two a quarter-mile).—(1) R.A.F. (Serjt.-Maj. L. Kessler, Serjt.-Maj. F. Mawby, Cpl. C. E. Bosberry, Capt. Mitchell), 2 min. 26 2-5 sec.

AIR FORCE.

According to the "Times," of Sept. 6th, the revised scale of disablement pensions for the higher ranks, which came into force as from September 3rd, is as follows:—

SOLDIERS AND AIRMEN.

For total disablement.	New rates. per week. s.	d.	Previous rates with bonus s.
Warrant Officer, Cl. 1 (Regtl Sgt.-Maj., etc.).	60	0	51
N.C.O., Cl. 1 (Co. Sgt.-Maj., etc.)	53	4	45
N.C.O., Cl. 2 (Co. Q.M.S., etc.)	50	0	42
N.C.O., Cl. 3 (Sgt., etc.)	46	8	39
N.C.O., Cl. 4 (Cpl., etc.)	43	4	36
Allowances for wife and children:—			
For the wife	10	0	No allowance
For the first child (or 10s. if there is no wife)	7	6	1st child 8s.
For the 2nd child (or 7/6 if there is no wife)	6	0	2nd child 6s.
For each subsequent child	6	0	5

The allowance for the man's wife will be granted only where the marriage took place before the receipt of the wound or injury or before the man's removal from duty on account of the disease for which pension was awarded.

The rates (for man, wife, and children) in cases of partial disablement will be proportionately lower.

A widow pensioned under Article 11 of the Royal Warrant will receive while she is under 40 and without children one-half of the pension which might have been awarded to her husband if totally disabled, and when 40 or over, or when she has children, two-thirds of such pension. Children for this purpose are children eligible for allowances under Article 12 of the Royal Warrant.

WIDOW'S ALTERNATIVE PENSION.

The widow's alternative pension (for widows of the above ranks and privates or men of corresponding rank) will be one-half of the husband's pre-war earnings, increased by 60 per cent., subject to a maximum of 50s., while the widow is under 40 and without children. In other circumstances—i.e., where the widow is 40 or over, or has children, it will be two-thirds of the husband's pre-war earnings, similarly increased, subject to a maximum of 66s. 8d. Widows' alternative pensions in issue will be reviewed without application, and so also will cases in which applications received under the 1918 Warrant have been rejected.

The above new rates will continue for at least three years, and thereafter will be subject to readjustment according to the cost of living, but in any case they will not be lowered by more than 20 per cent. or under the previous rates (including bonus).

* * *

Reuter states that British aeroplanes carried out a raid on Kronstadt on Aug. 30th. They were subjected to a heavy bombardment from the batteries at Kronstadt and Krasnaja Gorka. The firing continued the whole evening.

A correspondent of the "Berlingske Tidende" states that the British air raid on Kronstadt on Aug. 30th was an important attack made by 18 big machines. They dropped a great number of bombs, which caused immense damage to the Bolshevik fortress, judging from the many fires observed.

* * *

The following is extracted from an Air Ministry "News Story," dated Sept. 2nd, on the flight of the F.5 Flying Boat from Felixstowe to Scandinavia:—

Exhibition and passenger-carrying flights were carried out at Christiania, Christiansand, and Copenhagen. At Christiania flights were made before their Majesties the King and Queen of Norway. Her Majesty was taken up on two occasions. During the second flight, when the Queen was accompanied by the Crown Prince Olaf, Her Majesty took control of the flying-boat for a short period.

A good impression was created in each of the Scandinavian capital towns visited. It is hoped that valuable results will accrue to the British aircraft industry in opening up what is perhaps the best market in the world for watergoing aircraft. Very few land aerodromes exist in these countries, and the land lying between them is difficult and generally dangerous for alighting. On the other hand, sheltered stretches of water are found everywhere, and there are numerous natural seaplane harbours.

Practically the whole of Norway is navigable by seaplanes making use of the fiords, and in Denmark all the large towns are approachable by water. In Sweden a natural seaplane highway extends right across the country, formed by the two large lakes Vättern and Vänern, the Gotha Canal, and countless small lagoons and lakelets.

The Germans are doing their best to obtain a footing in Denmark, and a short time ago announced aeroplanes and seaplanes for sale at unmistakably "cut" prices. The same policy is being pursued by German companies throughout Scandinavia. Several accidents have occurred with these machines.

The competition of our trade rivals must not be disregarded. It is important to realise that, once a country becomes permeated by machines of one type, a market for spare parts is secured, and the difficulty of effecting a radical change of type increases as time goes on; a golden opportunity will be lost if the British Aircraft Industry does not respond to the great good will which already exists in Scandinavia towards British people and British manufacturers.

From the technical standpoint, the flight of the F.5 gave proof of high efficiency; the hull of the flying-boat was as seaworthy after its month's immersion and exposure as when it left Felixstowe, and the reliability of the Rolls-Royce Eagle 8 type engines was beyond praise. With the wireless telegraphy installation communication was maintained with Dundee during the entire period of the voyage across the North Sea.

The times and distances of the stages flown were as follows :—

		Sea miles	Hrs. flying
July 11th	Felixstowe to Dundee	360	6.0
,, 20th	Dundee to Christiansand	380	7.15
,, 22nd	Christiansand to Christiania	150	2.20
,, 29th	Christiania to Copenhagen	265	4.15
Aug. 3rd	Copenhagen to Stockholm	390	4.30
,, 4th	Stockholm to Goteborg	300	5.0
,, 5th	Goteborg to Esbjerg	245	4.25
,, 6th	Esbjerg to Felixstowe	360	6.55
		2,450	40.40
Demonstration flights		—	5.30
		2,450	46.10

* * *

The Air Ministry announced on Sept. 3rd that all pilots, both Service and civil, who are compelled to effect a forced landing in Holland should report at once by telegraph or telephone to the Military Attaché, The Hague. The Military Attaché has made every arrangement to render rapid help as soon as he has proper details. Pilots should not leave the neighbourhood before they have made a written statement of the extent of the damage done to the private property in the landing; one copy of this must be handed to the owner or local authority, and one copy sent to the Military Attaché.

* * *

The Air Ministry published the following news item on Sept. 5th :—Amongst the various British units employed in fighting Bolsheviks in North Russia is the R.A.F. seaplane flight on the Dwina River. This unit has been continuously engaged since early June in co-operation with the river craft dispatched by the Admiralty to take action against the Bolshevik river gunboats.

The duties of this flight have been arduous. A constant watch has been kept on the enemy vessels, not only by day, but throughout the semi-darkness of the Arctic summer nights; enemy vessels have been effectively bombed and machine-gunned; spotting for the guns of our river flotilla has been directed by wireless, and photographic surveys have been regularly carried out.

The conditions under which this flight lives are somewhat novel. Their home consists of a barge, which moves up or down the river, according to the situation; the difficulties consequent on a moving base have been cheerfully met by all ranks of this unit to whose co-operation a considerable share of the success of the River expedition is due.

* * *

Flying Officer William Eugene Coulson and Aircraftsman James Roach Taylor, of No. 11 Squadron, were killed near Billingborough, Lincoln, on Sept. 5th. Together with another machine they were returning, it is stated, from overseas. The first machine landed safely, but that piloted by F.O. Coulson nose-dived and crashed from a height of about 80 ft. At the inquest on Sept. 6th a verdict of accidental death was returned.

* * *

Renter states that Major Halse, R.A.F., arrived at St. Raphael (France) on Sept. 6th on a "fighting 'plane." He made arrangements with the British Flying School there to continue his flight to Egypt and India.

CZECHO-SLOVAKIA.

The Czecho-Slovakian Military Aviation Service consists of about 100 machines of the Breguet, Salmson, Spad and Farman types. There are roughly the same number of pilots. The service is at present under the command of Commandant Bordage.

* * *

Lieut. Story and Sous-Lieut. Blizenac, of the Czecho-Slovakian Air Service, flying a Bréguet biplane, left Prague on Sept. 2nd at noon and reached Mainz during the afternoon. Leaving Mainz at 9 a.m. on Sept. 5th, they landed at Le Bourget, Paris, at 12.45 p.m.

FRANCE.

Lieut. Bonzac, who is in training for a long-distance flight, made the following circuit in August on a 14-months-old Spad-Herbemont biplane (300 h.p. Hispano-Suiza) : Aug. 8th, Paris-Tours, 124 miles in 1 hr. 30 min.; Tours-Le Poteau, 149 miles in 2 hr. 30 min.; Aug. 11th, Le Poteau-Béziers, 217 miles in 2 hr. 30 min.; Aug. 14th, Béziers-Chalons-sur-Saone, *via* Clermont-Ferrand, 341½ miles in 3 hr. 10 min.; Chalons-sur-Saone-Paris, *via* Nevers, 279 miles in 3 hr.

* * *

On Aug. 25th, at Beauvais, a French sentry posted on guard of a British aeroplane which had made a forced landing during the day saw a man approach the machine. After challenging three times the sentry fired, and the strange visitor ran away. Followed by the sentry (they do these things differently in France) and other soldiers disturbed by the firing, a chase started through the streets of Beauvais. The hunted man was hit apparently by one bullet, for a cry was heard and he "prononça une phrase en allemand." He then succeeded in evading pursuit. The sentry on returning to his neglected post found another stranger by the aeroplane. A second chase followed and again without result. Nothing is known that will throw light on the incident.

* * *

Commandant Vuillemain and Lieut. Dagneau, who recently flew from Paris to Cairo, began their return journey last week. Commandant Vuillemain landed at Constantinople after an uneventful journey on Aug. 27th. Lieut. Dagneau wrecked his machine in landing at Beirout on Aug. 26th and is returning to France by sea.

* * *

Capt. Lafon, who has been awaiting an opportunity to fly again from Paris to Constantinople, has been appointed to represent French military aeronautics at the Amsterdam Exhibition. He left Villacoublay at 11 a.m. on Sept. 4th, flying a S.E.A. biplane. At 12.20 p.m he landed at Brussels after a flight at an average speed of 140 m.p.h.

During the afternoon he continued his flight to Amsterdam, landing there without incident.

* * *

The French Service d'Aviation propose on Sept. 11th next to do honour to the memory of Capt. Guynemer, who was killed in action on Sept. 11th, 1917. The last citation of Guynemer will be read to all aeronautical formations during the day, and the ceremony will be in addition an act of homage to the memory of all those aviators who died for France. A special ceremony, in which flying will be a part, will be carried out at the headquarters of No. 4 Group at Le Bourget. The General Officer Commanding Military Aeronautics will be present.

* * *

It is rumoured in Paris that Capt. René Fonck, the great French aerial fighter, intends to seek election to the Chambre des Députés for a constituency in the Gironde.

GERMANY.

The following is extracted from a telegram from Warsaw, dated Aug. 28th, received by the Polish Press Bureau in London :—

The Germans continue to make attacks on Poland. The "Kurjer Warszawski" reports that on Aug. 27th Sosnovitz, in the Dombrowa coal district of Poland, was attacked three times by German aeroplanes.

An aeroplane flying low over the town at 6.40 a.m. machine-gunned the people in the streets. At 9.35 a.m. the most crowded streets were attacked in the same way. Two persons were seriously wounded and thirty slightly wounded. A third similar attack was made at 7 p.m. Afterwards three German machines appeared. Bombs were dropped at the Polish outposts on the frontier and on the bridge at Szopienice.

* * *

A Berlin message from Reuter, dated Sept. 4th, states that with regard to the recent reported destruction of German airships, the Aerial Department of the Ministry of War stated that the Ministry has had no airships for months past, and therefore they had nothing to say regarding the reported wrecking of Zeppelins. The Navy Office declared that there

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was nothing to add to the statement already published in the Press to the effect that some of the German airships were dismantled during the last weeks of the war. Seven others were destroyed by their crews at that time and soon after the sinking of the warships at Scapa Flow.

The "Tägliche Rundschau" states that the report that the airships had been destroyed by their crews is not correct. There was no wilful destruction of the seven airships. This was not possible, if only for the reason that, in accordance with the armistice terms, all airships and aeroplanes had to be rendered unfit for military use.

ITALY.

On Aug. 22nd Lt. Ancilotto flew a S.V.A. non-stop from Rome to Warsaw with a message from the Italian Premier to the Polish Premier. The average speed made was 118 m.p.h.—T. S. H.

* * *

According to the "Giornale d'Italia," the Italian Government has decided to send to the capitals of the Great Powers military attachés especially competent to deal with aviation questions.

MEXICO.

The Mexican Army Air Service has been gradually growing until it now numbers 500 aviators in various stages of training, while there are 6,000 applications on file. Colonel Alberto Salinos is Chief of the Service.

RUSSIA.

The Bolshevik military report of Sept. 3rd states:—In the inter-lake region, in the direction of Murmansk, we captured an enemy aeroplane which was obliged to land, taking the pilot, an Englishman, prisoner

BOLSHEVIST REPORT, September 7th.

In the inter-lake region (Murmansk Front) in the direction of Petrozavodsk (west coast of Lake Onega) enemy aeroplanes are carrying out systematic flights.

SPAIN.

The Spanish Government is continuing to dispatch large quantities of war material to Morocco, and special attention is being paid to the fourth arm. It is understood that 20 Airco biplanes are on order.

U.S.A.

A squadron of thirteen Curtiss army biplanes, named the "All-American Pathfinders," were due to start on a trans-Continental flight from Mineola (New York) to San Francisco on Aug. 13th. The squadron is under the command of Maj. O. M. Baldinger, and will fly in formation during the whole journey.

The itinerary of the flight embraces fifteen States and covers 4,183 miles. Stops and exhibitions will be made at 171 cities. The flight is being made to educate the people of the country, as well as being part of a recruiting campaign for all branches of the army.

The personnel consists of 22 officers and 80 men. The squadron has been divided into seven distinct sections: (1) headquarters and advance; (2) aerial routes, mapping and landing field; (3) recruiting; (4) flying and field operations; (5) wireless telephone and telegraph; (6) photographic; (7) balloon and airship.

Wireless telephones are fitted on all the machines, and reports of the progress made will be sent to the War Department by wireless.

The balloon and airship section are taking six specially constructed balloons and a "K" type observation balloon. This kite-balloon will be inflated at each stop.

A searchlight and field lighting section from the Engineer Corps also has been attached to the squadron. They are taking a 60 in. 250,000,000 candle-power searchlight, which can be seen by an aeroplane 110 miles away.

* * *

According to a message from the "Daily Mail" New York correspondent, dated Sept. 3rd, an American army aeroplane flying over the Rio Grande was heavily fired upon by Mexicans. The pilot, Capt. Macnabb, was severely wounded in the head. It is not yet known whether the aeroplane was over American or Mexican territory.

* * *

It is stated from Washington that 270 aeroplanes have been shipped to the Panama Canal zone for patrol duty.

R. A. F. FASHIONS.

It is reported that the new uniform for R.A.F. officers will cost £18 18s. Each extra gold ring on the sleeve costs 25s.

The barathea cloth used is much more expensive than the cloth used in the R.A.F. horizon blue uniforms, which cost £12 12s.

The advantages of the new blue cloth are that it is darker, more permanent, and possibly may have better wearing qualities.

METEOROLOGY AND AERIAL NAVIGATION.

According to the official news letter from Washington, an example of the importance of meteorological information and forecasts to aerial navigation is that in connection with the recent visit of the British dirigible, the R.34, to that country. The first call for meteorological information and forecasts was received from the commander of the airship when off Newfoundland, and was by radio through the shore station at Cape Race. Immediately on the receipt of this call, information of the prevailing weather and winds along the American coast north of New York and forecasts of wind and weather conditions were sent twice each day until the airship reached Long Island.

Perhaps the most important information contained in these advices was sent when the airship was flying between Nova Scotia and Cape Cod, encountering head winds and its supply of fuel nearly exhausted. The prediction was to the effect that the wind would change to the north-east within the next 12 hours. Unquestionably this change in wind was most timely, and enabled the airship to reach its destination without the aid of torpedo-boats. During all the time that the R.34 was moored at the flying-field on Long Island advices three times each day concerning the probable wind and weather conditions were supplied to its commander. Its dramatic departure was made on urgent recommendations from the Weather Bureau to the effect that a storm was approaching rapidly from the region of the Great Lakes, that the wind and weather conditions, then favourable for a start homeward, would continue but a few hours longer, and that to remain moored on the flying-field would be at the risk of having the airship torn from its moorings and swept away by winds and squalls that would set in before the expiration of the night.

This bulletin was sent as an urgent message at 9 p.m., and at midnight the R.34 was on her homeward flight under exceptionally favourable winds and weather conditions. It is fortunate that she left when she did, for the following morning the wind was blowing half a gale, rain had set in, and atmospheric conditions were most dangerous for an airship unprotected on a flying-field. In the meantime, the R.34 was miles eastward, flying in good weather and with strong following winds making exceptionally fine speed. That the work of the Weather Bureau in this connection was appreciated is evidenced by the following message received from her meteorological officer *via* radio after her departure: "Many thanks for kindly and efficient manner in which weather information has been supplied. Very grateful."



THE F.5 AT THE ELTA.—General Snyders, late Commander-in-Chief, Royal Nederlands Army, and various Dutch Editors inspecting the boat, Mr. M. H. Volk, of the Gosport Aviation Company, the constructors of the boat, is also shown.

Government Aircraft Competition

An important clause in the £64,000 prize conditions.

"16. Soundness and quality of construction will include—

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AERONAUTICS and The LAW

PERSONIFIED AIRCRAFT.

By "THE LINCOLN IMP."

Human children are registered on birth. Aircraft are to be born on registration. A human being, even before birth, is not without legal recognition. Thus a female murderer with child cannot be hanged before she is delivered, and in practice is, the "Imp" believes, reprieved. It is also criminal to kill an unborn child. Similarly aircraft, even before registration, will have to be accorded some sort of legal recognition. But, speaking quite generally, the law does not recognise as separate and distinct personalities either unborn children or unregistered aircraft. Children begin in law on birth, aircraft on registration.

Unnational Aircraft.

An aircraft which is not entered on the register of any State is not only unborn. It also is "unnational" to coin a phrase to meet the novel facts. It has *no* nationality. Nationality is only to be acquired by the aircraft being entered on the register of some State. An aircraft without a nationality is a trespasser wherever it goes, except over the high seas. Registration by "a contracting State"—*i.e.*, a member of the League of Nations—confers the Nationality of that State. An aircraft of that nationality can claim freedom of innocent passage over the territory of that or any other member of the League of Nations as of right. But registration by non-members of the League confers no such right. Indeed, an aircraft so registered may not even be permitted to fly above the territory of a member, except by a special and temporary authorisation. Should Switzerland join the League and Germany not do so, then for Switzerland to allow aircraft registered in Germany to fly across its borders would be a *casus belli* at the suit of other members of the League. Such aircraft, therefore, have a kind of local legality. Outside the ring fence of the League they are all right. Within it they have no business. The flight of unborn—that is, totally unregistered—aircraft is, however, altogether and everywhere illegal.

Illegitimate Aircraft.

Aircraft are also illegitimate and their flight illegal by reason of parentage or ownership. Parents of children may be of two nationalities, but owners of aircraft may not. An Englishman and a Frenchman may not own the same aircraft. Nor may an English company and a French one. At least they may not be its registered owners. To what extent nomineeship and trusteeship is to be permitted (if at all) is not apparent. If an American and a French-Canadian buy an aeroplane in France, intending to fly it there, and approach the French Registrar to have it registered, he will refuse them. Neither is a French national. If they approach the English Registrar, he will refuse them.

Canada is a "State" for the purposes of the Convention, and a Canadian is not an English "national." If they approach the American Registrar, he should refuse them. The aircraft does not belong "wholly" to American nationals. Suppose the Canadian lies low and the aircraft is accepted as American. Later, desiring to join in a point-to-point trade reserved to Canadian aircraft, the Canadian buys out the American. Now wholly Canadian-owned, the aircraft is struck off the American register. The Canadian then approaches the Canadian Registrar. But he, it seems, must refuse him registration. "An aircraft cannot be validly registered in more than one State." It is illegitimate and useless. (In all probability this is not what was meant by Article 8, but it happens to be what it says.)

Personality.

Let it not be thought that the "Imp" is pressing too far the analogy between aircraft and humans. It is the Convention and Regulations which carry it too far. Aircraft, it seems, are to be completely personified. They are to be persons in law. How in the world—or in law—can a *thing* be a *person*? Quite easily if the law chooses to make it one. Ships have a "character"—British or foreign. Ships are frequently defendants to actions in the Admiralty Court. In Roman Law things were frequently persons. The inheritance of a dead Roman was an aggregation of things—slaves, cattle, money, houses, and land. This aggregation (called a *universitas*) was a person. Before the heir was ascertained, it had rights, could own property, and was subject to liabilities.

Take an illustration. A child is born to one of the female slaves. Whose is it? It cannot belong to its mother (a slave), to the former owner (dead), or to the heir (unascertained). It belongs to the *universitas*. The *universitas* is a person.

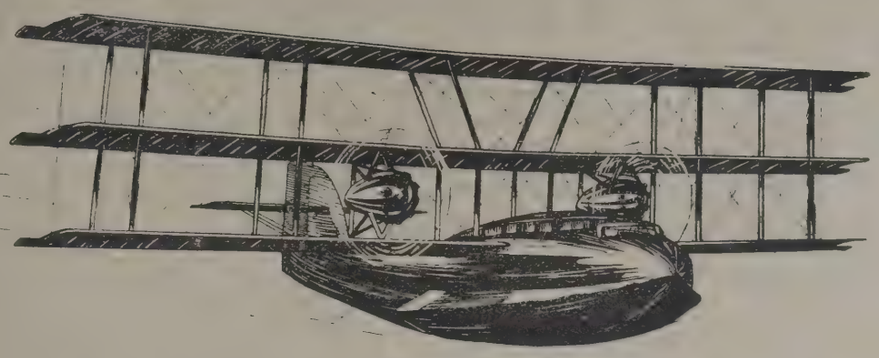
In modern English Law, however, a hard and fast line has (up to now) been drawn between persons and things. Land cannot own the houses built upon it. You cannot sue a railway train. The Admiralty action *in rem*, in which the ship itself is the defendant, is the exception that proves the rule. A ship is not a person in law, in spite of having a character. An airship, however, or any other kind of aircraft, really does seem to be personified. The language of the Air Legislation goes far beyond that of the Merchant Shipping Acts.

Marks of Personality.

What are the distinguishing marks of personality? Life is not necessary, for then a corporation could not be a person. Senses are not, for then a blind, deaf and dumb idiot paralytic could not be a person. But to have a name and a nation, to have a will, power to move, power of action; to have knowledge and intention and ability to communicate with others; to have rights and privileges, public and private and even international; to have responsibilities and obligations; to be able to take care or be negligent; to be able to intend wrong and to attempt it; to have needs and the power to suffer and perhaps even to be punished. Surely a being having all these marks of individuality upon it cannot be anything else than a person? Each of these marks an aircraft has expressly attributed to it by the Air Legislation. An aircraft is a person.

Individuality of Aircraft.

If there are 20 souls on board an aircraft, how many persons are there aloft? Not 20, but 21, if the aircraft is a person. The University of Oxford is a corporate person. "If there are a hundred people assembled in a room to work out a decree of the University of Oxford,



TRANSITIONS IN TRANSIT

No. 5. The Merchant Ship of Ancient Rome.

The Trans-Mediterranean sailing vessels of the Romans may be rightly termed the early ancestors of the modern flying boat. Owned by the wealthy Naviculariі Marini Corporations, they carried on profitable trade between the countries of the then known world. Rich spices from the East—precious stones from Africa—tin from Cornwall—oil and bullion—such were the light but valuable cargoes they brought into the Tiber.



But the civilised world has grown since those classic days. Speed has therefore become a factor of greater importance.

Nowadays the aeroplane fills the niche, carrying the light but valuable cargoes from one country to another swiftly—safely. For quick, reliable transit the seaplane is ideal.

The machine illustrated above is the Nieuport Mark Seaplane.

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how many persons are there in the room? Not 100, certainly, but 101." (Knogisdoff, "Common Sense in Law.") To any reader of a philosophic turn of mind the "Imp" recommends the study of the theory of corporate personality.

Is a corporation a real person—a fact? Or is it a figment of imagination, a convenient abstraction, a fiction of law? Learned writers argue either way. No one knows for certain. Take it which way you will, facts or fictions, you meet those corporate people every day.

Business men, unlearned in the law, are wont to irritate the ears of lawyers by speaking of "Messrs. Handley Page, Ltd.," and so forth. The solecism lies, of course, in the ignorance that it displays of any corporate personality. Handley Page, Ltd., is not (as Messrs. would imply) the name of a partnership, with Messrs. Handley and Page as partners. It is the name of a single, distinct, legal person or corporation whose name, birthday, fortune, rights, powers, origin, and duration differ in every particular from those of Messrs. Handley and Page or any partnership between them. All this is trite law, but necessary to some readers by way of explanation.

LIMITED LIMITED.

Aircraft can be owned by corporations. Limited Limited, let us suppose, is the name of a company, the chief of whose objects set forth in its memorandum is "to be the registered owner of English aircraft." Its nationality is English. Its registered office is in England. It complies with all the requirements of the English company law. Its chairman and at least two-thirds of its directors are English—but marionettes. The financiers of the concern own series of debentures secured severally and collectively on the fleets of aircraft "owned" by the company. The holders of these debentures are German-Austrian-Turks (or whatever may happen to be your favourite brand of foreigners). They "own" no English aircraft. Oh dear, no! The owners are an English company. If the venture is a success—good for G.A.T. If the venture is a failure, the aircraft misbehave themselves, and their "owner" is wanted, that is nothing to G.A.T., who are now merely innocent creditors of the wicked and insolvent company. Heads they win, tails we lose.

(To be continued.)

"ON GIVING A DOG A BAD NAME."

"An absolute death-trap; spins if you look at it." Of how many types of machine has one heard this said. So far as my recollection goes, the only machine about which it has NOT been said, at any rate, so that I have heard, is—the old Longhorn Maurice Farman Mechanical Cow.

And that brings us to the point in question.

So far as the present writer's experience goes, the Longhorn was the first machine on which he and fellow "Huns" juggled with death.

When we were all thoroughly skilled (according to our own ideas) on this type we were in due course promoted to the Shorthorn (now universially known as the "Rumpety").

Now, as all pilots know, this machine is a trifle lighter, or shall we say, less heavy, on its control than the former, consequently, our "star" Longhorn pilot on his first trip, when he was up about a thousand feet or so, started to do a moderately quick turn. This particular machine is, as we have seen, slightly more sensitive on ailerons than the Longhorn. Consequently, he put on more bank than he intended, and, as luck would have it, got a bad bump at the same time.

The machine side-slipped and started to do a dignified slow spin. He got it out in two hundred feet or so and landed with proper wind up. Everyone, of course, rushed up to him to find out how he liked it. "Ruddy awful thing, spins on a left-hand turn," was his comment.

Now from that day onwards in that particular squadron Shorthorns had a reputation for spinning on a left-hand turn.

About a year later I happened to be at the same aerodrome again and I actually found that the reputation for spinning on left-hand turns still clung to the poor old "Rumpety." When I asked a very young instructor how often he had seen a spin on a left-hand turn, he said he never had, as they were all told to watch the Pitôt carefully on a bank, since a fellow had been killed about a year ago by getting into a flat spin and being unable to get out.

When I suggested that this was probably the story, slightly added to, of our own particular Hun on his first Shorthorn solo, he merely looked at me with a pitying look and was sorry for my stupidity.

Now every machine that has been in the Service since the war has probably made a similar reputation in certain squadrons in a similar manner to the case just related.

At two aerodromes about fifteen miles apart there were two squadrons consisting of "Camels" and S.E.5s, respectively. While a visiting S.E.5 was getting up from the "Camel" aerodrome the engine "konked out," the pilot tried to turn back but side-slipped and crashed.

Now that particular type of crash has probably accounted for more flying fatalities than any other and is common to all types of machine, yet as long as this particular "Camel" squadron exists, they will never cease to regard S.E.5 as an apparatus designed by his Satanic Majesty for the express purpose of killing off perfectly good flying officers.

Shortly after this a "Camel" had the bad luck to crash on the S.E.5's ground through some simple accident. And now 90 per cent. of the pilots of this squadron regard a "Camel" in exactly the same light as do the "Camel" people the S.E.5s.

It is the same all through. Some people cannot find words sufficiently good for the D.H.9, others are unable to express themselves sufficiently forcibly in condemning it.

How, then, is one to counteract this tendency to give a machine a bad name?

First and foremost, in my opinion, it is weak-mindedness on the part of the pilots. They are too ready to believe what they are told: to condemn a machine untried.

The late Captain Hucks, in a paper which he read some time ago, before the Royal Aeronautical Society, drew attention to the fact that there is really very little difference between flying a big bomber or a small fighting scout once one has thoroughly mastered the art of flying.

Everyone agrees that there is a difference of "feel" between riding a small two-stroke motor-cycle and a big twin; the difference is in "feel," pure and simple, not in principle.

So, too, in aeroplanes. A pilot has been flying one type of machine for several hundred hours perhaps. He is put onto a newer and faster type. He is not so comfortable in it and finds it harder to fly, because it does things which his previous machine did not do, and does not do what the old one did.

In nine cases out of ten he will say "it's a ruddy awful machine," "it's dangerous," etc. Someone overhears him and tells someone else. Later on that "someone else" is asked if he knows anything about the machine in question and usually he comes out with the fact that "it's a ruddy awful thing," just as though his opinion were backed by his experience.

And in ninety-nine cases out of a hundred that is how all machines get their bad names.—G. D.

ALLEGED FALSE PRETENCES.

At Bow Street Police Court on Sept. 5th, before Mr. Garrett, Paul Lemay de la Plane, 21, an American citizen, describing himself as a commission broker, of Bedford Place, W.C., was charged on a warrant with obtaining £180 by false pretences from Lieut. James Arthur Eyres, R.A.F.

Mr. H. O. Carter, who prosecuted, said that the case was a sad one, as the prosecutor and the defendant were brother officers. They became friendly in France, and met again in this country at the beginning of July. The defendant, after borrowing £5 from Lieut. Eyres, told him that he had been brought up in the stockbroking business all his life, that he knew all about investments, and that he was working in a stockbroker's office with a salary of £11 a week. The prosecutor parted with various sums, amounting in all to £180, which the defendant told him he was investing in leather with Mr. Reginald Stanley, a hide broker. Ultimately, Lieut. Eyres, a young Canadian officer, made inquiries and found that no investments had been made with Mr. Stanley by the defendant.

Detective-sergeant Rixon stated that the defendant said to him that he had offered the money to Eyres on Sunday, Aug. 31st, but he refused to take it.

A remand was ordered.


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AERONAUTICAL ENGINEERING

SUPPLEMENT TO "THE AEROPLANE"

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THE WEEKLY COMMENTARY.

In an article "Concerning Competitions," Captain Sayers criticises the conditions of the Government competitions for commercial aircraft which have recently been published.

Particulars—so far as at present available—drawings, and illustrations of the various competitors for the Schneider Cup Race—which is to be held on the day after this paper goes to press—are given in this number.

Unfortunately no details whatever are available of the Italian entrant.

Of the competitors described it is notable that the regulations for the race have produced—as competitors—five purely racing machines, and only two which can claim to be really sea-going aircraft.

The Phœnix-Cork flying-boat, built by the Phœnix Dynamo Works, is the subject of this week's instalment of Modern British Aeroplanes.

CONCERNING COMPETITIONS.

By Capt. W. H. SAYERS, late R.A.F.

With the advent of Peace the days of aeronautical competitions have once more returned. The Atlantic Flight has been achieved, the Aerial Derby has been run, the Schneider Cup is once more upon us, and the Department of Civil Aeronautics, by way of justifying its existence, has announced that a competition is to be held for commercial machines in the early part of next year.

It is rumoured that the French Government, spurred on by the British example, is to attempt to forestall this country by holding a somewhat similar competition at an even earlier date.

In the present state of the Aeroplane Industry this revival of competitions of one kind or another is a very welcome sign. The Industry cannot live on competitions alone, but such of it as continues to survive is at least stirred by them to the extent of trying to improve its products in the directions demanded by them, and a relatively small expenditure in the shape of prize-money, intelligently awarded, may be the cause, directly or indirectly, of really great advances in the design and use of aircraft.

On the other hand, competitions run on the wrong lines, or under badly considered rules, or for the mere glorification and advertisement of their promoters, be they newspaper proprietors, patent medicine mongers, or mere Government Departments in need of rehabilitation, may, by inducing manufacturers and designers to waste time and money on intrinsically useless types of aircraft, seriously prejudice the future of aerial transport throughout the Empire.

Thus the right ordering of such competitions as are held is a matter of great moment to all who are seriously concerned with the future of aeronautics.

Competitions in so far as the aeroplane is at present concerned, are of two classes.

First and commonest is the type, generally purely sporting in nature, which aims at the exaggeration of some special quality, of which the Transatlantic and the Schneider Cup competitions may be considered as typical.

Such contests are extremely useful, in that they present to the designers and constructors of aircraft some fairly definite problem to be solved. The problem so set is generally not one of direct utilitarian value, and there is no pretence that the machines designed for such a competition and performing well therein are *ipso facto* machines having directly useful functions.

Indirectly such competitions may and often do lead to very considerable improvements in certain quite limited sections of the technique of aeroplane design or operation, which may be and often are of great importance in the process of "improving the breed" of aeroplanes generally.

A record of sustainedly good performances in contests of this type will give to the public an impression that the technical staff of the firm holding that record is both professionally competent and sufficiently broad-minded to vary their designs so as to best meet any required conditions.

No competition of this type is likely to produce evil results. The task set is invariably that of accomplishing, either first or best, some definite performance, and therefore reduces itself in the end to the simplest satisfactory solution of some relatively well-defined problem, and there is little risk that a faulty or biased judgment on the part of those in charge of the contest will obscure the results.

The second class of competition, and a much more dangerous one, is that intended to promote the development of a directly useful type of machine.

If such a competition takes the form of presenting to competitors a definite job which is to be performed, and the prizes are awarded solely upon some definite measure of the results achieved in carrying it out, then the competition may be quite as safe—*i.e.*, as little likely to cause actual harm—as the purely sporting type of competition.

Thus a competition wherein the competitors were required to carry, say, a total load of 500 lb. in a form requiring 50 cubic feet of cargo space, one journey a day, from London to Manchester and back, for fourteen consecutive days, and wherein prizes were awarded for either

the shortest gross time in the air, or the closest adherence to a pre-declared time-table, or for smallest total consumption of fuel and oil, or such-like, would have nothing but a beneficial effect.

But a competition wherein some person or collection of persons, having determined to their own satisfaction that certain qualities of performance are desirable for machines intended for a specific purpose, lay down these performance qualities as essentials to the competing machines and who devise a series of tests and a system of marking on the results of those tests, and which purports thus to discover what machines are essentially suitable for some specific purpose, may produce the most unhappy results.

The competition which has recently been announced by the Air Ministry, which, according to its sponsors, is intended to encourage the development of safe and reliable aeroplanes for commercial purposes, seems to fall definitely into the dangerous class.

This is the more regrettable in that the regulations issued in connection therewith show that a very considerable amount of trouble has been taken by the committee which has drawn them up, and that they have been animated by excellent intentions.

The results unfortunately are nearly sufficient to drive one to forswear for ever either diligence or any but the most evil intent.

A competition run by the Department of Civil Aeronautics, expressly for the purpose of stimulating the design of reliable commercial aircraft, under rules drawn up by a committee which includes accredited representatives of the Aircraft Industry, cannot fail to attract a large amount of attention from all those who may have considered the possibility of using aerial transport in their business.

A very small proportion of such people have any technical knowledge of aeronautics, and they cannot be blamed if they come to the conclusion that the prize-winning machines in such a competition represent the best and most suitable commercial machines that the manufacturers of the Empire can produce.

There is, in fact, no guarantee in the regulations that the prize-winning machines will be of any practical value whatever.

Considering the details of the regulations as they stand, they call for some criticism.

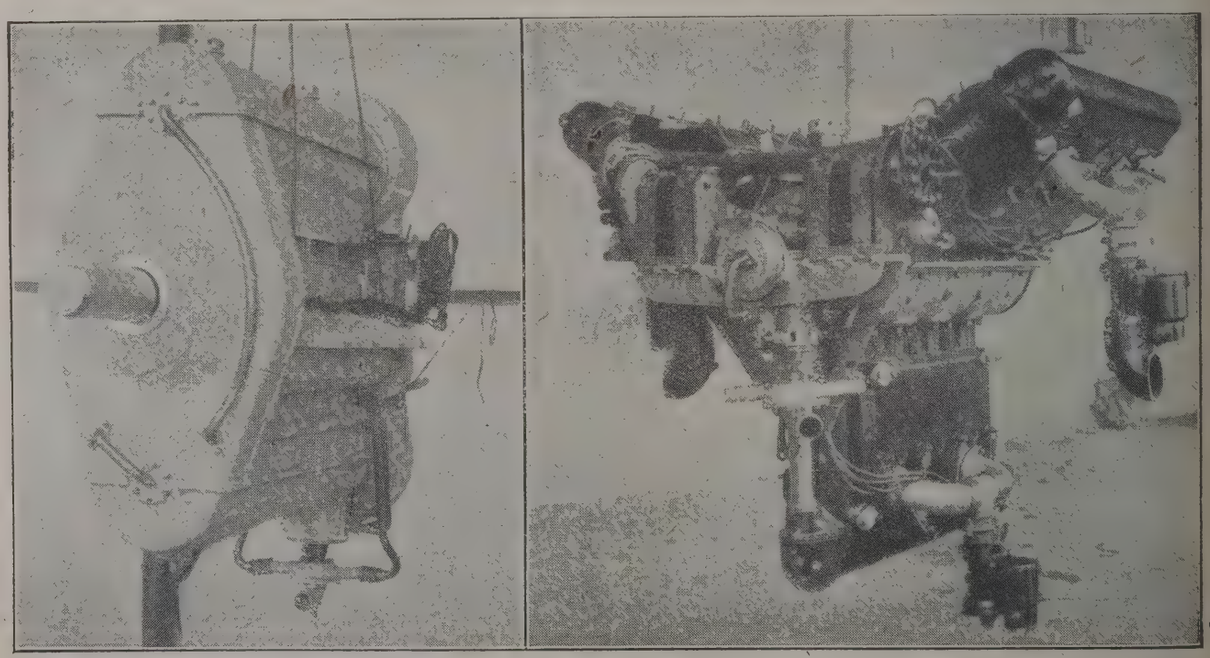
The absurdity of the small class for aeroplanes, limited to one passenger in addition to the pilot, has already been commented upon in The Aeroplane, as has the absence of any consideration of the engine power employed.

The speed ranges called for—from 40 to 100 m.p.h. for small aeroplanes and from 45 to 90 m.p.h. for large ones—are in themselves reasonable. Any attempt to increase the practicable speed range, and in particular to secure a low landing speed, without the sacrifice of a high maximum speed, is laudable, but the value of the condition is prejudiced by two factors—(1) that there is no limit to the engine power employed, (2) as a safety factor an unqualified minimum speed has no definite value. That is to say that a machine which can just support itself at 40 m.p.h., but which cannot be flown below 45 m.p.h. except by a skilled pilot, may be much less safe to land than a machine which falls out of the air at 42 m.p.h., but which is thoroughly controllable right down to that limit.

Similarly the specified climbing speeds are by themselves reasonable, but they are unnecessary for the purpose for which the competition is intended. The climbing requirements for commercial aircraft are limited by two considerations. The first is that the machine should be able to clear obstacles around landing fields.

This is purely a question of gradient of climb, and a machine climbing 400 ft. per min. at 40 m.p.h. will get out of a worse field than will one climbing 500 ft. per min. at 60 m.p.h. Yet the first machine would be disqualified and the second is eligible.

The second consideration is that a machine must be able to reach its cruising height in a reasonable time and without undue delay. This calls for an angle of climb up to cruising height in excess of the machine's best gliding angle. Given this, a machine may climb straight away on its proper course, and yet keep, whilst climbing, within gliding range of the aerodrome. This obviously calls for the maintenance of a sufficient rate of climb up



Two new Italian Aero Engines, built by the V.N.V. firm. On the left a "200/300" h.p. two-stroke, and on the right the 12-cylinder Y of 260 h.p.

G R

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to the cruising height, which for competition work might be put at 5,000 ft. or some such figure, and therefore initial rate of climb alone, without some qualification as to its maintenance at height, is of very little value.

It is possible, though very improbable, that a machine which would climb 500 ft. in its first minute would yet never reach 2,000 ft. In this country such a machine could have only a very limited commercial value.

These performance figures should never have appeared in the rules, or, if they appeared at all, should have been extreme figures merely designed to keep out impracticable and absurd machines.

The landing and getting-off tests, amplified somewhat perhaps, should suffice to keep landing speeds down to safe limits, and a designer who can produce a satisfactory braking mechanism, which will allow of safe landing in a confined space at a high speed, should be allowed to demonstrate the utility and reliability of his design, and not ruled out.

Similarly the practical test of clearing an obstacle, together with the provision that a straight climb was to be made from the aerodrome to some given height, say 2,500 or 3,000 ft., in a wind not exceeding 5 miles per hour, and that on reaching that height the engine was to be entirely cut off before turning, and a return then made to the aerodrome, would secure the essentials of safety without any risk of debarring unforeseen methods of securing it.

This in essence is the nature of the objections which may be taken to the whole of the conditions.

Over and above such objections is the fact that the relative importance of the various features of the designs submitted have to be assessed, according to a scale which is on the one hand arbitrary and on the other hand liable to be influenced by the personal prejudices of a number of so far unknown judges. However well drawn the rules might be, and however competent and unbiased the judges, the result of such a contest will inevitably cause discontent, and will inevitably be open to destructive criticism.

It will in no case afford to the prospective user of aircraft for commercial purposes any of the data which he most desires.

If it really is the intention of the Department of Civil Aeronautics to assist the Aeroplane Industry in an effort to popularise the use of aeroplanes for commercial purposes, it would surely have been well to have considered what are the questions which would be raised by any business man in deciding whether such a use is practicable or not.

Roughly these questions would be three in number. The first would be, "What is to be gained, and how much?" This is fairly simple. The answer to the first part of the question is "Time," and the quantity which may be gained can be defined fairly closely for any given set of conditions.

The second question will be, "What is the reliability of this method of saving time?"—*i.e.*, how often in a year is the aeroplane going to fail to save time, how often is it going to lose its cargo or totally fail to deliver it?

This question cannot be answered with any sort of certainty. Nobody really knows what the reliability of the aeroplane as a carrier is. Nobody has tested it under conditions approaching those of commerce.

And the last and possibly the most important of all is, "How much is it going to cost?" And here again there is no answer.

Let it be imagined that the Department of Civil Aeronautics had suffered from a moment of lucidity and had announced that a competition was to be held under the following conditions:—

(1) Any machine designed and built in the British Empire may be entered. Such machines are to comply with the conditions required for an airworthiness certificate.

(2) The entrant of each machine is to declare the normal useful load capacity of that machine when carrying fuel for 300 miles at a declared normal cruising speed.

(3) Each such machine, loaded to the declared load, shall be submitted to certain defined tests of landing in small fields and getting off therefrom, more or less as those actually laid down in Rule 6 of the actual competition.

Thereafter the machines entered are to be handed over to the competition committee, complete and in running order, and a selling price for each is to be declared and published. Competitors may nominate their own pilots and maintenance staffs, and shall declare the rate of payment of each member of the nominated staff.

Each such competing machine shall then be run by the competition committee upon a regular service consisting of one journey of 250 land miles each day, loaded to its declared load, and timed at its declared cruising speed, for at least 14 consecutive days, though a much longer period would be desirable. During these tests the whole cost of operating should be borne by the committee, to be recovered eventually from the competitors.

At the end of the test the cost per ton-mile of goods actually delivered, including interest on the capital represented by the machine, depreciation based on the actual condition of the machine at the end of the trial, cost of fuel, oil, wages, repairs, and maintenance, should be ascertained.

These should be published, together with full particulars of the actual times taken on each journey and of all mishaps and delays.

With such a test, prizes might be awarded on almost any of a large number of different bases.

For instance, cargoes might be priced at so much per ton per minute. Every minute lost from the schedule time would be charged to the machine losing it, and every lot of cargo not delivered at all would be charged at its price per ton and added to the running costs, and a prize for the lowest cost per ton-mile awarded. This might be extended to cover speed classes—*i.e.*, machines classed as low speed, up to 70 m.p.h. overall average, and high speed, up to 100 m.p.h. overall average.

Or prizes might be awarded merely on reliability and punctuality, or on almost any basis—it would matter little—since the publication of the performance data would supply all the information that anyone needed, and any manufacturing firm that felt confident that its machines would perform well from a commercial standpoint would enter for the sake of the advertisement that they would stand to gain.

As the proposed competition stands now, there are so many conflicting or disconnected features for which marks are to be awarded, and so much is inevitably left to the opinion of the judges, that the winning of a prize therein may mean anything—or nothing.

THE AIRCO EXHIBIT AT THE E.L.T.A.

The British section of the E.L.T.A. exhibition at Amsterdam has been considerably improved since the opening of this successful aeronautical show. The Airco stand has the white Airco 16 machine complete, with the exception of the planes, and it is very attractive in appearance, as most of the metal fittings, including the long exhaust pipes, are nickel-plated.

The cabin is tastefully decorated. The roof is cream colour, the curtains old gold, and the seats black. The sides of the cabin are dull green, purple, and old gold, and two large pillows of green silk are added. A black carpet covers the floor.

The cowling of the machine is buffed aluminium, the front part of the fuselage white, and the rear portion—the section covered with fabric—and the tail unit are natural dope colour. The chassis is dull black.

Excellent postcards with inscriptions in Dutch, and leaflets and pamphlets, also in Dutch, have been prepared.



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THE SCHNEIDER CUP COMPETITORS.

THE SOPWITH MACHINE.

The Sopwith Schneider Cup racer shows a number of interesting and more or less typically Sopwith characteristics.

The very small span, relatively large chord, and the small gap are very reminiscent of the original Sopwith Schneider Cup machine of 1914. If memory serves one right, the chord and gap, 5 ft. 1½ in. and 4 ft. 6 in. respectively, were the same in the 1914 model as in that of to-day. The span of the new machine is some 3 ft. less, and there is a small backward stagger.

The floats and chassis are not unlike those of the original, though the section of the front part of the floats, with an outwardly flaring bottom—a sort of "Vee" bottom halved—is new to this firm.

The main floats have also been extended aft and faired off considerably and a tail float dispensed with. The big 450-h.p. radial engine has naturally called for a big bull-nosed body—even more bull-nosed than the original—and the body has been faired off to a rounded section instead of having been left square. The tail fin and tail plane are likewise faired into the body with large radii, and altogether the machine has been carefully studied with a view to producing the minimum of head resistance.



The Sopwith at Cowes.

With a power loading of slightly under 5 lb. per h.p. and with the Sopwith firm's unrivalled experience in the production of small fast machines, this machine should prove to be one of the fastest aeroplanes yet built, and Messrs. Sopwith should stand an excellent chance of winning the Cup for the second time.

SPECIFICATION.

Span	24 ft.
Chord	5 ft. 1½ in.
Gap	4 ft. 6 in.
Total area of wings	210 sq. ft.
Length (propeller boss to tail)	18 ft.
Length (overall)	20 ft.
Stagger	2½ in. negative
Weight (empty)	1,600 lb.
Weight (loaded)	2,200 lb.
Engine	Cosmos Jupiter 450 h.p.

THE SUPERMARINE BOAT.

The Supermarine flying boat is a considerably larger machine than any of the other competitors, except the Fairey and possibly the Savoia, of which there are at present no particulars available. It is in fact more or less a standard type of flying boat, designed with an eye to real seaworthiness, and fitted with an engine large enough to give it a really high speed.

The boat hull is more or less on similar lines to the well-known Supermarine two-seater and "Baby" types—in that it is a circular, or nearly circular, section streamline body, boat built and doubly diagonal-planked.



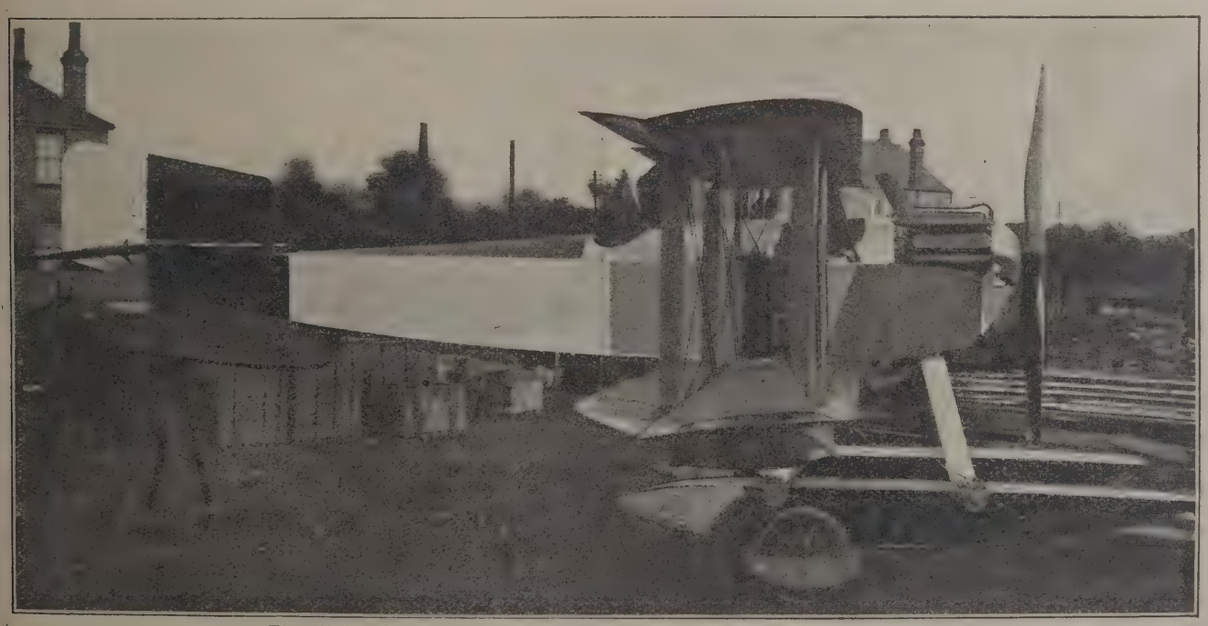
The Supermarine Boat.

It differs from the older Supermarine types in two particulars. Firstly, the fins, which are built out from the main hull to provide planing surface, are concave on their upper sides, and run into the main hull tangentially, instead of being flat and meeting the hull at a sharp angle. This renders the whole fin considerably more flexible and reduces the sea stresses on the whole hull structure.

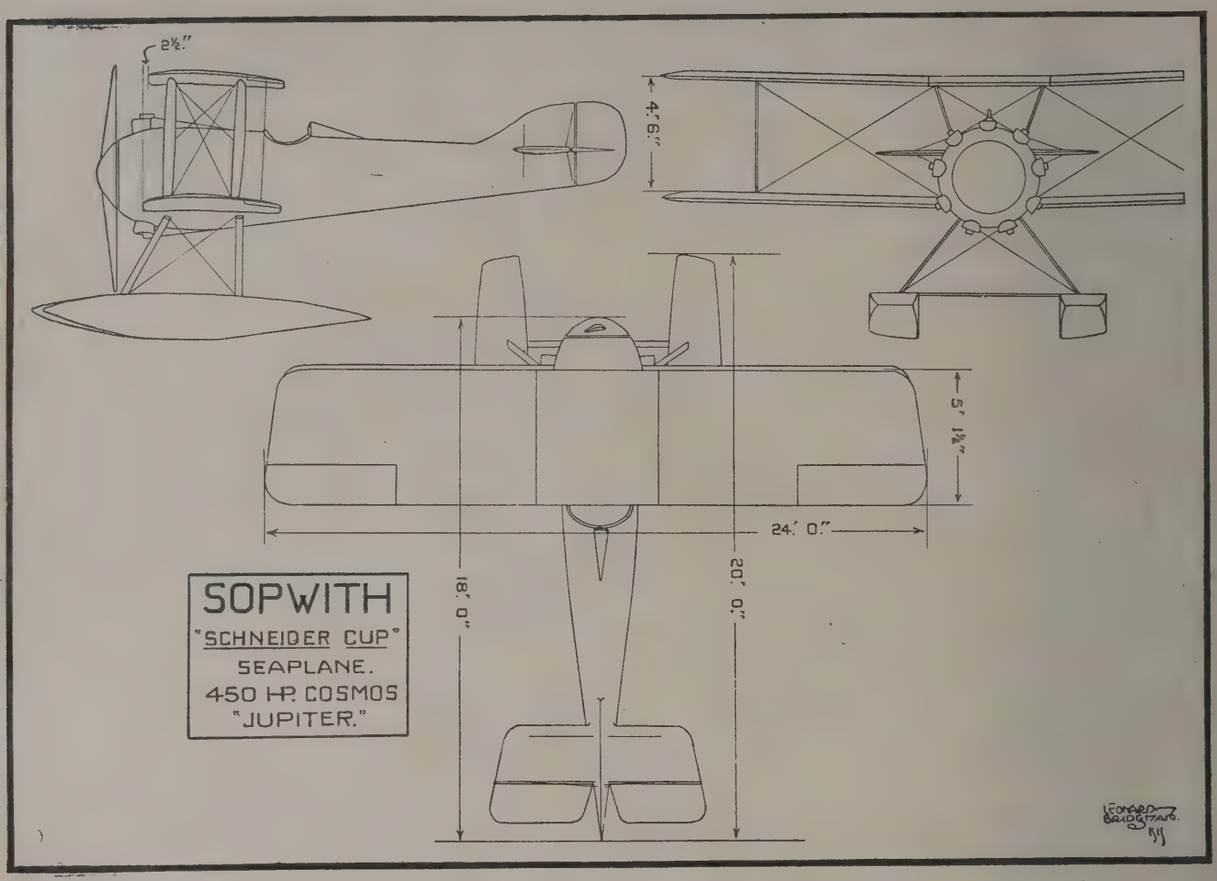
Secondly, instead of the fins washing out gradually into the hull lines forward the fins are kept wide to well forward and are then brought in sharply to the bows, which are made to assume a sharp "ram" or beak shape instead of being rounded or rather blunt in form. This arrangement, which can be seen in the rather poor illustration—the only one so far available—will very considerably reduce the amount of water coming over the bows when "taxying" in rough water, and gives to the hull a distinctive appearance.

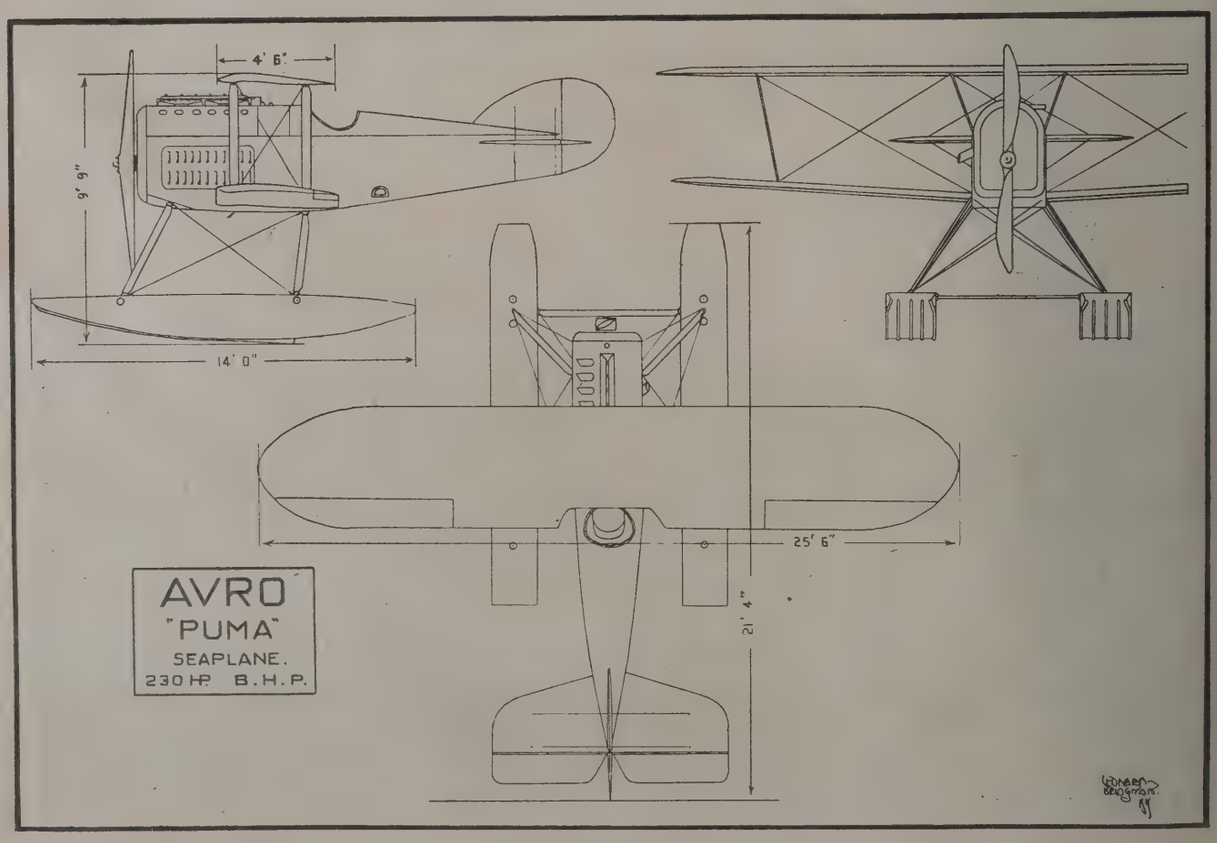
The engine—a 450-h.p. Napier—is carried from the hull on two ash bearers supported on steel tube struts from the root spars of the lower wing, with its crankshaft centre line somewhat higher than halfway up the interplane gap. Ahead of the engine a radiator of oval end elevation forms the forward end of an oval cowl in which the power plant is enclosed.

From the base of the engine struts two pairs of out-



The Fairey Schneider Cup Machine, with the large wings in place.


2½"
4' 6"
5' 1½"
24' 0"
18' 0"
20' 0"
SOPWITH
"SCHNEIDER CUP"
SEAPLANE.
450 HP. COSMOS
"JUPITER."


4' 6"
9' 9"
14' 0"
25' 6"
21' 4"
AVRO
"PUMA"
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wardly raking struts support the rather wide upper centre section. To this and to the lower wing roof spars are attached the outer section wings. Both upper and lower outer sections are of approximately equal size, and thus—the upper centre section being very considerably wider than the wing root spars—the upper wing has a considerable overhang

The single pair of interplane struts on each side slope outwards, practically parallel to the centre section struts.

The upper wing is fitted with large balanced ailerons.

The tail unit consists of a large fixed fin mounted above the hull. The fixed tail plane—of the inverted wing section type—is carried on the fin structure well above the hull and slightly lower than the thrust line of the airscrew and is braced to the hull with faired steel tube struts. The elevators, of ample size, are balanced, as is the rudder.

The latter is of very high aspect ratio, and is carried right down to the base of the hull stern post, and is at its lower end reinforced to act as a water rudder.

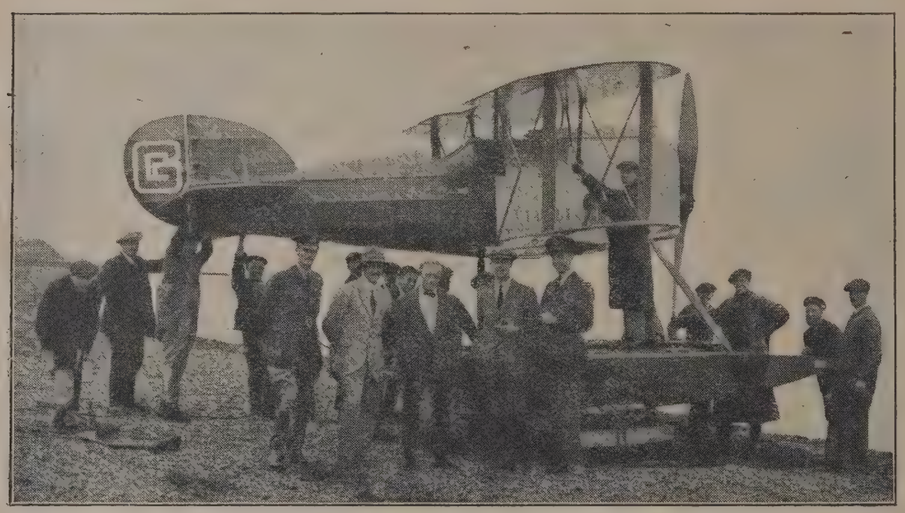
Although the machine is to be run in what is essentially a speed race and will have to compete with machines which are racers pure and simple, it will be completely equipped with a bilge pump, with branch suction pipes to each hull compartment, anchor, sea anchor, mooring ropes, etc.

The following table gives—approximately only—the chief dimensions of the machine. The makers state that the design is under consideration by the R.A.F. as a type of service seaplane and that they therefore do not desire that any full specification should be published at the moment.



The Fairey with the small wings at Cowes.

Gap	4 ft. 3 in.
Height	9 ft. 9 in.
Length (overall)	21 ft. 4 in.
Total area of main planes	200 sq. ft.
Area of tail plane	20 sq. ft.
Area of elevators	8 sq. ft.
Area of fin	4 sq. ft.
Area of rudder	5¼ sq. ft.
Total area of ailerons (4)	22 ft.
Span of tail plane	9 ft. 6 in.
Length of floats	14 ft.
Engine	240 h.p. Siddeley "Puma."



The Avro Schneider Cup Machine.

SPECIFICATION.

Span	Top wing 35 ft., bottom 29 ft.
Length (overall)	27 ft.
Total wing surface	360 sq. ft.
Total weight (loaded)	2,900 lb.
Loading	8 lb. per sq. ft —6.5 lb. per h.p

THE AVRO MACHINE.

A general description of the Avro entry to be flown by Capt. Hammersley appeared in this paper on Aug. 27th. This it is now possible to supplement with the following specification, and with a scale drawing and photograph. Unfortunately, owing to the untidy state of Southampton Water, and a consequent disagreement between the Avro and some floating débris which put one float out of commission, it is impossible to comment upon its appearance in the air. However, Capt. Hammersley reports that the machine handles excellently, and is up to expectations in the way of speed.

SPECIFICATION.

Span	25 ft. 6 in.
Chord	4 ft. 6 in.

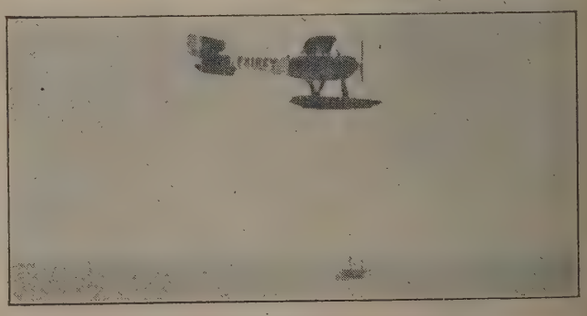
THE FAIREY SEAPLANE.

As has already been stated, the Fairey entry is a modified type 3 seaplane—fitted with the standard floats and chassis, fuselage and centre section, and with a 450-h.p. Napier engine.

Instead of the standard nose radiator two projecting sections of radiator are carried, one on each side of the fuselage, and the front of the fuselage is streamlined off by the engine cowling.

Two sets of wings have been built for the trials, one—more or less of the same type as those of the standard type 3c—with two rows of interplane struts a side. One photograph is given of the machine in this state. With these wings a very low landing speed is possible and the machine with its sturdy floats and undercarriage should be capable of getting off and landing in any sea.

The second set is of 28 ft. span with only a single row of struts. With these the landing speed is still quite moderate, and the top speed is very considerably raised, and unless the conditions at Bournemouth on the day of the race are abnormally bad the machine will probably fly with the latter set.



The Fairey alighting at Cowes.

THE NIEUPORT ENTRIES.

Two Nieuports have been entered for the competition.

Both machines are identical, except in regard to the floats. One machine is fitted with two short double stepped floats, fitted with "ears" at the bows, of exactly the same general type as the floats fitted to the pre-war Nieuport sea monoplanes, together with a tail float.

The second machine is fitted with long single step floats of streamlined elevation, and with no tail float. The two float arrangements are indicated on the attached General Arrangement drawing.

In so far as the machines themselves are concerned they are generally of the Nieuport 29 type upon which Lieut. Casale has put up both speed and height records recently in France. They are single bay biplanes, of equal top and bottom chord, slightly staggered forward and with a flat lower plane and a dihedral on the upper wing. The fuselage is of rounded section throughout, with the Hispano-Suiza engine entirely enclosed within the fuselage except for the valve gear casings which protrude on either side.

The radiators are of a form not hitherto familiar in this country. They are of more or less cylindrical or rather annular form, and the radiators are fitted to each machine below and entirely outside the fuselage. It is understood that this type of radiator is giving excellent results in France—particularly on high-speed machines.

At the rear end of the fuselage fixed fins, both above and below the body, and a fixed tail plane are carried followed by a balanced rudder and balanced elevators.

The tail float of the machine fitted therewith is of streamline form and of circular section, and is carried on a completely faired-in structure—whether of struts or in the form of a plank strut is not certainly known—which forms in effect an extension of the lower fin.

Altogether the two Nieuports have a very clean look, and as the land machines of similar general type are credited with an achieved speed of 265 km.p.h. (164 m.p.h.) there is little doubt that the speed of the seaplanes will not fall much below 150 m.p.h.

SPECIFICATION.

Span	8 metres
Total surface	22 sq. metres.
Length (overall)	7 m. 30
Engine	Hispano-Suiza—300 h.p.
Estimated speed	250 km.p.h. (155 m.p.h.)

The above information is due to the Royal Aero Club. According to a well-informed correspondent the Nieuport Co. have three machines, only one of which answers to the specification given, the other two having 27 and 30 sq. metres of surface, the third machine being held in reserve.

THE SPAD.

The machine, built by the S.P.A.D. for the race, is said to be a modified Spad-Herbémont type 20 machine, with a considerably reduced surface. No illustrations of the machine are to hand at the time of writing, but the specification attached is believed to be accurate, and gives the main dimensions.

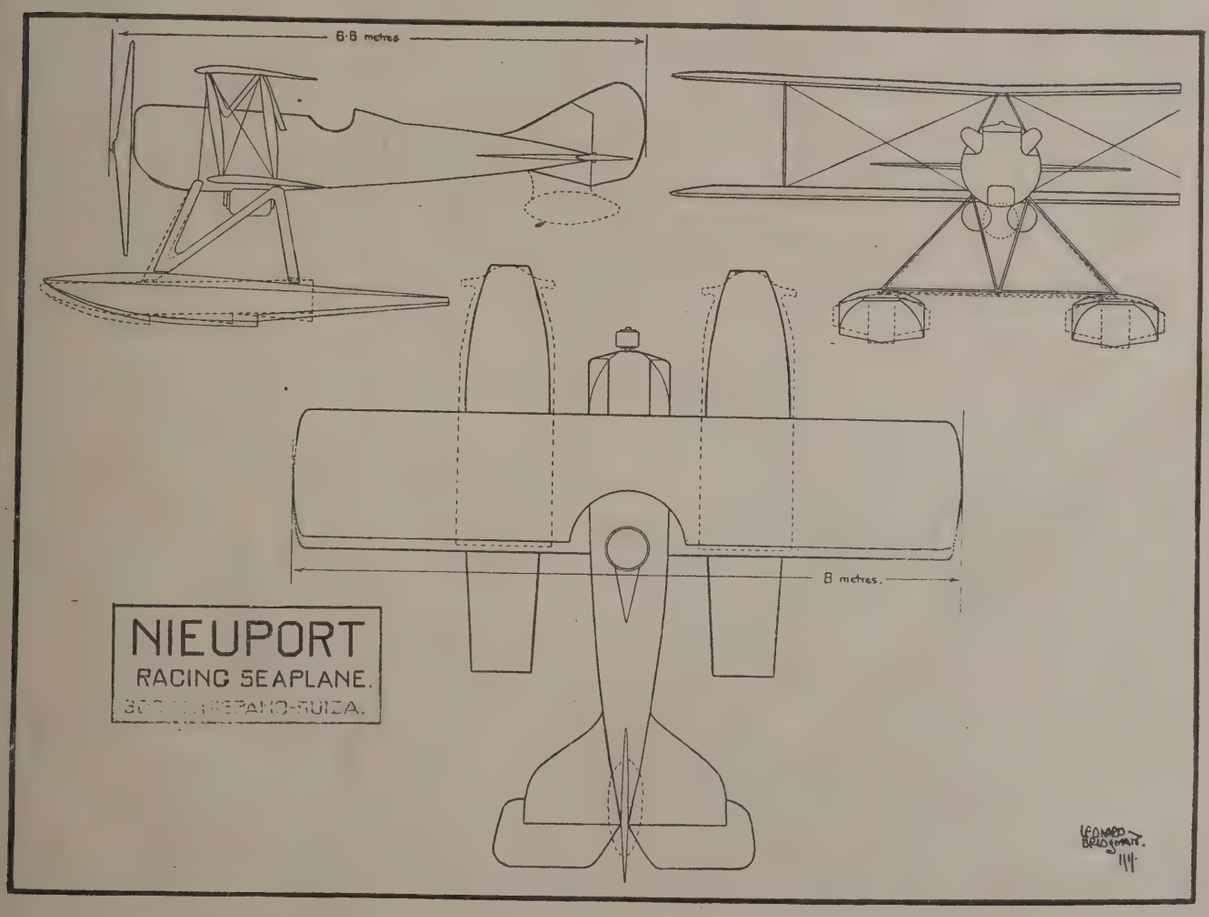
The original type 20 Spad-Herbémont machine which has been illustrated in these pages, was a small single-seater biplane, with equal top and bottom wings, and with little or no stagger, and a single interplane strut on each side—this strut being very deep in section fore and aft, and extended in this dimension at each end to carry both front and rear spar on each plane, and it may be presumed that the seaplane will retain these characteristics.

This machine is fitted with twin streamline floats of monocoque construction, which have no steps, but are fitted with rectangular metal hydrovanes to act as planeing surfaces.

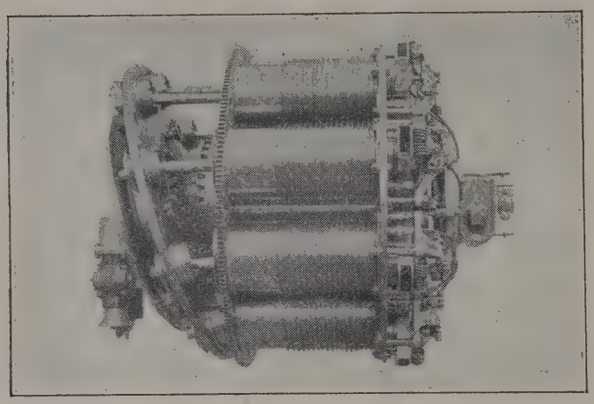
It is stated that a reserve Spad is to be held in readiness, and that Lieut. De Romanet is to act as reserve pilot—Lieut. Sadi-Lecointe being the firm's "first string."

SPECIFICATION.

Span	8 m. 690
Total wing surface	26 sq. metres
Length overall	8 m. 100
Engine	Hispano-Suiza—300 h.p.
Weight (empty)	850 kg.
Load (pilot)	85 kg.
Load (fuel)	165 kg.
Weight (full load)	1,100 kg.



AN ORIGINAL ITALIAN ROTARY.



Side View of the Perfetti-Dolara 300 h.p. rotary engine.

The Perfetti-Dolara rotary 9-cyl. 300-450 h.p. air-cooled engine, exhibited at the Taliedo Show, has been found unexpectedly efficient, so Signor Dolara tells me. So satisfactory have the novel and original features of the patent proved, that with slight changes in the valve distribution, and a second magneto, 450 h.p., will be obtainable from the same sized engine at practically the same weight.

The outstanding novelty of the design is its connecting rods and the transmission of their push in the motor itself. Big ends and crankshaft, in the ordinary sense of the expression, do not exist! Also, the whole engine is a lathe job.

A great part of the gain in efficiency is supposed to be due to the absence of all side-thrust by the pistons against the cylinder walls, the piston-rods being always at right angles to the gudgeon-pins with a barely perceptible sideways movement in the ball-socket joints where the big ends ought to be.

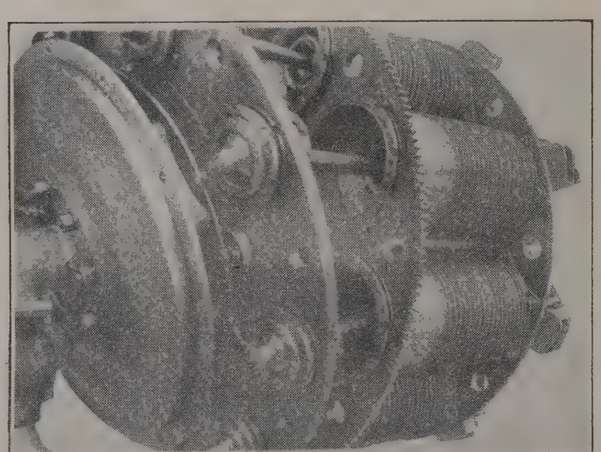
Without removing the engine from its bed the whole thing can be dismounted and the pistons taken out for inspection with the greatest ease.

On the new model 450 h.p. a patent method of fixing the motor to its bed is provided, as is also a direct-driven propeller bearing. In the engine illustrated there is the toothed ring attached to the cylinder "holding-down flanges" (so to call them) for the geared-down shaft-driven airscrew or screws.

The following data show the extraordinary ratio of weight to power, etc.:—Bore 130, stroke 176, cylinder sweep out 21 litres, 1,500 revs. per min., 300 to 450 h.p., weight 280 kilos. or 300, with two magnetos. The engine looks about the size of a 90-Gnôme, and is a wonderful mixture of standard practice with startling originality. It would appear to combine the advantages of a rotary with the non-troubling nature and accessibility of a car type.

Presumably, the engine with airscrew bearing is for a propeller-driven 'bus, as the cylinder heads should face the air-blast one imagines, though the absence of side-thrust in the cylinders will cause them to run cooler than might be thought.

The inventors will be glad, after three years of testing, to find a firm willing to build the engine in series, which should come out singularly economical, being so largely a lathe job. The balancing is said to be A1.—T. S. H.



View showing the skewed disc which takes the place of a crank and the toothed ring for the drive in the Perfetti-Dolara Engine.



View showing Valve Gear and Magnetos of the Perfetti-Dolara Engine.

THE BIRMINGHAM FAIR.

A British Industries Fair is being held at Birmingham from Feb. 23rd to March 5th, 1920. The Fair will be arranged on the Leipzig model with exhibits in every available building. Exhibitors sending in their applications at the last minute may be unable to be grouped in proximity with other firms in the same trade. They are, therefore, requested to send in their applications to the Chamber of Commerce, Birmingham, as early as possible. The grouping is already mapped out, and allotment is steadily proceeding.

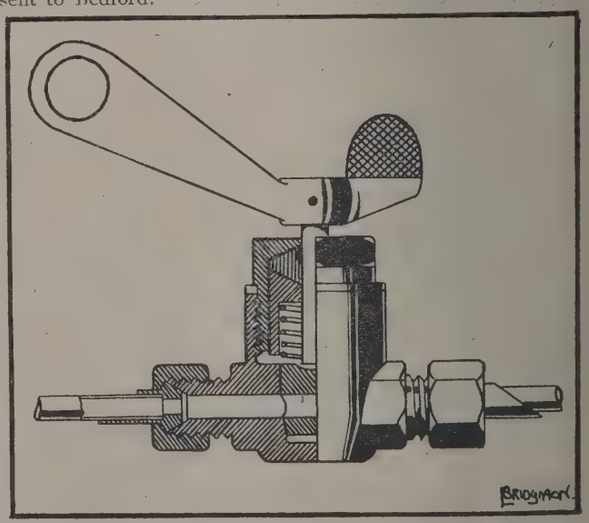
This Fair is run in conjunction with similar exhibitions to be held concurrently in London and Glasgow, but Birmingham alone has a section for aeronautical accessories.

AN IMPROVED FORM OF PETROL COCK.

The Aviation Department of Messrs. Vickers, Ltd., have designed and brought out a new form of petrol cock which is made so as to eliminate any form of leakage. As can be seen from the sketch a small helical spring, by exerting uniform pressure in the plug and a packing-ring which is free to slide on the gland tend to make the plug work smoothly, and do away with the necessity of grease, which, through the action of petrol, is dissolved, thereby causing the tap to seize and score, with the result that leakage follows as a matter of course. The Vickers cock, which has been tested officially, can be supplied in sizes suitable for pipes ranging from ⅛-in. to 1-in. bore, with any type of connection, and can also be made for special purposes with three or more branches.

A REDUCTION OF STAFF.

Between 500 and 600 employees at Messrs Armstrong, Whitworth and Company's Aircraft Works at Barlow, Selby (Yorks), were paid off on Aug. 29th owing to the cancellation of airship contracts. According to the "Daily Mail" of Aug. 30th, airship gondolas fitted with engines have been sent to Bedford.



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The adventures were of the most thrilling description, and the heroes of them went unrecognised by the man in the street.

Extract from Chapter I.

"The 'ace' of the special mission was generally a man celebrated in other branches of aviation, but these men were not always recognised according to their deserts during the war. They were only known to the commanders, and sometimes—in the case of popular heroes—they were traduced by the crowd, which grew indignant at hearing nothing of its peacetime idols."

In the thirteen Chapters of this book the author, writing from authentic records, describes this phase of secret service and shows how the enemy was outwitted and outplayed, albeit often at heavy cost in precious lives.

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"Hearken unto the revelations of Roy, and profit thou by his experiences."—*"The Revelations of Roy, XXI. 2.*

Extract from Chap. II.

1. And when he was come unto Farn, Roy was compassed about by a great multitude.

2. And he beheld winged chariots of divers designs; thus there were the Scout, and the Dolphin, and the Martinsyde, and the Camel, even that which produceth the hump.

Extract from Chap. XXI (and last).

17. And in all thy ways consider this, that there be two things greater than any other in forming the character of him that flies; and the one is Energy and the other, it is Enthusiasm.

19. And take thou a pride in being an aviator; for hath not the great Hender said, These young men are the salt of the Earth.

20. Go thy way in courage and good cheer; and greet the Great Adventure with a song.

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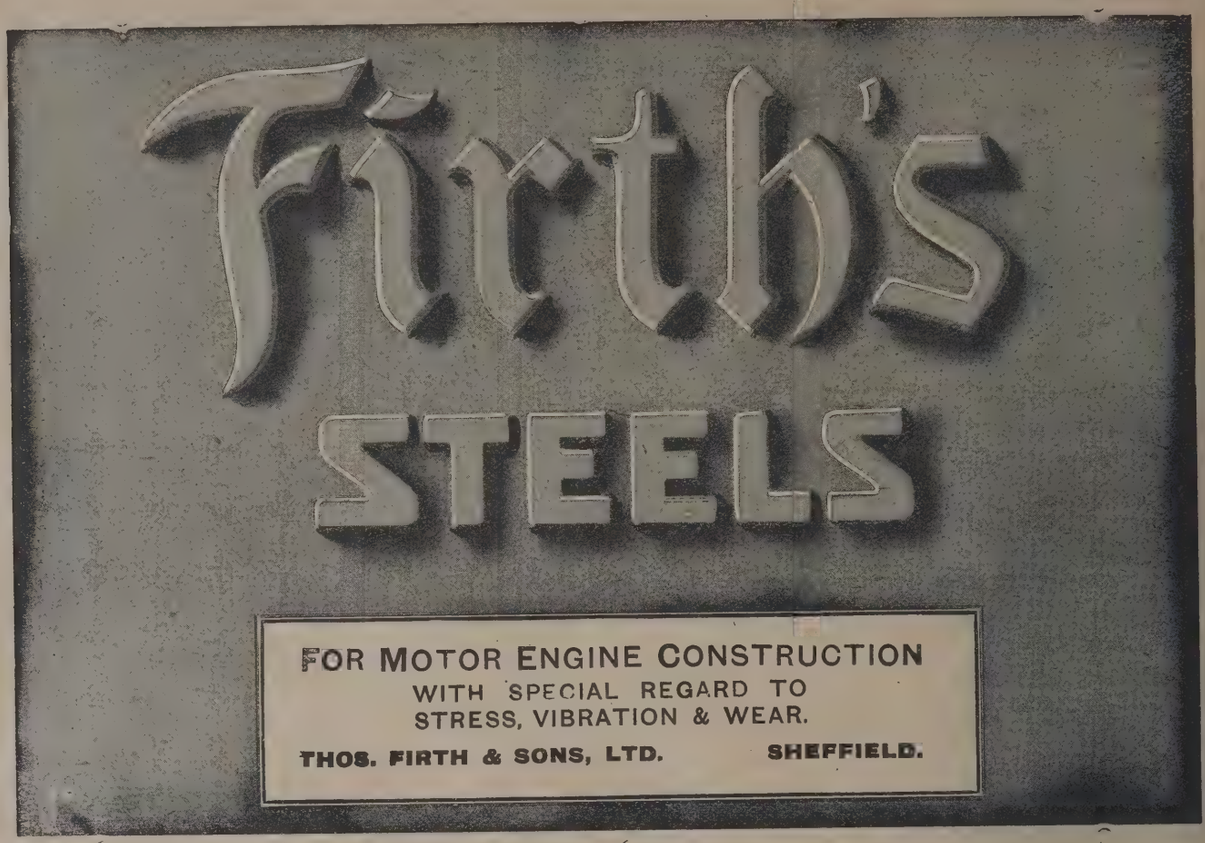
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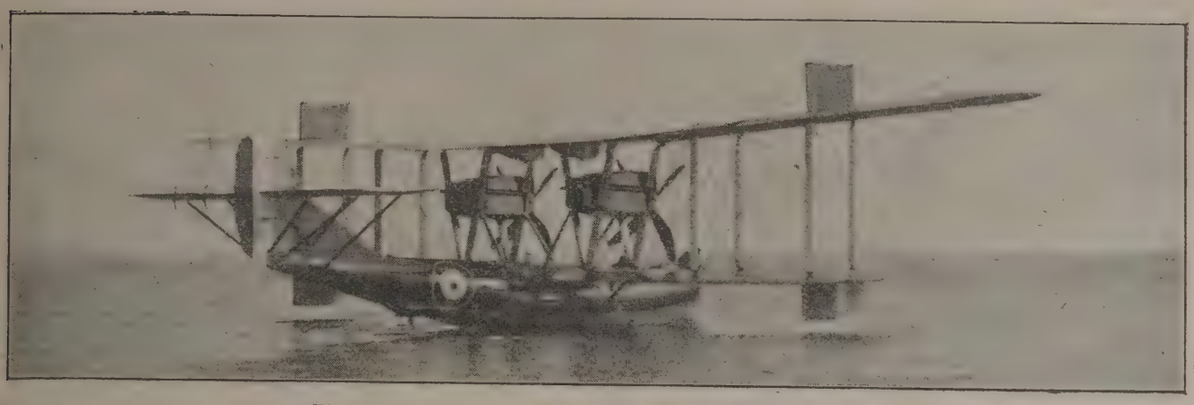
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MODERN BRITISH AEROPLANES.

XII.—The Phoenix Dynamo Co., Ltd.



Three-quarter Stern View of the Phœnix-Cork Flying-boat.

The Phœnix Dynamo Co., of Bradford, were, before the war, amongst the best-known of the British electrical manufacturing firms.

With the advent of war their activities were diverted in some part to the manufacture of aircraft, in which they were eminently successful, under the direction of Mr. E. Pybus.

After the production of very successful versions of other designers' products, the firm secured the services of Mr. W. O. Manning (then Lieut.-Comdr., R.N.V.R.), and have devoted themselves to the design of large boat seaplanes.

The firm has recently amalgamated with Dick, Kerr and Co., Ltd., and has become the aviation branch of the English Electrical Co., Ltd.

THE PHŒNIX-CORK FLYING BOAT.

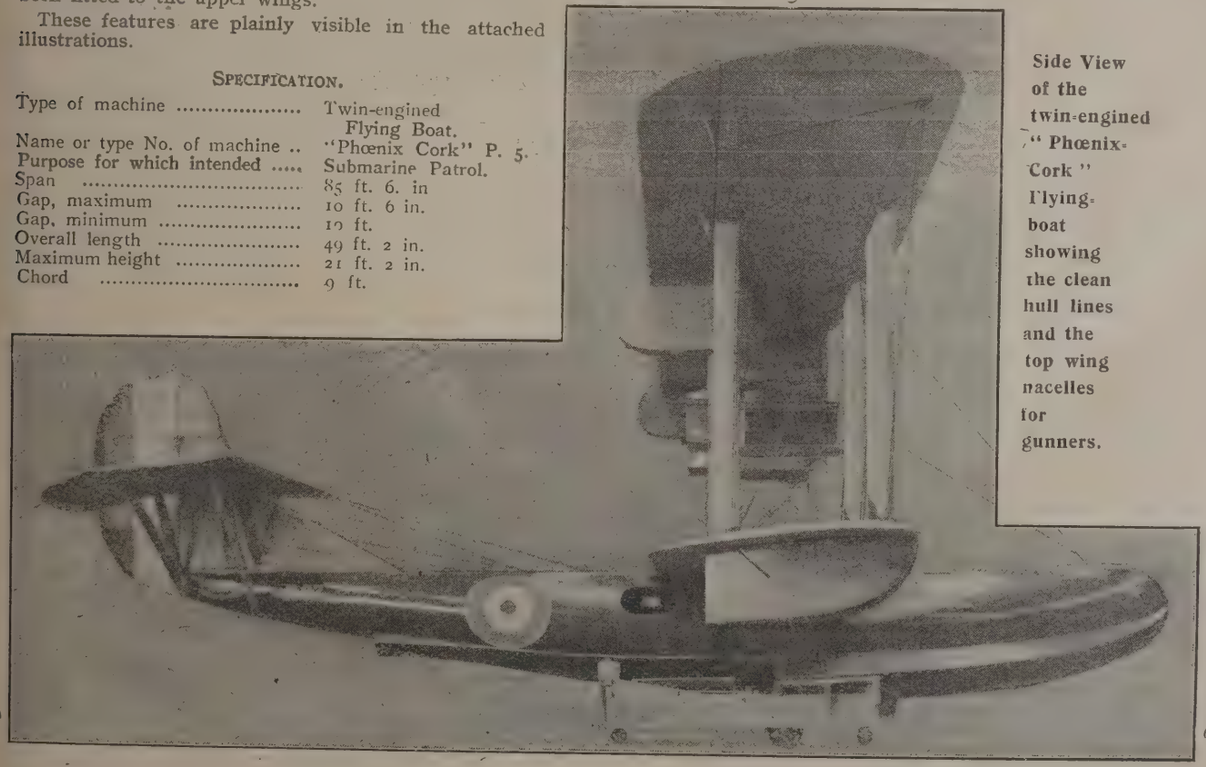
This, so far, the only product of the firm's own design, which it is permissible to describe, is a large twin-engine boat designed for sea patrol and anti-submarine work.

In general lay-out it resembles most of the successful machines of the boat type designed for this purpose, but it is notable for the extremely clean design of hull, which is circular or oval section streamline, boat-built, and mahogany planked, and for the gunners' nacelles, which have been fitted to the upper wings.

These features are plainly visible in the attached illustrations.

SPECIFICATION.

Type of machine	Twin-engined Flying Boat.
Name or type No. of machine	"Phœnix Cork" P. 5.
Purpose for which intended	Submarine Patrol.
Span	85 ft. 6. in
Gap, maximum	10 ft. 6 in.
Gap, minimum	10 ft.
Overall length	49 ft. 2 in.
Maximum height	21 ft. 2 in.
Chord	9 ft.
Total surface of wings	1,306 sq. ft.
Span of tail	25 ft.
Total area of tail	200 sq. ft.
Area of elevators	58 sq. ft.
Area of rudder	42 sq. ft.
Area of fin	31 sq. ft.
Area of each aileron and total area	42.75 each; 85.5.
Maximum cross section of body	27.75 sq. ft.
Horizontal area of body	202.5 sq. ft.
Vertical area of body	208 sq. ft.
Engine type and h.p.	"Eagle" Rolls-Royce; two 360 h.p.
Airscrew, diam., pitch and revs.	10 dia., 10 pitch, 1,080 r.p.m
Weight of machine empty	7,000 lbs.
Load per sq. ft.	8.85 lbs.
Weight per h.p.	16.1 lbs.
Tank capacity in hours	8 at full speed.
Tank capacity in gallons	360 gallons.



Side View of the twin-engined "Phœnix-Cork" Flying-boat showing the clean hull lines and the top wing nacelles for gunners.

Performance—
Speed low down ..... 106 m.p.h.
Speed at 10,000 feet ..... 94 m.p.h.
Landing speed ..... 52 m.p.h.
Climb—
To 5,000 feet ..... 10 minutes.
To 10,000 feet ..... 30 minutes.
Disposable load apart from fuel 2,000 lbs.
Total weight of machine loaded 11,600 lbs.

Armament: 5 Lewis guns and 4—230 lbs. or 2—520 lbs. bombs.
Crew, 5—Pilot, observer, wireless operator, engineer, and gunner.

PATENTS INDEX

The subjoined list of recent inventions has been specially compiled by The Aeroplane from the current Official Patents Records.

Patents Applications.

Alsopp, J. C. Clinometer for aircraft. No. 17485. July 12th.
Bradley, P. R. Fireproofing for aircraft. No. 17078. July 8th.
Calthrop's Aerial Patents, Ltd., E. R. Retaining and releasing devices for ropes, cordage, etc. No. 17095. July 8th.
Cartwright, P. R. Cross level indicator for aircraft. No. 17362. July 10th.
Dean, F. M. Combined speedometers and mileage-recorders for aircraft. No. 16978. July 7th.
Dean, F. M. Apparatus for measuring and recording speed of aircraft. No. 16979. July 7th.
Dean, F. M. Apparatus for measuring and recording angle of flight of aircraft. No. 16980. July 7th.
Gray, H. Flying-machines. No. 16998. July 7th.
Greenwood, C. V. Aircraft envelopes, etc. No. 17298. July 10.
Marshall, R. Control of aircraft. No. 17212. July 9th.
Martin, J. V. Aeroplanes. No. 17004. July 7th.
Matthews, C. G. Clinometer for aviation. No. 17047. July 8th.
Molesworth, J. D. M. Device for mooring and launching airships. No. 17457. July 11th.
North, J. D. Means for discharging liquid-fuel containing vessels carried on aircraft. No. 17406. July 11th.
Orlandi, A. Aeroplanes. No. 17350. July 10th.
Robinson, C. D. Airships, etc. No. 17180. July 9th.
Sharp, A. Structures and appliances for housing, etc., aircraft and apparatus for measuring wind-pressure on buildings. No. 17020. July 8th.
Smith, N. M. C. Tents or hangars for aircraft, etc. No. 16951. July 7th.
Tattersall, W. Struts, etc., of aircraft. No. 17266. July 10th.
Wagner, R. V. J. H. Apparatus to enable people to descend from aircraft, etc. No. 17030. July 8th.
Wright, S. W. Safety device for aircraft. No. 16970. July 7th.
Balch, E. G. Aeroplane signals. No. 17905. July 17th.
Bloxham, S. G. Manipulation of airships from their sheds. No. 17854. July 17th.
Carlin, W. Y. Indicating-device for aeroplanes. No. 17626. July 14th.
Carpenter, T. Wind screens for motor vehicles and aircraft. No. 17612. July 14th.
Eales, W. H. Combined airship and aeroplane. No. 17[illegible]. July 14th.
Fraser, W. Leveller or indicator for aircraft. No. 17571. July 14th.
Holloway, W. F. Clinometer for aircraft. No. 17602. July 14th.
Howe, J. A. Clinometer for aircraft. No. 17657. July 15th.
Jamieson, E. A. Cable attachments for balloons, etc. No. 17670. July 15th.
Kruse, J. S. Flying-suit for women. No. 17839. July 16th.
Leitner, H. Variable pitch airscrews. No. 17879. July 17th.
Mooney, D. J. Metal attachment for aircraft. No. 17658. July 15th.
Murphy, J. J. Clinometer for aircraft. No. 17653. July 17th.
Shaw, W. R. D. Airbrakes for aircraft. No. 17958. July 18th.
Westaway, J. Propellers of aeroplanes, etc. No. 17723. July 15th.

Complete Specifications Accepted, Prints of which can be obtained on and after July 31st, 1919.

128971. Sept. 5th, 1917. Woosnam, A. Landing-chassis for airplanes.
128979. Sept. 8th, 1917. Aeronautical Instrument Co., and Brewer, G. Balloons.
128980. Sept. 8th, 1917. Vickers, Ltd., and Savage, H. A. Aircraft gun mountings.
128989. July 14th, 1916. Caproni, G. Chaser aeroplane.
128990. Sept. 12th, 1917. Brunton, J. D. Method of and means for forming joints in streamline and like wires for use in aircraft.
128993. Sept. 13th, 1917. Warren, A. O., Prior, W., and Prior, E. G. Manufacture of fuselage, wings, struts, and the like of aircraft.
128994. Sept. 15th, 1917. Phillips, H. W. Spars for aerial machines.
128997. Sept. 17th, 1917. Blackburn Aeroplane and Motor Co., and Copley, J. W. Attachment devices for constructional connections particularly applicable to aircraft.
128998. Sept. 17th, 1917. Blackburn Aeroplane and Motor Co., and Copley, J. W. Attachment devices for constructional connections particularly applicable to aircraft.
128999. Sept. 17th, 1917. Blackburn Aeroplane and Motor Co., Booth, H., and Copley, J. W. Operating mechanism for the rudders of aeroplane flying-machines and other aircraft.
129000. Sept. 17th, 1917. Blackburn Aeroplane and Motor Co., and Simpson, F. C. Couplings or connections for the tension wires of aeroplane flying-machines and other aircraft.
129007. Sept. 18th, 1917. Daimler Co., and Berriman, A. E. Cylinders for internal-combustion engines and the like, particularly applicable to engines used on aircraft.
129017. Sept. 21st, 1917. Brewer, G. Releasing mechanism for parachute and other apparatus carried on aircraft.
129021. Sept. 25th, 1917. Macfie, R. F. Apparatus for indicating land speed and angle of drift on aircraft, and also acting as a bomb sight thereon.
129023. Sept. 26th, 1917. Brown, E. E., and Mooney, D. J. Construction of metal frames for aircraft.
129029. Sept. 28th, 1917. Siddeley-Deasy Motor Car Co., and Green, F. M. Landing-chassis of aeroplanes and the like.
129034. Oct. 1st, 1917. Roe, A. V. Clamping devices for the ties of cross-braced structures.
129052. April 16th, 1918. Minvalla, P. E. J. Parachutes.
129071. June 4th, 1918. Killen, E. B. Landing carriages or frames for aircraft.
129119. July 5th, 1918. Mateyka, F. J. Parachute for use with aircraft.
129128. July 12th, 1918. Blackburn Aeroplane and Motor Co., and Booth, H. Regulating the cooling of internal combustion engines on aircraft, and particularly on aeroplane flying-machines.
129142. July 19th, 1918. Cairns, A. Means for propelling aerial machines.
129147. July 26th, 1918. Agar, M. F., and Sarll, L. Warren girders.
129149. Aug. 2nd, 1918. Navarro, J. G. Steering and braking mechanism for aircraft.
129161. Aug. 27th, 1918. Boulton and Paul, and North, J. D. Loading and discharging devices for aircraft.
129164. Sept. 3rd, 1918. Norrington, J. R. Buckle for airman's safety belts.
129184. Oct. 17th, 1918. McNary, J. E. Protective armour for aviation pilots and other operators.
129234. March 11th, 1919. Mooney, D. J., and Brown, E. E. Metal spars or longerons and the like for aviation.

THE DEATH OF MR. J. R. NISBET.

The death occurred suddenly from heart failure on Sunday, August 17th, of Mr. James R. Nisbet, who had been a managing director from the beginning of the business of Bowden Wire, Ltd., and its associated companies in France, Germany and elsewhere.

Mr. Nisbet was intimately concerned in the formation of the original Bowden Wire Syndicate, Ltd., to acquire the patents in the method of power transmission by means of a flexible wire invented by the late Mr. E. M. Bowden, and had taken a very close and personal interest in its developments. For some years past he had been the sole managing director of the parent concern and he took a very deep interest in all the details of the business, both manufacturing and commercial, and devoting himself untiringly and unceasingly to its success. Early this year, although far from well, he paid a visit to the United States in its interests.

Mr. Nisbet, who was in his fifty-eighth year, was also head of Hay, Nisbet and Co., Ltd., printers and publishers, of Glasgow London. In addition he devoted a large amount of his time to the legislative side of the sport and pastime of automobilism.

He was one of the earliest members of the Royal Automobile Club and of the Scottish Automobile Club and served on the committee of both. He was a vice-president and chairman of the Auto Cycle Union. He was also a vice-president of the Cycle and Motor Cycle Manufacturers' and Traders' Union and took an active part in its councils.

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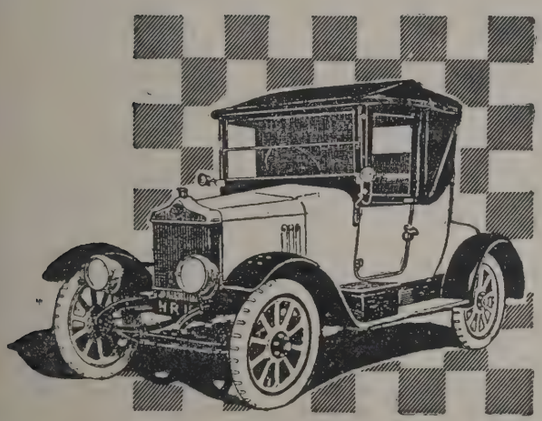
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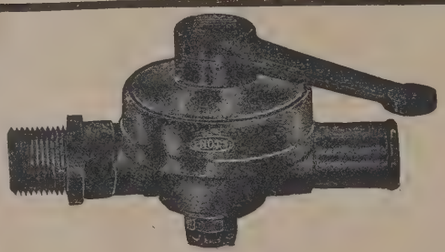
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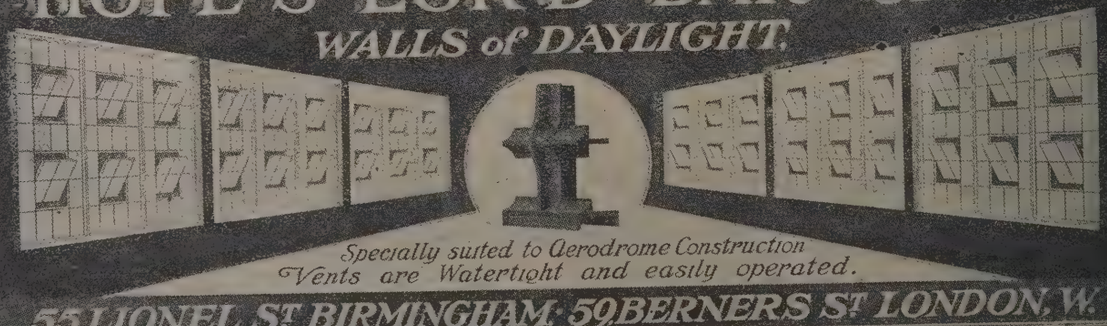
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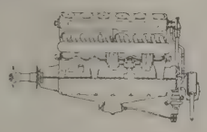


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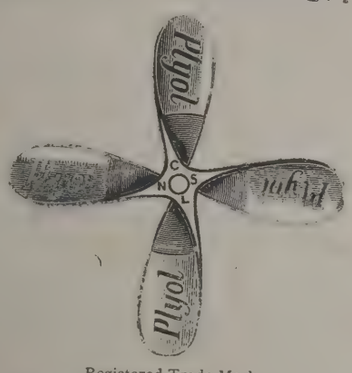
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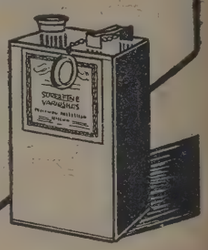
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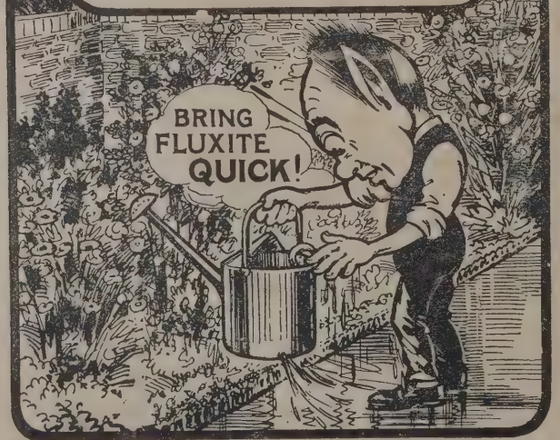
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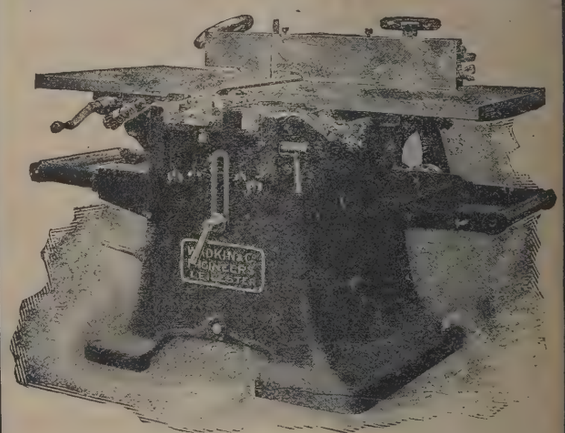
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COMMERCE AND ECONOMY.

By "MEDWAY."

The editorial opinion of THE AEROPLANE as regards the economy stunt when applied to airships has already been expressed. Consequently, though I am privileged to differ with the editorial view as much as I like, I find in this case that the greater part of what I had intended to write has been anticipated.

Up to the present the only industry that really appears to have been effectively nationalised is the "stunt" industry. The Government is in effect the board of directors of a stunt factory, with Mr. Lloyd George as the managing director and principal inventor or adaptor. From the very beginning of the War we have been systematically doped with one stunt after another. Starting with "business as usual," we passed through the period of "push and go" to inquire what "daddy did in the Great War," and so on, until at the present moment, with the able assistance of certain sections of the daily Press, we have reached the Economy stunt. This, having been freely advertised in advance, has now been taken up by the government factory, which anticipates a heavy demand. The only trouble is that, in the hurry of the moment, the board of directors has completely lost sight of the real meaning and virtue of the word and quality of which it is talking so glibly.

SO-CALLED ECONOMY.

Before the war we had plenty of samples of economy, so called. For the time being we refused to spend money on the development of aeroplanes or airships. The result was a subsequent expenditure under each heading vastly greater and vastly less efficient than it need have been. Only a few days ago Mr. Lloyd George made it clear that he did not consider that all wars were over for good and all. This was when he was discussing tests of what constitutes a key industry. Let us take his four tests and consider whether the Airship Manufacturing Industry does or does not conform to them.

Test No. 1. Whether the industry was revealed to be essential for war or the maintenance of the country during war.

Comment on this point would be altogether superfluous.

Test No. 2. Whether during the War it was discovered that the industry had been so neglected that there was an inadequate supply of goods produced in the industry for the purpose of equipping ourselves for the essential task of war.

Test No. 3. Whether it was found necessary for the Government to take special steps to promote and foster that industry during the War.

Test No. 4. Whether, if that special Government support were withdrawn, the industry could maintain itself at the level of production which War has shown to be essential to the national life.

A SELF-EVIDENT TRUTH.

I had intended to comment on these four tests one by one, but when it comes to the point I find myself up against the difficulty that one cannot very well set out to prove a self-evident truth. The Airship Industry is, then, a key industry, though it has not been catalogued as such by the Board of Trade. It seems obvious that, unless we deny the possibility of any future wars, it is an industry that must be maintained. Despite this fact, the directors of the economy stunt have closed it down totally and entirely.

Let us now admit the inadmissible, and work on the assumption "that war will be no more." In that case, is the Airship Industry entirely superfluous? It is obvious enough to any thinking man that this is not so. There are plenty of jobs that cannot be performed with any degree of efficiency by any older method of transport, and can only be performed with very poor efficiency by the aeroplane. Wherever we have no prepared land route and no direct and suitable means of communication by water, the airship is the obvious pioneer to develop the beginnings of true commercial communication.

To stop airship construction at the present moment is economy on a par with what would be realised if we were to stop railway services and give up maintaining the roads, harbours, and docks. The advocates of economy seem entirely to have forgotten that economy, in the common sense of the term, is not an end in itself, but merely a means to an end. Its purpose is the creation of wealth. Just as there are more ways of killing a cat than by choking it with butter, so there are more ways of making money than by merely refraining from spending it. The gentleman who hid his talent in the ground was not regarded as the commercial, or even the moral, equal of the man who used his talent and turned one into ten, no doubt taking a certain risk of loss in the process.

AN APOPLECTIC FIT OF ECONOMY.

We are the possessors of an Empire of incalculable value. Its potential value is many hundreds of times greater than its present value. It is awaiting development. Development is impossible without expenditure, and hangs mainly on the provision of means of communication. Yet the Government, for the sake of a stunt, proposes to shut down all progress in respect of one of the most promising means of communication imaginable.

The Airship Industry, in its infant stage, if not actually nationalised, is completely under national control. The treatment it is receiving indicates the kind of risk we run if other means of communication become nationalised. At any moment any Government may be seized with a sort of apoplectic fit of economy. Every section of transport which does not look like paying within the next six months will then be ruthlessly shut down. The transport facilities that remain will be overburdened, but will show an apparent profit, for which the Government will take much credit. Meanwhile the commercial community, and through it the entire nation, will suffer losses thousands of times greater than the apparent profit secured by retrenchment.

Were we to adopt the permanent policy of regarding it as economical to refuse to incur any expenditure on communication that cannot be productive of immediate profit, we should never build a new railway or a new road in any part of the Empire. I have not a vestige of doubt but that there are many projects for railway and road building now on foot, such that a considerable loss in working for a period of years is accepted as inevitable. The capital cost of a railway is very high. The expenditure can only be justified by looking well ahead,

to the time when the railway will have developed sufficient traffic to make it pay. Meanwhile, interest must be paid upon capital. In very many cases an appreciably smaller loss would be incurred if, instead of building a railway at once, we ran commercial airship services for the first three years to develop the traffic up to such a point that the cost of constructing a road or railway would be immediately justifiable. The alternative in every such case is not between making a loss on airships and making no loss upon some other system, but between making a loss on airships and a bigger loss on the other system. In that case true economy would consist in increasing the manufacture of airships and working upon their design and construction to make them truly commercial vehicles. The thing can be done, and somebody will undoubtedly do it. Unless the present Government's policy in this connection is promptly reversed, some other country will get not merely the kudos but the sound commercial advantage of becoming the world's great producer of airships. Their production will give profitable employment to a large amount of skilled labour. It will cause money to flow into the producing country.

Appreciation of Depreciation.

At the moment the whole policy of the British Government appears to be in favour of an outward rather than an inward flow of money. Imports are unrestricted and free, and the Prime Minister has the supreme impudence to tell the British manufacturer that the depreciation of our currency is as good as a substantial import duty. One would imagine that the less the value of the pound sterling the better the Government would be pleased!

Here, in airship manufacture, we have an unexampled opportunity for those who believe in nationalisation to build up an industry, nationalised or State-controlled from birth, and to develop it for the profit of the country. The Government prefers a policy of absurd parsimony masquerading as economy, and is apparently determined to throw away an accumulation of enormously valuable experience simply for the sake of a trifling temporary reduction in expenditure.

The Press that has been vocal on the score of economy has during the past few months been equally emphatic on the importance of commercial aeronautics. It worked strenuously to get the Government to take a long-sighted view of the value of aerial communications. Success appeared to be more or less in sight. Then suddenly the new stunt is officially staged, and our national policy is reversed to conform to it.

Our great job now is to develop the value of the British Empire so as to make good the depreciation in value due to the War. This can only be done by developing our means of communication. Aerial communication will be a big factor. All experts are agreed that in certain spheres the airship is notably superior to the aeroplane. Yet it is seriously proposed to sacrifice probably thousands of millions of Empire value in order that a political opportunist may be able to point out to a grateful and unintelligent community that he has temporarily reduced its financial burden by a few hundred thousand pounds!

A ROOF AERODROME

By Captain M. G. Kiddy (late R.A.F.), Assistant Secretary, The Society of Architects.

Mr. A. W. Gattie, chairman of the New Transport Company, has proposed a Central Clearing House for London goods traffic, having a roof-aerodrome for the landing and taking-off of aeroplanes carrying mails and merchandise.

This sounds very alluring, but I for one should not care to be one of the pilots employed. I do not quarrel with Mr. Gattie's statement that a roof area of 15½ acres provides sufficient space for the landing and taking off of smaller machines of the present-day type; but these machines have not sufficient carrying capacity to justify the enormous expenditure involved in the construction of the proposed building, and it is a question whether machines having sufficient cargo-space to allow the outlay would be able to land and take off from a roof of this size.

The "wind-cornices" suggested by Mr. Gattie would not, in my opinion, solve the problem of air currents, i.e., cross-winds—rather would they tend to increase the danger by exposing the machines to sudden, and possibly violent, gusts the moment the "cornices" were cleared. It is not so much these difficulties which to my mind constitute the danger as the situation of the building itself.

A very frequent source of trouble in flying, and one which one ventures to prophesy will not lightly be overcome, is that of engine-failure just after leaving the aerodrome. Hence an aerodrome is always sited as far as possible in flat surroundings. What is going to happen if the engine fails when the machine has proceeded some 100 yards from the edge of this roof? To turn near the ground when the engine has failed is fatal, and has been the cause of death of more beginners than one cares to estimate. The only thing one can do is to glide straight down and land as best one can, *igitur* the flat surroundings, which obviate accidents. But if the surroundings are the roofs of other houses, what is the pilot to do? He will be lucky to kill nobody other than himself.

Night flying, it seems to me, will increase the danger all round. Mr. Gattie's idea is to light the surface of the aerodrome from underneath. Apart from the effect this might produce upon pilots who are not total abstainers, I should think it would be very difficult to land under such conditions, as the effect of a dazzling surface to land upon is usually that of deceiving the pilot as to the actual whereabouts of the ground. One cannot speak from experience (Heaven be thanked), but one imagines that the effect must be somewhat similar to landing upon an aerodrome lightly covered with snow upon which the sun is shining—a very uncertain business.

The question of night-signals which was raised is not so important as those who discussed it appear to imagine, and could quite easily be settled without the aid of green search-lights or similar jazz-like decorative illuminations. It is quite a minor problem by the side of the others, and caused very little trouble during the war. But in any case machines will only be able to land one at a time, the remainder, as pointed out in Mr. Gattie's statement, having to circle round until the "all clear" signal is given. But who is going to land next? I must confess I should not care to sleep in the surrounding neighbourhood with such a noise in progress every night. The only amusing part about such a state of affairs would be when two pilots tried to land at once. One can imagine that a golfer-missing an easy put would be relegated to the remote shades when this took place.

No doubt Mr. Gattie's architect could design a suitable building in collaboration with an experienced pilot, but even if the constructional and technical difficulties could be overcome, central London would appear to remain a very impossible spot for such a venture. One must conclude that Mr. Gattie would do very much better to adopt as his Clearing House Hounslow, or another convenient aerodrome—that is if he is a sufficient believer in the possibilities of civil aviation to do so.

A SEAPLANE WORKS FOR SALE

The business assets of the Norman Thompson Flight Co., Ltd. (in voluntary liquidation), are for sale by tender.

The company was established in 1912 at Middleton, near Bognor, Sussex, and made the first British-built flying-boat of present-day type. They have made naval and commercial seaplanes and military and commercial aeroplanes and parts. During the war the company was a controlled firm and supplied the Government with large and small flying-boats of their own design.

The premises consist of seaplane sheds, workshops, power house, etc., and cost over £15,000. The plant and machinery cost over £13,000. The worth of the freehold land and stock-in-trade on hand is over £30,000. Particulars and orders to view can be obtained from Messrs. Leask, Clemens and Co., Alderman's House, Bishopsgate, E.C.; or Messrs. Poppleton, Appleby and Hawkins, 4, Charterhouse Square, E.C.

AN AIRCRAFT WORKS DECREASING

Final notice was given on Aug. 27th to 500 out of the 900 remaining employees at Short Brothers' aircraft works, near Bedford, which has been taken over by the Admiralty.

Very large works with a railway were laid down during the war, and at one time thousands of workers were employed on airship work. The firm opened up an estate and built many houses. The district is known as Short's Town.

London-Paris Air Express

Second Week's Record

			Offical Weather Reports.
Monday	Left London ...	**12.30**	Patches of low cloud over the whole route.
	Arr. Paris ...	**2.48**	
	Left Paris ...	**12.30**	
	Arr. London ...	**2.45**	
Tuesday	Left London ...	**12.30**	Strong southerly wind; clouds under 800 ft. in places
	Arr. Paris ...	**3.5**	
	Left Paris ...	**12.30**	
	Arr. London ...	**2.30**	
Wednesday	Left London ...	**12.30**	Thick fog in the morning. Low clouds and drizzling rain. Misty all day.
	Arr. Paris ...	**2.50**	
	Left Paris ...	**12.30**	
	Arr. London ...	**2.25**	
Thursday	Left London ...	**12.34**	Strong south-westerly wind. Very low clouds at times. Bad visibility in England.
	Arr. Paris ...	**2.45**	
	Left Paris ...	**12.30**	
	Arr. London ...	**2.49**	
Friday	Left London ...	**12.30**	35-40 miles per hour southerly wind in channel. Very gusty.
	Arr. Paris ...	**3.0**	
	Left Paris ...	**12.30**	
	Arr. London ...	**2.50**	
Saturday	Left London ...	**12.30**	Mist and haze generally; clouds under 500 feet in places.
	Arr. Paris ...	**2.50**	
	Left Paris ...	**12.30**	
	Arr. London ...	**2.30**	

The attention of Bankers, Merchants, and firms who have houses both in London and Paris is again drawn to the unique facilities offered by this service, which has run throughout the past week without a single breakdown or delay. It permits urgent documents, express goods, or passengers to be transported between London and Paris in an average flying time of 2¼ hours. The service is being operated to demonstrate that, with the use of skilled pilots and fast machines, such an express air service can now be run with sufficient reliability to afford a definite, daily convenience to the business world.

LONDON:
AIRCRAFT TRANSPORT & TRAVEL, LTD.,
27, Buckingham Gate, S.W.1.

PARIS:
COMPAGNIE GÉNÉRALE TRANSAERIENNE,
118, Champs-Elysees.

Full particulars regarding rates and freights can be obtained from Aircraft Transport & Travel, Ltd., 27, Buckingham Gate, S.W.1, or from the American Express Co., Queen Street and Haymarket; Thos. Cook and Son, Ludgate Circus, E.C.; General Transport, Ltd., 52, Crutched Friars; J. Jackson & Sons, 7-8, Charing Cross, and King William Street, E.C.; Henry Johnson & Sons, 18, Byward Street, and Beak Street, W.; Lepaerial Travel, Piccadilly Circus (Criterion Corner); Carter, Paterson & Co., 6, Maddox Street, W., and 3, Cannon Street, E.C.; and Henny, Peron & Co., 98-100, Queen Victoria Street, E.C.

CIVIL AERIAL TRANSPORT NOTES.

GREAT BRITAIN.

The Air Ministry announced on Sept. 5th that the report circulated in the Press a few days ago that a hitch had occurred in the signing of the International Air Convention is without foundation. It is pointed out that aerial communication between London and Brussels is permissible, provided that no goods are carried.

The Air Ministry announced on Sept. 6th that Lt.-Col. W. D Beatty and Lt.-Col. W. O. Raikes, of the Air Ministry, had started at 11.5 a.m. that day from Hounslow for Italy in a Bristol fighter machine with Col. Beatty piloting. Certain outstanding points were to be settled with the Italian authorities regarding civil aerial communication. Stops were to be made at Paris, Lyons, Fréius, and Pisa. It was expected that the machine would reach Rome at 5 p.m. on Sept. 7th.

The Berkshire Aviation Company.

The Berkshire Aviation Co. state that they hold the only two licensed flying-grounds at Derby and Nottingham—respectively Hill Meadow and Sneinton Junction Meadow. Passengers are carried there by Lts. J. D. V. Holmes and Alan J. Cobham (late R.A.F.).

In the last four months flying has been given at twenty different towns, including, besides Nottingham, Derby, and one or two smaller places, Bedford, Chesterfield, Leicester, Loughborough, Northampton, Oxford, Reading, Stoke-on-Trent, and Swindon.

Avro Northern Stations.

During the week ending Sept. 6th 551 flights were made and 1,142 passengers were taken up.

London-Paris Air Services.

The air service to Paris by Aircraft Transport and Travel, Ltd., has run daily since it started, over a fortnight ago. Only on one flight was a landing en route necessary. The pilot made a ten minutes' stop at Marquise Aerodrome to make a small adjustment, and then continued the journey.

The company expected an efficiency of 80 per cent. before they started the service. As flights have been made in both directions every day, except on one, when a 100-m.p.h. gale prevented the machine from leaving Hounslow, an efficiency of nearly 100 per cent. has been obtained.

Among the parcels and goods carried by the machines have been bankers' scrip, leather, films, photographic plates, champagne, sweetmeats, grouse, bills of lading, plans and drawings, dress material, newspapers, millinery, samples of clothing, and Devonshire cream.

Lately the company's agents in Paris have been negotiating for the regular carriage, in consignments spread over various days of the week, of as much as 600 lb. and 1,000 lb. of goods. It is proposed that certain vaccines, which must be used within 24 hours or their potency is lost, should be consigned for aerial transport.

Mr. G. H. Davis, an artist, recently flew to Paris and back on business. During the outward flight he completed two pencil sketches of the country beneath and a wash drawing of the Channel boat nearing Boulogne. The next day, on the return trip, he finished another pencil sketch and a black-and-white drawing of the cloud effects over the Channel.

LONDON—PARIS AIR SERVICES.

Date.	Type	Left Hounslow	Arr. Paris	Left Paris	Arr. Hounslow	Pass	Weather
Sept. 1st	D.H. 4a	12.30 p.m.	2.48			1	Low
	D.H. 4a		p.m.	12.30 p.m.	2.45 p.m.	2	clouds
	D.H. 16			12.30 p.m.	3.10 p.m.	4	
Sept. 2nd	D.H. 4a	12.30 p.m.	3.5 p.m				
	D.H. 4a			12.30 p.m.	2.30 p.m.		Strong south wind, cloudy
Sept. 3rd	D.H. 4a	10.55 a.m.	1.10 p.m.			spar's	Mist, low
	D.H. 9	12.30 p.m.	2.50 p.m.				clouds drizzling
	D.H. 4a			12.30 p.m.	2.25 p.m.	2	rain
	D.H. 9			12.30 p.m.	2.45 p.m.	1	
Sept. 4th	D.H. 4a	12.34 p.m.	2.45 p.m.				Strong S.W
	D.H. 4a			12.30 p.m.	2.49 p.m.	1	wind, low clouds, bad visibility
Sept. 5th	D.H. 16	12.30 p.m.	3.0 p.m.			2	35-40 m.p.h.
	D.H. 9			12.30 p.m.	2.50 p.m.	2	south wind, very gusty
Sept. 6th	D.H. 9	12.30 p.m.	2.50 p.m.				Mist and haze
	D.H. 4a			12.30 p.m.	2.30 p.m.		clouds under 500 feet

Handley Page, Ltd., sent a machine to Paris on September 2nd, carrying seven passengers and goods. It left Hounslow at 12.50 p.m. This machine returned to Hounslow on Sept. 4th, and arrived at 5 p.m. During the week on these services Handley Page have carried 33 passengers and 600 lb. of goods.

Blackpool.

Capt. Lloyd (late R.A.F.), an Avro pilot, recently attempted to fly from Blackpool to Barmouth, with a passenger. They left Blackpool in fine weather, but while passing over the Merionethshire mountains in the Corwen district, they flew into a heavy mist which developed into a bad storm.

The pilot experienced great difficulty in controlling the machine, and on coming out of the mist found that they were well out at sea.

Owing to the storm over the mountains a landing had to be made at Rhyl. The journey to Barmouth was completed later.

Brighton.

During the week ending Sept. 6th 50 flights were made from the Ladies' Mile Aerodrome and 100 passengers were carried in Avro machines.

The weather was very indifferent all the week, and it was impossible to fly for some part of every day. On Saturday afternoon passengers were taken up at Chichester, and a cross-country flight from Brighton to Chichester and return with two passengers was made.

Harrogate.

Passengers were taken up during the week ending Sept. 6th in Airco machines.

Herne Bay.

At Herne Bay there are hundreds of spectators and always many passengers waiting their turn. Flights are being given around the Fleet for £3, and already many trips have been booked.

Leicester.

An aeroplane, piloted by Mr. Alan Cobham, who has been conducting passenger flights at Aylestone Park, Leicester, met with a mishap on Sept. 5th. The machine had only risen to a height of 10 ft. when the engine failed.

Mr. Cobham, and two women passengers he was carrying, received bruises and cuts. The machine ran into a thick hedge.

London.

Hounslow.—During the week ending Sept. 6th the Avros made 85 flights and took up 149 passengers. Cross-country flights were made as follows:—One to Margate, one to Weston-super-Mare, two to Brooklands, and one to Woolwich and return.

On Sept. 8th an officer of the Guards chartered an Avro at Hounslow and flew to Hythe. He started at 7 a.m. to be in time for a musketry course which commenced there that morning.

The Avro Co. is not running any regular service to the Continent, but in its capacity as "Air Taxi" is always ready to take passengers there when they want to go. Its first flight to Paris was made on Saturday, Sept. 6th, when the Avro limousine, piloted by Capt. R. T. Fagan, D.F.C., left Hounslow at 4.50 a.m. carrying two Norwegians, Mr. Robshon and Mr. Waase. A non-stop flight was made and Le Bourget was reached at 7.35 a.m.—a flight of 2 hr. 45 min.

Margate.

Avro flying at Margate has been exceptionally good this past week, and 273 passengers have been taken up, and have thoroughly enjoyed their trips. Many enthusiasts were over 60 years of age, and several under six. There were also a number of celebrities, including a well-known M.P. and his son. Tea is served on the aerodrome, which makes an afternoon at Manston a very pleasant affair.

Norwich.

On Sept. 4th over a thousand people, chiefly women, attended Mousehold Aerodrome, Norwich, to participate in the public draw for the first fifteen free flights given by the "Daily Sketch," the "Evening Standard," and the "Illustrated Sunday Herald."

Fifteen further free flights were given on Sept. 7th. Arrangements have been made also to give flights on Sept. 11th and 14th.

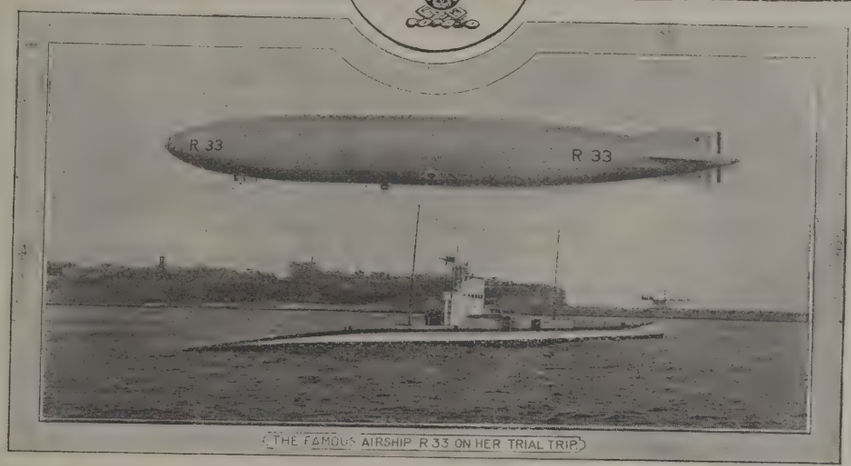
Paignton.

The Avro seaplanes here made 46 flights during the week ending Sept. 6th and carried 76 passengers. Flying was only possible on two days. Cross-country flights were made to Teignmouth and Babbacombe.

Sheffield.

The Sheffield Development Committee and Vickers, Ltd., have arranged to run an aeroplane passenger-carrying service during the Doncaster Races.

TRADE MARK



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BIRMINGHAM 1920

Chamber of Commerce, Birmingham.

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

Twenty-four passengers can be carried each day in the machines, which will leave the Coal Aston Aerodrome on Sept. 9th, 10th, 11th, and 12th. The prices for the flights will be from £10 to £7 for the return journey and from £6 to £4 for the single journey. Those who pay the highest prices will have least time to wait at the racecourse before the first and after the last race.

SOUTHSEA.

From an aviation point of view, Southsea is very dull. The people, doubtless from having lived so long in a Naval atmosphere, resolutely know nothing whatever of the R.A.F., the aviation firms, or the places where one may find an aviation interest.

On inquiry it was found that no one knew the way to Calshot, except one man, of military origin, who referred to "those stiffs in the R.A.F."

For Lee-on-the-Solent one covers half Hampshire by train, and takes best part of the day to get there by train, ferry, tram, and a walk.

To return to Southsea. The town is more or less thinly placarded with advertisements for the Supermarine Company's boats, which fly, according to the bills, at Ryde, Shanklin, Southampton, etc. For Southsea one applies at South Parade Pier. When the weather is suitable, a boat flies over from Southampton and the South Parade Pier, carrying a blue and white flag. One is now awaiting suitable weather.

In a week the actual number of aeroplanes seen at Southsea were three small land machines—or they may have been float seaplanes—and, possibly, four flying-boats. All were very far out at sea and very small.

Whether these machines were Service or commercial it is impossible to say. But aviation hereaLouts seems almost dead. Of course, one is not sufficiently near Southampton to see the immense activities of the Supermarine Company, and one has not seen anything of their Ryde activities. Possibly, the weather has been against much flying, as it has been squally, and a rather strong South to West wind blowing all the time. Still, the weather has been fine enough, and the sea fairly calm. After all, surely one flew in such weather during the late war?—S. F. B.

SWANSEA.

The weather was far from favourable during the week ending Sept. 6th, and there was no flying on Sept. 1st and 4th, and very little on Sept. 3rd. Altogether 122 flights were made and 214 passengers were taken up in Avro machines. Mr. F. G. M. Sparks is now the manager of the Avro Aerodrome.

WINDERMERE.

In the last two weeks the Avro seaplanes at Windermere have been chiefly engaged with carrying the "Daily News" to Douglas. They completed their contract last Wednesday. After delivering the papers to Douglas for this last time Capt. Pixton filled up with petrol and flew over to Port Erin, and took up a few passengers there. Unfortunately, he could only manage a few, owing to lack of petrol, and he had to disappoint a great number. If he had had enough petrol he could have gone on taking passengers up indefinitely. It is possible he may visit there again before the season closes. One passenger at Port Erin took a passage back to Windermere, calling in at Douglas on the way. The weather was perfect, with not a breath of wind.

To summarise the "Daily News" flights to the Isle of Man—the Avros flew every day during August Bank Holiday week. The papers were taken from the 5.30 a.m. train at Windermere station and conveyed down to the seaplane base, where they were stowed into the machine, and a start was made at about 6.30 a.m. The seaplane usually arrived in Douglas about 8 a.m., and returned to Windermere about noon. About the time the week was finished the Steamboat Co. commenced running night boats three or four times a week, but the Avros continued the service when the boats did not run. They made 12 journeys in all, and only failed to cross three times, once due to engine trouble and twice due to gales blowing. As Capt. Pixton is the only pilot there, he had to neglect the local business somewhat, but the I.O.M. flights have been a splendid demonstration of the usefulness of the Avro seaplane.

AUSTRALIA.

According to the "Melbourne Age," a party is surveying Australia to find sites suitable for landing-grounds. Mr. Reginald Lloyd, the head of the party, has stated that Sydney is to be brought within 6½ days of London.

Mr. Broadsmith, the ex-chief engineer of A. V. Roe and Co., Ltd., has joined the Australian Aircraft and Engineering Co. He will be the direct representative of the Avro Co. in Australia. He is taking out there with him a fleet of Avro seaplanes and aeroplanes. The "Joy-Stick" states that the fleet will be the largest yet seen in the Southern Hemisphere

SOUTH AFRICA.

Major Miller (late R.A.F.) and his colleague hoped to start a service between Johannesburg and Pretoria at the beginning of this month. The standard Air Force engines, for the British machines to be used, had arrived on July 31st. Passenger-carrying flights were probably made before the regular service was started.

They also hoped to have two or three machines in Cape Town during the Peninsular season, so that the public would be educated to flying. Major Miller has said that no long services will be started until they have the confidence of the public, when they hope to form a large company entirely with South African capital.

Aerial photographic work will also be done, as there is a great future for that business in the country.

THE ARGENTINE.

Major S. G. Kingsley (late R.A.F.), of Aircraft Transport and Travel, Ltd., has been in the Argentine for some weeks. A cablegram has been received by the above-mentioned company in London to say that he has formed an Anglo-Argentine Aviation Company. No further information is yet available.

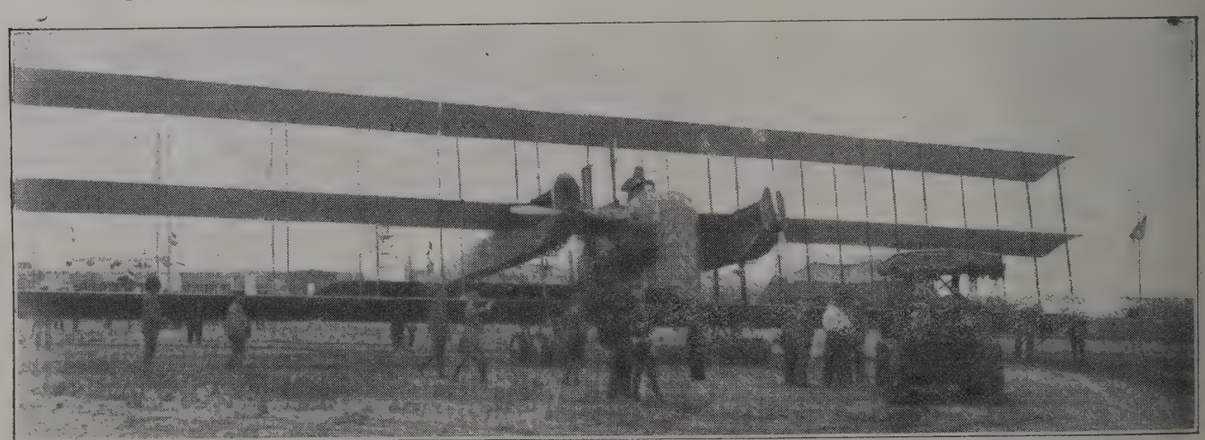
BELGIUM.

Further details are now available as to the proposed aerial service over the Belgian Congo. A mission consisting of Capt. Michaux, recently in charge of the Brussels-Paris aerial service, Lieut. Tony Orta, and M. Allard has recently been sent to the Congo by the Belgian Government. This mission is to undertake the actual organisation of the service.

Twelve seaplanes are to be employed on the service between Kinchassia and Stanleyville, a distance of about 1,050 miles. The route is divided into three sectors, and alighting stations are provided in each.

Transport at present takes 24 days to complete the distance by river. By air it is estimated that Stanleyville will be reached in three days, while seven or eight will be taken on the out-and-return journey, including the stay at Stanleyville.

Each machine will be able to carry two passengers, the charge to Stanleyville will be about £130.



Front View of the Caproni Triplane (three 400 h.p. Liberty engines) now at Amsterdam.

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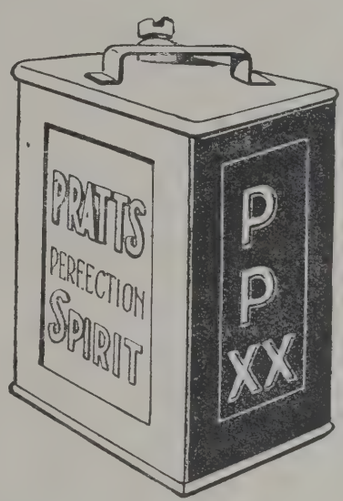
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An aerial photographic survey of the country will shortly be made.

The inclusive cost of providing the service will be about £50,000, and it is hoped that the first regular flights over the first sector will be made in February next and that the line will be in complete running order by July, 1920.

FRANCE.

The cyclone on the evening of Aug. 28th did considerable damage at Villacoublay. The large four Hispano engined Voisin biplane, type 12, was completely wrecked. This machine took the French football team to Brussels some weeks ago. Altogether, Voisin's loss from the storm amounted to about two million francs. Other firms on the aerodrome lost in proportion.—E. N.

The Coupe Deutsche, which is given for the fastest flight over a circuit starting and ending at Saint Germain, of which the turning-points are Senlis and Mélun, was won on Sept. 2nd by M. Sadi Lecointe, flying a Spad-Herbemont biplane (300 h.p. Hispano-Suiza). It is necessary for a competitor for this cup to exceed the speed of the previous holder by 10 per cent. before he can be awarded the prize.

M. Sadi Lecointe left Saint Germain (the starting-point is the Pavillon Henri Quatre of the great chateau) at 10 h. 21 min. 5 sec., and arrived back at 11 h. 9 min. 13 sec., having covered in 48 min. 8 sec. a distance of 124.28 miles at a speed of roughly 152 miles an hour.

The previous holder, M. Gilbert, flying a Deperdussin monoplane, covered the same distance in 1914 at a speed of 109 miles an hour.

The Toulouse-Casablanca aerial post, made possible by the ratifying last week of a convention between France and Spain, began its service on Sept. 1st. An aeroplane left Toulouse at 6 a.m. and flew to Casablanca *via* Barcelona, Alicante, Malaga, Tangier, and Rabat.

The official opening of the route will take place on Oct. 1st, when the passenger service will begin.

The lengths of the stages on the Toulouse-Rabat aerial service are as follows: Toulouse-Barcelona, 236 miles; Barcelona-Alicante, 298 miles; Alicante-Malaga, 314 miles; Malaga-Rabat, 212 miles. Total, 1,060 miles.

A league for the development of aerial post in Morocco has been formed in Casablanca. Several big merchants and aviators have already become members. Letters will be carried at a charge of two francs apiece.

An aerial transport service between Nice and Bordeaux will shortly be opened.

A Parisienne recently missed the night train to Cherbourg, where she was to sing the next evening. The price asked for the journey by a motor firm was £100, so she flew in an Air Transport Co.'s machine. The journey cost her £22.

M. Etienne Poulet, who is practising for a flight from Paris to Melbourne, made a series of flights at the "haute école aerienne" at Angers on Sept. 6th and 7th. He is piloting a Caudron biplane (Le Rhone engine).

M. Alexis Maneyrol attempted on Sept. 2nd to fly from Paris to Rome and back in one day on a Morane-Saulnier monoplane (160 h.p. Le Rhone). He left Villacoublay at 5.51 a.m. and landed at Rome at 12.40 p.m. At 15.40 p.m. he left Rome for Paris. He landed, owing to fog, at Pisa at 4 p.m.

Madame Jane Hervieu, who was one of the first women to adopt aviation as a profession, is leaving for the United States. She has signed a contract to act as one of the Curtiss Co.'s pilots.

M. Chevillard, whose skill as an aviator charmed the British on many occasions before the war, left Toussus-le-Noble on Sept 1st for Madrid, piloting a dual-control Farman biplane, type F.46. His instructions were to examine the Paris-Madrid route in order that plans may be made for a future aerial service between the two cities.

GERMANY.

It is stated from Munich that on Aug. 27th revenue officers flying in an aeroplane landed at Bamberg in order to arrest a smuggler. Finding he had left, they flew on to the Swiss frontier, where they awaited his arrival. He was arrested finally with 10,000 marks' worth of unstamped bank notes in his possession.

HOLLAND.

E.L.T.A. NEWS.

A correspondent, writing from Amsterdam on Sept. 2nd, sends the following news:—

The exhibition aerodrome is wetter than ever. The "Kangaroo" is the only large machine now taking up passengers.

Three machines arrived here to-day sent by the French Government—a Farman 40, a Farman 50 and a Nieuport 29. The other French aviators are Fonck, with a "Baby" Spad, and Bourgeois, with a Morane "Parasol" two-seater.

Capt. Gathergood (late R.A.F.), piloting a new Airco D.H.9.R. machine to the exhibition, flew from Hounslow to Soesterberg (25 miles from Amsterdam) in 2 hr. 10 min. on Sept. 5th. The engine is a 450 h.p. Napier. The machine had only been in the air for five minutes previous to the flight.

Capt. Gathergood states that he travelled at a speed of 134.5 m.p.h. Of the many flights which have been made from London to Holland during the E.L.T.A., this flight appears to have been accomplished in the fastest time.

A second Blackburn Kangaroo passenger-carrying biplane has arrived at Amsterdam, piloted by Capt. Wooley. The machine has been inspected by H.R.H. the Prince Consort of the Netherlands and the Dutch Minister of War. The latter's flight in the Kangaroo was his first experience in the air.

£16,000,000 has been subscribed towards the establishment of an aerial port at Ockenburg, near the Hague, according to the "Daily Express" of Sept. 3rd.

ITALY.

A Nieuport-Macchi machine landed at Varese (Como) on Sept. 4th, having made a non-stop flight from Barcelona in 5 hr. 50 min.

The Seaplane Circuit of Sicily, which takes place on Sept. 14th, will be over a course of which the following are the controls: Palermo (departure), Lefalu, Milazzo, Messina, Catania, Syracuse, Cap Passaro, Licata, Sciaeca, Marsala, Trapani, and Palermo (finish). Sixteen Italian and two French entries have been received. The machines entered are mostly F.B.A.s with 160 h.p. Isotta-Fraschini engines. The French entrants are Enseignes de Vraisseau Gizard and de Cuverville.

The Italian correspondent of THE AEROPLANE writes:—Officers, men, and motorists are to prepare the way for the D'Annunzio regularity flight to Tokio. They left Spezia for Bangkok and other towns *en route* on Aug. 25th. The flight is not likely to start before October.—T. S. H.

An Italian soprano who was under an engagement to sing in Paris on Sept. 2nd missed her train at Milan. She hired an aeroplane and arrived in Paris in good time. The pilot made only one landing on the way, at Bron Aerodrome, near Lyons, where he stopped to refill with petrol.

PORTUGAL.

The "Diario de Noticias," a Lisbon news-sheet, states that it intends to offer a prize for a flight from Lisbon to Portuguese Guinea in order to encourage the development of aviation.

NORWAY.

The Handley Page machine piloted by Maj. T. Gran and carrying his wife and other passengers crashed on Sept. 6th. The machine ascended at 10.30 a.m. from the military aerodrome at Kjelles, near Lillestroem (north of Christiania), to fly to Stockholm. One of the engines stopped just after leaving the ground. Maj. Gran endeavoured to make a landing, but the machine fell between some houses and crashed badly. One wing and the undercarriage were completely smashed.

SPAIN.

A free passage has been granted by Spain to all aeroplanes belonging to French companies flying over Spanish territory between France and Morocco. A regular service between these two countries will be started very shortly.

UNITED STATES OF AMERICA.

The inauguration flight of the aerial mail service from San Francisco to Sacramento was made on July 31st. Two other De Havilland machines accompanied the mail plane, which carried as a passenger a well-known San Franciscan dancer.

The National Air Service Co. of Washington state that a regular passenger-carrying service between Washington and New York is to be started as soon as safe landing-grounds have been made.

A service between New York and Boston is also contemplated, and the Chambers of Commerce of both cities have been asked for information as to landing-grounds.

Capt. C. L. Glidden, of the Aero Club of America, has announced plans for an international trans-continental aerial Derby from New York to San Francisco. Over £20,000 will be given in prizes.

The following is extracted from a long article by Otto Praeger, the Second Assistant Postmaster-General, in the "Aircraft Journal," of August 23rd:—

A year and three months ago the regular airplane mail was launched with a little army training plane out of Washington and another out of New York, each carrying 200 pounds of letters.

To-day eight mail airplanes travel 1,900 miles each day despite the weather.

A machine carrying 13,000 letters flies from New York City at 5.0 a.m. every morning for Cleveland and Chicago. It

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The Tielocken Air-Warm by means of overlapping fronts, doubly shields every vital area of the body. Another advantage is its unique method of fastening, which consists solely of a strap-and-buckle—no buttons to fasten or lose.

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TRADE MARK

GODBOLDS

arrives at Cleveland before 9.30 a.m., and at Chicago before 1.30 p.m. This service advances the mail to the Middle West by sixteen hours, and to the Pacific Coast twenty-four hours. A similar service is run from the East.

Since the air mail service started it has covered 272,628 miles, and has carried a total of 11,845,980 letters. If Congress will give the money we will put the air mail next year from the Atlantic to the Pacific in forty hours instead of four days, and from Boston to Havana in a little more than twenty-four hours instead of sixty hours or more by railway and boat.

The service is so costly that as yet it can be established only between the largest commercial and railway centres, where it can expedite the largest amount of mail to the largest number of people. The day will come, but it is not yet, when the air mail will operate between every important city in the United States.

When the Post Office Department inaugurated the aerial mail a delegation of military men connected with flying operations called upon me, accompanied by a colonel of the British Air Force, to dissuade the Post Office Department from attempting to run a daily airplane mail schedule, on the ground that airplanes cannot be flown in rain or fog. But we operated the entire first year, scoring a performance of 92.73 per cent., despite weather and frailties of airplane construction.

The Cleveland-Chicago stage (325 miles) has been flown daily since May 15th without a single forced landing from engine or any other trouble. The service has been carried on, with rebuilt D.H.4 biplanes with Liberty engines, through 80 m.p.h. gales, the aeroplanes flying both ways. Since the inauguration of the service only two aviators have lost their lives.

The Post Office Department has contributed directly to the advancement of aviation in (1) demonstrating the possibility of maintaining a dependable daily schedule by aeroplane all the year round; (2) giving encouragement to an inventor and causing his improved type of compass to be put into general use; (3) encouraging an inventor in the development of a self-cleaning, non-cracking sparking plug; (4) requesting the Bureau of Standards to work on a device to allow aviators to locate or accurately spot a landing ground by sound when it is perfectly invisible; (5) testing and adopting the gyroscopic turn indicator, to enable pilots to keep their machines straight in a fog; (6) by using a new alcohol fuel.

The Department is converting a D.H.4 machine into a twin-engined aeroplane capable of carrying 600 lbs. of mail. Fitted with two 150-h.p. Hispano-Suiza engines the machine travels at 103 m.p.h. with both and 80 m.p.h. with one engine. Two six-cylinder 200-h.p. Liberty engines are to be installed in this machine.

All of the planes in the air mail service are being made safe against fire by completely isolating the engine and gasoline compartments by asbestos fire walls. Each compartment is protected by pressure fire extinguisher system, and the mail itself is safeguarded by non-inflammable canvas bags.

In spite of this record of the mail service Congress is being asked to put this with the other air services under military and unified control, on the assumption that the Post Office Department cannot operate a separate air mail service as economically as it might be operated by a military organisation. An investigation of the cost of military flying as compared with the cost of the air mail operations will settle that contention conclusively.

* * *

Rice growers at Colusa are contracting with a local company for an aerial patrol to protect 15,000 acres of rice from the ravages of ducks, geese and mudhens. It is believed that the regular flight of aeroplanes over the fields at low altitude will so frighten the birds that they will leave for other parts.

A COMPLIMENT TO THE WRIGHT COMPANY.

The Director of Air Service, Washington, states that the following telegram is being sent by the Air Service to Mr. Orville Wright:—

> "The congratulations of the Air Service are extended to you on the tenth anniversary of the delivery of the first airplane to the Government of the United States, first in the world to acquire a dynamic aircraft. The Air Service appreciates to the full the ever-increasing debt owed by mankind to the Wright Brothers, whose foresight, indefatigable research and practicable application have aided world progress through the invention of a new means of communication.—MENCHER."

"It will be recalled that 10 years ago, on July 30th, the United States acquired the first airplane. The Government was the first in the world to be the possessor of an airplane, but had, however, no pilots. Later in the season the following American Army Officers were taught to fly by Wilbur Wright, 1st Lieut. Frank P. Lahm, now Colonel, and 1st Lieut. B. D. Foulois, now Brig.-General.

"On July 30th, 1909, Orville Wright and B. D. Foulois together made the second and final trial flight with the Wright machine contracted for by the Government the year before. This was a cross-country trip of five miles in each direction, with and against the wind. The speed made was 42 miles an hour. On July 27th the endurance test of one hour was made in a flight which totalled 72 minutes, with 1st Lieut. Frank P. Lahm. Lieut. Lahm has the distinction of being the first American Army Officer to fly.

"While the Wright Brothers were negotiating in foreign countries for the sale of patent rights, they were communicated with by the United States Government, and in the winter of 1907 the Chief Signal Officer, General James Allen, advertised for bids for an airplane. Of 22 bids three were accepted. The Wright Brothers were the only ones to deliver a machine. In September, 1908, official demonstrating flights were begun at Fort Myer, near Washington, in the fulfilment of the contract, but the death of 1st Lieut. Thos. E. Selfridge, passenger, and the accident to Orville Wright, the pilot of the machine, postponed flights until 1909. Lieut. Selfridge was the first man in the world to be killed by a power-driven airplane.

"The contract price of the machine was $25,000. The maximum speed demanded was 40 miles an hour, with a bonus of 10 per cent. for each mile per hour in addition. The Wrights received $30,000 for a speed of 42 miles per hour. This was paid out of the funds of the Board of Ordnance and Fortification."

AEROPLANE ENGINES FOR SALE.

The Disposal Board of the Ministry of Munitions has for sale several 75 h.p. aero engines. It is stated that they are suitable for stationary groundwork. A 200 h.p. 8-cylinder aeroplane engine has been installed in a factory. Coal gas is being used as a fuel, and the engine is running satisfactorily.

A Belfast daily newspaper is stated to use an ex-R.A.F. engine in their printing works.

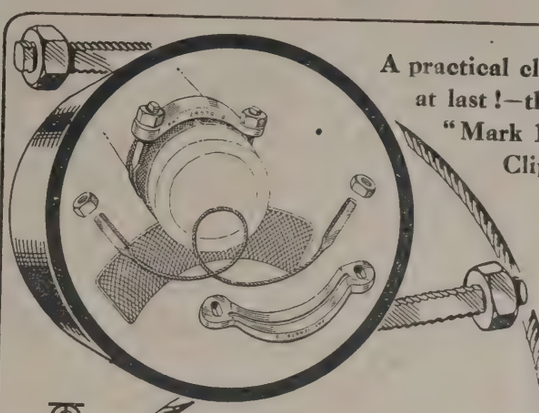


Three-quarter Back View of the Caproni Triplane (three 400 h.p. Liberty engines) now at Amsterdam.

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Tenders are invited for the helmets lying at the Royal Army Clothing Depôt, Grosvenor Road, Pimlico.

Application to view the helmets in bulk should be made to the C.O.O. at the above depôt.

Forms of tender may be had and samples seen on application to the Controller, Textiles, Leather and Equipment Section, D.B.3.b.4., Ministry of Munitions, Room 716, Caxton House, Westminster, S.W.1. Tenders returnable by 10 a.m. on 19th September.

Telegraphic address:—"Dirawmat, London."
Telephone—Victoria 8540 Ext. 263.

NOTE.—For "SURPLUS," the detailed list of surplus Government property for sale, apply at the nearest bookstall or to a local newsagent (to whom a standing order should be given). Compiled by the Director of Publicity, Ministry of Munitions, Whitehall Place, London, S.W.1. Price 3d.

AN INSTITUTE OF AERONAUTICAL ENGINEERS.

To-morrow, Sept. 11th, at 7.30 p.m., a meeting is to be held at 180, Sutherland Avenue, Maida Vale, W.9, by the embryo society known as the Institute of Aeronautical Engineers, which must not be confused with the affair which calls itself "The Aeronautical Institute."

To quote from the card of invitation, "matters of extreme importance to the aeronautical profession will be discussed and the scope and purpose of the Institute will be further determined." Mr. L. Howard Flanders will preside.

The older readers of THE AEROPLANE will remember Mr. Flanders as one of the pioneers of aviation who built a machine of his own at Brooklands, and before that was connected with the firm of A. V. Roe.

The objects of the Institute of Aeronautical Engineers are to promote theoretical and practical courses of instruction and to publish a periodical as an educational and reference work. It is proposed that all aeroplane design pupils should be taught to fly, as it is thought that "only by having flown various types of machines can the designer tell the degree of sensitiveness that is attainable."

There are to be five grades of membership—viz., Members, Associate Members, Pilots, Students, and Honorary Members. The first three will be designated M.I.Ae.E., A.M.I.Ae.E., and P.I.Ae.E. respectively.

The following letters give an indication of the reasons for calling the meeting :—

"Dear Sir,—In view of the strong trade union movement and of the Prime Minister's statement that the wishes of no body of people can be considered unless they are organised, it is high time that aeronautical engineers and pilots were organised to form one branch of the various middle-class unions that are springing up, the Society of Technical Engineers being an example.

"Such a union would ensure that pilots and others were adequately remunerated and that they received a suitable share of prize-money won in public competitions. Reasonable insurance rates for flying risks would be insisted upon, and the union would keep a record of the abilities of its members so that vacant posts would be filled by men with the requisite knowledge and experience.

"Under the existing laws such a society is an illegal conspiracy unless registered as a trade union. Consequently, I strongly urge that this society be primarily organised for the members' benefit and that it be registered under the Trade Union Act to enable it to work without fear of prosecution.

"I would suggest that as aeronautical work is of such a specialised nature all manual workers and draughtsmen be invited to join either as affiliated members with the consent of their own respective unions or separately.

"Personally, I regard this as an urgent matter, and I tried to do something on these lines in 1916, but pressure of work prevented my doing much.—(Signed)

"L. HOWARD FLANDERS."

The following is the reply to Mr. Flanders' letter from the organising secretary, Mr. Shaw :—

"Dear Sir,—I thank you for your letter. While I originally intended that the Institute of Aeronautical Engineers should deal with matters of technique rather than what I call industrial politics, you have convinced me that it should be organised to protect the various interests of designers, constructors, pilots, and aircraftsmen.

"I am therefore going to suggest that the scope of the Institute should be broadened so that it may serve the purposes which you have outlined. I therefore think it would be advisable to form the Aeronautical Defence Union under the auspices of the Institute of Aeronautical Engineers. The Institute would carry out the programme originally intended. The Union would be the Protection Society. Those who could not belong to a trade union could still be eligible for membership of the Institute, and members of the Union could proceed to the Institute for their examinations and diplomas.—(Signed) W. R DOUGLAS SHAW."

THE GOVERNMENT AND AIRSHIPS.

A meeting of those interested in commercial aviation was held in Australia House, Strand, on Sept. 8th, to discuss with representatives of the Air Ministry the question of the disposal of airships and the Government's policy for assisting aerial commercial enterprise. Representatives of all the large aircraft-producing firms were present.

As THE AEROPLANE was not allowed to be represented at the meeting it is impossible to give a verbatim report of the discussion. One is indebted to the "Times" for the following report :—

"Major-General Seely, Under Secretary of State for Air, presided. He said the Government was anxious to do the best it could for the State in the disposal of the lighter-than-air type of machine, and, at the same time, to aid commercial enterprise. The Air Ministry had been handed over a certain number of machines, and the Admiralty, having been consulted about its demands in the future, had reported that when the political situation cleared away—say in a month's time—it would be able to give a definite reply as to the number of airships and aerodromes it would require in case of emergency. The Air Ministry and the Admiralty would then combine to offer existing machines and machines in various stages of construction to those who would undertake the formation of a commercial air scheme. The assistance would include the use of wireless stations and meteorological information, and the Post Office would help in every possible way. In the case of any well-founded scheme airships would be sold at a very cheap rate. Business people would also have the advantage of sheds and trained personnel, and would have help in dealing with terminal points. The future of such a scheme was boundless, and he was sure that if they went into it in a businesslike manner, they would retain the supremacy in the air they had gained during the war.

"General Seely, answering criticism, said it would be wise for the Government to allow the firm to build any class of airship which might be deemed useful for commercial service, because any ship would be more useful to the Government, in hostile circumstances, than no ship at all. It was urgent on political grounds that the scheme should be launched as soon as possible. Air machines received from Germany would be included in the total that would be handed over for commercial purposes.

COMMITTEE TO DISCUSS DETAILS.

"Sir Trevor Dawson (Vickers Ltd.) approved the scheme in view of the promise of Government support, and suggested the formation of a committee of financial representatives to discuss details.

"Mr. Holt Thomas, Mr. Short (Bedford Aviation Company), Sir Glynn West (Armstrong, Whitworth and Co., Ltd.), and others expressed approval of the scheme, and it was decided to form the committee suggested, to meet General Seely, General Sykes (Controller-General of Civil Aviation), General Maitland, and other officials of the Air Ministry, to discuss details

"General Seely said he had the assurance of Lord Inverforth that red tape would not be allowed to hamper the negotiations in connection with the scheme. The matter was too important to brook delay. He was quite sure they would make the airship service of great good to the State, and they would have every possible chance to take the lead in the matter of airships, for the good of the Empire and mankind generally."

AERIAL KISSES.

The "Aerial Age," of America, published the following :—

"Sensational acrobatics that made Eddie Stinson, heretofore the most finished of the air pilots who have been amazing the throngs at the Atlantic City Airport, hold his breath from his "orchestra seat" a little off to one side in his own aeroplane, featured when Lt. Omer Locklear, former Army sky-skipper, mounted five times from one aeroplane to another by means of a rope ladder swinging clear in the air. Crowds below, who had been told that the lieutenant, who was the first man to jump from a plane above to the one underneath, would attempt to reverse the order, could see him standing upright on the upper wing and reaching for the ladder as one machine manœuvred by Lt. Melvin Elliott hovered over a second piloted by Lt. Shirley Short

"But it was Eddie Stinson who brought the real story of the manœuvres to the ground. 'I have seen some nice balancing and daring driving of aeroplanes, but those two pilots and Lt. Locklear showed me something new to-day,' declared Stinson, who himself was chief of aerial acrobatics in south-western army flying fields throughout the war.

"'While Lt. Locklear was swaying back and forth on top of the Short machine, Lt. Elliott swooped down from above, and so much confidence did those two drivers have in one another that the machines actually kissed one another, making it necessary for Lt. Locklear to drop and stretch out flat on top of the plane. Yet with cool daring he flipped upright again and grabbed for the ladder as they pulled away. It was the most remarkable aerial stunt. It was one of the most daring bits of game flying I have even seen.' Eddie had been up with a photographer, trailing the two planes throughout the trips.

"Crowds below knew nothing of the aerial kiss, but they saw the machines so close together that they looked as one skooting through the sky over a thousand feet in the air. Lt. Locklear, baffled by the wind, made three desperate trips across the field standing up on the wings of the aeroplane, while the throngs below nervously clutched one another fearing that he would be dashed to death at any instant. Just to show that he was still perfectly cool he proceeded to climb all over the plane as it swooped down within a hundred feet of the ground, once hanging by a precarious hold to the skid at the extreme tip of the right wing, and again hanging by his knees from the axle of the landing gear beneath the fuselage, permitting the wind to swing him back and forth head down like a pendulum."

AIRCRAFT FINANCE

CURRENT TOPICS

NATIONAL ECONOMIES AFFECT SHARE VALUES.

It is feared that the Government's drastic economies in departmental expenditure must seriously react on the Aircraft Industry: already the shares are drifting to a still lower price-level. In the circumstances it is useless to blame the investor for developing "nerves" and throwing over such securities. It is the common belief that the manufacturing industry is still wholly dependent on Government orders. This is not so, of course, but it must be confessed that the volume of business from that source has been helpful during the transition period.

FUTURE UNCERTAINTIES.

Anyway, the event may prove to be a blessing in disguise, in so far as the industry must work out its own salvation without delay and without expectation of a few "crumbs" from the table of the Treasury. Of course, it is a reversion to the old policy of *laissez faire*, unblushingly served up with a few trimmings. It may, however, enable commercial aviation to start with certain advantages derived from the uncompleted Government scheme. The Government cannot expect to obtain much for what it now proposes to jettison in the way of airships and stations and stores, so that the capital cost to the commercial venture would be comparatively small. There is some consolation to be derived from such a reflection, but only on the assumption that there are capitalists with sufficient confidence to seize the opportunity. The Government having paid for its experience, the newcomer should profit thereby.

INVESTORS EXPECTED PROTECTION.

Such consolatory reflections, however, are negatived, or, in any event, neutralised, by the present economic position of the Aircraft Industry. The amount of capital at stake is considerable. Many people were induced to risk their money in aircraft propositions by the excellent war services so often belauded by responsible officials and by the belief that as a reward therefor a certain measure of protection would be accorded to the industry for a reasonable period after the war.

SOME OF THE MOVEMENTS.

In the case of Aircraft Manufacturing "B" Preference shares the price has fallen away to 14s. Not so long ago these were selling well over £1, and were then considered reasonably valued. After their recent recovery Handley Page Participating Preference have also suffered a setback, being not better than 15s. 3d. Waring and Gillow have many other irons in the fire than aircraft business, and for that reason have not been much affected so far. The same applies to Armstrong Whitworths and Vickers, both of which companies can afford to nurse their aircraft business until times are more propitious.

MILLIONS THAT MUST BE RAISED.

One hopes that something concrete will result from the great aerial liner scheme discussed by its sponsors in the Press with so much enthusiasm. At the same time it must be confessed that the financing of such a venture to the tune of £2,000,000 will not prove an easy task. On the contrary, it may prove an insurmountable obstacle, for the man in the street has yet to be convinced of the economic and physical efficiency of an aerial passenger-service. The hint that the large brewery companies intend to help the scheme must strike the average person as being a little ornamentation and nothing better.

SUBSIDIES: A SUGGESTION.

What is absolutely necessary in order to help the financial consummation of such an aerial transport venture is assistance from the Government. This help should take the form of a subsidy similar to that enjoyed by the big mail steamships. The fleet would constitute a reserve for military purposes just the same as the Blue Ensign.

W. J. DAVIES.

JOHN DAWSON AND CO.

John Dawson and Co. (Newcastle-on-Tyne), Ltd., aeroplane manufacturers, Newcastle-on-Tyne, and Wallsend.

A largely attended meeting of the creditors of the above was held on Aug. 9th, at the Institute of Chartered Accountants, Moorgate Street, E.C. Mr. H. B. C. Baldwin, C.A., of 29, Lincoln's Inn Fields, W.C., stated that the shareholders of the company had passed resolutions in favour of voluntary liquidation, and he had been appointed to act as the liquidator.

The figures, which he was submitting, would have to be regarded as entirely approximate, and a considerable time would elapse before a complete statement of affairs could be prepared. The liabilities totalled £105,865, being made up as follows: Preferential creditors £2,122, secured creditors £28,592, unsecured creditors £50,164, and contingent claims £25,885. The book value of the assets was £108,563, and, in certain circumstances, he felt he was justified in assuming that they would realise £91,872, or a deficiency of £13,993.

The principal secured creditor was the London, City and Midland Bank, whose claim aggregated £27,361. The security held by the Bank consisted of the deeds of the Wallsend property, which was a large and well-equipped factory. There was a debenture registered for £30,000. The debenture was held by the Ministry of Munitions, but nothing was due on it, as the company had fulfilled all the conditions laid down in connection with its issue.

A creditor said it was rather curious that the debenture was given on April 10th of the present year, and that as soon as the necessary three months had elapsed the company went into liquidation.

Mr. Baldwin said that was not the correct view to take. The company had a large contract with the Air Board, who refused to find any more money. The directors said that unless more money was found they would be unable to carry out the contract, and it was decided to give the debenture to secure any further advances made by the Air Board.

The advances were subsequently wiped out by the work done by the company. Mr. Humphrey, the governing director of the company, had been included as a contingent creditor for £10,701, and at least £8,000 of that amount represented cash advanced to the company. The other two directors were each contingent creditors for considerable amounts, but he was unable to give details of the claims. Messrs. Napiers, Ltd., were also contingent creditors for £5,000.

Under the Articles of Association the governing director had power to fix his own remuneration up to £1,000 a year, and also that of the other members of the Board. The remuneration of Mr. Humphrey had been fixed at £2,500 a year, while that of the other two directors had been agreed at £1,500 per annum. Messrs. Luke, Turner and Co. were claiming £3,200 in respect of a cancelled contract in respect of aircraft.

Mr. Baldwin further stated that attempts had been made to sell the assets of the company to another concern which was taking up the manufacture of furniture. A second business would also be transferred to the new company. A prospectus had been prepared and a firm of promoters approached. The promoter thought it was a proposition that could be brought out. The issue of the new company was to have taken place on July 28th, but was deferred in consequence of the disturbed state of the labour market. It was, however, believed that the matter could be proceeded with in the near future. From the new concern it was proposed that the present company should receive £45,000 in cash for the Wallsend factory in Lawrence Road, while £8,500 in

shares would be handed over for the preliminary work which had been done. The company possessed other assets of a substantial nature.

The company was formed in January, 1917, to manufacture Handley Page and D.H. spares, and during the first twelve months it did well. Last year the A.I.D. came down on the company and insisted on the organisation being largely increased. An enormous number of inspectors were taken on, and the overhead expenses increased to a very large extent. During the last three months of last year the unproductive wages represented no less than 75 per cent. of the wages bill.

A petition had been presented to the Court for the compulsory winding-up of the company for the voluntary liquidation to be continued under a supervision order. The hearing of the petition had been adjourned pending the holding of that meeting of the creditors. The company possessed a magneto of its own which was believed to be of value. It was hoped to sell the magneto rights to a syndicate or another firm engaged on similar work. There was an enormous stock on the premises, but most of it belonged to the Government. The company entered into a contract to build a large bombing machine. The arrangement was that the company should manufacture a machine, and if it came to within 10 per cent. of all that was claimed for it John Dawson and Co. would have a licence for the manufacture of the aeroplane. It was in connection with that machine that the contingent claim of Messrs. Napier's for £5,000 arose.

Mr. O. Sunderland, of the Motor Trades Guardian Association, proposed that application should be made to the Court for the appointment of Mr. E. H. Hawkins, of Messrs. Foppleton, Appleby and Hawkins, 4, Charterhouse Square, E.C., as joint liquidator of the company.

Mr. A. Houstoun seconded the motion, which was agreed to on a show of hands, and a committee of five of the principal creditors was also nominated.

WHITEHEAD AIRCRAFT.

LIST OF CREDITORS.—(Continued from last week.)

	£
General Electric Co., Ltd.	5
Gadsdons	5
Gillespie Partners, Ltd.	3
Green, G. W., and Co., Ltd.	49
Grove Chemical Co., Ltd.	6
Hobday Bros., Ltd.	65
Hickey and Son, J.	2
Hoffman Manufacturing Co., Ltd.	2
Heggett, Young and Co.	6
Hawkins Bros. and Co.	14
Halden, J., and Co., Ltd.	7
Hyde Archer and Co., Ltd.	139
Hanwell Bros. and Co., Ltd.	3
Hayden, W. H. and Co., Ltd.	7
Hawkins, A., and Sons	4
Houghtons, Ltd.	23
Hanworth Park Estate	378
Hancock, J. L., Ltd.	145
North, J., Hardy, and Son, Ltd.	156
Hall and Hall	9
Heenan and Froude, Ltd.	35
Hudson, Ermunds, and Co., Ltd.	20
Hunt, M.	147
Hattersley, C., and Sons, Ltd.	239
Hall, B. J., and Co., Ltd.	5
Hart Accumulator Co., Ltd.	2
Harrison and Cook	10
Harris, T. H., and Sons	3
Herbert Frood Co., Ltd.	8
India Rubber Products Co., Ltd.	28
Imperial Light, Ltd.	3
Isleworth Rubber Co., Ltd.	15
Ingham, R., Clark and Co., Ltd.	337
Jeyes Sanitary Compounds Co., Ltd.	48
Joseph Jonas and Colver, Ltd.	3
Jennings, F. A.	15
Jennings, G., Ltd.	11
Parkes Drug Stores, Ltd.	7
Parker, J. A.	6
Pneumatic Rubber Stamp Co.	4
Pouder, H., and Co.	7
Pinchin, Johnson and Co., Ltd.	21
Petrie, D.	10
Parker and Co.	47
T. M. Probert and Son	2
Perry and Co., Ltd.	2
Power Gas Corporation, Ltd.	145
Pearn, F., and Co., Ltd.	150
The Pyrene Co., Ltd.	5
Reynolds and Co.	39
Rollett, M., and Co.	13
Rubery, Owen and Co.	60
Reynolds, J. A., and Co., Ltd.	5
Richmond Garage	9
Ragusa Asphalte Co.	114
Ramsey, S., and Co.	2
Rissen, J., Ltd.	20
Rejax, Ltd.	15
Rhodes, J., and Sons, Ltd.	71
Rubeck, Thew and Co.	5
Rylands and Sons, Ltd.	9
Remington Typewriter Co., Ltd.	7
Robinson, T., and Son, Ltd.	365
Redpath, Brown and Co., Ltd.	93
Ransome, A., and Co., Ltd.	5
Leo Ripault and Co.	4
Randall Bros.	81
Rushmores, Ltd.	14
Sagar, J., and Co., Ltd.	5
Smith and Sons	13
Sybry, Searles and Co., Ltd.	3
Smart, A., and Sons, Ltd.	12
Sheppard, F.	4
Spenser Whatley, Ltd	12
Sumerling and Co., Ltd.	3
Sampson, T.	3
Salmon, Whitfield and Co.	7
Salomon, A., and Co	8
Spear and Jackson, Ltd.	8
Smither and Sons, D.	6
Progressive Engineering Co.	3
King, J. C., Ltd.	7
Kalisky, S.	5
Knowles, J., and Co	45
Kelly's Directories, Ltd.	3
Lee and Sons, A., Ltd.	9
Lancashire Dynamo and Motor Co., Ltd.	79
Linc, J., and Sons, Ltd.	219
London and North Western Railway Co.	2
Lamben Sheet Metal Co.	24
Llandilo Saw Mills, Ltd.	201
London and South Western Railway	7
London and South Western Railway	148
Lilley, H., and Sons	150
London Warming and Ventilating Co., Ltd.	116
Mallandain, A. E.	30
Mendine Co.	235
Maclennan and Co.	61
Melhuish, R., Ltd.	4
McDowall, Steven, and Co., Ltd.	7
Mcsers, Ltd.	33
Morgan Crucible Co., Ltd.	45
Matthews and Yates	35
McArthur and Co.	23
Middlesex Foundry, Ltd.	10
Meerloo Engineering Co., Ltd.	25
Messers, Ltd.	12
Mountford, F. (Birmingham), Ltd.	13
Milham, H.	7
Mitchell Bros.	15
Marsh, E. R., Ltd.	5
Motor Radiator Manufacturing Co.	567
Maw, S., Son and Sons Ltd.	2
Nurse, C., and Co., Ltd.	28
Nettlefold and Sons	137
Newton Fire Extinguisher Co., Ltd.	36
Newton, J. M., and Sons, Ltd.	7
Nicholls and Clarke, Ltd.	11
New Pegamoid, Ltd.	115
Norris, Henty and Gardners, Ltd.	1758
Northern Machine Screws, Ltd.	163
National Time Recorders Co., Ltd.	24
National Aeroplane Factory	9
O'Brien, Thomas and Co	3
Oakey, J., and Sons, Ltd.	5
Oppenheimer, A., and Co.	5
Palmer Tyre Co.	1462
Parke, Davis and Co.	2
Peach, H. H.	91
Simplex Conduits, Ltd.	8
The Sentinel Waggon Works, Ltd.	8
Summers, G. F.	3
Sanitary and Water Fittings Co.	7
Selman and Son	3
Smith, W.	2
Smith, Parrrey and Co., Ltd.	72
Siemens Bros. and Co., Ltd.	27
Smith, F., and Co.	3
Sly, Dibble and Co., Ltd.	10
The Sun Electrical Co., Ltd.	53
Tollit and Harvey	23
Terry, N., and Sons, Ltd.	80
Thomas, W.	193
Tapling, T., and Co., Ltd.	12
Twigg and Beeson	4
Thomas, W., and Son	9
Underwood Typewriter Co., Ltd.	37
Union Petroleum Co.	51
Vickers, J. W., and Co., Ltd.	42
Wadkin and Co.	8
Woodside Engineering Co., Ltd.	376
Weardon and Guylee	2
Waterloo and Sons, Ltd.	11
Wills and Chaplin	12
Wall, G. P.	23
Williamsons, Ltd.	6
Wiggins-Davies, T.	7
Worsley, M.	17
White, A., and Sons, Ltd.	18
Willcox, W. M., and Co.	109
Walters, W., and Sons	2
Wall Paper Manufacturing, Ltd.	12
Williams, J., and Co., Ltd.	2
Young and Marten, Ltd.	51
Yost Typewriter Co., Ltd.	5
Zenith Carburetter Co., Ltd.	19
Howeson, O. E.	7211
Falcon Airscrew Co.	680
Nettlefold and Son	627
Auster, Ltd.	400
Drummond Col.	1305
Austin, E., and Sons	145
Falcon Airscrew Co.	425
Robinson, T., and Son, Ltd.	350
Woodbridge and Son	20
Llandilo Saw Mills	6
Richmond Electric Light Co.	18
Aluminium Corp.	48
Oriental Tube Co.	14
Ellis, A. A.	9
Earle, Bourne and Co.	57
Triplex Safety Glass	3
Greening, N., and Sons	26
Simplex Conduits, Ltd	12
Gridley and Co.	48

BEARDMORE MOTORS, LTD.

BEARDMORE MOTORS, LTD.—Private company. Registered Sept. 2nd. Capital £100,000 in £1 shares. To take over the business carried on by Aidee Motor and Engineering Co., Ltd., and to carry on the business of manufacturers of and dealers in motor-cars, carriages, vehicles and boats, aero engines, aeroplanes, motor-launches, etc. The subscribers (each with one share) are:—H. L. Smith, 62, Grosvenor Road, Canonbury, N.5, clerk; H. W. Eason, 149, Tufnell Park Road, N.7, clerk. The first directors are:—Sir Wm. Beardmore, Bt., J. G. Girdwood, P. M. Luther, and C. H. Allsworth. The two first-named are nominees of William Beardmore and Co., Ltd., and the two last-named are nominees of the Aidee Motor and Engineering Co., Ltd. Remuneration £250 per annum. Solicitors: Nicholson, Graham and Jones, 24, Coleman Street, E.C.

RECEIVERSHIPS (Appointment or Release).

AERO TANKS, LTD.—A. Charlesworth, of 20, Copthall Avenue, E.C., and W. R. Gaff, Capel House, E.C., as receivers on July 26th, 1919.

EXTRACTS FROM "THE LONDON GAZETTE."

GREAT BRITAIN.

MILITARY.

FROM THE "LONDON GAZETTE."

WAR OFFICE, Sept. 1st.

REGULAR FORCES.—INFANTRY.—Essex R.—J. R. Massey (temp. Sec. Lt., R.A.F.) to be temp. Sec. Lt., Jan. 4th.

WAR OFFICE, Sept. 2nd.

REGULAR FORCES.—INFANTRY.—North'd Fus.—Maj. I. M. Bonham-Carter, O.B.E., is placed in the h.p. list, and retains his present employment with the R.A.F., Sept. 3rd

OVERSEAS FORCES.—CANADA.—NOVA SCOTIA R.—Temp. Capt. V. Hodson ceases to be secd. for duty with the R.A.F., April 2nd (substituted for "Gazette" notification of July 24th, incorrectly describing rank as Maj.).

CAN. ENGRS.—Temp. Capt. H. S. Quigley, M.C., D.C.M., ceases to be secd. for duty with the R.A.F., July 3rd (substituted for "Gazette" notification of Aug. 11th, incorrectly specifying date as July 5th).

W. ONTARIO R.—The following officer retires in the British Isles:—Temp. Maj. A. E. McKeever, D.S.O., M.C., ceases to be secd. for duty with the C.A.F., Aug. 16th.

WAR OFFICE, September 4th.

REGULAR FORCES.—Attd. to the Gen. Staff.—Station Accountant Officers (Cl. GG.).—Sec. Lt. H. D. Giblett, R.A.F., and to be temp. Capt., Gen. List, while so empld., Aug. 15th.

INFANTRY.—Bedf R.—S. D. Harrower (temp. Lt, R.A.F.), June 20th.

ROYAL ARMY CHAPLAINS DEPARTMENT.—The Rev. H. Beauchamp, temp. Chapln. to the Force, 3rd Cl., relinquishes his commn. on transfer to the R.A.F., July 25th.

WAR OFFICE, September 5th.

REGULAR FORCES.—Royal Regiment of Artillery.—R.G.A.—The following are restd. to the estabt.:—Supern. Capt. R. Hilton, M.C., D.F.C., July 7th.

FOOT GUARDS.—S. Gds.—Capt. and Bt. Maj. J. E. Tennant, D.S.O., M.C. (attd. R.A.F.), resigns his commn., Sept. 6th

INFANTRY.—R.W. Surr. R.—Lt. A. M. Bennett (attd. R.A.F.) resigns his commn., Sept. 6th.

WAR OFFICE, September 6th.

REGULAR FORCES.—INFANTRY.—Service Battalions.—Welsh R.—Temp. Lt J. Garvin resigns his commn on appt. to R.A.F., Sept. 14th, 1918.

ROYAL ARMY SERVICE CORPS.—To be actg. Capt.—Temp. Lt. A. W. J. Lyons, from R.A.F., to be temp Lt., May 30th, seny. April 15th, 1917.

AIR FORCE.

AIR MINISTRY, Aug 29th.

R.A.F.—The following temporary appointments are made:—Brig.-Gen. Staff.—Col. (actg. Brig.-Gen.) B. H. H. Cooke, C.M.G., C.B.E., D.S.O., is graded for purposes of pay and allowances as Maj.-Gen. while officiating in command of an area, Feb 27th.

Staff Officers, 1st Class (P.)—Col. A. M. Bent, C.M.G., C.B.E., is graded for purposes of pay and allowances as Brig.-Gen. while officiating as Brig.-Gen., Staff, Feb. 27th; (T.) Maj. T. G. Hetherington, C.B.E., is graded for purposes of pay and allowances as Col. while officiating as Col., Staff, from Feb. 18th to July 31st.

Staff Officer, 3rd Class (P.).—Capt. E. F. Wilkinson, July 23rd.

FLYING BRANCH.—Capt. C. H. Elliot-Smith is graded for purposes of pay and allowances of Maj. while employed as Maj. (A.), May 1st.

Capt. R. S. Smith relinquishes the grading for purposes of pay and allowances as Maj. (K.B.), July 20th (substituted for notification in "Gazette" of Aug. 1st).

Capt. B. C. Clayton to be Capt (A.) from (T.), May 15th.

The following Lts. are graded for purposes of pay and allowances as Capts. while employed as Capts. (A.):—H. G. Davis, D.F.C., S. G. Frogley, G. C. Gardiner, D.F.C., H. Hillier, D.F.C., A. E. Morgan, W. S. Reid, May 1st.

The following relinquish the actg. rank of Capt. on ceasing to be employed as Capts.:—Lt. H. F. Nicholls, D.F.C., July 29th; Lt. W. F. J Harvey, D.F.C., July 30th; Lt. G. L. Hobbs, M.C., Aug. 8th.

Sec. Lt. H. A. Castaldini is graded for purposes of pay and allowances as Lt. while empld. as Lt. (O), May 1st

Sec. Lt. J. T. O'Brien-Saint to be Sec. Lt., from unemployed list, prec. next below Sec. Lt. C. A. White, July 23rd.

The following relinquish their commissions on ceasing to be employed:—Sec. Lt. C. L. Douthwaite (E. Yorks. R., T.F.), March 12th; Lt. W. G. Fluke, D.S.O. (Lt., S. Staffs. R.), May 12th; Capt. H. S. Parsons (Capt., Can. Forces), June 19th; Sec. Lt. (Hon. Lt.) F. McRae (Capt., Can. Forces), July 13th; Sec. Lt. C. E. Eddy (Lt., Gen. List S. African Forces), Aug. 5th; Lt. (Hon. Capt.) H. G. L. Mayne (Capt., K.O.S.B.), Aug. 9th; Lt. (Hon. Capt.) C. H. L. Coney (Capt., N. Staffs. R.), Aug. 11th; Lt. J. Cave (Lt., Manitoba R.), Sec. Lt. H. A. Crommelin, Aug. 13th; Lt. J. Sharp (Lt., S. Ir. Horse), Aug. 15th. Transferred to unemployed list:—Capt. B. P. G. Hunt, Jan. 28th; Lt. G. L. Webster, Jan. 29th; Sec. Lt. J. R. R. Rankin, Feb. 8th; Lt. H. R. Aird, Feb. 17th; Lt. L. C. Tonkin, Feb. 23rd; Sec. Lt. N. Cooper, D.F.C., March 15th; Lt. (actg. Capt.) L. H. Jones, March 31st; Lt. (Hon. Capt.) (actg. Capt.) G. H. B. Wilson, April 5th, substituted for notification in "Gazette" of June 6th; Lt. S. Jolley, M.C., Sec. Lt. (Hon. Capt.) R. T. Pearson, M.C., Lt. (Hon. Capt.) C. Le Strange, April 11th; Sec. Lt. (Hon. Lt.) J. S. Maguire, April 15th; Sec. Lt. C. E. M. Howard, April 17th; Sec. Lt. J. W. Gennard, April 18th; Capt. J. B. Crompton, Sec. Lt. J. E. Jellison, April 19th; Sec. Lt. N. A. Jamieson, Sec. Lt. H. W. Phillips, Sec. Lt. (Hon. Lt.) T. A. Lloyd-Rees, M.C., Sec. Lt. G. Russell, Sec. Lt. A. W. Sawyer, April 29th; Sec. Lt. R. S. Johnson, May 2nd; Maj. A. K. H. O'Brien, May 4th; Lt. A. F. Cotton, May 14th; Lt. J. S. A. Willis, May 16th; Sec. Lt. O. H. Campbell, May 20th, substituted for notification in "Gazette" of May 13th; Sec. Lt. R. C. Jones, May 21st; Lt. J. Creigton-Jones, May 26th; Lt. Wm. Hughes, June 2nd; Sec. Lt. T. J. H. May, June 5th; Lt. J. S. Hodges, June 7th; Sec. Lt. C. Brooks, June 9th; Sec. Lt. Wm. Emery, June 10th; Sec. Lt. (Hon. Lt.) A. B. Radford, June 12th; Lt. D. A. Hansard, June 13th; Lt. L. E. O. Lounds, June 16th; Lt. F. W. Morter, A.F.C., June 25th; Sec. Lt. E. E. Morrison, July 1st; Sec. Lt. L. C. Cox, Sec. Lt. T. D. Fitzsimon, Lt. R. E. Taylor, substituted for notification in the "Gazette" of July 29th, July 12th; Sec. Lt. J. W. Rhodes, July 23rd; Lt G. H. Armstrong, A.F.C., July 28th; Lt. G. C. Judd, July 31st; Sec. Lt. C. A. Box, Aug. 2nd; Sec. Lt. E. A. Rogers, Aug. 3rd; Lt. C. F. Nathan, M.C., Aug 5th; Capt. J. F. Jones, O.B.E., D.S.C., Capt. A. T. Moore, O.B.E., Aug. 6th; Sec. Lt. G. Chellingworth, Aug. 9th; Sec. Lt. J. Harris, Aug. 12th; Lt. G. E. Shearmur, Aug. 13th; Sec. Lt. C. H. Howitt, Lt. E. E. Lockwood, Aug. 14th; Lt. E. W. Hart, Lt.-Col. J. C. Porte, C.M.G., Capt. R. R. Soar, D.S.C., Aug. 15th; Sec. Lt. G. A. Davis, Aug. 16th; Lt. A. G. Donald, Aug. 17th; Sec. Lt. R. J. Palmer, Aug. 19th; Sec. Lt. W. L. Alston, Lt. J. A. Jamieson, Lt. G. G. Macphee, Lt J. Palmer, Sec. Lt. R. D. Vaughan, Aug. 20th; Lt. R. J. Layard, Lt. W. H. Pollard, Aug. 22nd; Sec. Lt. E. H. C. Steeds, substituted for notification in the "Gazette" of Aug. 22nd; Lt. S. MacK. Sproat, substituted for notification in the "Gazette" of Aug. 22nd; Lt. D. Davidson, Sec. Lt. R. E. Norrish, Aug. 28th.

Capt. E. K. H. Turnour (Lt., R.N.) resigns his commission, and is permitted to retain the rank of Capt., Aug. 30th.

The following Lts. relinquish their commissions on account of ill-health, and are permitted to retain their rank:—J. E. Howell, Aug. 20th; W. S. Featherstonhaugh, Aug. 21st.

Lt. L. H. Mackay (Scottish Rifles) resigns his commission, and is permitted to retain his rank, Aug. 30th

Lt. M. J. P. Scully (R. Inniskilling Fus.) is cashiered by sentence of a General Court-Martial, Aug. 11th.

Sec. Lt. D. E. Culver relinquishes his commission on account of ill-health contracted on active service, and is permitted to retain his rank, Aug. 19th.

The surname of Lt. G. W. Gauld is as now described, and not "Gould," as stated in the "Gazette" of April 25th.

The surname of Sec. Lt. R. P. Coton is as now described, and not "Caton," as stated in the "Gazette" of May 27th.

The initials of Sec. Lt. C.A. Muir are as now described, and not "T. A.," as stated in the "Gazette" of June 3rd.

The surname of Lt. H. S. Wellby is as now described, and not "Welby," as stated in the "Gazette" of May 27th.

The surname of Lt. J. G. Prestwich is as now described, and not "Prestwick," as stated in the "Gazettes" of July 1st and June 24th.

The initials of Sec. Lt. J. T. O'Brien-Saint are as now described, and not "J. D.," as stated in the "Gazette" of July 4th.

The initials of Lt. S. Y. Grant are as now described, and not "S. W.," as stated in the "Gazette" of April 25th.

The notification in the "Gazette" of Aug 27th, 1918, concerning Flt. Cadet H. W. Williams is cancelled.

The notification in the "Gazette" of March 28th concerning Lt. (actg. Capt.) E. Swale, D.F.C., is cancelled.

The notification in the "Gazette" of April 4th concerning Lt. (actg. Capt.) M. G. W. Stewart, D.F.C., is cancelled.

The notification in the "Gazette" of May 20th concerning Capt. C. G. Davis, M.C., is cancelled.

The notification in the "Gazette" of June 3rd concerning Lt. H. L. Young is cancelled.

The notifications in the "Gazette of June 24th concerning Sec. Lt. J. S. McGeown and Sec. Lt. H. R. Hayden are cancelled.

The notification in the "Gazette" of July 11th concerning Sec. Lt. T. C Stranger is cancelled.

The notification in the "Gazette" of July 18th concerning Sec. Lt. (Hon. Lt.) M. C. Sexton is cancelled.

The notification in the "Gazette" of July 29th concerning Lt. W. C. Siddaway is cancelled.

ADMINISTRATIVE BRANCH.—Lt.-Col. (actg. Col.) A. W. C. McFall relinquishes the actg. rank of Col. on ceasing to be employed as Col., Aug. 1st.

Maj. (actg. Lt.-Col.) D. Mackenzie relinquishes the actg. rank of Lt.-Col. on ceasing to be employed as Lt.-Col., Aug. 1st.

Capts. to be actg. Majs. whilst employed as Majs., without pay and allowances of that rank:—R. W. Dawes, J. L. Walshe, July 31st.

Capt. L. M. Boddam-Whetham to be Capt., from (S.O.), Aug. 7th.

Capt. A. F. Marlowe is graded for purposes of pay and allowances as Capt. whilst employed as P.T.O., April 10th.

Lt. H. F. Fuller to be actg. Capt. whilst employed as Capt., July 18th.

The following Lts. are graded for purposes of pay and allowances as Capts. whilst employed as Capts.:—(Hon. Capt.) P. Colbeck, M.B.E., (Hon. Capt.) R. T. H. Watson, May 1st; R. J. L. Gerard, from May 1st to June 5th; C. H. Tancred, from May 1st to May 26th.

Sec. Lt. H. F. Hendry to be Lt., March 2nd.

The following relinquish their commissions on ceasing to be employed:—Lt.-Col. (actg Col.) W. P. Alexander, and is permitted to retain the rank of Col., Aug. 1st; Lt. D. H. Bell, M.C. (Lt., Queen's Own Cam. Highrs.), Sec. Lt. (Hon. Capt.) T. G. Horn (Capt., Extra Regimentally Employed List), Aug. 12th.

Transferred to Unemployed List:—Sec. Lt H. M. Towlson, March 11th; Capt. H. Sherwood, April 27th (substituted for notification in the "Gazette" of July 11th); Sec. Lt. R. H. Curtis, June 3rd; Lt. C. Marsden, Aug. 2nd; Sec Lt. R. Thomson, Aug. 7th; Maj. M. E. Lane, Aug. 14th; Lt. H. G. Dadley, D.C.M., Capt. (actg. Maj.) A. Young, O.B.E., Aug. 15th; Lt. T. P. Jenkins, Aug. 21st; Lt. E. W. Bassil, Capt. B. W. Batchelor, Aug. 22nd.

Lt. R. L. G. May (Lt., Royal Fus.) resigns his commission, Aug. 27th.

Lt. W. R. Ashwell (Leic. R., T.F.) relinquishes his commission on account of ill-health contracted on active service, Aug. 28th.

Lt. W. B. Judd (Lt., Dur. L.I.) is cashiered by sentence of a General Court-Martial, Aug. 7th.

Sec. Lt. W. S. Greasley relinquishes his commission on account of ill-health, and is permitted to retain his rank, Aug. 22nd.

The surname of Lt. D. M. K. Marendaz is as now described, and not "Masendaz," as stated in the "Gazette" of May 6th.

The surname of Sec. Lt. C. W. Slarke is as now described, and not "Starke," as stated in the "Gazette" of May 27th.

The initials of Sec. Lt. J. L. O'Hagan are as now described, and not "J. R.," as stated in the "Gazette" of May 20th.

The notification in the "Gazette" of July 22nd concerning Sec. Lt. R. C. Rosser is cancelled.

TECHNICAL BRANCH.—Maj. R. C. Lane to be Maj., Grade (B.), from (S.O.), July 31st.

Capt. W. E. L. Seward, M.C., to be graded for purposes of pay and allowances as Maj. while employed as Maj., Grade (A), May 1st.

The following Lts. are graded for purposes of pay and allowances as Capts. whilst employed as Capts., Grade (A.):—E. S. Cohen, A. E. Lindon, W. Sutherland, J. A. V. Welsh (substituted for notification in the "Gazette" of July 22nd), May 1st.

The following Lts. are graded for purposes of pay and allowances as Capts. whilst employed as Capts., Grade (B.):—J. Durward, F. M. I. Watts, M.B.E., May 1st; L. L. W. Smythe, from (Ad.), from May 1st to 27th (substituted for notification in the "Gazette" of July 8th).

Sec. Lt. (Hon. Lt.) P. L. Lindup to be graded for purposes of pay and allowances as Capt. whilst employed as Capt., Grade (A.), May 1st.

Sec. Lt. H. Barnes-Moss to be graded for purposes of pay and allowances as Capt. whilst employed as Capt., Grade (B), May 1st.

Lt. H. A. Adams to be Lt., Grade (A), from (S.O.), May 12th (substituted for notification in the "Gazette" of May 30th).

Lt. A. A. Davis to be Lt., Grade (B), from (O), July 27th, 1918 (substituted for notification in the "Gazette" of Aug. 30th, 1918).

Sec. Lt. (actg. Capt.) W. W. Hamond to be Lt., and to retain the actg. rank of Capt until April 30th.

Sec. Lt. M. P. Graddon to be Lt., Oct. 27th, 1918.

Sec. Lt. G. A. Gillings to be Lt., without pay and allowances of that rank, Nov. 17th, 1918.

Sec. Lts. to be actg. Lts. whilst employed as Lts., Grade (A) :—E. J. Wilkins, from Nov. 10th, 1918, to April 30th (substituted for notification in the "Gazette" of Sept. 17th, 1918); L. Hawkins, from (Ad.), from June 16th, 1918, to April 30th (substituted for notification in the "Gazette" of Sept. 17th, 1918).

Sec. Lts. to be graded for purposes of pay and allowances as Lts. whilst employed as Lts., Grade (B) :—Hon. Lt. G. H. Heys from (Ad.), J. E. Tyrrell, Hon. Lt. N. W. Walmsley, May 1st.

Transferred to Unemployed List :—Sec. Lt. F. L. Sutcliffe, Jan. 31st; Sec. Lt. A. H. Waterman, March 15th; Sec. Lt. (actg. Lt.) A. H. James, April 18th (substituted for notification in the "Gazette" of July 15th); Lt. H. R. Hare, April 19th; Lt. R. F. Tindall, May 19th; Sec. Lt. A. V. Jay, May 28th; Sec. Lt. P. D. Wilson, June 7th; Capt. F. C. Jenkins, July 6th; Lt. R. Leedal, July 31st; Sec. Lt. F. H. Jefferies, Aug. 3rd; Lt. T. M. S. Jenkins, Aug. 8th; Sec. Lt. F. C. Lyne, Aug. 10th; Sec. Lt. C. L. Underwood, Aug. 12th; Lt. G. E. F. Elliott, Aug. 14th; Lt. V. G. Darrington, Sec. Lt. (Hon. Lt.) R. Kearton, Aug. 15th; Sec. Lt. J. T. Brown, Aug. 16th; Sec. Lt. N. W. B. Bovey, Aug. 18th; Capt. W. M. Lange, Aug. 19th; Capt. H. O. Fry, Capt. T. R. Garrigan, Aug. 20th.

The surname of Sec. Lt. A. Gall is as now described, and not "Gill," as stated in the "Gazette" of June 24th.

The surname of Sec. Lt. W. F. Bevis is as now described, and not "Beirs," as stated in the "Gazette" of May 6th.

The Christian names of Sec. Lt. Robert Boyd Cheery are as now described, and not as stated in the "Gazette" of May 9th.

The notification in the "Gazette" of Aug. 15th concerning Sec. Lt. W. Brown is cancelled.

MEDICAL BRANCH.—Maj. G. D. Bateman, O.B.E., to be Lt.-Col., Nov. 21st, 1918.

Lts. to be Capts. :—H. B. B. Green, Aug. 12th; S. A. Nield-Faulkner, Aug. 14th.

R. W. Ryan is granted a temporary commission as Capt., Aug. 22nd.

Transferred to Unemployed List :—Lt. G. H. Johnson, July 1st; Maj. W. G. Mitchell, July 16th; Capt. P. O. Moffat, Aug. 9th; Lt. G. Bourne, Aug. 14th; Capt. A. Leitch, Aug. 15th; Lt. J. G. Bird, Aug. 24th.

Capt. C. P. Strong relinquishes his commission on account of ill-health, and is permitted to retain his rank, Aug. 22nd.

DENTAL BRANCH.—Lt. L. G. Smith to be Capt., July 1st.

MEMORANDA.—Sec. Lt. (Hon. Lt.) P. J. Burns to be Hon. Capt., June 19th.

The following Cadets are granted hon. commissions as Sec. Lts. :—178766 G. C. Allen, 179308 H. W. Ackroyd, 179326 H. W. Andreas, 175846 K. C. Aers, 176913 T. E. Archer, 178021 E. W. Blumley, 178096 F. O. Buss, 178513 T. A. Booth, 178569 J. R. Baillie, 178612 C. E. Barry, 179331 D. Bagnall, 176917 A. E. Burgess, 177951 A. H. Barnes, 178233 C. Bowlins, 178235 J. Boyd, 178337 E. J. Buckley, 178459 H. Burt, 177918 F. S. Colwell, 178042 N. C. Clark, 178463 S. M. Chisholm, 178617 T. Crosthwaite, 178771 G. B. Charlton, 128161 T. A. Clarke, 177656 C. P. J. Churton, 177769 W. H. Cooper, 177770 G. Cooper, 177916 C. R. Churns, 177917 R. J. A. Chandler, 177920 J. K. Conder, 178411 L. J. Cheshire, 178462 T. C. Coombe, 177775 R. H. Davison, 178524 E. R. Davy, 178622 J. P. Douglas, 178932 R. W. Davies, 175250 A. E. Davidson, 175737 B. C. Dion, 176652 F. W. Dibden, 177736 H. Daton, 178347 A. E. Don, 178415 A. R. Ellis, 178576 G. E. Edge, 178248 F. Fouler, 178350 S. R. Farrow, 178526 R. N. Frazer, 188203 R. C. Finlay, 177489 H. Forsythe, 177739 D. E. Francis, 178100 O. Furn, 178464 H. Frampton, 178354 E. J. George, 178355 W. M. Griffiths, 178465 C. W. Glendinning, 179038 T. S. Griffiths, 178416 C. C. Green, 178422 J. L. Hyland, 178469 H. C. Hawker, 178471 R. G. Hunt, 178581 G. W. Haig, 128640 F. W. Hollingworth, 176964 W. A. Hodgson, 177928 W. F. Henson, 178533 E. F. W. Hendrick, 137637 C. W. Ince, 177968 W. A. P. Jackson, 179053 J. J. Jones, 175649 C. J. Jones, 177889 C. E. Johns, 178363 B. A. Jamieson, 177969 F. P. Koester, 178476 H. Kitney, 178479 W. Leonard, 177433 G. C. B. Lloyd, 177536 J. Leggett, 177744 S. Lawson, 177745 W. F. Leach, 177788 J. Lawrence, 178425 D. S. Leonard, 177862 R. B. London, 177792 G. T. C. McGowan, 178268 A. A. McPherson, 178481 E. H. Maton, 178483 W. G. May, 175939 D. J. McDonald, 177793 J. Marshall, 177896 F. H. Maslin, 177933 E. F. Mumford, 177934 A. J. Matheson, 178316 W. A. Naylor, 170819 J. Naismith, 176109 A. T. Norris, 177638 R. E. Newman, 178374 W. Norris, 178486 B. Nessney, 177863 H. O'Neill, 178428 S. V. Offley, 178454 W. F. Oldridge, 178490 E. Page, 179259 H. G. H. Phipps, 179280 W. W. C. Peterson, 175144 A. C. D. Prall, 176361 F. Parker, 177832 W. H. G. Pick, 177902 R. S. Partridge, 177938 P. M. Pennyfather, 178489 G. T. F. Pearce, 178023 W. A. J. Reyell, 178206 G. R. Rowland, 178387 M. Rowley, 178433 G. M. Rose, 178389 E. D. Smith, 178400 G. Simpson, 178493 B. P. Smith, 177231 G. A. Sanderson, 177842 T. H. Searle, 178282 C. P. V. Tanner, 178285 A. L. Taylor, 178287 S. P. Thompson, 178436 R. A. R. Try, 178438 D. P. Tennant, 175666 I. Thomas, 176834 R. J. Taylor, 177472 J. Todd, 178439 N. Vyvyan, 178500 J. W. Vincent, 177240 S. W. Windsor, 177996 C. E. Wormald, 178837 A. E. White, 178093 J. F. Yorke, 178094 G. C. Young, 178506 S. E. Young, 128987 J. E. Young, Jan. 20th.

Capt. (actg. Maj.) W. C. Murray (temp. Dental Surgn., R.N.V.R.) relinquishes his commission on ceasing to be employed, Aug. 31st.

Transferred to Unemployed List :—Sec. Lt. E. Parkinson, May 22nd; Maj. O. G. G. Villiers, D.S.O., from (S.O.), June 30th; Sec. Lt. G. O. G. Burnett, Sec. Lt. E. E. Cannon, Aug. 14th; Lt.-Col. H. Campbell, D.S.O., O.B.E., from (S.O.), Aug. 15th.

AIR MINISTRY, August 29th.

The following officers and other ranks of the Royal Air Force (including *personnel*, Women's Royal Air Force) have been brought to the notice of the Secretary of State in respect of the valuable services they have rendered in connection with the war, and a note to this effect will accordingly be made in the Official Records :—

(*Continued.*)

9310 Actg. Sgt. A. C. Squirrell, 1995 C.M. R. A. Stacey, 2242 S.M.1 (T.) J. Stallard, 209141 Sgt.-Mech. A. A. Stanbridge, 19205 Sgt. F. Starkey, 79229 Sgt. H. Stebbings, 14117 Flt. Sgt. H. Stephenson, 206716 Sgt. Mech. A. Stevens, 75405 L.A.C. F. D. Stewart, 223141 Actg. Cpl. Mech. L. C. Stewart, 17318 Ch. Mech. W. F. Stewart, 29209 Ch. Mech. W. H. Storr, 138 Mas. Mech. R. Street, 13974 Flt. Sgt. E. W. J. Streetly, 214871 Sgt. P. E. Stubbs, 40841 Actg. Sgt. J. C. Suter, 293339 Actg. Clk. 2 W. H. Swan, 105283 L.A.C. J. V. Sykes, 72704 Sgt. F. Sylvester, 6515 Flt. Sgt. J. W. Sylvester, 18200 Flt. Sgt. R. Syme, 6198 S.M.1 F. W. Symons.

93483 Flt. Sgt. W. H. Tarrant, 8864 A.M.1 H. Tatton, 300237 Actg. Sgt. A. J. Taylor, 313274 Ch. Mec. H. Taylor, 313928 Cpl. Mech. H. Taylor, 8949 Ch. Mech. H. R. K. Taylor, 10963 Member Miss L. A. Taylor, 187229 Flt. Clk. L. R. Taylor, 48741 Sgt.-Maj. R. A. Taylor, 11925 Flt. Sgt. D. G. Templeman, 17676 Sgt. Maj. r H. Theobald, 221849 Flt. Sgt. D. R. Thom, 9244 Flt. Clk. G. E. Thomas, J.2207 Ch. Mech. (R.L.) H. Thomas, 209142 Ch. Mech. R. H. Thomas, 5444 Flt. Sgt. W. Thomason, M.M., 70611 Flt. Clk. A. J. Thompson, 206239 Flt. Sgt. A. S. Thompson, 401974 L.A.C. (actg. Cpl.) C. Thompson, 187172 Actg. Sgt. T. P. Thompson, 1418 Flt. Sgt. W. Thompson, 21055 Flt. Clk. J. A. Thomson, 218306 Sgt. Mech. H. G. Tiller, 306 Ch. Mas. Mech. D. G. Tindale, 8290 Member Miss E. E. Titterington, 314070 C.P.O. C. Todd, 205711 Cpl. E. Tonkin, 225546 Cpl. C. H. Tonks 16063 Actg. Ch. Mech. W. J. Toozes, 205707 Cpl. F. W. Torlot, 23344 Ch. Sec. Ldr. Miss F. A. Travis, 42894 Flt. Clk. P. V. Tree, 6656 Ch. Sec. Ldr. Miss L. M. Trusler, 302778 R.S.M. F. Truss, 1124 Ch. Sec. Ldr. Miss K. Tubb, 201547 Flt. Sgt. E. H. Tunnell, 112167 L.A.C. J. M. Turnbull, 17474 Sgt.-Maj. 2 W. G. Turner, 207068 Sgt. Mech. W. C. Turpin, 206004 Sgt. E. W. P. Tyrrell.

24954 Flt. Sgt. O. A. Usher.

35573 Flt. Sgt. J. Vale, 10012 Member Miss N. Van Loock, 12264 Flt. Clk. F. Venner, 220393 Cpl. A. H. Vickers, 8136 Actg. Spt. Ldr. Miss H. Vinogradoff.

200582 Ch. Mech. W. Wadlow, 313282 Actg. Flt. Sgt. J. Wailling, 407677 Flt. Sgt. F. Waite, 1212 Sgt.-Maj. 1 H. J. Wakeling, Can. 73645 Cpl. C. V. Wakely, 1714 Sgt.-Maj. C. G. Walker, 409837 Ch. Mech. D. J. Walker, 4322 Flight Sergeant F. S. Walker, 56011 Sergeant Mech. H. Walker, 214013 Cpl. S. Walker, 37624 Flt. Sgt. E. J. Walsh, 78674 Sgt.-Maj. 1 J. Wannop, S.R.18 Sgt.-Maj. 1 H. W. Warboys, 2169 Member Miss F. E. Ward, 8824 Member Miss L. M. T. Ward, 25760 Actg. Flt. Sgt. A. A. Warner, 314425 Flt. Sgt. F. W. H. Warren, 2157 T. Sgt.-Maj. E. C. Watson, 26286 Sgt. F. B. Watson, 65835 Sgt.-Maj. 1 C. E. Watts, 29192 Sgt. G. E. Watts, 57648 Sgt. W. E. Wears, 58717 Flt. Sgt. B. S. Webb, 408696 Flt. Sgt. A. P. Webley, 3095 Sgt. Mech. A. Webster, 2436 Sgt.-Maj. 2 W. Webster, 9525 Member Miss M. Weeks, 11929 Cpl. E. Wenband, 25142 Flt. Sgt. F. L. Wheeler, 37586 Ch. Mech. W. Whitaker, 1946 Ch. Sec. Ldr. Mrs. A. White, 212750 Sgt. D. D. White, 123534 L.A.C. L. S. Whitehead, 202542 Flt. Sgt. F. H. Whiteley, 230687 A.C.1 A. W. Whiting, 21210 Clk. 1 L. A. Whitty, 203768 Cpl. G. F. Wicks, 11621 Sgt.-Maj. L. M. Wiertz, 1913 Ch. Sec. Ldr. Miss B. Williams, 6234 T. Sgt. Maj. H. A. Williams, 70714 A.M.1 H. C. Williams, 228763 Sgt. Clk. J. W. Williams, 51092 Flt. Sgt. R. J. Williams, 75269 Sgt. W. E. Williams, 8707 Flt. Sgt. S. Wiliamson, 19111 Sgt.-Maj. F. Willis, 313297 Flt. Sgt. F. G. Wilmot, 18810 Sgt. Mech. E. Wilmot, 14279 Ch. Mech. J. A. Wilson, 1437 L.A.C. R. W. Wilson, 47157 A.M.1 A. A. Wiltshire, 226532 Sgt. H. Winchester, 1098 Sgt.-Maj. 1 S. V. Winney, 12236 Ch. Sec. Ldr. Miss E. A. Winspear, 210392 Actg. Clk. 1 T. R. Winter, 9719 Sgt.-Maj. 1 E. A. Withers, 232830 A.M.2 A. T. Wood, 14758 Flt. Sgt. E. Wood, 7296 Sgt.-Maj. 1 H. Wood, 7823 Sgt. S. A. J. Wood, 31 Snr. Ldr. Mrs. V. N. M. Wood, 36738 Sgt.-Maj. A. W. Woodgate, 263679 Cpl. H. Woodhead, 2878 Ch. Sec. Ldr. Miss C. I. Wooding, 5759 Sgt. C. Woolrow, 112745 L.A.C. G. F. Woolaston, 1744 Ch. Sec. Ldr. Miss R. Woolfe, 29076 Sgt.-Maj. 1 R. N. H. Workman, 201765 Sgt. J. Wrenn, 13057 Sgt.-Maj. 1 C. H. Wright, 4374 Ch. Sec. Ldr. D. M. Wright, 8472 Actg. Sgt.-Maj. 2 F. N. Wycherley.

21440 Sgt. T. E. Yates, 6735 Flt. Sgt. S. Young.

CIVILIAN STAFF.

The following members of the civilian staff employed by, or serving in connection with, the Air Ministry, have been brought to the notice of the Secretary of State in respect of valuable services rendered in connection with the war :—

Mr. H. H. Adams (Thornton Heath), Mr. W. E. Boyce (Paddington), Mr. H. H. Chapman (West Croydon), Dr. W. C. Collins, M.D. (Chester), Mr. J. Cooke (Upper Holloway), Mr. U. Cooke (Biggin Hill), Mr. F. J. T. Cooper (Balham), Mr. V. Cozens (Newlyn), Mr. C. W. Crosbie (Bedford), Mr. H. C. Dwelly (Stoke Newington), the Rev. G. Frazier-Upton (A./Chaplain) (Coventry), Mr. J. S. Grosvenor (Kingston-on-Thames), Mr. V. C. Mountfort (Streatham Hill), Mr. W. R. Parker (Lewisham), Mr. R. C. Pearce (Battersea, S.W.), Mr. F. S. Rae (Battersea Park), Mr. G. R. Richardson (Surbiton), Mr. H. Russell (Upper Walthamstow), the Rev. W. G. Spurrell, M.A. (Actg. Chaplain) (Pembroke), Mr. S. Stephens (Cattewater), Mr. C. E. Stevens (Uxbridge), Mr. H. M. Stretch (Romanlea, Berks.), Dr. H. M. Thomas, L.R.C.P., M.D. (Fishguard), Mr. W. Williams (Streatham Hill).

Mrs. D. M. Alban (Blackheath), Misses F. A. Anscombe (West Kensington), J. Armstrong (Palmers Green, N.), Mrs. L. Aston (Uxbridge), Misses E. H. Attwood (Canada), K. Barry (Thornton Heath), Mrs. Bedford (Barnes), Misses A. Bennett (Wanstead), E. D. Bircumshaw (Wimbledon), A. Boisseau (Canada), Mrs. C. E. Bond (Leyton, Essex), Mrs. A. R. Broughton (Canada), Misses F. E. Branchflower (Leytonstone), B. J. Burch (Salisbury, Wilts), O. Callender (Surbiton), O. E. Cardew (East Dulwich), B. R. Chapman (Hyde Park, W.), N. W. A. Chard (Crawley, Sussex), E. V. Cheney (East Ham), G. Clarke (Kensington, W.8), D. A. E. Cole (Portman Square, W.), I. Collins (Canada), G. M. Dellagana (Brondesbury Park), D. E. Dunn (Bloomsbury, W.C.), M. Dwyer (Canada), Mrs. M. Elderton (Canada), Miss K. Farber (Canada), Mrs. G. G. Finn (Barnes, S.W.), Misses I. W. Fitzwilliam (Jermyn Street W.), K. F. Forsdyke (Broomwood Road, S.W.), F. Francis (Brompton Road, S.W.), B. Gearge (Canada), B. Gibbon (Ripon, Yorks.), E. M. Gibbons (Sutton, Surrey), E. M. Glendenning (Hampstead, N.W.), G. M. Godsal (St. Mary's Mansions, W.), Mrs. F. M. Gooch (East Ham), Mrs. N. Gordon (Canada), Mrs. E. E. Green (Ealing), Mrs. D. Greenall (Reading), Misses L. Groom (Wallington), D. Hale (S. Lambeth), M. Hannant (Canada), H. Harding (Highbury, N.), E. Harker (Canada), Lady Harrowby (Grosvenor Place, W.), Misses H. I. Hartley (W. Hampstead), F. L. Hayward (Surbiton), L. A. Heritage (Streatham), Mrs. E. G. Hingston (Brompton Road, S.W.), Mrs. M. M. Hodgson (Streatham), Mrs. E. Hogan (Canada), Miss G. M. Hood (Kingston-on-Thames), Mrs. F. C. Holloway (61, Lexham Gardens, W.), Misses B. E. M. Hubbard (Naughton, Suffolk), E. Hughes (Chelsea, S.W.3), A. B. Hyam (New Cross), M. I'Anson (Walthamstow), A. L. Jarvis (Canada), Mrs. M. Johnson (Canada), Misses N. M. Jones (Golder's Green), G. J. Keogh (Forest Gate), Mrs. M. Kimpton (Canada), Mrs. A. E. King (Shepherd's Bush), Misses E. E. King (Hampstead, N.W.), E. M. King (Canada), G. E. Knight (Gloucester Road, W.1).

Misses C. Lamb (West Hampstead), D. C. Lawman (Upper Tooting, S.W.), L. E. Lawrence (Westminster), C. McChesney (Ealing), E. J. McClellan (Canada), D. McCoy (Stamford Hill), E. Macdonald (Canada), L. G. McGuffin (Canada), P. MacKinnon (Grays, Essex), Mrs. T. McRae (Canada), Misses C. Macklin (East Ham), M. Maloney (Canada), E. Marshall (Canada), E. F. M. Marwood (Wandsworth), M. A. Matthew (Westminster), H. May (Canada), M. L. Meehan (Canada), Mrs. A. M. Megaw (Cleveland Gardens, W.), Misses K. Melville (Canada), D. I. Millard (Hornsey), Matron Miss V. G. Milman (Blandford), Mrs. L. E. Milroy (Hanover Square, W.), Mrs. M. G. Mogridge (Wimbledon Park), Mrs. G. Montagne, (Brixton Hill), Misses L. M. H. Nash (Hampstead), B. M. Nelson (Canada), Mrs. G. Norman (Bayswater, W.), Misses H. E. Norman (London, E.), M. Nott-Bower (Richmond), A. O'Brien (Canada), O. M. Ormsby (Canada), P. W. Osborne (Streatham), D. Parry (Finsbury), Mrs. L. M. Parsons (Canada), Mrs. G. E. Pearce (Forest Gate, Essex), Mrs. C. Perry (Marylebone, N.W.1), Misses G. E. Rafter (Canada), A. Ratcliffe (Canada), Mrs. D. W. Read (Streatham), Misses M. Ryder (Tooting, S.W.), G. L. Robarts (Welwyn, Herts), E. B. Sandford (Paddington), A. Sandys (Yatesbury), N. Schofield (S. Croydon), D. F. Snow (Canada), Mrs. J. Spencer (Mornington Crescent, N.W.), Mrs. L. M. Stacey (N. Kensington), Miss E. Steele (Canada), Mrs. J. I. Strachan (Muswell Hill, N.), Misses K. M. Tackaberry (Canada), A. Tandy (Sheffield), V. R. Thompson (Dublin), Mrs. M. A. Thierry (Oxford Gardens, W.), Misses D. Threlkeld (Canada), V. S. Torckler (E. Molesey), C. W. Turner (London, E.17), Mrs. A. M. Upton (Myatt's Park, S.E.), Miss I. Vallee (Canada), Mrs. M. Vandyke (Canada), Miss C. M. Vincent (Stoke Newington), Mrs. L. A. Vine

(Hampstead), Mrs. G. Webster (Canada), Mrs. M. Weiss (Canada), Misses C. A. J. West (Streatham, S.W.), L. L. White (Highbury, N.), Mrs. A. Whitecross (Wimbledon Park), Misses D. V. Wiffin (Southfields, S.W.), H. M. F. Windle (Chelsea), H. Woodruff (Canada).

AIR MINISTRY, Sept. 2nd.

R.A.F.—The following temp. appointments are made at the Air Ministry:—Staff Officer, 2nd Class (P.).—Sqdn. Ldr. J. H. Liddendale, from (S.O.), 1st Class, Sept. 1st.

Staff Officer, 3rd Class (Air).—Lt. R. V. Bramwell-Davis, Sept. 1st, vice Lt. R. C. Cox.

The following temp. appointment is made:—Staff Officer, 1st Class (P.)—Lt.-Col. C. T. Maclean, D.S.O., M.C., Aug. 19th (substituted for the notification in "Gazettes" of Aug. 19th and 26th).

The following temp. appointment is made (graded for purposes of pay at Air Ministry rates):—Staff Officer, 2nd Class (T.).—Capt. R. G. Parry, D.S.O., and to be actg. Maj. whilst so employed, Aug. 9th.

The notification in "Gazette" of Aug. 15th concerning Capt. V. Buxton is cancelled.

FLYING BRANCH.

Maj. (actg. Lt.-Col.) F. W. Lucas to be Maj. (A'ship) and relinquishes the actg. rank of Lt.-Col. on ceasing to be employed as Lt.-Col., Aug. 2nd.

Lt. R. H. Stocken is graded for purposes of pay and allowances as Capt. whilst employed as Capt. (A.), May 1st.

Lt. G. H. Langley is graded for purposes of pay and allowances as Capt. (without flying pay) whilst employed as Capt. (A.), May 1st.

The following Sec. Lts. (late Gen. List, R.F.C., on prob.) are confirmed in rank as Sec. Lts. (A.):—C. W. Kerr, July 5th, 1918, G. E. Leaman, Aug. 31st, 1918, G. L. Ross, Sept. 1st, 1918.

P.F.O. R. H. Barker (late R.N.A.S.) is granted a temp. commission as Sec. Lt. (A.), July 18th, 1918.

The following relinquish their commissions on reversion to I.A.R.O.: Lt. E. A. Floyer, M.C., March 17th, Lt. F. C. C. Yeats-Brown, Aug. 13th.

The following relinquish their commissions on ceasing to be employed:—Sec. Lt. C. F. Williams (Sec. Lt., R. Highrs.), April 1st. Lt. (Hon. Capt.) W. T. Wood (Capt., Nova Scotia R.), April 14th, Lt. F. C. J. Whigham (Lt., Sask. R.), April 27th, Sec. Lt. W. W. Honywood (Lt., Lrs.), June 6th, Lt. D. W. Davis (Capt., Sask. R.), June 11th, Lt. F. J. Gill (Lt., K.R.R.C.), June 30th; Lt. G. L. Shephard (Lt., E. Ont. R.), July 9th, Lt. J. V. Bowring (Sec. Lt., S. Lancs R.), July 30th, Sec. Lt. T. S. Duddy, M.C., D.C.M. (Sec. Lt., Durh. L.I.), Aug. 11th, Sec. Lt. (Hon. Lt.) H. W. Pearson (Lt., Can. M.G.C.), Aug. 12th, Maj. C. H. Stringer (Capt., R. Irish Lrs.), Aug. 13th, Lt. F. A. Garwood (Lt., Bedf. R.), Aug. 19th, Lt. F. Hotrum (Lt., Can. M.G.C.), Aug. 22nd.

Transferred to unempld. list:—Lt. H. Arkell, Feb. 7th (substituted for notification in "Gazette" of March 11th); Capt. H. R. Aird, Feb. 17th (substituted for notification in "Gazette" of Aug. 29th); Lt. C. Hayward, May 4th; Sec. Lt. L. G. Crossby, May 21st.

The following Lts. relinquish their commns. on account of ill-health and are permitted to retain their rank:—C. Kennard (contracted on active service), March 30th (substituted for notification in "Gazette" of Jan. 7th); A. R. Metelerkamp, June 22nd (substituted for notification in "Gazette" of May 23rd); R. M. Tate (contracted on active service), Aug. 22nd; G. H. Jacob (caused by wounds), Aug. 27th.

The following relinquish their commns. on account of ill-health:—Lt. C. Geen (Lond. R.), July 28th (substituted for notification in "Gazette," March 11th); Sec. Lt. R. H. Harlow.

Sec. Lt. W. V. Wright resigns his commn., Jan. 27th (substituted for notification in "Gazette," Nov. 8th, 1918).

Sec. Lt. (Hon. Lt.) C. M. Moore to take rank and prec. as if his appointment as Sec. Lt. bore date Feb. 7th.

The surname of Sec. Lt. L. P. Boudler is as now described, and not "Boulder," as stated in "Gazette," May 30th.

The surname of Sec. Lt. (Hon. Lt.) R. S. Blucke is as now described, and not "Blacke," as stated in "Gazette," April 15th.

The initial of Sec. Lt. W. Long is as now described, and not "L. W.," as stated in "Gazette," April 15th.

The surname of Sec. Lt. F. Gouthro is as now described, and not "Guthro," as stated in "Gazette," April 15th.

The initials of Lt. (Hon. Capt.) A. W. B. S. F. Bloy are as now described, and not as stated in "Gazette," July 29th.

The initials of Lt. H. G. Lomberg are as now described, and not as stated in "Gazette," July 29th.

The initials of Lt. W. T. S. Lewis are as now described, and not "W. T.," as stated in "Gazette," April 1st.

The initials of Sec. Lt. K. H. Ashton are as now described, and not "K.," as stated in "Gazette," April 29th.

The notification in "Gazette," Jan. 31st, concerning Sec. Lt. W. J. Griffiths is cancelled.

The notification in "Gazette," April 1st, concerning Lt. E. C. Hoar is cancelled.

The notification in "Gazette," April 15th, concerning Lt. (Hon. Capt.) W. T. Wood is cancelled.

The notification in "Gazette," April 18th, concerning Sec. Lt. J. Hamilton is cancelled.

The notification in "Gazette," May 1st, concerning Lt. H. A. Hannay is cancelled.

The notification in "Gazette," June 6th, concerning Lt. F. C. J. Whigham is cancelled.

The notification in "Gazette," July 11th, concerning Lt. F. Adams is cancelled.

The notification in "Gazette," July 15th, concerning Sec. Lt. J. G. Crossley is cancelled.

The surname of Lt. C. M. Holbrook is as now described, and not "Holbrooks," as stated in the "Gazette" of Aug. 19th.

The notification in the "Gazette" of July 18th concerning Lt. G. L. Shepherd (Lt., W. Ont. R.) is cancelled.

The notification in the "Gazette" of Aug. 5th concerning Sec. Lt. C. R. Fraser is cancelled.

ADMINISTRATIVE BRANCH.

Lt.-Col. (actg. Col.) F. H. G. Playfair relinquishes the actg. rank of Col. on ceasing to be empld. as Col., Aug. 1st.

Capt. H. C. Jones is graded for pay and allowances as Maj. whilst empld. as Maj., May 1st.

Capt. R. L. S. Raffles to be Capt., from (S.O.), Aug. 16th.

Lt. A. W. Rouse to be actg. Capt. whilst empld. as Capt., from March 9th to April 30th.

The following Lts. are graded for purposes of pay and allowances as Capts. whilst empld. as Capts.:—A. W. Rouse, May 1st; H. L. McNaughton, July 2nd.

The following Sec. Lts. are graded for purposes of pay and allowances as Capts. whilst empld. as Capts.:—C. W. Probets, May 1st; W. R. Castings, May 11th.

Lt. T. T. Pickup to be Lt., from (S.O.), Aug. 14th.

Sec. Lt. T. F. Aitchison to be actg. Lt. whilst empld. as Lt., from Nov. 2nd, 1918, to April 30th.

The following Sec. Lts. are graded for pay and allowances as Lts. whilst empld. as Lts.:—T. F. Aitchison, C. W. Braddy, May 1st.

Sec. Lt. (Hon. Lt.) L. S. Dell (Lt., R.F.A.) relinquishes his commn. on ceasing to be empld., July 2nd (substituted for notification in the "Gazette" of June 27th).

Transferred to unempld. list:—Lt. E. C. Hoar, Feb. 23rd; Lt. H. A. Hannay, May 15th; Sec. Lt. E. W. Thomson, July 12th (substituted for notification in the "Gazette" of July 29th); Lt. M. J. Dalton, July 26th (substituted for notification in the "Gazette" of March 11th).

Lt. P. A. Katte is dismissed the Service by sentence of a General Court-Martial, Aug. 13th; Sec. Lt. (Hon. Maj.) J. L. McLean (R.A.S.C., T.F.) relinquishes his commn. on account of ill-health, Aug. 31st.

The initials of Lt. W. B. Maitland, D.S.O., are as now described, and not "D. B.," as stated in the "Gazette" of April 25th.

The rank of Lt. J. C. Bain is as now described, and not "Sec. Lt. (Hon. Lt.)," as stated in the "Gazette" of April 18th.

The initial of Sec. Lt. J. Mann is as now described, and not "T.," as stated in the "Gazette" of May 6th.

The notification in the "Gazette" of July 15th concerning Sec. Lt. W. H. Dibben is cancelled.

TECHNICAL BRANCH.

Lt. R. J. Sladden, M.B.E., D.C.M., to be actg. Capt. whilst empld. as Capt., Grade (A), from Feb. 15th to April 30th.

Lt. R. J. Sladden, M.B.E., D.C.M., is graded for purposes of pay and allowances as Capt. whilst empld. as Capt., Grade (A), May 1st.

Lt. W. S. Harms is graded for purposes of pay and allowances as Capt. whilst empld. as Capt., Grade (B), May 1st.

Lt. H. E. Hazlehurst relinquishes the grading for purposes of pay and allowances as Capt. on ceasing to be empld. as Capt., Aug. 21st.

Lt. H. Hoad to be Lt., Grade (A), from Grade (B), Aug. 12th.

Lt. R. A. Knott to be Lt., Grade (B), from (A'Shp.), Aug. 18th.

The following Sec. Lts. are graded for purposes of pay and allowances as Lts. whilst empld. as Lts., Grade (A):—S. E. Castle, Dec. 24th, 1918; E. O. Brown, Feb. 1st.

Sec. Lts. to be Lts.:—(Hon. Lt.) H. Allsebrook, April 2nd, 1918 (without pay and allowances prior to June 21st, 1918); J. Mytton, March 27th.

Sec. Lt. E. W. Hooton-Smith relinquishes the grading for purposes of pay and allowances as Lt. on ceasing to be empld. as Lt., Aug. 16th.

Maj. S. J. Lacey, O.B.E. (Shipwright Lt. Comdr., R.N.), relinquishes his commn. on ceasing to be empld., March 29th (substituted for notification in the "Gazette" of May (th).

Transferred to unempld. list:—Sec. Lt. (Hon. Lt.) W. H. Parker, May 6th (substituted for notification in the "Gazette" of May 20th); Sec. Lt. F. Adams, June 13th.

Sec. Lt. W. H. Hallett-Carpenter relinquishes his commn. on account of ill-health, and is granted the rank of Capt., Aug. 23rd.

Lt. T. J. Stannage relinquishes his commn. on account of ill-health, and is permitted to retain his rank, July 18th (substituted for notification in the "Gazette" of March 25th).

The initials of Sec. Lt. (actg. Lt.) H. D. Oliver are as now described, and not "D.," as stated in the "Gazette" of April 4th.

The notification in the "Gazette" of Aug. 19th concerning Lt. G. A. Harrison is cancelled.

MOTOR BOAT BRANCH

Lt. G. A. Harrison is transferred to unempld. list, July 23rd.

PHYSICAL TRAINING BRANCH.

Lt. K. S. Hunter (Lt., Dn. Gds.) resigns his commn., Sept. 3rd.

MEDICAL BRANCH.

Capt. (actg. Maj.) A. P. Bowdler to be actg. Lt.-Col. while so empld., Aug. 1st.

Lts. to be Capts.:—H. F. Squire, June 18th; J. J. O'Mullane, July 15th; E. H. L. Le Clezio, July 29th; N. Rumboll, Aug. 14th; V. A. T. Spong, Aug. 19th.

The following Capts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—T. E. Mulvany, Aug. 13th (substituted for notification in the "Gazette" of Aug. 15th); E. H. Hogg, Aug. 22nd.

Capt. A. Gleeson (Capt., R.A.M.C.) relinquishes his commn. on account of ill-health contracted on active service, June 5th.

CHAPLAINS BRANCH.

Rev. H. Beauchamp, M.C. (T./Chapln. to the Forces, 3rd Class, R.A.D.C.), is granted a temp. commn. as Chaplain with the relative rank of Capt. (R.C.), July 26th.

MEMORANDA.

The following Cadets are granted hon. commns. as Sec. Lts.:—181036 G. Campbell, Jan. 6th; 177149 A. E. Ayling, 177912 W. E. Allkins, 179187 R. Bowman, 176861 K. Blackborough, 177563 J. T. Burchell, 177731 S. Berry, 177786 C. W. M. Brown, 177850 A. A. Binning, 178405 T. H. F. Burdett, 178517 L. L. Barnard, 178807 R. Coffin, 179097 C. H. Campbell, 175909 H. W. Cook, 177733 G. S. Caston, 177752 A. H. T. Castell, 177768 T. H. Cotton, 177809 H. Chantry, 177812 G. D. Cleland, 178237 F. W. Crosier, 178412 J. R. Cross, 178633 P. H. Catrick, 137631 W. S. Duncan, 177735 A. Dean, 177774 J. F. Duckworth, 177884 F. A. Dunwoody, 178348 L. W. Dickinson, 177922 C. M. Ellerby, 178244 H. Evans, 137730 R. Fenn, 175953 F. Fairbrother, 177781 L. Findlay, 177816 H. H. Fast, 177925 C. L. Freeman, 178046 F. C. Fieldsend, 179340 C. P. Garner, 176088 E. G. Gough, 176399 R. S. Greethead, 176414 R. J. Griffiths, 176771 J. P. Gevers, 176903 J. Gibson, 177052 F. W. Goddard, 177740 S. Geddes, 177926 E. A. A. Graves, 178049 A. H. Gould, 178418 F. E. B. Gourley, 178467 C. G. Godfrey, 178754 T. W. Garden, 179304 F. S. Humbey, 137635 A. L. Hill, 176675 P. E. Hornby, 177783 W. C. Holmes, 177887 H. E. Hammett, 178582 S. R. Holt, 179101 H. Harris, 178628 R. Jones, 117930 B. N. Jackson, 118116 E. A. Jefferson, 177112 C. W. M. Jenner, 178473 T. V. Jakob, 178537 F. W. Jones, 175395 D. W. T. Jenkins, 175648 G. F. Johnson, 178540 S. Kitchinson, 176421 W. E. Knowles, 178542 W. Loew, 178477 H. Lyon, 178630 J. Lockheart, 175892 M. Marston, 175906 H. F. Musson, 176263 J. Middleton, 176696 A. G. McPherson, 177790 H. G. Martin, 177859 A. E. Moon, 177892 S. W. Marsland, 177931 A. E. Mulford, 178371 T. L. E. Morley, 178484 G. Maynard, 178587 H. B. Mason, S/21125 J. Marnock, 176941 H. W. McCutcheon, 178265 R. G. McDonagh, 178607 R. N. S. Morgan, 177794 W. S. Norris, 177899 G. B. North, 177900 F. C. W. Nott, 177936 G. D. Newman, 178516 R. V. W. Newton, 177867 E. H. Owen, 178697 L. H. Orford, 176364 S. F. D. Perrott, 178273 H. C. Pearce, 178274 J. P. Petley, 177545 N. E. S. Pilcher, 179071 G. F. Ricks, 177341 F. C. Ridoubt, 177755 F. G. Richardson, 178385 R. R. Rennie, 177758 T. P. Shaw, 177870 J. Shenton, 177995 A. H. C. Sheffield, 176373 J. B. Simpson, 176830 L. Staniforth, 172686 J. Tulley, 177131 J. H. Williams, Jan. 20th; 179701 R. E. Brittain, 142280 H. Barry, 178040 S. L. Clarke, 175512 C. L. Eggington, 179791 F. Fisher, 177732 J. Crowcott, 178755 W. M. Heap, 178470 D. J. D. Henderson, 178362 W. E. Hardy, 179345 F. G. Hamilton, 179740 L. L. Hanks, 179843 J. E. Hurst, 175126 H. R. Harris, 179346 P. Holden, 179403 J. V. Howie, 175603 F. T. W. James, 179351 J. G. Johnston, 178360 J. E. Jones, 178629 R. Kerr, 179743 A. C. J. Kelly, 137576 A. M. R. Letts, 179746 E. V. S. Lacey, 176733 P. L. Morgan, 177377 R. P. Martin, 179360 H. E. Murray, 179406 D. R. McFarlane, 183352 G. L. Mathieson, 179448 D. I. R. Martin, 177749 D. R. McKay, 17925 C. F. North, 178997 G. Powley, 179069 R. P. Powrie, 179103

A. V. Phillips, 179370 G. K. Robertson, 177551 G. M. F. Sollar, 178450 H. A. Smith, 179110 T. Stewart, 179283 A. W. Starey, 179374 J. H. Smith, 137112 J. Sturdy, 179084 W. M. Scott, 179221 R. H Skinner, 179321 G. G. Sanderson, 179372 E. Smith, 179761 S H. Smith, 179177 H. J. Trethewy, 178279 W. B. Taylor, 178962 F. D. Turner, 179416 G. A. Taylor, 177805 J H. Williams, 177678 E Wilkinson, 178444 R. Williamson, 179033 S Walker, 179183 J. C. Wood, 179384 A. E. R. Willis, 179385 H. S. Walker, 179518 E. J. Whitefield, 179765 H. W. Wilson, 179268 H. A. Warburton, 179382 E. Wright, 179585 W. T. Wilson, 179485 L. R. Williams, Jan. 28th; 179186 W. J. Adams, 179391 J. Barber, 178231 T. H. E. Betts, 177885 R. Day, 175181 A. W. Evans, 177591 S. W. Gough, 178918 C. E. Gill, 178078 R. A. Hambling, 178985 R. C. J. Holding, 137702 D. E. Jowitt, 178739 E. F. Keal, 177462 W. Leck, 179355 W. Littler, 137413 F. Lord, 137759 L. T. Lees, 179209 H. G. Mills, 179753 F. H. Masser, 137710 F. J. Peters, 128908 J. W. Roberts, 179074 L. H. Radcliffe, 179411 C. Rhodes, 25653 D. Rowe, 175461 J C. Renwick, 179081 T. Somerville, 179262 H. Sargood, 179288 G. W. Strathmann, 175623 M. W. Stubbs, 178404 F. I. Teckwell, 178303 B. H. West, 179420 H. S. Wedgbury, 175303 R. Walne, Jan. 29th; 176802 D. F. Potter, March 9th

Lt.-Col. E. H. Griffith, O.B.E. (Maj. (Lt.-Col.), retd. pay), relinquishes his commn. on ceasing to be empld, and is permitted to retain his rank, Aug. 19th.

Capt. G. S. Ridgway (Lt., R.N.) relinquishes his commn. on ceasing to be empld, July 1st.

Temp. Hon. Lt. W. Bryson relinquishes his commn. on ceasing to be empld., April 30th.

AIR MINISTRY, September 5th.

R.A.F.—PERMANENT COMMISSIONS.—The notification appearing in "Gazette," Aug. 1st, appointing the following officers to permanent commns. is cancelled:—Lt.-Col. R. G. Cherry, M.C., Lt.-Col. W. H. C. Mansfield, D.S.O., Maj. K. R. Binning, M.C. (A.), Maj. R. A. Chalmers, O.B.E., A.F.C. (A.), Maj. G. Henderson (A.), Maj. C. M. Murphy (A.), Maj. H. A. Van Ryneveld, D.S.O., M.C. (A.), Capt. F. M. P. Barrington (A.), Capt. C. Cooper (A.), Capt. R. B. C. M. T. de Poix (S.O.), Capt. E. de C. Hallifax, D.S.O. (A. and S.), Capt. D. R Hanlon (A.), Capt. G. H. A. Hawkins (S.O.), Capt. F. P. Holliday, D.S.O., M.C. (A.), Capt. H. W. G. Jones, M.C. (A.), Capt. E. L. Oliver, M.C. (A.), Lt. E. O. L. Bell (Ad.), Lt. M. A. Benjamin, M.C. (S.O.), Lt. G. B. Booth (Ad.), Lt. C. S. Fulton (S.O.), Lt. G. W. N. R. Haynes (A.), Lt. C. H. Noble-Campbell, A.F.C. (A.), Lt. C. D. Skinner (A.), Lt. B. S. Wilcox, D.F.C. (A.).

The initials of Lt. W. J. King are as now described, and not W. J. N. as in "Gazette," Aug. 1st, and his classification is "T." and not "S.O." as in "Gazette," Aug. 1st.

The surname of Capt. W. R. D. Acland (A.) is as now described, and not Ackland as in "Gazette," Aug. 1st.

The surname of Lt. C. F. B. Bassill (T.) is as now described, and not Basil, as in "Gazette," Aug. 1st.

The surname of Capt. E. A. Beaulah (S.O.) is as now described, and not Beulah as in "Gazette," Aug. 1st.

The surname of Capt. H. F. Delarue (A. and S.) is as now described, and not Delarne as in "Gazette," Aug. 1st.

The surname of Lt. M. H. Findlay, D.S.C., D.F.C. (A.), is as now described, and not Findley, as in "Gazette," Aug. 1st.

The surname of Lt. L. E. M. Gillman (S.O.) is as now described, and not Gilman, as in "Gazette," Aug. 1st.

The surname of Capt. E. J. Hodsoll (S.) is as now described, and not Hodsell as in "Gazette," Aug. 1st

The surname of Lt. R. E. Keys, D.F.C. (A.) is as now described, and not Keyes, as in "Gazette," Aug. 1st.

The initial of Lt. J. McBain, D.F.C. (A.), is as now described, and not "L." as in "Gazette," Aug. 1st.

The initials of Lt. A. B. Raymond-Barker (A.) are as now described, and not "B." as in "Gazette," Aug. 1st.

The initials of Capt. C. S. Richardson, M.B.E. (Ad.) are as now described, and not as in "Gazette," Aug. 1st.

The classification of Lt. D. S. Robertson is "O.," and not "A.," as in "Gazette," Aug 1st.

The initials of Maj. R. P. Whitehead (A. and S.) are as now described, and not "R.," as in "Gazette," Aug. 1st.

The initial of Lt. J. Whitford (A.) is as now described, and not "L." as in "Gazette," Aug. 1st.

The surname of Lt. A. T. Wynyard-Wright (S.O.) is as now described, and not "Wynward-Wright" as in "Gazette," Aug 1st.

The surname of Lt. W. J. Millen (A.) is as now described, and not "Millan" as in "Gazette," Aug. 1st.

The surname of Lt. A. G. Peace (A.) is as now described, and not "Pearce," as in "Gazette," Aug. 1st.

The surname of Maj. E. L. Millar, M.B.E. (A.), is as now described, and not "Miller," as in "Gazette," Aug. 1st.

The following temp. appointment is made at the Air Ministry:—Staff Officer, 3rd Cl.—(P.).—Flight Lt. G. W. Dobson, O.B.E., Aug. 31st, from S.O.2, vice Flight Lt. H. S. Neville.

The following temp. appointment is made:—Staff Officer, 3rd Cl. (Q.).—Flying Officer C. E. Hodgson, M.B.E., from S.O.2, Aug. 15th.

The surname of Sqdn. Ldr. J. H. Lidderdale is as now described, and not "Liddendale" as stated in "Gazette," Sept. 2nd.

FLYING BRANCH.—Sec. Lts. to be Lts.:—H. F. Griffith, May 8th, 1918; P. Segrave (since killed), Oct. 26th, 1918; Hon. Lt. T. S. Campbell, Nov. 9th, 1918.

The following relinquish their commns. on ceasing to be empld.:—Lt. F. R. McCall, D.S.O., M.C., D.F.C. (Capt., Alberta R.), June 23rd; Sec. Lt. (Hon. Lt.) G. F. Antell (Lt., Can. Ord. Corps), June 30th; Sec. Lt. A. Woolsey (Lt., Northants R.), July 16th; Sec. Lt. (Hon. Lt.) P. W. Fox (Lt., Brit. Columbia R.), Aug. 28th.

Transferred to the unempld. list:—Sec. Lt. E. V. Boyd, Sec. Lt. W. G. Burns, Sec. Lt. W. B. Fry, Feb. 1st; Lt. R. F. W. Sheraton, Feb. 2nd; Sec. Lt. G. A. R. Hill, Feb. 14th; Sec. Lt. F. W. Elliott, Sec. Lt. T. B. Shepherd, Feb. 28th; Lt. W. R. K. Skinner, March 2nd; Sec. Lt. C. G. H. C. Thomas, March 4th; Lt. A. W. Sharp, March 5th; Sec. Lt. D. Rose, March 6th; Sec. Lt. G. F. Mack, March 8th; Sec. Lt. C. A. Craig, March 15th; Lt. G. B. S. Thompson, March 17th; Lt. W. M. Smith, March 21st; Lt. R. H. Marshall, March 31st; Lt. A. Moore, April 3rd; Sec. Lt. R. F. Hammond, Sec. Lt. S. D Hutchinson, April 10th; Sec. Lt. R. G. Scott, Sec. Lt. J. W. Jakes, Lt. H. Tasker, April 13th; Lt. H. J. Sparks, M.C., April 16th; Sec. Lt. M. Tison, April 17th; Sec. Lt. W. D. Straight, Lt. L. J. A. Tapper, April 18th; Sec. Lt. G. G. Dow, Sec. Lt. G. H. Lunn, Lt. W. B. Sullivan, April 19th; Sec. Lt. (Hon. Lt.) R. Bowman, Lt. (actg. Capt.) W. L. Douglas, Sec. Lt. R. Kelly, Sec. Lt. A. D. Kemp, Sec. Lt. R. A. Rutter, Lt. L. H. Scott, M.C., Sec. Lt. J. S. Shortt, Sec. Lt. W. W. R. Watson, April 20th; Sec. Lt. W. H. Thomas, April 21st; Lt. C. W. Thomas, April 24th; Sec. Lt. H. F. Turner, April 25th; Sec. Lt. M. G. Stewart, April 26th; Sec. Lt. F. R. Chapman, Sec. Lt. C. W. Gill, Sec. Lt. F. R. James, Sec. Lt. H. Stirrup, April 29th; Lt. C. E. Ogden, May 1st; Lt. S. Hill, Sec. Lt. A. B Newman, Lt. B. E. Turney, May 2nd; Sec. Lt. C. A. Lovell, Sec. Lt. H. C. Sparks, May 8th; Sec. Lt. J. Town, May 10th; Capt. F. H. E. Kolligs, Lt. F. G. M. Sparks, May 12th; Sec. Lt. V. P. B. Thomas, Sec. Lt. C. W. Sutcliffe, Sec. Lt. L. C. Taylor, May 15th; Sec. Lt. C. L. Hicks (substituted for notification in "Gazette," June 17th); Sec. Lt. W. P. Loomis, Lt. T. V. Lord, Lt. E. C. Robinson, Sec. Lt. M. C. Sherwood (substituted for notification in "Gazette," May 20th), May 20th; Lt. H S. Terrell, May 26th; Lt. E. A. Elliott, May 27th; Sec. Lt. R. A. H Shelford, May 31st; Sec. Lt (Hon. Capt.) L. R. Hibbert, Lt. E. D. Jennings, June 4th; Sec. Lt. A. Taylor, June 7th, Lt. G. G. Williams, June 8th, Sec. Lt. J. Graham, D.F.C., June 11th; Sec. Lt. C. E. Tearne, June 12th; Sec. Lt. W. J. Griffith, June 13th, Lt. S. J. Clinch, Lt. F. A. Trotter, July 1st; Lt. W. Green, July 9th; Lt. S. E. Buck, Sec. Lt. G. C. Cole, Lt. R. H. S. Eason, Sec. Lt. A. J. Gagon, Sec. Lt H. M. Small, July 12th; Sec. Lt. E. F. C. Greene, July 13th; Lt. H. R. Gardner, July 17th; Sec. Lt. E. L. FitzSimmons, July 25th; Sec. Lt. W. Graham, July 28th; Lt. R. Brown, Lt. A. E. I. Clifford, Capt. R. S. Sorley, D.S.C., July 29th; Lt. H. F. Jenkins, July 31st; Pilot Officer J. G. S. Lennstrand, Pilot Officer J. W. New, Flt. Lt. M. H. Turner, Aug. 1st; Pilot Officers C. Turner, Aug. 2nd; R. R. Layer, Aug 5th; A. E. Eagle, H. J. Evans; Flying Officers L. J. P. Green, J. R. Millie, D.F.C., W. E. Palk, D.F.C., Aug. 6th; Flt. Lt. W. L. Jordan, Flying Officer F. Pascoe, Pilot Officer A. R. Thatcher, Flt. Lt. T. G. Thornton, M.C., D.F.C., Sqdn. Ldr. C. S. Wynne-Eyton, D.S.O., Aug. 7th; Flying Officers J. J. Meredith, W. C. Mortimer-Phelan, A. G. Peasland, Aug. 8th; C. G. Capel, E. J. A. L. Kemp, J. G. McEwan, Aug. 9th; Flying Officer H. Daniel, M.C., A.F.C., Pilot Officers J. R. Frean, L. R Grice, O. A. P. Heron, D.F.C., A. H. McRoberts, Aug. 10th; Flying Officers W. F. Kendall, T. L. Tebbit, Aug. 11th; A. Marriner, Aug. 12th; Pilot Officers W. A. Mercer, (Hon. Flying Officer) L. J. Pugh, Aug. 13th; Sqdn. Ldr. R. A Chalmers, O.B.E., A.F.C., Pilot Officer (Hon. Flying Officer) R. A. B. Pope, M.C., Pilot Officer D. M. Smith, Aug 14th; Flying Officer H. G. Jackson, Aug. 15th; Pilot Officer B. Hinkler, Flying Officer F. E. Rix, Aug. 18th; Flt. Lt. M. Le Blanc-Smith, D.F.C., Flying Officer A. W. Whitmore, Aug. 20th; Pilot Officer A. T. Shelley, Flt. Lt. J. C. Slessor, Pilot Officer B. Sykes, Aug. 21st; Pilot Officer G. W. Fields, Flying Officer G. G. Fonseca, Flying Officer W. S. Frackelton, Flying Officer C. Lillicrap, Pilot Officer T. J. Maloney, Pilot Officer T. R. Sharpe, Aug 22nd; Flying Officer N. H. N. Fletcher, Pilot Officer S. N. Hart, Flying Officer T. L. Palmer, Flt. Lt. S. F. Vincent, A.F.C., Pilot Officer C. W. Waller, Pilot Officer L. A. Williamson, Aug. 23rd; Flying Officer N. B Lovemore, A.F.C., Aug. 25th; Flying Officer I. O. Gaze, Sqdn. Ldr. (actg. Wing Cmdr.) F. W. Lucas, O.B.E., Aug. 26th; Pilot Officer L. S Ash, Pilot Officer E. V. Brown, Pilot Officer A. S Rutherford, Pilot Officer (Hon. Flying Officer) L. R. Wheeler, Aug. 28th, Pilot Officer J. Burr, Flying Officer B. de Salaberry, Flying Officer P. M. Hodder, Flying Officer W. G. Ivamy, Pilot Officer H T. McKinnie, Flying Officer J. A. R. Mason, A.F.C., Pilot Officer N. J. Nock, Aug. 29th; Flying Officer S. I. Gribble, M.C., Sept. 2nd; Pilot Officer E. I. Mayne, Sept. 3rd; Pilot Officer J. C. J. McDermont, Flying Officer R. McPhee, Sept. 4th.

Lt.-Col. G. Wellesley, M.C. (G. Gds.), relinquishes his commn. on account of ill-health, Sept. 3rd.

Lt.-Col. J. E. Tennant, D.S.O., M.C. (Capt., Brev. Maj., Scots. Gds.), resigns his commn., Sept. 6th.

Capt. J. C. L. Barnett, M.C. (Oxf and Bucks L.I., T.F.), relinquishes his commn. on account of ill-health, Sept. 3rd.

Lt. R. T. Percival relinquishes his commn on account of ill-health contracted on active service, and is permitted to retain his rank, Aug 23rd.

Lt. Lord C. C. Douglas (K.O.S.B.) relinquishes his commn on account of ill-health caused by wounds, Sept. 4th.

The following Lts. resign their commns.:—Hon. Capt. F. W. Hattridge (Capt., R.A.S.C.), A. M. Bennett (Lt., R. W. Surr. R.), Sept. 6th

The surname of Lt. T. M. Johns is as now described and not "Jones" as stated in "Gazette," Aug. 8th.

The notification in "Gazette," Feb. 18th, concerning Lt. J. Freman (Lt., Brit. Col. R.) is cancelled.

The notification in "Gazette," May 20th, concerning Sec. Lt. A. K Barter is cancelled. The notification in "Gazette," June 3rd, to stand

The notification in "Gazette," June 6th, concerning Sec. Lt. J. H Yalden is cancelled. The notification in "Gazette," April 25th, to stand.

ADMINISTRATIVE BRANCH.—Lt. R. Kane is granted the hon. rank of Capt., Sept. 23rd, 1918.

Sec. Lt. H. B. Brown to be Lt., Nov. 24th, 1918.

The following Sec. Lts. (late Gen. List, R.F.C., on prob.) are confirmed in rank:—C. R. Campbell, Aug 24th, 1918; W. Simmonds, Nov 1st, 1918; L. F. Joyner, April 17th.

Sec. Lt. J. Cameron to be Sec. Lt., from (A.), July 15th, 1918.

Sec. Lt. W. Knight to be Sec. Lt., from (K.B.), April 17th.

Transferred to the unempld. list:—Sec. Lt. A. D. Turner, Jan. 10th; Sec. Lt. G. S. Turner, Jan. 30th; Lt. C. C. Gardner, March 18th; Sec. Lt. A. N. Ryles, April 1st; Sec. Lt. G. Thomson, April 9th; Sec. Lt. J. King, April 14th; Lt. J. Rymer, April 17th; Lt. B. Burton, May 2nd; Sec. Lt. A. Tullock, May 14th; Capt. W. H. Taylor, June 3rd; Sec. Lt. F. W. J. Tooley, June 13th; Sec. Lt. E. F Tyler, June 18th; Capt. E. L. Oliver, July 4th (substituted for notification in "Gazette," July 18th); Sec. Lt. J. R. Searle, July 25th; Flying Officer W. J. Harvey, Aug. 1st; Flt. Lt. C. P. L. Firth (Worc R.), Aug. 2nd; Flying Officer (Hon. Flt. Lt.) C. H. Lewis, Aug. 3rd; Pilot Officer W. G. Nicholas, Aug 4th; Flying Officer E. C. Batchelor, M.C., Aug. 15th; Capt. S. A. Laird, Aug. 17th; Flying Officer I. M Fry, Flt. Lt G. E. Morris, Pilot Officer J. C. Rowell, Aug. 18th; Pilot Officer J. H. Drayton, Pilot Officer E. Hoy, Flying Officer T. W. A. Jackson, Aug. 19th; Pilot Officer H H. Creighton, Aug. 22nd; Pilot Officer R. R. Trout, Aug. 23rd; Pilot Officer G H. Allender, Aug. 27th; Pilot Officer (Hon. Flying Officer) F. W. Day, Aug. 28th.

Sec. Lt. (actg. Capt.) C. W. Probets resigns his commn. and is permitted to retain his rank, Sept. 4th (substituted for notification in "Gazette," July 22nd).

The notification in "Gazette," Nov. 8th, 1918, concerning Sec. Lt. F Moss is cancelled.

The notification in "Gazette," July 18th, concerning Sec. Lt. C. W Sutcliffe is cancelled.

TECHNICAL BRANCH.—Sec. Lt. (Hon. Lt.) V. H. Tait to be Lt., without pay and allowances prior to July 1st, 1918, April 2nd, 1918 (substituted for notification in "Gazette," Feb. 18th).

Sec. Lt. E. L. M. Emtage to be Lt., July 12th, 1918 (substituted for notifications in "Gazette," Jan. 3rd and Aug. 19th.

Sec. Lt. W. J. Scott to be Lt., April 29th.

Sec. Lts. to be Lts. without pay and allowances of that rank:—Hon. Lt. J. Robertson, April 2nd, 1918; A. W Mansfield, June 1st.

Sec. Lt. H. B. Brown to be Sec. Lt., Grade (A.), from (Ad.), Aug. 17th, 1918.

Sec. Lt. J. L. Irving to be Sec. Lt., Grade (A), from (O.), Jan. 20th.

Sec. Lts. (Ad.) to be Sec. Lts., Grade (B):—J. E. Neary Feb. 20th; W. Hawksworth, May 30th.

Pilot Officer J. S. Ferguson to be Pilot Officer, Grade (B), from (Ad.), Aug. 6th.

Sec. Lt. F. C. Rayson to be Sec Lt., Grade (B), from (A'ship), July 17th.

Transferred to unempld list:—Sec. Lt. (Hon. Lt.) T. P. S. Summerson, Feb. 21st; Capt (actg. Maj.) C. H. D. Poppett, O.B.E., April 2nd;

Sec. Lt. (actg. Lt.) B. F. T. Hare, April 17th (substituted for notification in "Gazette," June 24th); Lt. E. A. Baker, M.C., Sec. Lt. A. Gregory, April 18th; Sec. Lt. H. C. King, May 7th; Capt. G. A. Turner, May 11th; Lt. H. G. Thornton, June 12th; Lt. (Hon. Capt.) V. F. Davies, June 19th; Capt. S. M. Harding, July 1st; Sec. Lt. P. C. Heming, July 2nd; Lt. W. F. Thrutchley, July 8th; Capt. C. E. Ruah, July 24th; Flying Officer G. M. Edmonston, Flt. Lt. E. Stroud, Aug. 2nd; Flt. Lt. J. H. Taylor, Aug. 3rd; Flying Officer A. W. McClellan, Aug. 6th; Flying Officer D. H. Blaikie, Sqdn. Ldr. A. Partridge, Aug. 12th; Pilot Officer C. B. Dolphin, Aug. 13th; Pilot Officer F. A. Dickinson, Aug. 17th; Pilot Officer (Hon. Flying Officer) P. Rourke, Aug. 18th; Flying Officer W. J. Cooper, Flying Officer S. T. Fradd, Aug. 19th; Flt. Lt. J. Hollingworth, Flt. Lt. J. G. Schon, M.C., Aug. 20th; Flt. Lt. C. C. Carlisle, Aug. 21st; Flt. Lt. W. A. Andrews, Aug. 22nd; Flt. Lt. J. C. C. Affleck, Pilot Officer A. A. Dolphin, Aug. 23rd; Flt. Lt. W. G. Everingham, Aug. 24th.

The initials of Capt. R. P. J. McCoy are as now described, and not "R. P. T." as stated in "Gazette," Aug. 22nd.

The surname of Capt. A. A. Bryce-Buchanan is as now described, and not "Bryce-Burdon," as stated in "Gazette," April 1st.

The notification in "Gazette," May 23rd, concerning Sec. Lt. R. E. Pudney is cancelled

The notification in "Gazette," June 3rd, concerning Sec. Lt. (Hon. Capt.) E. R. Loder is cancelled.

MEDICAL BRANCH.—T./Capt. A. E. Panter is granted the actg. rank of Maj. whilst specially empld., Aug. 1st.

Flying Officer G. Hughes is transferred to the unempld. list, Aug. 13th.

The initial of Capt. O. Gleeson (Capt., R.A.M.C.) is as now described, and not "A." as stated in "Gazette," Sept. 2nd.

DENTAL BRANCH.—T. H. Jones is granted a temp. commn. as Flying Officer, Aug. 30th.

Lt. G. H. W. Randall is transferred to unempld. list, April 2nd.

CHAPLAINS BRANCH.—Rev. M. J. Dunne (late temp. Chapln. to the Forces, 4th Cl., R.A.C.D.) is granted a temp. commn. as Chapln. with the relative rank of Capt. (Roman Catholic), Aug. 2nd.

Asst. Principal Chapln. (Wesleyan).—The Rev. A. S. Bishop is granted a temp. commn. as Chapln. with the relative rank of Capt., April 26th, seny. Jan. 1st, and is granted the relative rank of Maj. whilst empld. as Asst. Principal Chapln. (Wesleyan).

MEMORANDA.—The following Overseas Cadets are granted temp. commns. as Sec. Lts., with effect from Feb. 15th, and relinquish such commns. with permission to retain the rank, from the day following termination of the standardised voyage in the case of those claiming immediate repatriation and from the day following demobilisation in England in all other cases:—212676 S. F. Anderson, C.M.G., D.S.M.; 152750 P. McShane, S6469 W. P. Turner.

The following Cadets are granted hon. commns. as Sec. Lts.:—7547 O. T. Curtis, 635996 F. W. Cotton, 42717 H. B. Fellowes, 202346 J. Little-Johns, 3204 M. A. K. Smith, 16828 A. J. Spacey, 203217 M. W. Todd, 2152 T. A. Williams, 62904 J. Wiseley, Jan. 4th; 45376 J. H. Baird, 42855 A. M. Brown, 7664 J. Ediss, Jan 5th; 47837 E. Adams, 92517 F. Banham, G/29791 W. T. M. Branson, S/29943 C. W. Benstead, 251026 W. L. Clifford, 12599 D. Easson, 21121 J. Forbes, 250422 M. I Green, H270958 F. R. Grundy, 30319 L. R. Hilsdon, 48043 W. B. McMillan, 33138 C. Rhodes, 840633 A. E. Wolverton, Jan. 11th; 176848 C. E. Foulds, Jan. 12th; MI/1009 W. W. Bletchetti, 1843 B. De Putron, 373761 R. J. Frost, M/205005 W. W. Gough, 23785 F. K. Howes, 178945 C. C. Welsh, Jan. 13th; 177403 J. E. Furlong, Jan. 15th; 176790 S. Knowles, 176801 D. Nichol, Jan. 16th; 52185 A. M. Lee, 7337 F. Shaw, 23980 E. Treashure, Jan. 17th; 178520 E. M. Butcher, 177082 L. P. Bridal, 177693 C. A. Henson, 197621 E. R. Lewis, 177287 D. J. C. Prizeman, 177185 J. Patrick, 177244 E. C. Rolfe, 177549 P. Sinclair, 178495 J. Sharp, 177182 V. E. Stockwell, 176949 H. Warre, 178505 R. H. T. Young, Jan. 10th; 47501 H. Lennon, Jan. 26th; 178900 C. J. Barker, 178234 T. H. Burke, 179702 P. H. Brown, 179712 F. W. Bleeze, 179777 S. Blenkin, 178413 W. E. Chinn, 176757 B. R. Dickinson, 176898 J. E. H. Davis, 176367 R. G. Elms, 179724 H. S. Ellingworth, 176871 J. A. Greetham, 177307 J. M. Graham, 177860 C. A. Jowitt, 179305 F. H. Jacobs, 177786 B. J. Knowles, 178869 J. A. Long, 179356 G. Lewis, 179748 L. Lord, 178757 H. G. Marshall, 179363 D. H. L. May, 179165 W. G. Marsack, 179279 L. Nothard, 177869 H. Piccaver, 176911 V. C. R. Pope, 178487 N. L. Pilling, 178901 A. A. Pepler, 177979 G. A. Renwick, 178386 A. C. Richards, 178449 S. Reid, 179072 G. A. Richards, 179073 D. O. Ridoubt, 179109 J. Rankin, 179320 J. Robinson, 178086 H. J. Smith, 178643 F. Shiner, 178931 R. A. Swinard, 179003 A. H. Sykes, 179554 W. C. Strathou, 179082 C. V. T. Sutton, 179010 W. Tomlinson, 179006 F. Torkildson, 179266 E. L. Tomkins, 178563 A. D. Williams, 179264 E. L. Watkins, 179519 F. W. Westcott, 179558 G. Waller, 178967 E. A. Yarneld, Jan. 29th; 177271 L. W. Hyland, 178964 R. Warden, 179270 R. F. Williams, January 30th; 177729 W. A. Booth, 177924 L. H Fisher, 176904 I. G. Gascoigne, 173421 F. C. Hayes, 137566 W. H. Henderson, 177861 W. H. Knight, 26531 N. A. T. Martin, 175092 R. W. Sheppard, 179414 D. L. Simpson, Feb. 8th; 176089 J. L. Gregory, Feb. 9th; 178407 C. E. Butler, 178343 J. H. Cowan, 117421 W. J. Chaston, 178246 A. W. Eldred, 177817 J. Font, 128641 E. J. Hodges, 177207 G. D. Ireland, 170368 H. Rodger, 246519 A. J. Young, Feb. 11th; 4359 G. After, Feb. 14th; 1351 J. O. Henderson, 178870 S. J. Millen, 176976 M. J. Phillips, 178698 A. J. Peacey, 178629 T. W. Patterson, 197492 E. Robinson, 156308 S. T. Sherlock, 265181 E. A. Tiley, 176733 A. W. C. Villiers, 176719 J. S. Worters, 176718 R. A. Ward, Feb. 18th; 176781 B. S. Ingledew, 176269 F. J. McClean, Feb. 19th; 160598 G. Appleyard, Feb. 24th; M/10515 L. E. Alston, Feb. 25th; 434571 A. E. Gatiley, 63408 J. Newton, Feb. 28th; MS/4373 M. W. Bartlett, 128752 G. M. Edwards, March 4th; 117205 R. Kay, 173281 A. D. Myers, March 11th; 177099 J. Clayton, 137613 H. Stott, March 18th; 175038 G. A. F. Bucknall, St.K951 E. Day, 175701 S. Hudson, 137774 W. V. R. Nicholl, 137779 C. L. O'Callaghan, 137285 W. G. Pirrie, 137489 P. G. Rogers, March 21st; 155149 W. B. Britter, 43294 H. Brace, 8518 A. C. Cooper, 63214 C. Dickinson, 370340 H. C. Doubleday, 947861 W. W. Fitchen, 170123 A. J. Hall, 35043 C. Hall, 307 F. A. Humphreys, 20860 F. A. Jordan, 6904 W. V. Piggott 135579 W. S. Rees, 137038 S. Tickle, April 1st; 128932 J. Wallace, April 4th; 117080 L. Doherty, 71418 E. Ross, April 8th; 940534 J. I. Blackburn, 137092 D. S. Richardson, April 28th.

Lt.-Col (actg. Brig.-Gen.) C. C. Marindin, C.B.E., D.S.O. (Maj. (Bt. Lt.-Col.), R.G.A.), relinquishes his commn. on ceasing to be empld., Sept. 1st.

Transferred to unempld. list:—Capt. C. B. Baker, May 2nd; Pilot Officer T. A. Bayly, July 17th; Flt. Lt. H. N. Nowell, Aug. 7th; Pilot Officer J. M. Fraser, Aug. 10th; Flt. Lt. H. F. Barge, Pilot Officer J. A. S. Cooke, Pilot Officer E. Hanley, Pilot Officer T. S. Laird, Aug. 14th; Pilot Officer C. S. Buckingham, Aug. 15th; Flying Officer W. H. Date, from (S.O.), Flt. Lt. H. M. Farnshaw, from (S.O.), Aug. 18th; Flt. Lt. (actg. Sqdn. Ldr.) C. L. Bullock, O.B.E., from (S.O.), Aug. 19th; Pilot Officer T. E. Fisher, Pilot Officer E. Fortin, Aug. 22nd; Flt. Lt. H. S. Neville (S.O.), Aug. 31st.

PERSONAL NOTICES.

NAVAL.

BIRTH.

ENGLAND.—On Sept. 2nd, at Penlee, Lee-on-Solent, the wife of Squadron Leader T. H. England, D.S.C., A.F.C., R.A.F.—a daughter.

MILITARY.

DEATH.

LEE.—On Sept. 1st, killed in a flying accident, Brigadier-General Lee, C.M.G., son of Major W. F. Lee, Grove Hall, Knottingley.

MARRIAGE.

COOKE—HALL.—On Aug. 20th, at Weybridge, Sapper Cooke, N.Z. Engineers, was married to Miss Winifred Hall, W.R.A.F.

ENGAGEMENTS.

HAWKINS—SPENCER.—The engagement is announced between Alfred Cyril Spencer Hawkins (late R.F.C.), only son of Mr. and Mrs. Alfred Tolhurst Hawkins, of 42, Portland Place, W., and Beryl Sefton, younger daughter of Mr. and Mrs. Alfred Spencer, of 70, Inverness Terrace, Hyde Park, W.

RIDDELL—BULLER.—The engagement is announced of Capt. Patrick Cameron Oliver Riddell (late the Wiltshire Regiment and R.A.F.), elder son of the late Patrick Riddell and Mrs. Riddell, Noirmont, Weybridge, to Alice Moubray, younger daughter of the Rev. Spencer R. A. Buller, R.D., and Mrs. Buller, the Rectory, Weybridge.

SOUTHGATE—FOLKARD.—A marriage has been arranged, and will shortly take place, between Lieut. F. W. Southgate, late R.F.C., third son of Henry Southgate, Needham Market, Suffolk, and Angela, elder daughter of Mr. and Mrs. Folkard, Addiscombe, Surrey.

BIRTHS.

BARTON.—On Aug. 28th, at Victoria Road, Bushey, Herts, to the wife of Sydney Barton (late R.F.C.)—a son (Douglas Searle).

HAMILTON.—On Aug. 31st, at Heighington, Lincolnshire, the wife of Mr. E. V. C. Hamilton, Worcestershire Regt. and R.A.F., of a son (John Colley Colclough).

WATTERS.—On Sept. 4th, at 19, Drumsheugh Gardens, Edinburgh, the wife of Capt. W. Watters, late the Border Regt. and R.A.F., of a daughter.

AIR FORCE.

DEATHS.

HARBORD.—Lieut. Lionel Anthony Harbord, R.A.F., who died on Aug. 21st at Airpark, Lahore, India, was the husband of Sophy Harbord. He was 49 years of age.

EVERSDEN.—Capt. Robert Ernest Eversden, R.A.F., late 1-1st Suffolk Yeo., was accidentally killed on Aug. 15th at the aerodrome at Ekaterinodar, S. Russia, while serving with General Denikin's Mission. He had been on active service since 1915, in the Dardanelles, Egypt, Palestine, and German East Africa. Capt. Eversden was the son of Catherine Eversden, of Ley Hill, Chesham, Bucks, and was 24 years of age.

MORRIS.—Lieut. Herbert Stanley Morris, R.A.F., whose death was announced last week, came to this country in October last, and joined the R.A.F. as a Flight Cadet, and was, prior to being posted to Netheravon, a pupil in aviation with 29 Squadron, R.A.F., Croydon. He was born in South Africa 30 years ago; he was educated at the Cape University, and specialised in Indian, Roman, and Dutch Law, and held the position of Magistrate at Suva, the capital of Fiji.

At the inquest at Maidenhead on Aug. 15th Capt. R. S. Aitken, R.A.F., stationed at Netheravon (Wilts), said that on Aug. 14th he instructed Mr. Morris to go up for landing practice. He was only to go round and round the aerodrome. No one knew why he had come to Maidenhead. He went quite on his own account. Mr. Morris had an average experience as a flier. Witness examined the wrecked machine. It was a "Bristol Fighter." In his opinion, the machine before the flight was in perfect order. He thought Mr. Morris tried to find a place to land, shut off the engine, and lost flying speed, and then either spun down spirally or nose-dived to the ground. It was one of the commonest of flying accidents. The inquest was adjourned.

NELSON.—On Aug. 6th, at Craven Cottage, Eastbourne, Molly, the dearly loved wife of Capt. C. H. Nelson, R.A.F.

ENGAGEMENTS.

ANDERSON—YEO.—The engagement is announced between Lieut. David Stewart Anderson, R.A.F., son of the late Mr. C. D. Anderson, and nephew of Mr. R. Woolley Walden, J.P., and Phyllis Jessie, only daughter of Mr. and Mrs. James Yeo, Woodhurst, Warlingham, Surrey.

BATES—HASKETT-SMITH.—The engagement is announced between Lieut. Harry Bates (late R.A.F.), son of the late Mr. Tom Bates and Mrs. Bates, of Dewsbury, Yorkshire, and Kathleen Antonia, only daughter of Mr. and Mrs. H. F. Haskett-Smith, of Teignmouth, S. Devon, and granddaughter of the late Capt. Haskett-Smith, of Weston, Bath.

BEEVOR—MINTY.—The engagement is announced of Ralph Branthwayt Beevor, late 28th Squadron, R.A.F., eldest son of Mr. and Mrs. Ralph J. Beevor, of Reymerston, St. Albans, and grandson of the late Sir Thomas Beevor, Bt., and Phyllis Margaret Ashburner, eldest daughter of Mr. and Mrs. H. O. Minty, of Nessfield, St. Albans.

FANE—BACON.—The marriage arranged between Capt. Gerard Fane, D.S.C., R.A.F., and Miss Rhoda Bacon will take place on Wednesday, October 1st, at 2.15, at St. Andrew's Church, Raveningham, Norfolk.

LYON—STORY.—The engagement is announced of Mr. W. A. Lyon, R.A.F., youngest son of the late Dr. Robert Lyon and of Mrs. Lyon, 10, Baskerville Road Wandsworth Common, and Sylvia Ellen, younger daughter of Capt. and Mrs. E. U. Story, Cherry Garden House, Folkestone.

MASKELL—KNIGHTS.—A marriage has been arranged and will take place at an early date (leave permitting) between Flight Lieut. A. S. Maskell, R.A.F., of "Benicree," Glencairn Park Road, Cheltenham, and Nellie, daughter of Mr. and Mrs. W. B. Knights, of "Basil House," York Road, Great Yarmouth.

SNOW—LIVESAY.—The engagement is announced of Capt. A. Courtenay Snow, R.A.F., only son of Mr. and Mrs. John Snow, Penllwyn Park, Carmarthen, and Dorothy Elizabeth Bligh, youngest daughter of Mrs. Livesay, Eaglehurst, Alverstoke, Hants.

MARRIAGES.

ALDERSON—DOIG.—On Aug. 18th, at Swanage, Lieut. A. G. D. Alderson, R.A.F., son of the Rev. A. D. Alderson, of Tockwith, York, was married to Edith Mary, eldest daughter of Mr. David Doig, of Rosslyn House, New Barnet.

DICK—MARSH.—On Sept. 6th, at All Souls' Church, Loudoun Road, N.W., by the Rev. W. P. Hanks, M.A., D.D., Walter Fleming Dick, late Lieut., R.A.F., only surviving son of Mr. and Mrs. John Semple Dick, of 34, Langham Road, N., and grandson of the late Anthony Beaufort Brabazon, M.D., of Bath, to Marjorie Stella, widow of Harry Evelyn Marsh, of Sheffield, and youngest daughter of the late Edward Nunes Phillips.

FOSTER—HATCH.—The marriage took place on Sept. 2nd at St. Mark's, North Audley Street, of Capt. William Foster, R.A.F., youngest son of Mr. Robert Foster, of Stockeld Park, Wetherby, Yorkshire, and the late Hon. Mrs. Robert Foster, and Marjorie, only child of Sir Ernest Hatch, formerly M.P. for the Gorton Division, and Lady Constance Hatch, of 46, Upper Grosvenor Street, W.

The officiating clergy were the Dean of Salisbury (Dr. Page Roberts), great-uncle of the bride, the Rev. the Hon. A. Parker, uncle of the bridegroom, and the Rev. W. G. Pennyman, vicar of St. Mark's.

NIGHTINGALE—WHITAKER.—On Sept. 1st, at St. Anselm's Church, Streatham, by the Rev. F. A. S. Reid, M.A., Capt. Alfred J. Nightingale, R.A.F., youngest son of the late A. Nightingale, to Stella May, youngest child of the late Walter S. Whitaker and Mrs. Whitaker, Streatham.

ROACH—COOK.—On Aug. 25th, at Christ Church, Ealing, Lieut. Thomas Edward Vaughan Roach, R.A.F., of Johannesburg, South Africa, was married to Elspet Sophia, only daughter of Mr. and Mrs. John Nicol Cook, 27, Castle Bar Road, Ealing, and Aberdeen, by the Rev. J. E. Cardigan Williams

SOMERS-MARSHALL—NEALE.—On July 22nd, at St. Mary Magdalen's, Brighton, Lieut. J. A. Somers-Marshall (late R.A.F.), was married to Winefride Mary Neale.

SYKES—ROBERTS.—On Sept. 4th, at St. Jude's on the Hill, Golder's Green, Capt. Maurice Gaskell Sykes, R.A.F. (Indian Civil Service), youngest son of T. Gaskell Sykes, West Ealing, to Constance Mary Lilian, younger daughter of the late Hugh Stewart Roberts.

WOODHOUSE—MANNING.—On Sept. 1st, at All Saints' Church, Nottingham, Lieut. George Edward Leighton Woodhouse, R.A.F., younger son of Mr. and Mrs. Arthur Woodhouse, of 17, Heygate Avenue, Southend, to Mary, only daughter of Smith Fowler Manning, Esq., J.P., and Mrs. Manning, of The Tower House, Nottingham.

BIRTHS.

ALSTON.—On Aug. 23rd, at Dyffryn, Dulwich, S.E., to Margery, wife of Capt. C. R. Alston, late R.A.F.—a daughter.

ELLIOTT SMITH.—On Aug. 18th, at "The Rough," Wimborne Avenue, Parkstone, the wife of Capt. H. Elliott Smith, R.A.F., of a son.

ELLIS.—On Sept. 1st, at "Glasslyn," Brook Street, Brentwood, Essex, the wife of Colonel H. C. Ellis, C.B.E., R.A.F., of a son.

MONTAGU.—On July 19th, at Lady Holland's Home, to Capt. A. M. R. Montagu, R.A.F., and his wife Margaret (née Rumsby), a son—John Humphrey.

MUSSON.—On July 24th, at 3, St. Andrew's Road, W.14, to Moya, the wife of Lieut. J. McD. Musson, R.A.F.,—a son.

O'CONNOR.—On Aug. 13th, at 34, Albert Road, Regent's Park, N.W., Constance (née Price), the wife of Capt. C. W. O'Connor, R.A.F., a son.

OLDHAM.—At Balgonie, Cobblehill, Vancouver Island, the wife of Lieut.-Col. Frank T. Oldham, R.A.F., of a son.

SANDFORD-THOMPSON.—On August 10th, at Orchard Cottage, Dormansland, Surrey, the wife of Major W. A. Cecil Sandford-Thompson, late R.A.F., of a daughter.

SCOTT.—On July 8th, at Wyncot, Thorpe St. Andrew, Norwich, to G. J. Scott (late Captain, R.A.F.) and Mrs. Scott, a daughter.

SLINGSBY.—On Aug. 5th, at "Clare Green," Nelson, Lancashire, the wife of Capt. William Ecroyd Slingsby, R.A.F., of a son.

WOOD.—On Sept. 5th, 1919, at Thicket Cottage, The Thicket, Southsea, "Biddy" (née Amos), wife of Capt. H. L. Wood, R.A.F., of a daughter.

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THE AEROPLANE

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ON THE SCHNEIDER PICNIC.

[NOTE.—Owing to the extreme length of these notes it has been necessary to set them in small type. It is hoped that the information contained therein will repay the trouble of reading them.—C. G. G.]

Officially it was called the Jacques Schneider International Cup Seaplane Competition, or words to that effect, the function of Sept. 10th having been arranged in order to hold a seaplane race for a handsome trophy and a prize of £1,000 presented by M. Jacques Schneider, of the famous French gun-making firm. Unfortunately, owing to a variety of reasons which will be related in detail further on in this story, there were very few seaplanes, there was no race, and there was little or no competition.

Consequently, the grandiloquent and complicated official title did not apply, and, considered from that point of view, the affair was a very perfect failure. But, considered as a picnic pure and simple, it was a great success, at any rate to those of us who had the good fortune to be of the party on the T.S.Y. "Ombra," which the Committee of the Royal Aero Club had borrowed from Mr. Montague Grahame-White for the occasion. Perhaps the expectant hundreds of thousands of the mere public who sat and grilled on the cliffs and beaches between Christchurch and Swanage enjoyed themselves less, and departed with a very poor opinion of seaplanes and the sport of flying, but, after all, that is no concern of the Royal Aero Club, which, it will be remembered, is by agreement with the Aerial League and the Royal Aeronautical Society concerned only with the sporting side of aviation and not with propaganda or with science.

AN EPICUREAN EPITHALAMIUM.

Certain readers of this paper have made the accusation that one is constantly attacking everything and everybody, and that one is incapable of praise. Just by way of refuting that accusation one feels that it is one's first duty to praise the Committee of the R.Ae.C. for its work on Sept. 10th and during the period of preparation before that date. Those who are merely interested in seaplanes and flying and such things had therefore better skip the next few paragraphs, for the ensuing epithalamic effort has nothing to do with such subjects. But one must praise something.

The Committee of the Royal Aero Club may not be great as organisers of flying events, but it certainly is astonishingly competent in arranging for the social side of the sport of aviation. It is true that once in a while it misses an opportunity—as, for instance, when it omitted to entertain the first people to fly the Atlantic, namely the gallant officers and men of the U.S. Naval Flying Boat N.C.4—but it made full amends to its members in the way it afforded them the opportunity of eating and drinking with Sir John Alcock and Sir Arthur Brown, and with the officers and men of H.M. Airship R.34.

The Committee may not arrange "classic" races, nor establish championships for different kinds of sporting events in its own line, as do the governing bodies of other branches of sport, but it has certainly appeased the hunger and thirst of its members better than has any club in London throughout the war and the subsequent parched and arid peace. This signal success is certainly due to the individual genius of the Club's *maître d'hôtel*, Mr. Frisbee, whose ability in finding manna in the wilderness and in extracting liquids (other than water) from the rocky hearts of dealers in such commodities suggests that somewhere in his remote ancestry he must include the Quartermaster-General of Moses' Desert Column. But to the Committee belongs the credit of having discovered and engaged Mr. Frisbee and the still greater credit of succeeding in retaining his services.

A YACHTING PICNIC.

By a wonderful flash of intelligence the Committee sent Mr. Frisbee to control the catering on the yacht "Ombra," with the result that one hundred and seventy people had excellent lunches in relays in a saloon which could only seat twenty at a time. And then they had tea and an infinite variety of *patisseries* afterwards. Where the material was stowed and how it was handled was a pure conjuring trick.

It was not surprising that one of the distinguished foreign visitors who had some knowledge of the Club, as well as of "Ombra" during the picnic, remarked that though the Schneider Cup Race was not a success the Committee was quite fit to run a subsidiary company of the Maison Lyons.

At any rate, all those who penetrated to the yacht enjoyed the picnic thoroughly, though one cannot speak for the balance who stood on the pierhead at Bournemouth. Personally, one cannot praise the work of the Committee too highly.

OUR VISITORS.

In the preceding issues of this paper Capt. Sayers has given all obtainable particulars concerning the competing machines and the so-called eliminatory trials from which the British team was selected, but, as usual, some of the competitors only arrived at the last moment.

It was unfortunate in some ways that there were so few entrants, though, as things turned out, it was fortunate that there were no more nations represented, for if there had been there would have been just so many more to be amused, or annoyed, or irritated by our comic British ideas of organisation. If, for example, there had been a German team we should have provided aviatic Germany with subject-matter for



THE HERO OF THE DAY.—The Italian Pilot, Janello, in his Savoia Boat (250 h.p. Isotta-Fraschini engine) at Bournemouth.

heavy humour for the next two or three years. As it was, the French and Italians took our clumsy efforts with all the courtesy of the Latin race, whatever they may have felt, and it is only right to put on record the names of our visitors on this occasion.

The Nieuport firm was represented by M. Delage (Director), M. Chasseriaux (Chief Engineer), Lieut. Casale (Pilot), and MM. Janvier, Arnould, Sanson, Bompaire, Fournier, and Bonthieu.

The Spad was represented by M. Herbemont (Technical Director and Chief Designer), M. Sadi-Lecointe (Chief Pilot), M. de Romanet (Reserve Pilot), and MM. Chion, Levannier, Lehoucq, Fabricius, Coquelin, and Maignan.

The Savoia was represented by Sig. Santoni (Director, and incidentally a pioneer of British aviation), Mr. Power (British Representative), Sig. Janello (Pilot), Sig. Conflenti (Technical Manager), and Signori Magnani, Aisa, Roncorone, and Foresti.

M. Rousseau, of the Paris "Temps," was the French *commissaire*, and Capt. Finzi, of the Italian Army, a Doctor of Science, and Air Attaché at the Italian Embassy, watched affairs in the Italian interests. M. Demonge and M. Roche d'Estrez, of that excellent new French paper "L'Air," were also present. And a distinguished visitor was Madame Lumière, the clever little lady who has designed and manufactured the airscrews which have captured all the recent records in France.

BEFORE THE FATAL DAY.

One arrived on Tuesday at Cowes where the foreign competitors were housed in the capacious sheds of S. E. Saunders, Ltd. Certainly nothing finer could be imagined as a storage place for seaplanes, and nothing could exceed the care which Mr. Sam Saunders took to provide for the needs of the visitors. Lieut.-Commander Harold Perrin (Secretary of the Royal Aero Club) busied himself indefatigably for their comfort, and Mr. Charles Greenhill expended his Pentecostal versatility for their verbal assistance. Indubitably they had nothing of which to complain before the fatal day on which the competition should have occurred.

The Nieuport people had the hardest of luck, which was only relieved by the splendid example of sportsmanship it afforded. M. Casale had left Paris on Sunday and had arrived at Cowes *via* Brighton in two and a half hours, a very fine performance. In descending at Cowes he alighted on top of a buoy and completely abolished his floats and undercarriage. The machine sank, and of course that meant that the wings and engine were seriously damaged, though fortunately the main spars were not broken.

Real Sportsmanship.

As soon as his men arrived on Monday morning Mr. Saunders set them to work to rebuild the Nieuport. Mr. Newman took charge of the job and he and his men worked without stopping till Wednesday morning, so that the machine was ready again in time for the race. They fitted the spare engine and the spare floats which the Nieuport people had sent on ahead; they rebuilt the wings entirely, using only the spars, metal fittings, compression struts, and a few ribs; they made new undercarriage struts; they repaired the fuselage and tail unit; and they re-erected the whole machine.

In defiance of all modern labour notions they worked for practically forty-eight hours at a stretch, and demonstrated conclusively that, whatever the British workman may be, he is at heart a sportsman. The work was excellently done, and all the foreign visitors were loud in praise of the fine spirit shown by Mr. Newman and his men. It is wholly lamentable that their fine sporting effort was wasted after all, but it was a very bright spot in a disappointing affair.

More Bad Luck.

The Nieuport bad luck did not end here. M. Malard, the famous pilot of pre-war days, left Paris on Monday on the second Nieuport, and disappeared. The Air Ministry put a telephone call through to Paris on Tuesday, but could get no news of him. On Tuesday evening a member of the Royal Aero Club at Cowes tried to telephone to the Admiralty to awaken it to the advisability of sending a destroyer or something to hunt for him, but so far as one could learn nothing came of the attempt.

It was not until the centre of activity had moved to Bournemouth on Wednesday that information was received that M. Malard had been picked up in mid-Channel some time the previous day. He owes his life to the perfect weather of the period. Otherwise, he must have suffered the fate of poor Gustav Hamel, drowned in flying from France for the Aerial Derby of 1914.

Final Alterations.

The Spad arrived by boat and was duly assembled. After a preliminary trial M. Herbemont decided that she would be faster with less surface, so he and his men spent Tuesday night in amputating a foot or so from each tip of the upper plane. The result was that she arrived at Bournemouth with her upper wings considerably shorter than her lower.

The effect was curious to the eye, but distinctly beneficial to her speed, and though she was obviously not as fast as the Sopwith, she would have put up a good fight for second place with any of the other competitors. Despite her quaint appearance, she impressed everybody very favourably, and it is to be hoped that she will do some trials against time before long so that her performance may become known.

A Fine Achievement.

The Savoia was the last competitor to arrive, she came the longest distance, she was certainly built in the shortest time, and she was the first of the visitors to fly after arrival. All of which is cause for just pride on the part of her constructors.

Three weeks before the event she did not exist. She was built in exactly two weeks, and she spent a week in reaching England. She would hardly have got there then but for the help of General Pitcher and the Air Ministry Mission in Paris, who used every endeavour to expedite her railway journey across France.

She had the smallest engine of all the competitors, a 250 h.p. Isotta-Fraschini, but it has a lovely voice and it runs like a clock. The boat and wing structure is beautifully built, and altogether Sig. Conflenti is to be congratulated on a very fine achievement.

Sig. Lorenzo Santoni, who will be remembered as being concerned with the British Deperdussin Co. and with the General Aeronautical Co. of 1912 and thereabouts, has certainly made good in Italy as founder and director of the great Savoia firm. It is seldom that such a pioneer as he attains to so much success.

The British Competitors.

Of the British competitors, all of whom were housed in their own sheds on Southampton Water, it suffices to say that the Sopwith with the 450 h.p. Cosmos-"Jupiter" was an obvious choice because of her astounding speed, which must be a good 160 miles an hour, if not more. The Fairey with the 450 h.p. Napier-"Lion" was an equally obvious choice as a machine of high speed and of proved seaworthiness. With these two Great Britain was estimated to be well represented in case of either very fine or very rough weather. The choice between the Supermarine with the 450 h.p. Napier and the Avro with the 240 h.p. Siddeley-"Puma," B.H.P., was not so obvious, for the Avro was apparently the faster until the day of the race, when the Supermarine acquired a new airscrew and gained a good five knots in speed.

The Committee of the Royal Aero Club made a mistake in holding "Eliminating Trials" at all. They should have held simply "Trials," and after noting carefully the speed and



BEFORE THE SHOW.—M. Sadi-Lecointe on the SPAD at Bournemouth, being taken in tow by the ubiquitous "Tiddleywinks."

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performance of each machine they should have nominated the representative machines on the day of the race. As it turned out, if the Avro had been nominated she would probably have won, for she was faster than the Savoia.

A SUGGESTION TO THE R.Ae.C.

If the Committee wants to justify its existence it has a chance of doing so. There is a great deal of dissatisfaction about its choice in the Schneider affair, so it would confer a benefit on everybody if it would arrange a "British Seaplane Championship" to be held during the inevitable fine spell in October commonly called "St. Martin's Summer."

The course should be from Southampton Pier to Calshot as many times as might be necessary. The Club Enclosure, starting and finishing point should be in the Avro Aerodrome at Hamble. The rules should be otherwise those applying to the Schneider Cup Race.

The date might be fixed approximately and forty-eight hours' notice given of the actual start, when the Air Ministry Meteorological Department signals fine weather ahead.

In this way British constructors might satisfy themselves and demonstrate to the world who builds the best seaplanes. And if the Club wanted to be really enterprising it might offer a respectable prize for foreign competitors. Thus it might remove some of the obloquy which at present attaches to it on account of its apathy towards the sport of flying and its dire demonstration of organising inability.

THE DAY OF THE FIASCO.

The Club yacht arrived at Bournemouth a little after midday on Wednesday. There had been a fog in the Solent in the morning, but by mid-day the sky was clear except for a slight haze. There was scarcely a breath of wind, the sea was dead calm except for a slight swell, and it was blazing hot. In fact it was a perfect day. And that was precisely why the whole affair was such a hopeless fiasco.

If it had been blowing a gale nobody would have been surprised at machines smashing up, or at the race being called off, but on such a day the public in its hundreds of thousands expected to see a great race, and it was grievously disappointed.

A WILY COMPETITOR.

The first competitor to arrive, if one is not mistaken, was the Fairey, piloted by Lieut.-Col. Vincent Nichol, D.S.O. Mr. Dick Fairey is one of the wisest and wiliest of men, besides being a genius as a designer. He saw no fun in keeping his machine afloat till the Committee felt inclined to start the race. Keeping afloat means the danger of being rammed by motor-boat hogs or idiots in other craft, besides a great deal of trouble generally. So he arranged to beach his machine as soon as it arrived.

Mr. Fairey argues that the whole fabric of British society is based on the Land Laws, and that if a man puts up an enclosure of any sort it takes an Act of Parliament to shift it. One may tell off innumerable officials and policemen and so forth to keep a crowd back, and the crowd will still push past them. But if one sticks a few posts into the ground and ties a piece of cotton between them the crowd will respect the sanctity of the resultant enclosure.

So Mr. Fairey constructed a wire fence with many posts and much wire, rolled it into a bundle, and sent it to Bournemouth with men in a lorry. As soon as Colonel Nichol beached the machine—right alongside the pier—the Fairey gang came down, unrolled their fence, stuck the posts in the sand, and there the machine remained, perfectly happy and unmolested.

The contrast between the fenced Fairey and the unfenced Savoia may be seen in the accompanying photographs. There is a useful lesson here, both for the Club Committee and for individual aeroplane owners.

PRELIMINARY INCIDENTS AND ACCIDENTS.

The Supermarine boat arrived much about the same time as the Fairey, and Squadron-Commander Hobbs, D.S.O., the pilot, made a faultless alighting. He was promptly taken in tow by the Supermarine Co.'s funny little motor-boat "Tiddleywinks." This, one is told, is really the hull of one of the original Supermarine flying-boats built for that clever and curiously neglected invention of Mr. Pemberton Billing's by which the wings and tail form a complete unit which can be slipped off, leaving the hull as a self-contained motor-boat. Such a scheme would have been of great value during the war, and will be later on when flying-boats come into their own.

"Tiddleywinks" was very useful all day, acting as tender for all and sundry. A photograph shows her courteously assisting the Spad after the arrival of M. Sadi-Lecointe.

Mr. Hawker arrived soon after on the Sopwith, the big "Jupiter" engine emitting much crackling owing to being throttled down, though it has a splendid note when running full bore. He alighted well and beached his machine. Afterwards one learned that he discovered a leak in a float, so the pair of floats was changed on the beach while waiting for the race to start.

THE RESULT OF A PERFECT DAY.

This was the first evil result of the perfect weather. As there was no wind all the machines had perforce to alight at their slowest safe flying speed. In the case of the Sopwith this could hardly be less than 60 miles an hour, for a speed range of 60 to 160 m.p.h. is about as wide as could reasonably be expected.

Also, as there was no wind the sea was as smooth and as hard as glass, whereas if there had been a slight ripple or lop the floats would have cut through the tops of the waves, which would thus have had a gradual braking effect. Consequently, floats which would have done their work perfectly well on an ordinary day simply cracked through hitting hard, smooth water at a very high speed.

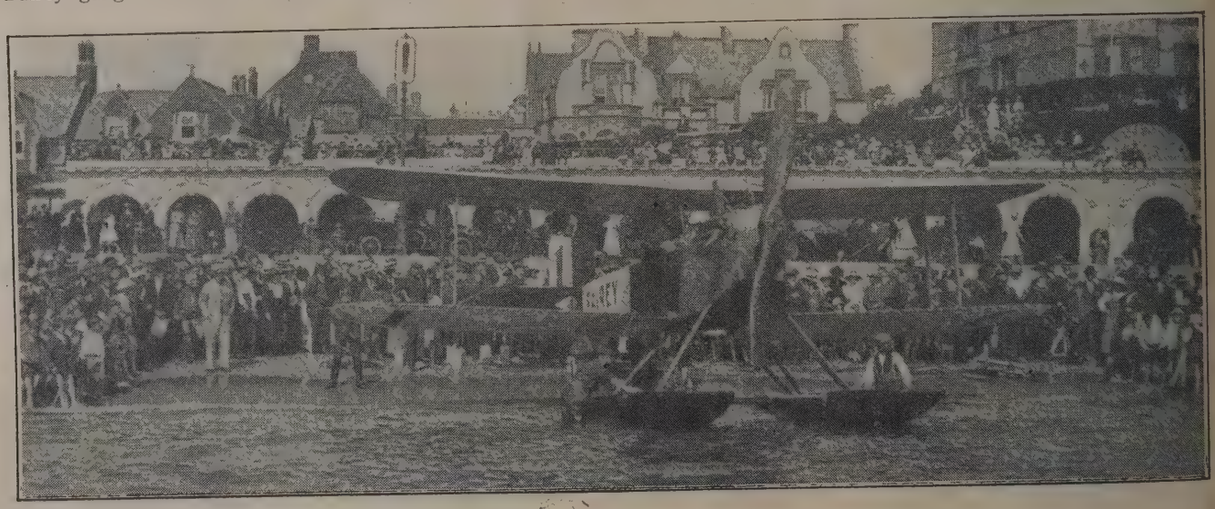
THE ARRIVAL OF THE FOREIGNERS.

The first of the foreign machines to alight was the Savoia. Janello put her down in perfect style. He is a fair-haired, blue-eyed youngster, very much more a Goth than a Latin in type, and he is a non-commissioned officer of the Italian Navy. As he has three rows of medal ribbons one judges that his Service record is more than ordinarily good. And his flying showed him to be a pilot of the very first class.

When he alighted one noticed the first serious defect in the Aero Club's organisation. He taxied about on the water for quite a while before anybody paid any official attention to him. At last he was taken in tow by a big, clumsy R.A.F. boat, the crew of which was evidently unaccustomed to handling small flying-boats. However, they managed not to do any damage to the machine, and eventually he put his boat ashore.

DEFECTIVE ORGANISATION.

One would have expected that there would have been a motor-boat told off as a tender for each competitor, and that each such boat would have borne the competitor's numbe



A PSYCHOLOGICAL STUDY.—How the British Public respected the Fairey Company's fence.

Then there could be no doubt about whose duty it was to attend to whom.

Later, when the Spad alighted (in very pretty style), she was towed in by the Supermarine Co.'s "Tiddleywinks." She also was beached, for lack of proper moorings, and stove a hole in one of her floats on a stone on the beach. So that put her out of the race.

It was desperately hard luck on M. Herbemont, who was so upset by the accident and so overwrought by working nearly all night at cutting down his wing area that in the evening he quite broke down and was too *enervé* even to eat or drink. As a designer he is quite in the front rank, so there was no need for him to be discouraged, but apparently he had set his heart on making a good show in this race, so he took things rather more hardly than seemed necessary.

Last of all came the Nieuport, flying very fast and evidently standing a very good chance in the race if anything happened to the Sopwith. M. Casale put her on the water as slowly as was possible with so fast a machine, and floated about for a while. Then she began to sink slowly, and on beaching her it was found that a float had cracked in alighting. This, again, was the fault of the perfect weather and not of the Club.

The Float Trouble.

It is well to remember, and to point out to those who scoff at seaplanes on the strength of the Schneider fiasco, that these floats which cracked and burst and punctured so easily were built specially light purely for racing machines, and were intended for ordinary weather. When they had to come down on glass-hard water at high speed, or be pushed ashore on pebbles, they were asked to do something which they were never intended to do.

All the firms whose machines suffered in this way have built excellent floats in the past. These breakdowns reflect no more discredit on the firms than does the breakdown of an experimental racing car of a motor firm of proved reliability.

More Defective Organisation.

When the foreign pilots went ashore they found that there were no preparations of any kind for them. There was nobody to interpret for them. There was nobody to keep the mob away from their machines. There were no preparations to feed them, though even if the race had started at the proper time (2.30 p.m.) they would have wanted lunch.

So far as one could discover, they were supposed to hang onto the tail of a motor-boat (if they could find one) from the time of their arrival until the start, and they were to feed in their machines as best they could. Which hardly strikes one as being the courteous or even the politic way in which a big and rich club ought to treat visitors from abroad.

Happily, the undefeatable Mr. Newman of S. E. Saunders, Ltd., redeemed our national reputation when he discovered that the Club had made no preparations. Somehow he managed to make himself understood by both the French and Italians. He found food for them, he established some sort of guard for their machines, he commandeered planks with which he made temporary launching slips. He and the crew of his Saunders seaplane tender were here, there, and everywhere.

No wonder the visitors went home with the idea that Saunders, Ltd., and their Mr. Newman, are the most efficient people and the best sportsmen in England. They saw so little of the Committee of the Royal Aero Club that they can scarcely have acquired a true estimate of either their efficiency or sportsmanship.

A Geographical Error.

The splendid work done by Mr. Saunders and his people is in fact the one redeeming feature in the result of the Committee's gross error in choosing Bournemouth as the headquarters of the race and Cowes as the storing-place for the machines.

The theory was that if the day was rough the machines would fly off the sheltered water at Cowes, alight on the water at Bournemouth, and then start in the race when told. If that had actually happened most of the machines would have been wrecked or swamped long before the race started. Moreover, there was no direct communication with Cowes, so there was no way of telling them when to start for Bournemouth.

When the Aero Club first announced that the race was to take place this year, one pointed out the folly of separating the housing of the machines from the starting-point of the race. Events have shown conclusively that one's criticism was right.

The race ought to have taken place at Eastbourne, where there are seaplane sheds and ample repair shops within flag-wagging distance of the pierhead which would be the timing point. If the sea had been too rough at Eastbourne it would have been too rough at Bournemouth also. From every point of view Eastbourne would have been a far better place for a race which, under the conditions of the prize, must be held in the open sea. Otherwise, the Solent or Southampton Water is the right place.

Nothing but Mr. Sam Saunders and his people saved the face of the Committee, and, without detracting in any way from their magnificent effort, one may express one's belief that under similar circumstances Major F. B. Fowler and the Eastbourne Aviation Company would have been just as thoroughly sportsmanlike.

It is to be hoped that before another important event takes place the Royal Aero Club will have formed a committee to manage that event which will include men with a stronger critical faculty, greater knowledge of sporting flying, and more experience of organising competitions than those who were responsible for the Schneider fiasco.

THE RACE THAT FAILED.

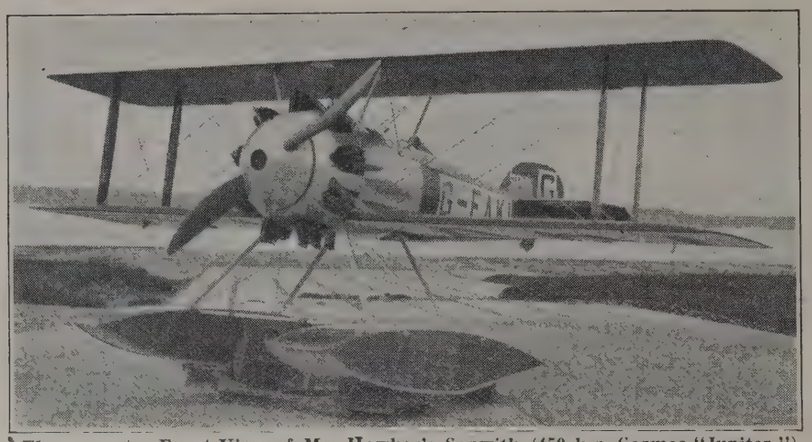
Not long before the race was timed to start heavy banks of fog began to roll in from seaward, and by 2.30 p.m. one could only see about 400 yards in any direction, and then only up to a height of 40 or 50 feet. From the yacht everything was blotted out except the pier and the beach immediately behind it.

Before the fog came in two R.A.F. boats had gone off, one to the turning-point at Swanage and one to the turning-point at Christchurch. A third boat of the same type was kindly lent for the race, but was not wanted. But that is another story which enters into this tale later.

By 4 p.m. the fog had passed inland and left only a slight heat-haze through which it was quite possible to see the Needles—the westernmost point of the Isle of Wight. Therefore the Committee decided to start the race at



HOW NOT TO DO IT.—The Savoia swamped by the crowd owing to the lack of an official enclosure.



Three-quarter Front View of Mr. Hawker's Sopwith (450 h.p. Cosmos "Jupiter.")

4.45 p.m., without taking the precaution to send a machine down the long leg of the course to Swanage to see what the weather was like there.

This proved to be the undoing of the whole affair. Capt. Hammersley and the little Avro (the British reserve machine) had been doing some very pretty exhibition flights during the morning, and he would certainly have gone out scouting if the Committee had asked him to do so. But seemingly nobody thought of it, and the race started.

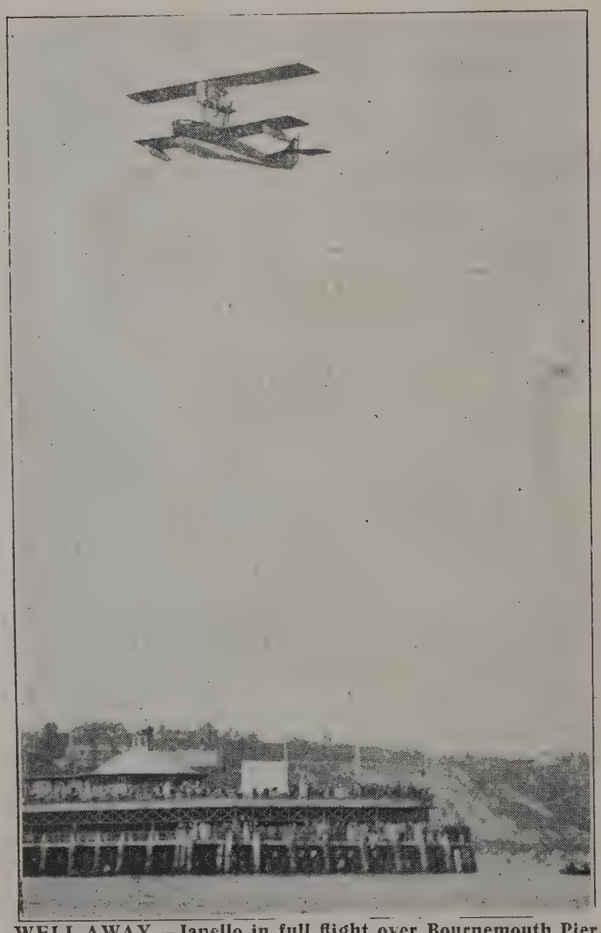
THE START.

The first machine away was the Fairey which lifted in great style. Colonel Nichol, who knows the coast well, reached Swanage Bay and found it still full of fog. Though he could see the top of the cliffs he could see nothing below them. Relying on his own quickness in controlling the machine, he dived into the fog to try and find the mark-boat. He sighted the water and flew along about 15 feet above it. Then suddenly a sailing ship appeared in front of him. He pulled his machine upwards as quickly as possible, cleared the ship, and went straight on up into the clear air.

Then he headed for Bournemouth, circled round to find a vacant piece of water, alighted on it, and beached his machine. He reported to Mr. Fairey that it was not good enough to go on with the race, for if he could not see the mark-boat he was sure that the mark-boat could not see him. Though it might hear him if he followed the cliff line, that would not be evidence of identity. Consequently he retired from the race. The Fairey people took his decision without question, for they knew that their machine was not up to



Three-quarter Rear View of the Sopwith.



WELL AWAY.—Janello in full flight over Bournemouth Pier.

the speed of some of the others, so they simply withdrew from the race.

They had been gambling on and praying for fairly rough weather, and it turned out to be a perfect day. If it had blown half a gale they would very probably have won. The curious thing was that after all the Fairey was the only competing machine that flew home.

Commander Hobbs' Supermarine was the next starter. He took her off splendidly, though badly baulked by row-boats which came out onto the course owing to absence of course-keepers. This is another point for the attention of the Committee at the next seaplane competition.

Personally, one's idea of a course-clearing craft is a 40-knot steel-built hydroplane with a ram bow, but, as such a method might not find favour in so mild-mannered a country as this, perhaps a fast hydroplane with a big megaphone or a Klaxon might suffice. On Wednesday there seemed to be nobody to keep the course clear. Mr. Louis Coatalen in "Tyreless" was doing some very neat high-speed driving, and one feels sure that if he had been asked he would have been pleased to act as course-keeper.

A wrong impression has been circulated concerning the fate of the Supermarine. All that was seen of her was what looked like a circuit of the course. She came down at the end of the first lap to do the two alightings specified by the conditions, and at the first attempt changed at once from a Supermarine to a submarine. Naturally the uninformed assumed that the hard, smooth water had stove in her bottom.

Such was not the case at all. She was also a victim of the perfect day, but not from that cause. What happened was this: Commander Hobbs arrived at Swanage Bay, could not see the mark-boat because of the fog, and so alighted in the hopes of finding her under the fog-bank. As he failed to do so, he, being an experienced seaplane pilot, took a compass-bearing for Bournemouth and started away again. Just as he was leaving the water something hit the boat with a terrific crash, but being already practically in the air he carried on: which was extremely lucky for him, as it proved.

Once out of the fog-bank he headed for Bournemouth, turned over the pier and went back to Swanage. This time he flew round the Bay, taking his course by the cliffs, presumably hoping that the mark-boat would see him even if he could not see it. Thence he followed the proper course to Christchurch, turned there, and came down to do the



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The Supermarine (450 h.p. Napier "Lion"), piloted by Squadron-Commander Hobbs, D.S.O.

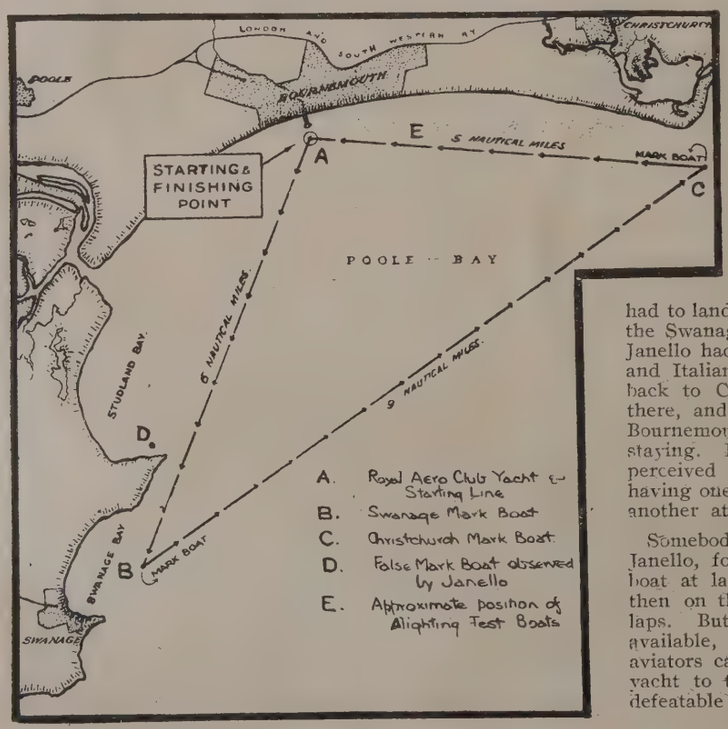
required alightings under the eyes of the official observers on a Naval "M.L."

Surmising that there was probably something wrong with his boat he alighted very carefully and very close to the "M.L." He made quite a pretty descent onto the water and went straight under. He himself came up a few seconds later and was retrieved by the ubiquitous "Tiddleywinks," which had gone down to watch his alighting. When the boat was hauled up later on it was found that the whole bottom had been knocked out of her by the collision at Swanage. Presumably the object hit was a baulk of timber or a big packing-case which was invisible owing to the fog and smooth sea. There were several R.N. ships in Swanage Bay at the time, and the Navy is always prodigal with such impedimenta, and is accustomed to heave overboard anything, no matter how useful, which interferes with superficial smartness.

The next to get away was the Savoia. Janello's start was perfect as an example of handling a boat, but here again was an example of mismanagement by the Committee. He taxied towards the line, looking alternately at the pier and at the yacht for the starting signal. The official starter and the timekeepers were in fact on a "M.L." ahead of the yacht, though there was nothing to indicate the fact, and apparently nobody had informed the foreign competitors.

The obviously proper method of starting such a race is by means of a big white flag hung out on a pole from the pierhead and used exactly as an ordinary semaphore signal is used on a railway. It is so hard to get people, especially official people, to see that the simplest method is always the best

MAP OF COURSE.



Anyhow, inspired apparently by everybody on the yacht waving him forward, Janello got off, followed the coast in the direction of Poole, appeared presently to the southward flying east, came back over Christchurch way, made his two required alightings in quite perfect style, and thereafter continued to pass the post lap after lap with the regularity of a clock. One will leave him at that for the time being.

The fourth and last starter was Mr. Hawker on the Sopwith. He got off the water faultlessly and streaked off towards Swanage with that curious hustling action reminiscent of a scalded cat which one always perceives in the start of these tiny machines with big engines. In an incredibly short time he came back, alighted close to the beach where he had gone ashore earlier in the day, heeled over to the right, opened up his engine, skilfully avoided sundry bathers, and shot his machine onto the sand.

Later one learned that he had gone to Swanage and, like Colonel Nichol, had found it impossible to see the mark-boat, so he had decided to withdraw. On alighting he had punctured another float. So that was that. He was a double victim of the perfect day.

The Great Tragedy.

We may now revert our attention to Janello in the Savoia, who, after all these minor tragedies, was left circling a course in solitary glory. It had been arranged that, as the required alightings in the first lap necessarily took a good deal of time, competitors could, if they wished, fly eleven laps instead of ten and be officially timed for the last ten so as to set up a seaplane record for 200 nautical miles. This Janello elected to do.

Somewhere about the ninth lap Mr. T. O. M. Sopwith, who is an exceptionally fine judge of pace and had been studying the times very carefully, perceived that Janello's time for each lap—though wonderfully regular—was much faster than was possible for the apparent speed of his boat. That was the first hint that there was a still greater misfortune in store for the unfortunate Aero Club than the previous mishaps.

Janello duly completed his eleven laps, but as there was one lap which was so fast as to show that he must have turned short somewhere, Sig. Santoni went out in a motor-boat and, when Janello alighted, asked him to go on again for a twelfth lap so as to be sure of covering the full course. Janello consented, although he said that he doubted whether he had enough petrol for the distance, and this led to still more trouble.

A Wholesale Mix-Up.

Judging by his previous laps Janello should have come round again in about ten minutes. Twenty minutes, thirty minutes, and then forty minutes passed, and there was no Janello. The Christchurch mark-boat returned and reported that he had passed it ten times, but not eleven, thus proving that the short lap, already surmised from the time-sheets, had been made.

Still there was no Janello, and it was evident that he had come down somewhere at sea. Darkness was falling, the yacht "Ombra" had to get back to Cowes for fear of being fog-bound on the way up the Solent. The Aero Club Committee had to land on the pier at Bournemouth to await the arrival of the Swanage mark-boat, on whose report depended whether Janello had covered the correct course or not. The French and Italian *commissaires* and some others of us had to get back to Cowes in "Ombra," for all our belongings were there, and in any case there was not a room to be had in Bournemouth, and we could not help Janello in any way by staying. It was a horribly helpless feeling. But thus one perceived the true beauty of the Committee's scheme of having one headquarters at Cowes, another on the yacht, and another at Bournemouth.

Somebody ought to have gone off at once in search of Janello, for although there were an M.L. and an R.A.F. boat at large patrolling the course, both were probably by then on their way home, having counted the requisite ten laps. But there did not seem to be a boat of any kind available, and anyhow everybody appeared to be in what aviators call a flat spin over the job of shifting from the yacht to the pier and so forth. Then, as before, the undefeatable Mr. Newman and the Saunders launch came to



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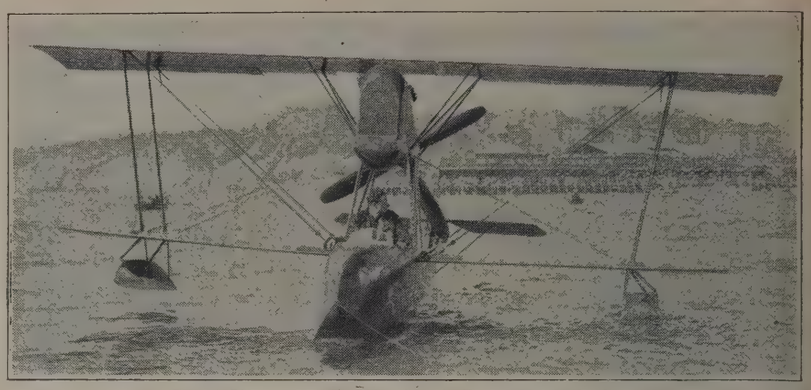
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the rescue and took off Sig. Santoni, Sig. Conflenti, and Captain Finzi, to go in search of Janello.

As "Ombra" started for Cowes one looked round the horizon, which was now quite clear, and in the dying reflection of the sun on the water over towards Poole one spotted through glasses a slow motor-boat towing a flying-boat. Careful study showed clearly that the latter was the Savoia, for there was nothing else in this part of the world with precisely her hull-line. So we went off to Cowes greatly relieved in mind.



Front View of the Savoia off Bournemouth Pier.

A Reunion and a Blow.

The first people one met on entering the Gloster Hotel at Cowes were the Savoia crowd, Signori Santoni and Conflenti, Captain Finzi, and the lost Janello, with the inevitable Mr. Newman. It appeared that, despairing of other help, they decided to fling themselves on the mercy of the Royal Navy, and had gone aboard H.M.S. "Malaya," then lying off Bournemouth with H.M.S. "Barham," for the enthusement of the British public. "Malaya" could do nothing without the consent of her flagship "Barham." Just as they were going over the side to appeal to "Barham" the keen eye of Sig. Conflenti caught sight of the motor-boat towing the flying-boat and recognised the towee. So the Italians, instead of waiting for the British Navy to move, depended on the Mercantile Marine (like the British nation in the Great War), and went off again in the Saunders boat.

They found Janello, put the Savoia safely onto the beach, and came straight back to Cowes. As the Saunders boat does her 16 knots comfortably they got in before "Ombra" and were celebrating their success when the rest of us arrived.

Moved by that "'satiable curiosity" which one shares with Mr. Kipling's baby elephant, one thereupon put a telephone call through to the Branksome Towers Hotel at Bournemouth, which had become the fourth home of the Aero Club's mobile headquarters. Then one learned what one rather expected—namely, that the Swanage mark-boat had never seen Janello at all. They had only seen one machine for one moment in all the day, and were not very sure what it was, but they thought it was the Fairey—which was probably when Colonel Nichol nearly hit a boat of some sort. The mark-boat heard engines in the direction of Studland Bay, and that was all.

Signor Santoni took over the telephone and got the same information, and broke it gently to Janello and the others. Naturally they were dumbfounded. Janello, a skilled pilot and a sailor by training, stuck out firmly that he saw the mark-boat quite clearly, that it was just like the one at Christchurch, and that he passed well outside it every time. He was not likely to be mistaken.

An Explanation and a New Mystery.

Then one produced an official programme, in which was a map of the course, and Sig. Santoni asked Janello to indicate the position of the mark-boat. Without hesitation he placed his finger on a point in Studland Bay, just north of the headland which divides Studland from Swanage Bay. That explained at once the mystery of the excessively fast times. But it produced a new mystery—namely, what boat could possibly have been there?

The only possible explanations at the time seemed to be either that it was an unemployed M.L., or else that it was the third R.A.F. boat which had come out to act as a mark-boat and was not wanted. At the moment of writing the mystery still remains unsolved.

It is, however, plain that Janello would not fly eleven laps of a wrong course just for fun. What happened evidently was that, following the coast past Poole, he came in due course round Studland Bay. Either he could not see over into Swanage Bay because of the fog and never knew that such a place existed, or else, seeing that the coast south of Studland was full of fog, he saw the bogus mark-boat and imagined that the Committee had altered the course.

The Proper Thing.

Naturally, the Italians lodged a protest, and, so far as one can gather, the Committee of the Royal Aero Club intends to do the proper thing by them. That is to say, if the mystery of that mark-boat is explained the representative of the Royal Aero Club will move a motion at the meeting of the Fédération Internationale Aéronautique in October that the Schneider Cup for 1919 and the accompanying prize be awarded to Italy, on the grounds that Janello flew the full distance specified in the rules, and that any error in the course was not his but was due to a British mistake. If we cannot be organisers we can as a rule be sportsmen and gentlemen, and that seems to be about the only way in which the Royal Aero Club can get out of a very awkward position.

Finally.

From the British point of view the Schneider Cup Competition has been a lamentable failure, but there are many valuable lessons to learn from it. British aircraft constructors have learned their own lessons, which are quite obvious and will not need repeating. And, anyhow, the British constructor is very quick to learn. What is most necessary is that the Royal Aero Club, the recognised governing body of the sport of flying, should learn its lessons.

Lieut.-Commander Harold Perrin is a wholly admirable secretary. He has done wonderful work for the Club in the past, and he did everything that one man could do to make the Schneider Cup Competition a success. But in the first place no one man could possibly do all the work of such a competition, and in the second place a secretary is by rights a kind of chief-of-staff, and is not even a generalissimo, let alone a combination of army, corps, division and brigade commanders all in one.

What caused the fiasco, so far as one could judge on the spot, was that the Committee of the Club, as a committee, did little or nothing during the day, except enjoy a very pleasing picnic individually, and before the day the Committeee neglected to appoint officials for the various duties which should have been done. These have been indicated in the course of this lengthy narrative, and one hopes the indications will be of use.

Officious officials are a nuisance at any time, but they are better than no officials at all, and, so far as sports are concerned, in some thirty years' experience of such matters one has learned convincedly that the more really officious officials one can collect to run a sports meeting the better the meeting will be run. They are a nuisance, but they do make things and people move. It was just such people who were lacking at Bournemouth.

To sum up the whole thing, the first and greatest mistake was holding the race at the wrong place, with mobile headquarters. The second was insufficient study of weather conditions and neglect to allow for the possibility of a dead calm day with a sea fog. The third was the absence of properly appointed officials to attend to the multifarious details of such a competition. And the fourth was the absence of a Competition Committee composed of people with practical experience of running competitions, people with a strongly developed critical faculty, and people with acute imagination.

The Committee of the Royal Aero Club is a wholly estimable body. The members individually possess personal charm and unimpeachable honesty. But as a Committee they are better fitted to run a Department under the Air Ministry than to undertake the management of a great international competition in which keen comprehension, foresight, forethought, firmness, and quickness of action are necessary to success. In fact, if the Schneider Cup Competition had been conducted by the Department of Civil Aviation it could not have been done very much worse.

Nevertheless, we live and learn, and it is to be hoped that by the next time we have to run a big competition in this country either the Royal Aero Club will have a new Committeee or the present Committee will have learned its lesson from this failure.—C. G. G.

AIRCRAFT IN THE MAKING.—No. 1

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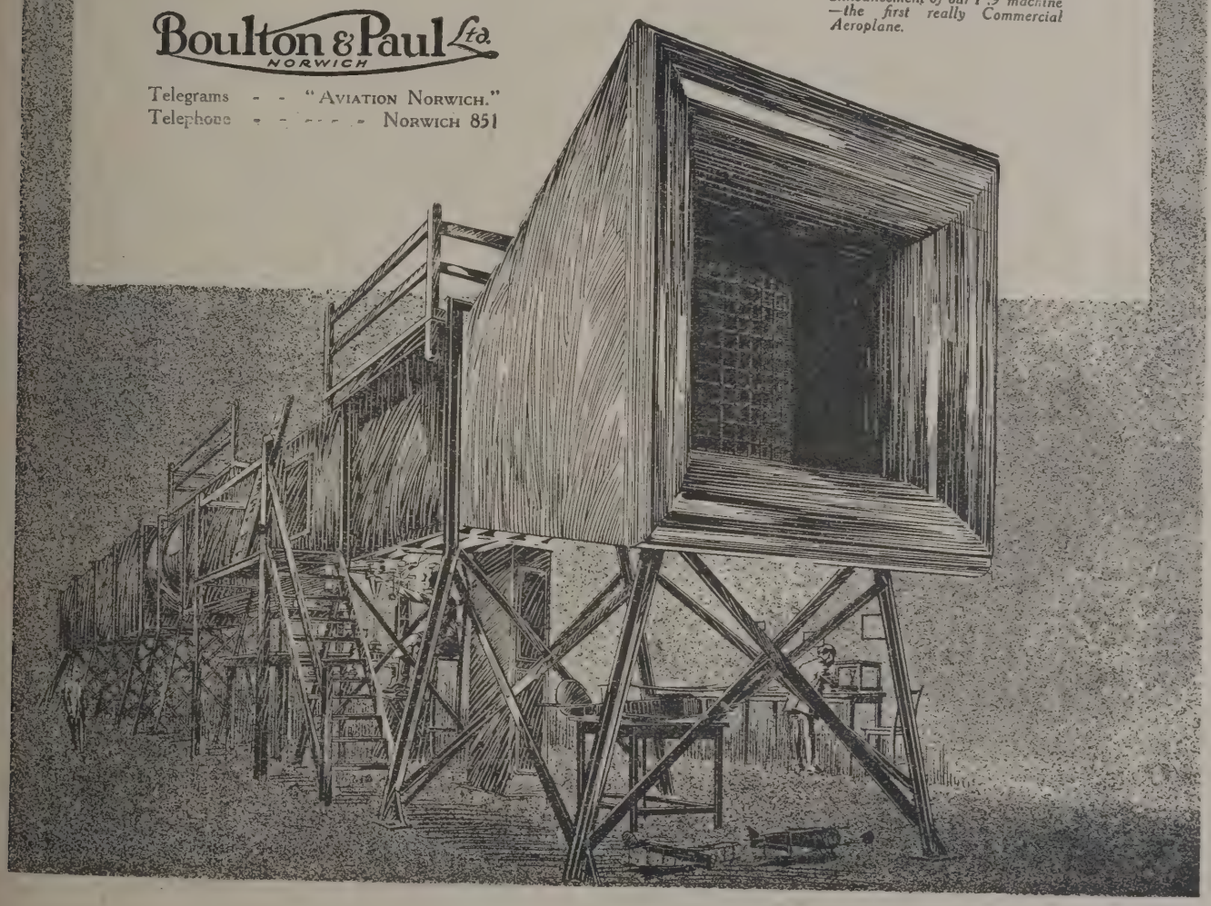
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AN OFFICIAL PROTEST

The following letter has been sent to the Royal Aero Club by the Savoia Company :—

Gloster Hotel, West Cowes, I. of Wight,
Sept. 11th, 1919.

The Committee, Royal Aero Club, Clifford Street.

RE SCHNEIDER CUP RACE.

Gentlemen,—We confirm our telegram of even date herewith as follows :—

"Schneider Cup. Please note we appeal against the decision of Committee declaring race void on account of Mark boat observe Swanage end statement that he did not see our Savoia machine, our pilot saw distinctly at that end of course a boat with same mark as boat at Christchurch. We understand that a third mark boat was on the course, and we request investigation and inquiry as to whereabouts of this boat. We request revision of decision against which we formally appeal to the Committee of the Aero Club.

"D. LAWRENCE SANTONI, President,
Società Idrovolanti Alta Italia."

We beg formally to appeal against the decision of the Race Committee declaring the race void and disqualifying Savoia seaplane on the statement that the observer on the mark boat situated at the Swanage end of the course, that he did not observe our machine.

We appeal on the following grounds, and we demand an inquiry into the facts mentioned below :—

1. Our pilot made the circuit 11 times complete. On each circuit he distinctly recognised the mark boat with the red and white sign at the Swanage end of the course, exactly similar to the boat situated at the Christchurch end.

2. Observation from below may have been obscured by the mist.

3. We have been informed that there were three mark boats, and as our pilot distinctly saw, during the whole of the race at the Swanage end, a boat exactly similar to that at Christchurch with the same marks, he evidently took this boat as the turning point, and if this is the case, the error is due entirely to bad organisation on the part of the arrangement of the Committee, for which we are, naturally, not responsible.

We also protest against the manner in which the race was managed, and against the absence of proper indication to the pilots of the change in the time, and in the order of starting.

The rules hereon laid down by the Committee were not adhered to. Proper and definite notice of such change was not intimated to our pilot, who received his information from a source outside the official one. No proper and effective provision was made to enable the mechanics attached to the foreign seaplanes to approach their respective pilots in order to supply them with petrol, or to inquire as to their wants. Nevertheless, we had been assured by the Secretary of the Club that a special motor-boat would be at the disposal of each competitor at Bournemouth in order to bring mechanics and petrol, etc., to the pilots.

We say we complied with all the rules and conditions of the race, our pilot having, as a precaution, completed more than the 200 miles prescribed by the Rules, and we claim to have won the Cup and the pilot's prize, and we request you to revise the decision of the Race Committee, and to make a searching inquiry into the points above-mentioned.—We are, Gentlemen, for the Societa Idrovolanti Alta Italia,

D. LORENZO SANTONI, President.

SCHNEIDER CUP NOTES

The following notes as to the events immediately preceding the Schneider Cup Race arrived too late for inclusion in last week's issue, and are here printed to complete the story.

THE NIEUPORT'S RUN OF BAD LUCK.

Two of the Nieuport machines built for the race crashed on their trials in the Seine. The reserve machine left Paris on Sunday, Sept. 7th, about 2 p.m., and, flown by Lieut. Casale, reached Cowes in 2½ hours. Unfortunately, alighting in the Medina the machine hit a mooring buoy and crashed. She was recovered during the evening, and work upon refitting with new floats and wings was started at once, and there seemed every possibility that she would be ready in time for the race.

This reserve machine was fitted with the long streamline type of floats described in "Aeronautical Engineering" of last week, and not with the original Nieuport type.

A second Nieuport was expected at Cowes on Monday, but had not arrived at 6 p.m.

THE SPAD.

The Spad arrived at Cowes on Saturday, Sept. 6th, and by Monday morning was completely erected. The machine was obviously not new, and had had a fair amount of flying—though possibly not as a seaplane.

She is a very pretty and extremely Hunnish looking job The fuselage is an oval monocoque of the very cleanest type. The upper and lower wings are of about equal span, but the upper wing has a much more pronounced rounding-off at the tips than has the lower, and is heavily swept back from the centre. The lower plane alone is fitted with ailerons.

The floats fitted are not the streamline affairs with hydrovanes, originally intended, but long, stepped, pontoon floats very like those of the Nieuports, carried on a very complicated and rather curious chassis. On the water the machine handles well and certainly looks very fast when in flight.

ITALY'S REPRESENTATIVE.

The Savoia boat appeared to be complete, and the Isotta-Fraschini engine was run on Monday afternoon, Sept. 8th, and a trial trip made in the evening. The machine itself is a very normal affair—rather reminiscent of an F.B.A. somewhat cut down and fitted with an excellent engine.

THE BRITISH ELIMINATING TRIAL.

The delayed trial between the Supermarine flying-boat and the Avro was flown off at 4.30 on Monday, Sept. 8th. The machines were started from Cowes, flew to Bournemouth Pier and back, alighted, and again made to take off. On actual time there was very little to choose between the two—both averaged somewhere round 130 m.p.h., and after some deliberation the Committee of the Royal Aero Club nominated the Supermarine as the third British representative.

On speed the Avro's was somewhat the better performance, but it is believed that the Committee were of the opinion that the Supermarine boat stood a much better chance of surviving the alighting and getting-off tests if the day of the race should prove at all rough.

The British team therefore stood as follows :—

(1) Sopwith seaplane, 450 h.p. Cosmos engine (Mr. Hawker pilot).
(2) Fairey seaplane, 450 Napier engine (Lieut.-Col. Nichol pilot).
(3) Supermarine flying-boat, 450 Napier engine (Squad-Comm. Hobbs pilot).

With the Avro, 240 h.p. Siddeley Puma (Capt. Hammersley pilot) in reserve.

THE MEMBERSHIP OF THE AERO CLUB OF FRANCE.

The total membership of the French Aero Club is 1,930. The club has passed through very difficult times during the war, and only admitted an average of 97 new members per year during the war. The figures are as follows :—

Members to end of 1913	1301
New members, 1914	81
,, ,, 1915	26
,, ,, 1916	87
,, ,, 1917	114
,, ,, 1918	178
First 3 months of 1919	143
Total membership	1930

THE INTERNATIONAL AIR CONVENTION

The Air Ministry announces :—

The Convention relating to International Air Navigation was formally approved subject to one or two minor reservations, by the Supreme Council of the Peace Conference, at a meeting held at St. Germain immediately after the signature of the Peace Treaty with Austria on Sept. 10th.

This document, which is one of the most interesting of the agreements made by the Powers taking part in the Peace Conference, is very comprehensive, and deals amongst other things with such subjects as Sovereignty of the Air, Space above Territory and Territorial Waters, International Air Law, Nationality of Aircraft, Certificates of Airworthiness, Conditions of Admission of Air Navigation above Foreign Territory, Rules to be observed on Departure, on Landing, and when under Way, Prohibited Articles and the Institution of an International Commission for Air Navigation.

There was little or no precedent to guide the Delegates in the framing of the Convention, and in its drafting it was essential that our Dominions, our Allies, and as many as possible of the neutral States should participate. To secure agreement in 11 weeks as was done on a subject affecting so many different interests is no mean achievement.

The signatories to what may be regarded as the Charter for Civil Aviation throughout the world are as follows :—

United States, Great Britain, France, Italy, Japan, Belgium, Brazil, Cuba, Greece, Portugal, Roumania, and Serbia.



THE BOULTON & PAUL—P. 9.

An Aeroplane which is a Sound Commercial and Private Proposition

In this P. 9 Machine we have, we feel, solved the problem of providing an Aeroplane which is a sound business proposition—and which combines with low cost the great essentials for Commercial and Private use. All our great resources of material and craftsmanship have been utilised. Scientific Research and Experiment by a staff associated with flying from its beginnings coupled with the great Experience gained through the building of thousands of Aeroplanes during the War, have been concentrated in the production of this P. 9 Model.

It is a Two-Seater—Single Engine Tractor—which has attained on test a speed of over 100 miles per hour.
Its outstanding features are :—

CHEAP AND EASILY HOUSED. The Initial cost is extremely low—£700—and the cost of running for a machine of this type and performance is reduced to a minimum. Owing to its small size it is easy to handle on the ground and requires but little accommodation. The principal dimensions are: Span, 27 ft. 6 in.; Length, 25 ft.; Height, 10 ft.

EASY TO FLY. The P. 9 has a big speed range, and low landing speeds, and this combined with Stability at all trimming speeds and well-balanced controls, allows the machine to be flown for long periods without undue fatigue. It also gives the maximum of Safety possible.

COMFORT AND CONVENIENCE. The comfort of the Pilot and Passenger has been specially considered. Each Cockpit is roomy and fitted with our special Seats. Controls for both Flying and Engine are fitted in the front and rear Cockpits to enable the machine to be flown from either position. The exhaust from engine is discharged behind the rear Cockpit giving a silencing effect and freedom from fumes. Two standard cases are provided for luggage and form part of the fairing immediately behind the rear Cockpit.

The uses to which this compact and efficient machine can be put are wide and various, and will suggest themselves to those who have been awaiting the stage of Aeronautical Development now reached by the P. 9. It can be used for dozens of Commercial Purposes. The same type carried photos from R. 34 direct to London. It has been sent to Australia for Sheep-runs—and will soon be in use in various parts of the world for Exploring Uncharted Territory, Examining Timber Tracts, Fighting Forest Fires, Carrying Mails to Distant Mines, Transition of Colonial Mails to Mail Steamers, and for General Patrolling and Police Purposes.

£700 **If you are interested—write for full particulars. State your needs or purpose, and our engineers will consider every detail closely—to advise soundly.**

Boulton & Paul Ltd.
NORWICH

SEE OUR INTERESTING SERIES "AIRCRAFT IN THE MAKING" ELSEWHERE IN THIS ISSUE

The WORLD of AERONAUTICS

NEWS OF THE WEEK FROM ALL QUARTERS

The Francis Mond Professorship.

The election to the recently established Francis Mond Professorship of Aeronautical Engineering at Cambridge will take place on Friday, Sept. 26th.

An Attempt to Fly Round the World.

According to German newspapers, the pilot Boehm, who is well known in Germany for the feat of remaining twenty-four hours in the air, proposes to make an attempt to fly round the world.

The "Vossische Zeitung" considers that Boehm's twenty-four-hour flight as a feat of endurance surpasses even the British and American flights across the Atlantic.

It is good news to hear that Herr Boehm survived the war.

International Air Routes.

An international conference of the representative aerial transport companies of Norway, Sweden, Denmark, and Germany, summoned at the instance of Mr. Holt Thomas, chairman of Aircraft Transport and Travel, Ltd., of Great Britain, has just been held at The Hague.

The meetings, extending over several days, under the presidency of Maj.-Gen. Sir W. S. Brancker, were held by permission of the Dutch Government at the Ministry of Agriculture, Industry, and Trade; and, as their outcome, it was decided to form the International Air Traffic Association, the object of which will be to facilitate the commercial operation of long-distance "airways," more especially in the northern part of Europe.

145 Miles an Hour.

In an international air race, flown round a closed circuit of 136 miles, in connection with the Aircraft Exhibition at Amsterdam, the fastest time was that of Capt. Gathergood, who, piloting an Airco 9R (450 h.p. Napier Lion) biplane, averaged a speed of 145 m.p.h.

Life Insurance for Airship Passengers.

One of the passengers on the R.33 during its cruise to the Continent insured his life for £1,000. The premium was under £2.

A Banquet.

A banquet is to be given to Mr. Handley Page on Saturday, Sept. 20th, by the Cheltenham Chamber of Commerce to honour him as a distinguished citizen of the town.

Airships in Peace and War.

A very excellent exhibition has been arranged by Lady Sybil Grant, at the Princes Galleries, under a host of difficulties, as explained in the foreword of the catalogue, in an effort to educate the rather dense British public in the colossal amount of work achieved by airships in the past, principally during the war; and also in the huge possibilities that present themselves for the future.

Both the Air Ministry and the French Airship Department have lent their support, and together with a large number of private firms connected with the airship industry have brought together a comprehensive collection of parts accessories, models, photographs, paintings, etc., which illustrate the wonderful progress of the airship from pre-war times to the present day in a particularly graphic manner.

The opening day did not attract a "huge" crowd, but the G.B.P. was ever an unobservant tribe, and unless notices are continually thrust before its gaze, such as one gets concerning certain brands of pills, or systems of furnishing the home on one's separation allowance, a certain period of time must elapse before the preliminary Press notices take the necessary effect. Perhaps if the Jazz-band were accommodated in the basket of a captive Caquot balloon somewhere over Piccadilly it might have the desired effect.

Nevertheless, it is to be earnestly hoped that the exhibition will meet the success it deserves, more particularly since the profits go towards founding an "Airship" bed at the St. Dunstan's Home.

The exhibition is arranged in three rooms, the principal exhibits in each gallery being grouped as follows :—(I) French exhibits lent by the French Government; (II) Autochromes, cloud photographs, etc.; and (III) A collection of Airship accessories, such as types of valves, blowers, instruments, etc., together with a series of models, etc. In addition, there is a large number of commercial exhibits, a show of bombs and armament, as well as an excellent collection of official photographs and paintings; and finally mention should be made of the Masked Airship Band which dispenses syncopated music daily.—L. L. B.

Comparative Speeds.

In the "Daily Express" Maj.-Gen. Sir W. S. Brancker, K.C.B., A.F.C., is reported to have said recently : "Britain's airships, including the R34, are too small and much too slow. The airships, for passenger or goods transport, will be of little value, and for this reason the Government, when they sell the ships, must not expect to make a profit. They must, in fact, be sold at a low percentage of their original cost.

"The R34's performance, creditable as it was, shows that even our largest flying craft can get to America in little better time than ordinary steamships. Exporters who are asked to send their goods by air, and incidentally to pay double or treble the shipping rates, will want something speedier.

"The Government may have to subsidise the development of airship construction. The French Government are already doing this on a large scale. Airships will pay if we build them larger, with more power, and with greater lift.

"Larger ships, however, will mean larger sheds and—capital. Whether or not money for this purpose will be forthcoming from ordinary sources is problematical. Personally, I do not think it will."

Flying Backwards Through Time.

At the R.A.F. Club the other day, a member who is fond of leg-pulling was talking learnedly on the subject of flying backwards through time. After pointing out that as at the equator the earth revolves at the speed of about one thousand miles an hour, which speed naturally diminishes towards the poles, he argued that at a certain latitude the speed would be less than 100 miles an hour, so that if an aeroplane flew in the opposite direction to the earth's movement at a speed of more than 100 miles an hour, it could arrive at various points before it started. For instance, it could start at lunch time and travel backwards through the morning to breakfast time, and the only danger would be that one might travel backwards to the time when one was in bed and asleep, and then one might crash.

Some members, whose ideas of local time were vague, found that the problem required quite a lot of thinking over.

A Megaphoned Mistake.

On Wednesday, September 10th, the day allotted for the decision of the Schneider Cup Race, three of the Supermarine Passenger Flying Boats were moored to the West and inside of Bournemouth Pier. On one occasion during the afternoon, an official motor launch was visiting the competitors in the International Seaplane Race, with instructions to be ready to start within a quarter of an hour, and much to the surprise of the occupants of these three passenger machines instructions were megaphoned to them by the official on board the launch that they also were to be ready to start in a quarter of an hour.

A New Altitude Record Claimed.

It is said that one of the Curtiss Co.'s testing pilots, Mr. Rowland Rohlfs, on Sept. 13th, rose from Roosevelt Field, Long Island, to a height of 34,200 ft. Mr. Rohlfs started out to test a machine in preparation for an officially observed attempt to beat what is claimed to be the world's altitude record of 33,136 ft., held by Adjutant-Casale, of the French Army, but found conditions so favourable that he decided to try how high he could ascend. As it was unobserved, the "record" is unofficial, but Mr. Rohlfs will try on the first favourable day to make an authenticated attempt. At 34,000 ft. Mr. Rohlfs found a temperature of 44 deg. below zero, but discovered what a scientific writer recently described as "a temperature lid" a little above that height, as at 34,200 ft. the thermometer registered four degrees higher. Mr. Rohlfs machine was a Curtiss war triplane with a 400 h.p. Curtiss engine.

A Pretty Style.

The following advertisement recently appeared in the "Times" :—

> "Demobbed officer, R.A.F., age 26, plus 3 golfer, with the correct, pretty style, has also a knowledge of motors, seeks appointment as private professional or companion; small salary."

Also a pretty literary style.

ROLLS ROYCE

WARNING

Changes to Rolls-Royce Cars

Rolls-Royce Ltd. have recently learned that attempts are being made by certain persons to "bring up to date" pre-war Rolls-Royce chassis by substituting for Rolls-Royce Springs of old type cantilever springs which are not of Rolls-Royce manufacture; also by substituting other radiators and bonnets which are not of Rolls-Royce manufacture. Some of these changes have been brought to the attention of the Company, who have found them to be not only unsatisfactory but possibly dangerous to the users. Owners who are asked to have such changes made to their Rolls-Royce cars, or potential purchasers of Rolls-Royce cars on which such changes have been made or may be suspected, should communicate with Rolls-Royce Ltd., 15, Conduit Street, London, W.1, and the Company will, for a small fee, inspect the chassis in question and inform the applicant what parts, if any, are not supplied by Rolls-Royce, and what the effect of such parts in their opinion is likely to be. Furthermore, any such alterations which interfere with or depart from Rolls-Royce standards will probably put the car out of action for an indefinite period in cases of accident or breakage, as Rolls-Royce new parts cannot be expected to replace foreign broken parts in a "bedevilled" chassis.

ROLLS-ROYCE Ltd., 14 & 15, Conduit Street, London, W. 1.
Telegrams: "Rolhead, Reg., London." Telephone: Gerrard 1654, 1655, 1656.

RECENT
AIRCO SUCCESSES

THE AERIAL DERBY, 1919

THE winning machine, an Airco 4R, with a Napier engine, averaged a speed of 129 miles an hour—since declared a record by the Royal Aero Club. Two other Airco machines started, the Airco 4, with a Rolls-Royce engine, and the Airco 9, with a Siddeley "Puma" engine. The Airco 4 finished third, and the Airco 9 fifth. Of the seven machines finishing three were Aircos.

FIRST THIRD AND FIFTH

THE AMERICAN AERIAL DERBY

IN this race, just flown over a course 1,042 miles in length, the winning machine, an Airco 4, averaged throughout a speed of 136 miles an hour; while the second and third places were also secured by Airco 4's.

FIRST SECOND AND THIRD

INTERNATIONAL RACE AT AMSTERDAM

IN this contest, flown in connection with the Aircraft Exhibition at Amsterdam, there were between thirty and forty starters, including the fastest of the French and Italian machines. The first and second speed prizes were won by Airco machines. The Airco 9R, with a Napier engine, the fastest machine in the race, covered the closed circuit of 130 miles at a speed of 145 miles an hour; while the second fastest time was that of the Airco 4A, with a Rolls-Royce motor.

FIRST AND SECOND SPEED PRIZES

THE AIRCRAFT MANUFACTURING COMPANY, LIMITED

London Office: 27, BUCKINGHAM GATE, S.W.1.

Chairman (and Founder 1911), Mr. G. HOLT THOMAS.

NAVAL & MILITARY AERONAUTICS

GREAT BRITAIN.

NAVAL.

ADMIRALTY APPOINTMENTS.

The following appointment has been made:—
SEPT. 13TH.—Sub. Lieut.—P. R. Fryer, to "Furious," Sept. 12th.

A British flying boat containing two officers recently arrived at Sordavala on the Finnish shore of Lake Ladoga. The boat had been flown from the Murmansk front and started on its return journey on Sept. 6th.

* * *

The British seaplane ship "Vindictive" has anchored at Copenhagen.—H1.

* * *

The aeroplane-carrier "Hermes" was launched on Sept. 11th from the shipyard of Sir W. Armstrong, Whitworth and Co., Ltd., on the Tyne. It is probable that she will be the last large vessel launched for the Navy for a long time.

Most of the vessels of this class were converted or adapted for aeroplane work, but the "Hermes" was laid down as a carrier in January, 1918, and in her construction and equipment advantage has been taken of the experience gained in the earlier ships. The "Eagle," a converted aeroplane-carrier, has also been launched at the Armstrong yard.

The "Hermes" has a length of 548 ft. and 70 ft. beam, with a displacement of 10,950 tons, and geared turbine engines of 40,000 h.p. capable of developing a speed of 25 knots. As in the case of the "Argus," the whole length of the flying deck of the "Hermes" will be available for starting and receiving the machines, and, by special arrangements for the emission of the hot gases and smoke, there will be no funnels or other obstructions. Under the flying deck are the hangars for the machines, as well as the workshops for their repair. Two electrically controlled lifts are fitted, the one forward and the other aft, for hoisting the aeroplanes to the flying deck. Another special feature of her design is a system of ventilation to lessen the danger of fire from petrol fumes.

The armament of the "Hermes" will consist of a number of light guns for anti-aircraft protection and several 6 in. guns for heavier work. In her construction, as a defence against torpedo attack, the "blister" system has been used. The complement of the vessel will comprise 500 naval ratings and 130 members of the Royal Air Force. It is expected that the "Hermes" will be completed early in 1920.

It is to be hoped that in the next war she will not be the victim of such a mistake as was her predecessor.

* * *

It is reported that a case of considerable interest will come before the War Inventions Committee during the course of the next few weeks. Capt. W. O. Bentley, the inventor of the Bentley rotary aeroplane engine, will claim recompense for the use of his invention. The amount claimed is said to be £100,000.

Capt. Bentley, who has served both in the R.N.A.S. and the R.A.F., was frequently in France and Flanders during the later stages of the war on duties connected with his engines.

MILITARY.

OFFICIAL COMMUNIQUES.

The War Office issued the following communiqué on September 15th: Touch has been gained by aeroplane with General Mamontoff, who, in the middle of August broke through the Bolshevik lines facing the Volunteer Army, and has been carrying out a raid on a large scale around Tamboff.

Kronstadt was bombed twice on Sept. 4th. The "Berlingsketidende" states that British aviators again attacked Kronstadt on the night of Sept. 7th-8th. The Bolsheviks had anti-aircraft guns in action, but did not seem to mind the air attack. Their searchlights were only directed on the sea, and they evidently feared an attack on the remainder of the Russian Baltic Fleet. But the British only made an air raid, and the number of fires proved the effect of their bombs.

A British pilot was bombing Kronstadt recently when his engine stopped. With a fierce barrage surrounding him, he glided across the 12-mile stretch of water to the Finnish coast. He landed on the beach, repaired his engine and flew back to the Bjorko base.

AIR FORCE.

An official announcement from the War Office states that an Army Entrance Examination for the Royal Military Academy, Woolwich, and the Royal Military College, Sandhurst, will begin on November 4th. Candidates must have attained the age of 17½ on January 1st, 1920, and must not be more than 19 on November 1st, 1919. An exception is made in the case of candidates who are serving or have served satisfactorily in the Navy, Army, or R.A.F.

A limited number of cadetships at the Royal Air Force Cadet College will also be open to competition, and will be awarded to candidates who fulfil certain conditions laid down by the Air Ministry from which particulars may be obtained on application. A candidate who fulfils all the necessary conditions may compete for a cadetship at the Royal Air Force Cadet College, and also for a cadetship at the Royal Military Academy or Royal Military College. Candidates desiring to do this must express definitely their order of preference before the examination begins. A candidate may say that if he is not among the first (so many) successful competitors for the Royal Military Academy or Royal Military College (as the case may be) he will elect for a cadetship at the Royal Air Force Cadet College. Cases may, however, arise in which it would not be possible to give effect to such conditional preference.

* * *

The Air Ministry has decided to demobilise the R.A.F. pigeons. It is stated that all the pigeons used in the Force were presented to the Government by fanciers, and it is hoped that these birds, which did good service, will now be returned to their original owners.

* * *

The Air Ministry made the following announcement of the trip of the R.33:—

"Following upon the conference held on Sept. 8th relating to the Government airship programme, it has been arranged that H.M. Airship R.33 shall carry out a flight of about 86 hours' duration in order to demonstrate the capabilities of lighter-than-air craft and as a practical illustration of the comfort afforded to passengers travelling in airships. Invitations to take part in this voyage have accordingly been extended to leading members of industry and representatives of Home and Colonial Government Departments interested in the commercial development of this type of aircraft. On board also is Lieut. de Vaisseau Sablé, Air Attaché to the French Embassy in London. In addition there are the following officers:—Air Commodore E. M. Maitland, C.M.G., D.S.O., A.F.C.; Flt. Lieut. G. M. Thomas, D.F.C., who is captain of the R.33; Flt. Lieut. H. A. H. Leetham, second officer; Flt. Lieut. S. E. Taylor, D.S.C., third officer; Pilot Officer W. E. James, engineer officer; and the crew, which consists of 27 men.

"Every possible attention has been paid to the comfort of the guests. Sleeping berths have been rigged in the internal keelway of the vessel, in which the passengers will rest during the night. Meals will be served in the mess-room, also in the keelway, hot and cold water will be available, and the news of the day will be transmitted to the airship by wireless telegraphy."

The R.33 left Pulham, Norfolk, at 9 p.m. on Sept. 10th. She had ten passengers on board, including a number of prominent business-men: Mr. Sydney A. Boulton, of Lloyds; Mr. J. Dunn; Mr. Benjamin Guinness; General Sir Sefton Brancker, of the Aircraft Manufacturing Co.; and in addition Commander Foakes, R.N., representing the General Post Office; and Mr. E. A. Box, Secretary to the High Commissioner of Australia. Most elaborate arrangements were made for the comfort of the passengers. Beds complete with all bedclothes were provided. A chef and a head waiter from the Criterion Restaurant cooked and served sumptuous meals cooked on the exhause-pipes and a small electric stove.

The R.32 left Pulham at 8 p.m., one hour before the R.33. The weather was excellent. The R.33 crossed the coast at Lowestoft and set a course to the mouth of the Thames, proceeding from the North Foreland to the Belgian coast at Ostend, which was reached at about 4 a.m. Shortly before 5 a.m. the coast of Holland was crossed at West Kapelle, and

The Hague was reached by 6 a.m. At about that time the R.32 was sighted flying low on the port side of the R.33. A signal was sent to her by wireless asking her to keep in company as far as Amsterdam, which was reached at 7 a.m. The R.32 then returned to Pulham. Messages were dropped at Amsterdam and at many other places. Rotterdam was reached at 8.15 a.m.

It was then decided to abandon the visit to Paris as landing might have been difficult owing to the amount of water ballast which had been dropped in the night. Therefore the battle-fields were then visited and the passengers obtained a good view of them from a height of 3,000 ft. Antwerp was reached at 10.40 a.m. South of the town and over the district of Hoboken what appeared to be German submarine shelters were observed on the banks of the Scheldt.

A message was dropped into Brussels at 12.45. Lille was passed over at 2.40 p.m. A return to Nieuport was then made by way of Armentières and Ypres. In that district salvage parties are clearing the ground, and the streaks of smoke from their fires can be seen over the shattered, desolate, and waterlogged waste. The journey over the sea was made to Suffolk and a landing was made at 6.20 p.m. on Sept. 11th, after a trip of about twenty-one hours. Over France on the return journey there was some head wind, but not enough seriously to interfere with the progress of the airship. A number of photographs were taken, but the ground haze probably interfered with many of them.

By special arrangement, which had been made in advance with the Marconi wireless station at Wormwood Scrubs, a complete summary of the news of the day was dispatched to the R.33 from the "Times" Office in Printing House Square. The last sentence of the summary was received by the aerial liner shortly before 4 a.m. while she was flying over the North Sea at 4,000 ft. The messages were typed out on sheets of special paper, by 6 o'clock the newspaper had gone to press, and at breakfast time, two hours later, the passengers on the R.33 received with their eggs and bacon the first copy of the aerial edition of the "Times."

The passengers were delighted with their trip. One remarked that he never expected a comfortable sleeping-berth, a dining-room, oysters for lunch, and electric light, nor did he expect to be able to roam all over the ship and from one gondola to another.

* * *

An aeroplane, piloted by Lieut. Kennedy left St. Raphael (Var) on Sept. 10th on a flight to India, via Taranto and Egypt.

BELGIUM.

The King of the Belgians flew from Brussels to Ostend during the afternoon of Sept. 8th. He then inspected the repairs carried out in the port, and returned by air to Brussels in the evening.

FRANCE.

The French military authorities have for some considerable time been running the following aerial services in the Near East assisted by the Serbian and Greek military aviation arms both of which are commanded by French officers.

(1) Athens-Salonica (208¾ miles). Landings are made intermediately at Larissa and Lamia. This service, which has been in existence for over a year, is run weekly during the winter and twice weekly during other seasons.

(2) Constantinople-Salonica (310¾ miles). Landing intermediately at Dedeagatch. Service irregular.

(3) Constantinople-Bucharest (298 miles). Landing intermediately at Lulu Burgas. Twice weekly since May last.

(4) Bucharest-Galatz-Kichinev (186 miles). Intermittent service.

The steamer "Mingrelie" left Dakar on Sept. 6th having on board the remains of the Farman biplane "Goliath" which is now being brought back to France. The pilot, Lieut. Bossoutrot, and his crew are returning in the same ship.

Commandant Vuillemin continuing his flight from Cairo to Paris left Constantinople at 7 a.m. on Sept. 8th and reached Istres, near Marseilles, at 8 p.m. on the same day, having landed at Naples en route. On Sept. 9th he continued his journey and reached Villacoublay at 7 p.m. He thus completed safely his journey Paris to Cairo and back which began on Aug. 11th. The total distance covered is about 5,500 miles.

The French nation has ever excelled in the creation of heroes. There is a national swiftness of perception in these matters and a delicate grace in the recognition of gallantry. As an instance of the manner in which the Army does honour to its heroic dead, the last citation of Captain Guynemer, a General Order of Oct. 16th, 1917, is here reprinted :—

"Le général commandant la 1re armée cite à l'ordre de l'armée le capitaine Guynemer, commandant l'escadrille No. 3.

"Mort au champ d'honneur, le 11 Septembre, 1917. Héros légendaire tombé en plein ciel de gloire, après trois ans de lutte ardente. Restera le plus pur symbole des qualités de la race.

"Ténacité indomptable, énergie farouche, courage sublime. Animé de la foi la plus inébranlable dans la victoire, il lègue au soldat français un souvenir impérissable qui exaltera l'esprit de sacrifice et provoquera les plus nobles émulations."

The memorial ceremony took place at Le Bourget on Sept. 11th. At four o'clock General Duval, Director of Aeronautics, and his staff arrived at the aerodrome and took the general salute from the troops on the station. He then read the last citation of Guynemer quoted above, and immediately afterwards presented various decorations to officers and men. The bands played the Marseillaise and the ceremony ended. During the proceedings the aviator Fronval flew with customary brilliancy and verve.

GERMANY.

According to the German paper, "Freiheit," the 426th Detachment of the Air Service recently joined the Russian counter-revolutionaries. The Detachment is still in communication with the Military Departments in Germany, and is receiving Army stores. Some men from the detachment arrived in Berlin on Sept. 10th to fetch three aeroplanes. Other machines will be sent shortly.

ITALY.

On Monday, Sept. 8th, Petty Officer Guarnieri, R.I.N., piloting a Savoia flying boat, left Lake Maggiore, with Lieut. Campacci, R.I.N., as observer. After flying over the Alpine chain in the St. Gothard region, and crossing Switzerland from south to north, he struck the Rhine Valley, and followed it. He arrived safely at Amsterdam after a non-stop flight.

Maggiore Gabriele d'Annunzio, whose fame as a dramatist has almost been equalled by his gallantry as an aviator, has as has been stated, organised with some publicity a flight from Rome to Tokio. On Sept. 12th he appears to have destroyed any chance of his attaining further distinction as an aviator or of reaching Tokio save as a refugee by a singularly rash interference in the affairs of nations. On the afternoon of that day he led a force of about 10,000 Italian Grenadiers and Arditi, with armoured cars and machine guns, to the port of Fiume (which, to the annoyance of the Italians, was not given



ANCIENT HISTORY. — A Short Seaplane (225 h.p. Sunbeam engine) in Central Africa. Very little has been heard of the work of these machines in that particular part of the world during the late war. The R.N.A.S. Detachment in Central Africa was not so widely advertised as was its less fortunate squadrons on the Fronts nearer to England and the world of newspaper correspondents.

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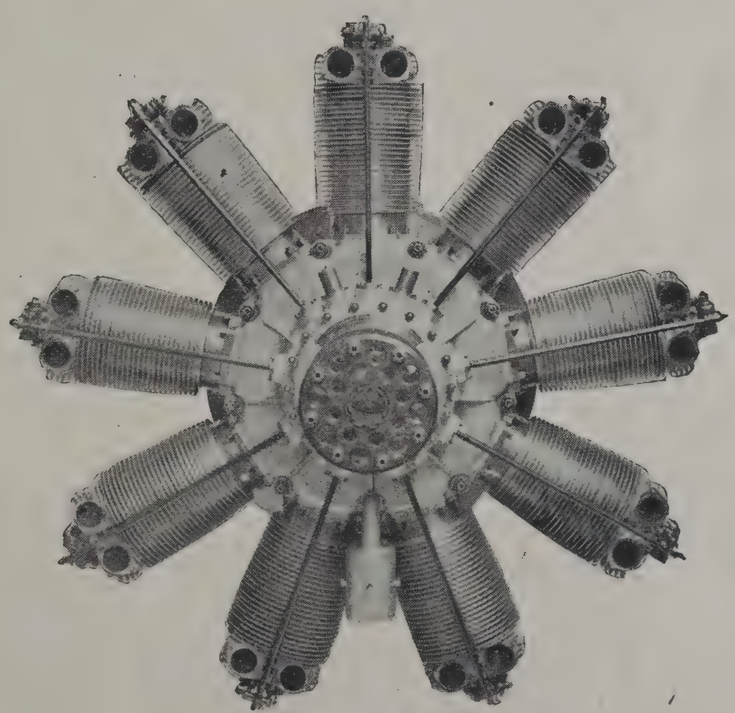
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to Italy in the Peace Treaty). Fiume has recently been administered as a temporary measure by an Italian general aided by Allied troops. According to the latest reports, Maggiore d'Annunzio seized the town and is now in the seat of power. The Italian troops in Fiume when called upon to repel the d'Annunzio attack revolted and transferred their allegiance to the insurgents.

The Italian Premier, in a speech in the Chamber, denounced Maggiore d'Annunzio's action and stated that vigorous measures were being taken to suppress the revolt. General Badoglio, the Deputy Chief of the General Staff, has gone to Fiume with complete powers.

The Italian correspondent of THE AEROPLANE writes :—

It transpires that among other unaccountable fatalities the death of the Naval officer-pilot Umberto Calvelli has caused the absence of an Italian seaplane squadron from the Amsterdam Show. Giovanni Ravelli is one more of the great naval war aces who have gone out in this last disastrous month. One is led to ask what effect the intense solar heat may have had on the artificially-seasoned timber of the use of which one has heard.

Italian seaplanes have been sent to St. Raphael to pass French Government tests.—T. S. H.

RUSSIA.

The "Daily Express" correspondent reports that Bolshevik aviators have dropped eleven bombs at Kellomaki, near the Finnish frontier, but caused only insignificant damage.

SPAIN.

The Farman biplane flown by M. Chevillard from Paris to Madrid where it arrived on Sept. 9th has been delivered to the Spanish Government for use in a Military aviation school. One machine of the same type has previously been delivered.

U.S.A.

A recent issue of the "Aircraft Journal" stated that mechanically inclined men were wanted for service aboard the U.S.S. "Shawmut," the only aviation mother ship in the U.S. Navy. The "Shawmut" is releasing aviation mechanics in accordance with orders received recently, and the vacancies are to be filled.

The "Shawmut" acts as tender for ten seaplanes and will be attached to the Atlantic Fleet. Four of the seaplanes are carried on board ship. The other six are known as air boats —big seaplanes of the F-5 type. Air boats are flown from port to port, and engage in all fleet manœuvres. The "Shawmut" will proceed to Newport soon for aerial bombing practice and for seaplane observation of torpedo tests.

The Missouri Aeronautical Society, of which Major A. B. Lambert is president, has arranged a Free Balloon Race between the Army and the Navy, to start from St. Louis, U.S.A., on Sept. 26th. Six balloons have been offered—three for the Army and three for the Navy. Final details have not been arranged, but there appears to be no doubt that the race will take place. So far as known, this will be the first free balloon race between Army and Navy officers ever held in America. Attempts will be made to establish both altitude and long-distance records.

THE "INTERNATIONAL AERIAL REGISTER."

The second impression of the "Aerial Register and Gazette" has now been produced. It is distinctly an elaboration of the first impression, and is to that extent more useful, and is now called "International," as it is aimed at bringing the British pilot before the notice of the foreign employer.

Obviously, some register of the technical personnel of aviation is necessary. Almost equally obviously, that "Register" should have been issued by the Department of Civil Aviation, so that anybody who is engaging a pilot—whether as a tester of new machines or for a 10 minutes' pleasure flight—should be able to refer to an Official Register and find out whether the pilot's record is such as to make him a trustworthy person. Similarly, anybody concerned with an aeronautical engineer—whether as a ground engineer at an aerodrome, or as a Government inspector of aeroplanes, or as an applicant for a position as a designer, or in any other capacity, should be able to refer to that "Register," and discover at once whether the man's record is such as to give confidence in his ability or in his opinions.

Similarly, Lloyds Underwriters and the Insurance Companies should be able to gauge a pilot's qualities in the same manner as that in which a ship captain may be turned up in the "Captains' Book."

As no official publication of this kind has been issued, naturally the opportunity arose for private enterprise to supply the deficiency, and this "Register" is the result.

Capt. Swinton, the compiler of the "Register," is an ex-officer of the Royal Engineers.

The difficulty of compiling such a "Register" was necessarily great, largely owing to the fact that the only people who were at all disposed to place their names in such a "Register" were those who were in search of situations, whereas, to be of the greatest use, a register of this kind should include all those who already occupy positions of importance, for these are the people whose names and records would really be of the greatest interest to possible purchasers of such a work.

From the beginning Capt. Swinton has been careful to point out that he is not running an employment agency, and does not pretend to find situations (though he has made very strenuous efforts to do so) for those who place their names on the "Register." It is refreshing to know, however, that his efforts have not been absolutely barren as salaries are actually being paid at the rate of some £8,000 or £9,000 per annum to registrants whom the "Register" has placed.

The fee charged for registration is certainly more than the sum charged for the insertion of a name in certain other registers and directories; but, no doubt, this is explained by the fact that whereas other directories embrace thousands of names, an aeronautical directory can at first only expect to number the names in hundreds. In any case, it is fairly evident that there cannot be any profit on the actual compilation of the "Register," and it is only fair to assume that so far as the registrants are concerned the proprietor of the "Register" is not making any money out of them. As a matter of fact, he has financed the undertaking to a considerable extent out of his own pocket. The profits—if any—will presumably be made from the sale of the book and from advertisements therein.

One may perhaps take this opportunity of stating clearly that THE AEROPLANE newspaper is not in any way concerned with this "Register," beyond the fact that it is published by the Aeroplane and General Publishing Co., and it has done its best to bring the existence of the "Register" before the aeronautical community in the belief that a directory of pilots and technical people ought to exist.

As at present arranged, each registrant is given a number on registering his name, and that number is discovered by reference to an alphabetical list near the end of the book. The second edition includes names up to No. 1,000. Following the numerical and alphabetical list of registrants there is a number of pages devoted to registrants' qualifications, such, for example, as knowledge of aerial photography, knowledge of aerial traffic management, knowledge of aerial equipment, acquaintance with various countries, knowledge of various languages and so forth, the registrant in each case being indicated by his number. In this way anybody desiring to engage a man with certain technical knowledge and a knowledge of a certain language can easily discover whether there does happen to be a registrant who combines the desired kinds of knowledge.

Naturally, the "Register," as it stands, is only a nucleus of what such a register should be, and one is somewhat in doubt as to whether it is actually the right kind of nucleus, but the book as produced is evidently the result of much hard and intelligent work. It certainly has already considerable value as a source of information, but before it can reach its highest value it must include, as already mentioned, those who are already occupying important positions in the Aeronautical Industry.

Capt. Swinton states that he hopes to bring out another edition in 1920 (published half-yearly) without any payment on the part of registrants, and to have their records supported either by an Air Ministry reference, or by a certificate of competency from the transportation concern employing them.

The permission of the Ministry has been obtained to publish lists of all registered aircraft, all pilots holding A.M. licences, and for the reprint of the Air Convention and other provisions for aerial navigation.

["The International Aerial Register and Gazette." Published for the proprietors by The Aeroplane and General Publishing Co., Ltd., Carey Street, W.C.2. xvi + 140 pp. Price 7s. 6d.]

CIVILIAN PILOTS REQUIRED.

A large aviation firm which has done a very great deal of passenger-carrying all over England this summer is advertising in this issue. They require pilots for commercial flying abroad. They should be not less than twenty-five years of age, with business experience and special knowledge of one of the following countries: Africa, Canada, China, Denmark, France, Holland, India, Italy, Japan, Mexico, Russia, South America, and the United States, etc.

Crossing The ts.

How the A.A. is extending well-known facilities.

The Automobile Association places no reliance on the proverb "Leave well alone" in connection with its road service for members. Having successfully organised and provided a new benefit the Association



is not content to maintain it at the original level, but all the time endeavours to go one better.

The present season has seen marked activity in the Association's policy of progress, as is evidenced by the following 1919 Service refinements:

Road Patrol Scheme. "Mechanical First-Aid" Cycles fitted with side-cars, carrying spares and tools necessary for light repairs to cars or motor cycles, have been added.

Roadside Telephones. All the A.A. sentry boxes are being adapted for a 24 hour telephone service, and every member will be given a key which will enable him to use any of the instruments at any hour of the day or night.

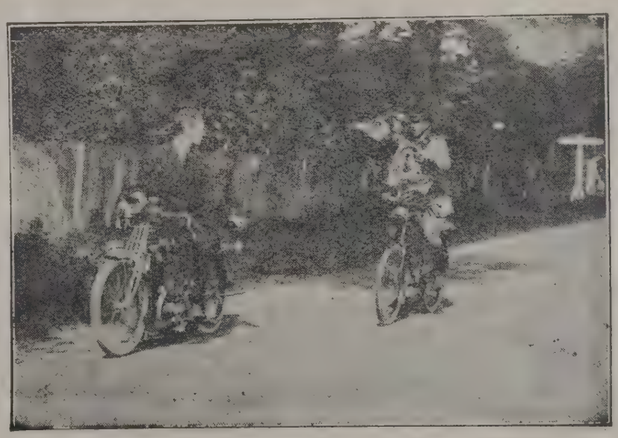
Free Legal Defence. This benefit now covers Free Legal Representation in civil cases by the Association's solicitors in all approved cases arising from the sale, purchase or use of privately owned motor cars or motor cycles.

Foreign Touring Assistance. Members of the Association can now take their cars into a 70 per cent. tariff country on a banker's indemnity alone and without depositing hundreds of pounds in Customs dues.

Branch Offices. New offices have been opened at Oxford, Cambridge and Brighton, where members whilst *en route* can obtain road information.

Motor Fuel. The Association has commenced 10,000 and 5,000 miles road tests of "National" benzole on a Sunbeam car and a Triumph motor cycle, in order to prove once and for all that benzole of good quality is completely satisfactory as a motor fuel.

Complete information as to the objects of the Automobile Association and the many privileges it extends to members is contained in a new edition of "The Key to the Open Road," a copy of which can be obtained, post free, from the Secretary, A.A. & M.U., 41, Fanum House, Whitcomb Street, London, W.C.2. Send a postcard to-day. Motorists in London who wish to join the Association without delay are invited to call at Headquarters, where a staff of experts is always in attendance ready to give information on any question relating to motoring.



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THE WEEKLY COMMENTARY.

In a leading article Captain Sayers draws attention to the neglect into which seaplane design has fallen of recent years in this country.

The lamentable exhibition in the Schneider Competition at Bournemouth on the 10th of this month serves to point the moral—even if it scarcely adorns the tale.

Machines produced during the war by the firm of Frederick Sage, Ltd., form the subject of this week's instalment of Modern British Aeroplanes.

Illustrations of certain German machines of more or less experimental types serve to show the profound effect which the Sopwith Triplane produced on the German mind.

This particular case is a typical example of the German method of seizing upon a new idea of extraneous origin and diligently investigating its possibilities.

So far as can be discovered Germany produced many more different types of triplane than all the rest of the belligerents combined, yet—with the possible exception of the Fokker—none of these equalled the original Sopwith.

A somewhat delayed account of a lecture by Lt.-Col. H. G. Lyons, read at a Joint Meeting of the Royal Meteorological Society and the Royal Aeronautical Society is published in this issue as being *apropos* the Schneider Cup weather.

THE NEGLECTED SEAPLANE.

By Capt. W. H. SAYERS, late R.A.F.

Great Britain has been known to be an island for some appreciable time. One Julius Cæsar placed the fact on record—*circa* 55 B.C.—and it seems possible that others were aware of it even earlier. As the files of the "Times" or its equivalent of those days are unfortunately no longer extant, it is impossible to state whether the importance of the matter was properly realised in those days.

Some 900 years later a certain Alfred—a sort of Lord Fisher of that era—certainly awoke to one aspect of the matter and founded the British Navy. It is also true that he burnt the cakes, and that the tradition which he thus initiated is to be found reflected in the execrable cooking which survives in the Senior Service to this day.

However, it is now over 1,000 years since Alfred the Great discovered that England's defensive frontier was to be sought upon her enemies' coasts, and it may therefore reasonably be hoped that within the next century or two one will arise who will combine, as Alfred did, both vision and authority, and who will realise that, although the advent of the airship and the aeroplane has profoundly modified the details of defence, it is still as true as it was 1,000 years ago that Britain's frontier in war should be the coastline of her enemies.

It has been stated often that the aeroplane has destroyed, or is about to destroy, the defensive value of the British Navy. It is even believed that THE AEROPLANE has on occasion expressed views which have been generally interpreted in that sense.

A very little reflection will serve to show that it is as absurd to suggest that aircraft can supersede a sea-going navy as that they can supersede an army. It is conceivable that some future wars may be fought almost entirely in the air.

Nevertheless, any type of aircraft must have some sort of base upon the Earth's surface, and that base must have protection against enemy attacks by land as well as by air.

Thus, even if the aerial arm attains that supremacy in warfare that some of its advocates proclaim, the aerial arm will still need a terrestrial protecting force from behind whose lines it will draw supplies.

For the British Empire, even more than for the British Isles, the lesson of history is clear. If the British Air Force is to take its place in the Empire's defensive system, it must be an Air Force which is based upon the sea, immediately behind the British Navy.

True, the few odd miles of ditch which separate Great Britain from the Continent are a relatively small matter where aircraft are concerned, but even here it were better to use that ditch over which to fight any future attempts at invasion rather than leave the business to occur over an equal depth of British land.

But, taking the Empire as a whole, there is question not of a few miles of water, but of thousands of miles of it, and the Imperial Air Fleet of the future—if it is not to be a mere coastguard affair—must be a High Seas Air Fleet.

To Britain land-going aircraft have a certain importance. There are a few land frontiers of the Empire exposed to the incursions of barbarous peoples, and land machines should be useful for police purposes in such places.

But sea-going aircraft—not merely aircraft able to cross hundreds and thousands of miles of sea, but aircraft which can use the sea as an aerodrome and a supply ship as a base—are essential to its continued existence, unless it be true that the millennium is at hand.

The late war was fought on land. The navies of the belligerent Powers were too frightened one of another to attempt to hold the open seas, and the coasts of the opposing nations were too close together to force the development of real marine aircraft, and Britain in particular has lost an unparalleled opportunity of developing what will become the basis of air power in the future.

Few things are quite so surprising in the history of the late war as the relative stagnation of seaplane development in this country. When war broke out, Britain possessed, in the Sopwith Schneider Cup winner, the fastest seaplane in the world. In the Sopwith "Bat-Boat" she had the original of the N.C. type which made the first flight across the Atlantic, and, in the Short seaplanes of that date, a type of general-utility seaplane unequalled by the products of any other country.

At the cessation of hostilities, after four and a half years of the most amazing progress in aeroplane performance, the only small high-speed seaplane which the Royal Air Force had possessed in any quantity was the original Sopwith Schneider with a somewhat more powerful engine. The only version of the "Bat-Boat" type that those four years have produced was a feeble effort of the Royal Aircraft Establishment, and the only moderate-sized seaplanes which had been made to any large extent were Shorts—practically unaltered in design since 1914.

One very important development did occur in that period. Whether it was pure joss, or whether it was that Wing Commander (since several other titles which memory fails to recall) J. C. Porte's naval training had taught him the right methods by which to attack the powers that were at the Admiralty—or whether it was mere persistence and perseverance on his part—Felixstowe was permitted to carry on with the work of developing the big flying boat to the extent of making a success of it and of getting it into production on a really large scale.

The big boat enthusiasts, who are not a few, will point to this fact as an indication of the essential soundness of the British seaplane policy.

As a matter of fact, it is nothing of the sort.

In the first place, speaking from a very intimate knowledge of the facts, there never has been any policy that has lasted more than three months on end.

In the second, without any kind of reflection upon the excellent work carried out at Felixstowe—carried out under conditions which only a small number of people who have attempted similar experimental work under the ægis of the late Air Department, Admiralty, can guess at—Felixstowe was in effect given a monopoly in that particular branch of experimental work. Had any of the competent designers who were willing to attack big seaplane design been decently encouraged, their efforts would at least have improved the Felixstowe breed of boat, had they done nothing else.

But the big boat is not the only type of seaplane, whether for war purposes or for the uses of peace.

The little Brandenburg monoplanes, which shot down our big boats 20 miles from their birthplace, are sufficient evidence, so far as war is concerned—just as they are evidence that the Germans had digested, as we have forgotten, the truth that Alfred the Great recognised a thousand years ago.

The flying-boat type of seaplane may or may not prove to be the only really seaworthy type of aircraft for trans-marine work. That question need not now be discussed.

The fact that is to be insisted upon is that, since 1914, nothing has been done officially to encourage the development of seaplanes, with the single exception of the large boat type.

This is in no way the fault of seaplane-designers. If it were possible to publish a list of specifications issued by the Air Department of the Admiralty during the course of hostilities, for various types of seaplane, and of the machines which were designed and produced to those specifications, together with their ultimate fate, and one or two other relevant matters of history, it would make an extremely interesting, though rather melancholy, story.

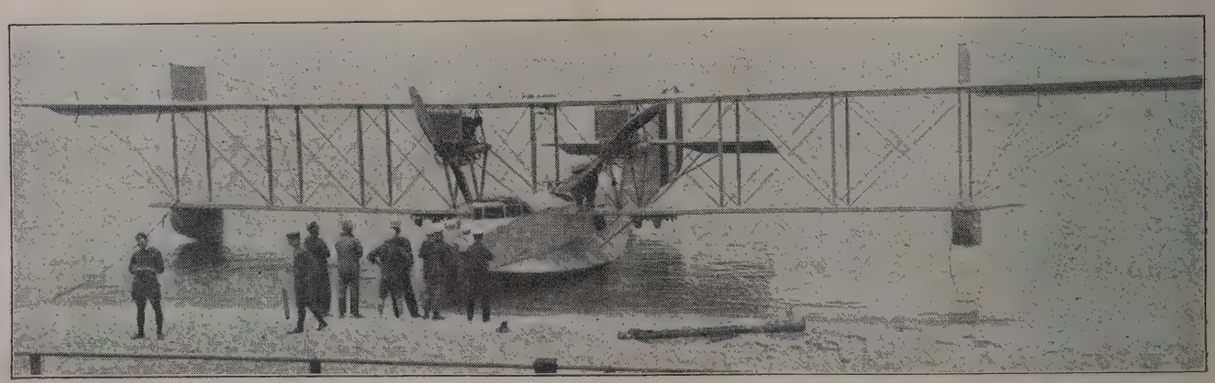
The Schneider Cup fiasco of Sept. 10th by no means tends to dispel the gloom in which war has shrouded the seaplane. It is true that Janello on the Savoia boat with the Isotta-Fraschini engine ran his full ten laps of the course—for even if he did not round the mark-boat in Swanage Bay he made up for that omission by his coast-hugging course west of Bournemouth—with clock-like regularity at just upon 130 miles per hour, and that Capt. Hammersley, on the left-out Avro, had the speed of Janello by not less than 20 miles per hour on his time for the exhibition laps which he flew.

But all these were merely aeroplane performances. The sea at Bournemouth on the day of the race would not have sunk an eggshell—and the beach there is as nearly perfect for beaching seaplanes as any that can be found in Britain.

Yet of seven machines built by three great nations for a seaplane race, only three, and one not a competitor, survived the day with unpunctured floats, and of those three one only actually passed the landing and getting-off tests imposed by the rules of the race.

There is in this country a certain number of people who have had some experience of seaplanes in practice, and who do know that a seaplane which has to alight at 80 miles per hour needs something rather extraordinary in the way of float bottoms if she is to alight undamaged with fair certainty even on a sea like a millpond, but most of them have been driven out of the industry, and none of them appear to have had any say in the arrangement of the contest.

Thus it happens that after four and a half years of war use of seaplanes the International Seaplane Race produced mainly a number of high-speed land machines on floats, and Britain—which should be the home of the seaplane—made as sorry a show as any competitor.



The Curtiss H.16. A big American twin-engined boat which has many resemblances to, and a common ancestry with, the British F. boats.

MODERN BRITISH AEROPLANES.

XV.—Frederick Sage & Co., Ltd.

The aircraft branch of Frederick Sage and Co., Ltd., the well-known firm of shop fitters and furnishers was begun at the request of the Admiralty early in 1915, and for a time machines of outside design were constructed.

In Sept., 1915, Mr. E. C. Gordon England joined the firm as pilot and consultant, and a few months later he was put in charge of the aeronautical department of the firm. In Jan., 1916, Mr. Clifford W. Tinson was permitted by the Director of Air Services to leave the Air Department of the Admiralty and join the firm as designer.

From that time Messrs. Sage have produced a number of machines of their own design, besides turning out in quantity sundry types of independent design, together with large quantities of spare parts.

An airship section was also formed shortly before the aeroplane department and built large numbers of cars for non-rigid airships.

THE SAGE II.

Sage I was an experiment which was not finished.

The Sage II was designed as a two-seater fighting scout, at a time when the synchronised gun was an experiment.

The pilot was seated in front and the gunner by standing up behind the pilot could fire a Lewis gun through a hole in the top plane.

Both pilot and gunner were enclosed in a streamline fairing extending upwards from the cockpit to the top plane.

Further developments of this machine were not proceeded with as the Constantinescu synchronised gun gear made the type unnecessary.

SPECIFICATION

Type of machine	Two-seater tractor biplane
Name or type number of machine	Sage 2
Purpose for which intended	Fighting scout
Span	22 ft. 2½ in.
Gap, maximum and minimum	5 ft. 6 in.
Overall length	21 ft. 1⅝ in.
Chord	top, 5 ft.; bottom, 2 ft. 8 in.
Total surface of wings	168 sq. ft.
Total area of tail	20 sq. ft.
Area of elevators	14.5 sq. ft.
Area of rudder	9 sq. ft.
Area of ailerons	25 sq. ft.
Engine type and h.p.	100 h.p. Gnôme
Weight of machine empty	946 lb.
Load per sq. ft.	9.2 lb.
Weight per h.p.	15.46 lb.
Tank capacity in gall.	petrol, 27½ gall.; oil, 8 gall.
PERFORMANCE—	
Speed low down	112 m.p.h.
Speed at 10,000 ft.	109.75 m.p.h.
Landing speed	55 m.p.h.
Climb—	
To 10,000 ft. in min.	14.75 min.
Total weight of machine loaded	1,546 lb.

THE SAGE III.

The Sage III was designed at the request of the Admiralty as a two-seater, dual-control, primary training land machine, the principal requirements being ease of handling, slow-landing speed, and good visibility.

A large order for this machine was given, but was cancelled in order to allow the firm to concentrate on the production of fighting seaplanes.

SPECIFICATION

Type of machine	Tractor biplanes
Name or type number of engine	Sage 3a and 3b
Purpose for which intended	Training
Span	34 ft. 6 in.
Gap, maximum and minimum	5 ft.
Overall length	32 ft. 10 in.
Chord	4 ft. 9 in.
Total surface of wings	330 sq. ft.
Total area of tail	26 sq. ft.
Area of elevators	24 sq. ft.
Area of rudder	10 sq. ft.
Area of fin	4 sq. ft.
Area of ailerons	72 sq. ft.
Engine type and h.p.	75 h.p. Rolls-Royce "Hawk"
Weight of machine empty	1,390 lb. (3b)
Load per sq. ft.	6.25 lb. (3a), 6 lb. (3b)
Weight per h.p.	23.9 lb. (3a), 26.4 lb. (3b)
Tank capacity in gall.	petrol, 26 gall.; oil, 4 gall.
PERFORMANCE—	
Speed low down	72 m.p.h. (3a), 76 m.p.h. (3b)
Landing speed	39 m.p.h.
Total weight of machine loaded	2,064 lb. (3a), 1,980 lb. (3b)

THE SAGE IV SEAPLANES.

The Sage IV Seaplane—produced in July, 1917—was very similar to the Sage III type, with a float undercarriage instead of wheels.

The machine was a two-seater, intended for wireless patrol work at sea, with a 140 h.p. Hispano-Suiza and in the hands of the late Capt. Gordon Bell, put up an excellent performance on test.

Subsequent types were altered to take the 200 h.p. Hispano-Suiza engine and fitted with dual-control. The training machines thus derived were called Sage IVb and Sage IVc, the former having fixed planes, and the latter folding planes.

These machines were extremely maniable, and just before the signing of the Armistice, the Sage IVc was used for a course of intensified training at seaplane training stations.

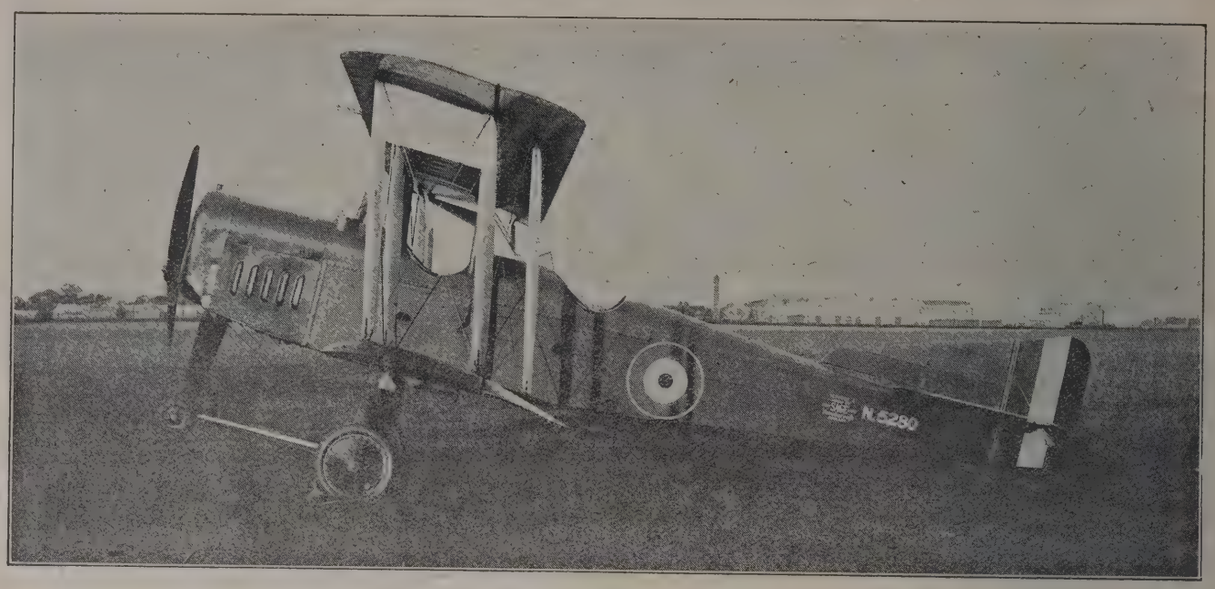
THE SAGE TYPE IVa.

SPECIFICATION.

Type of machine	Tractor float seaplane
Name or type number of machine	Sage 4a
Purpose for which intended	Training



The Sage II Fighter, with enclosed cockpit and gun-hole in the roof (100 h.p. Gnôme engine).



The Sage III Training Machine (Rolls-Royce "Hawk" 75 h.p.).

Span	34 ft. 6 in.
Gap, maximum and minimum	5 ft.
Overall length	32 ft. 6 in.
Chord	4 ft. 9 in
Total surface of wings	330 sq. ft.
Total area of tail	26 sq. ft.
Area of elevators	24 sq. ft.
Area of rudder	10 sq. ft.
Area of fin	4 sq. ft.
Area of ailerons	72 sq. ft.
Engine type and h.p.	110 h.p. Hispano-Suiza
Load per sq. ft.	8.06 lb.
Weight per h.p.	16 lb.
Tank capacity in gall.	petrol, 48 gall.; oil, 6 gall.
PERFORMANCE—	
Speed low down	83.5 m.p.h.
Speed at 10,000 ft.	79 m.p.h.
Landing speed	45 m.p.h.
Climb—	
To 10,000 ft. in min.	32 min.
Total weight of machine loaded	2,662 lb.

THE SAGE IVb SEAPLANE.

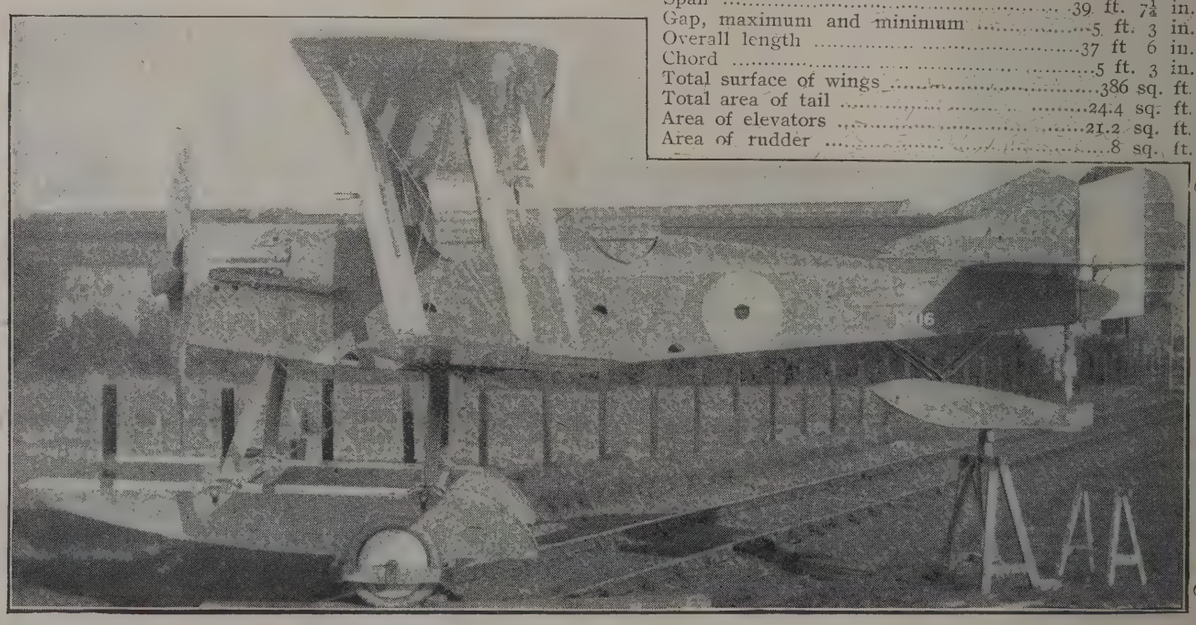
SPECIFICATION.

Type of machine	Tractor float seaplane
Name or type number of machine	Sage 4b
Purpose for which intended	Training
Span	34 ft. 6 in.
Gap, maximum and minimum	5 ft. 3 in.
Overall length	34 ft.
Chord	4 ft. 9 in.
Total surface of wings	330 sq. ft.
Total area of tail	26 sq. ft.
Area of elevators	24 sq. ft.
Area of rudder	9 sq. ft.
Area of fin	5 sq. ft.
Area of ailerons	72 sq. ft.
Engine type and h.p.	220 h.p. Sunbeam
Load per sq. ft.	8.2 lb.
Weight per h.p.	13.54 lb.
Tank capacity in gall.	petrol, 35½ gall.; oil, 4½ gall.
PERFORMANCE—	
Speed low down	95.5 m.p.h.
Speed at 10,000 ft.	85.1 m.p.h.
Landing speed	53 m.p.h.
Climb—	
To 10,000 ft. in min.	25 min.
Total weight of machine loaded	2,709 lb.

THE SAGE IVc SEAPLANE.

SPECIFICATION.

Type of machine	Tractor float seaplane
Name or type number of machine	Sage 4c
Purpose for which intended	Training
Span	39 ft. 7¼ in.
Gap, maximum and minimum	5 ft. 3 in.
Overall length	37 ft 6 in.
Chord	5 ft. 3 in.
Total surface of wings	386 sq. ft.
Total area of tail	24.4 sq. ft.
Area of elevators	21.2 sq. ft.
Area of rudder	8 sq. ft.



The Sage IVc Seaplane (Hispano-Suiza 200 h.p.)

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EAST COWES, I.O.W.

THE SOCIETY OF BRITISH AIRCRAFT CONSTRUCTORS S.B.A.C.

Area of fin	5½ sq. ft.
Area of ailerons	84 sq. ft.
Engine type and h.p.	200 h.p. Hispano-Suiza
Weight of machine empty	2,100 lb.
Load per sq. ft	7·34 lb.
Weight per h.p.	14.16 lb.
Tank capacity in gall.	petrol, 35½ gall.; oil, 4½ gall.
Performance—	
Speed low down	97.2 m.p.h.
Speed at 10,000 ft.	93.7 m.p.h.
Landing speed	45 m.p.h.
Climb—	
To 5,000 ft. in min.	8 min.
To 10,000 ft. in min.	21.44 min.
Total weight of machine loaded	2,875 lb.

Fredk. Sage, Ltd., do not propose to abandon their Aircraft Department on the cessation of hostilities, but intend to play a part in the development of civil aviation in the future.

To that end they are prepared with a series of designs for post-war types, ranging from a single-seater sporting model of 45 h.p. up to a big 1,200 h.p. 24-seater seaplane for long-distance work, and are, doubtless, prepared to undertake the design of special types for particular purposes.

SOME GERMAN TRIPLANES.

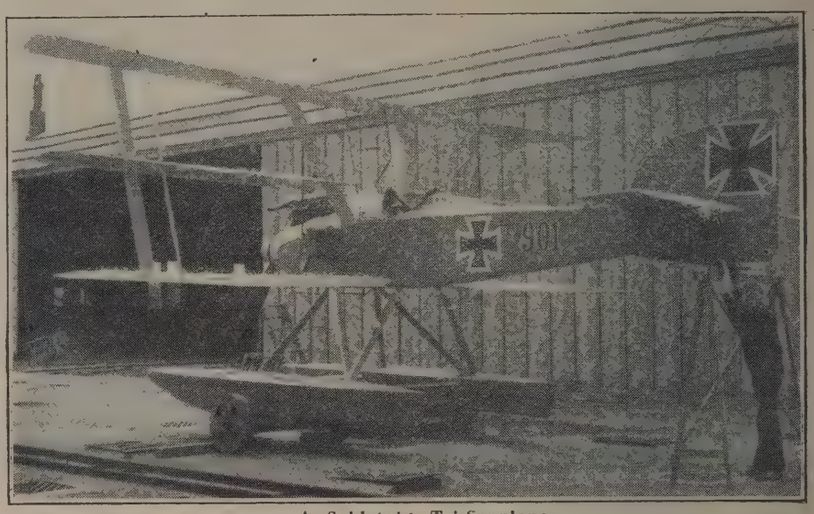
It is fairly well known that the Sopwith Triplane during 1917 produced a very considerable moral effect upon the German Air Service—in addition to the very substantial material losses which it inflicted.

It is also fairly well known that it produced by way of reply the Fokker triplane.

The three experimental triplanes shown on this page never reached any of the fighting fronts so far as can be discovered, but they serve to show how thorough and painstaking an experimentalist the German is.

Of the machines illustrated the little Sablatnig seaplane shows the most obvious signs of Sopwith influence—it is in fact a Sopwith triplane fitted with a stationary engine and has long floats without a tail float.

The second picture is a product of the Schütte-Lanz firm, and the last of the illustrations shows a machine produced by the Naglo Werke—actually a hybrid quadruplane.



A Sablatnig Tri-Seaplane.



The Schütte-Lanz Triplane.

Both show the curious German hankering after novel and rather complicated structural work in their strut arrangements.

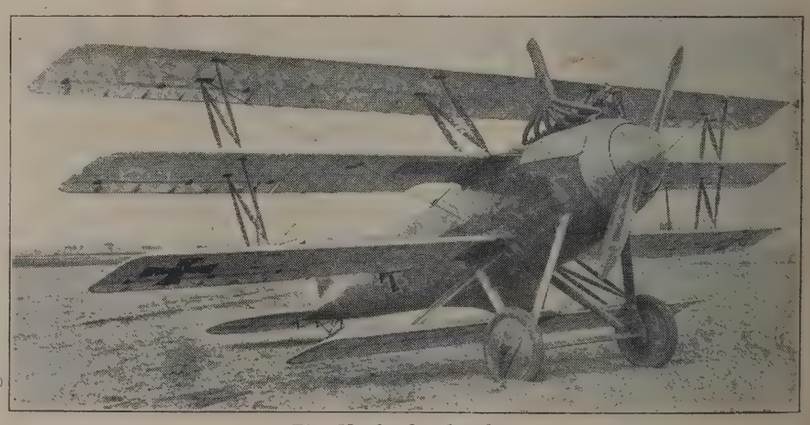
In addition to the machines illustrated, small single-seater fighting triplanes of Roland and Pfalz design were produced at about the same time.

Of these the Pfalz was fitted with a rotary engine—probably the Siemens-built 11-cylinder of 200 h.p. and the Roland with a 6-cylinder vertical—apparently a Mercédès.

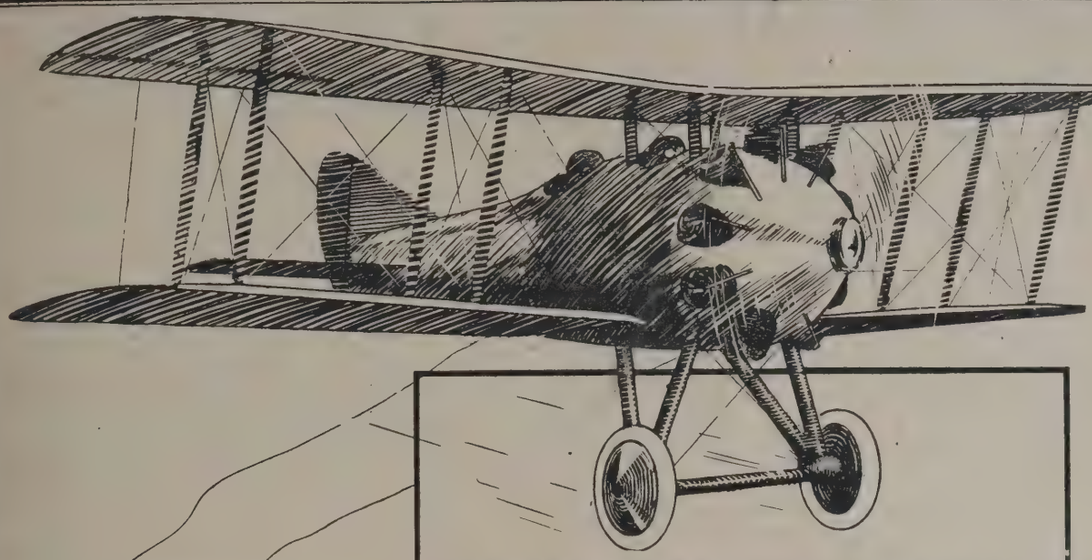
Both the Pfalz and the Roland triplanes have an upper wing of considerably greater chord than the two lower wings, though all three wings are in both cases of nearly equal span.

The Pfalz strutting arrangement to meet these conditions is in the form of a Y—one single strut connecting the lowest and centre planes and a Nieuport type V above connecting the top and centre planes.

In addition to single-seater machines, quite a number of larger machines have been built on triplane lines. Both the Gotha and the Freidrichshafen concerns have produced large twin-engined triplanes, and recently the Hannover Wagen Fabrik have turned out a three-seater limousine triplane which is possibly a converted war machine.



The Naglo Quadruplane.



TRANSITIONS IN TRANSIT

No. 6.—The Continental Tour.

"The Continent"! What visions that magic word conjures up. And how strangely it brings into focus that little strip of salted wilderness we call the "Channel." To most folk the crossing of that strip is the one fly in the Continental ointment. Few indeed are those who do not approach it with apprehension—and vivid recollection!

But such troubles are *non est* to the air tourist. To him, the crossing means twenty minutes of smooth swift flight. And then what splendid vistas await him. The fertile valleys of France, the sunny grandeur of Italy, the snow-clad peaks of Switzerland—wondrous visions from the point of view of the joy-hunting bird-man.

He is, as it were, in a little world apart; far from the troubles that beset the earth-t ed tourist.

Illustrated above is the Nieuport "Nighthawk" sporting machine.



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& GENERAL AIRCRAFT Co. LTD.

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3 lines.

CRICKLEWOOD,
LONDON, N.W.2.

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Nieuscout,
Crickle,
London.

THE AUSTIN "WHIPPET."

The Austin Motor Co., Ltd., of Northfield, Birmingham, have, during the late war, produced large numbers of aircraft and aero engines of standard design, and also some machines of their own design for war purposes, which have performed well.

Since the Armistice they have brought out a small biplane, known as the "Whippet," which is intended purely as a sporting machine. To meet the requirements of a private owner who is fortunate enough to be able to run an aeroplane, the "Whippet" has been very carefully designed to be simple to fly and also to keep itself in flying order and to be housed in the smallest space possible.

The "Whippet" is a small, single-seater, tractor biplane, with a wing span of 21⅓ ft. and an overall length of 16 ft. The fuselage and undercarriage are of steel construction, and in place of flying wires streamline tubes are used. It will thus be seen that frequent re-rigging is unnecessary.



The Austin "Whippet" (45 h.p. Anzani).

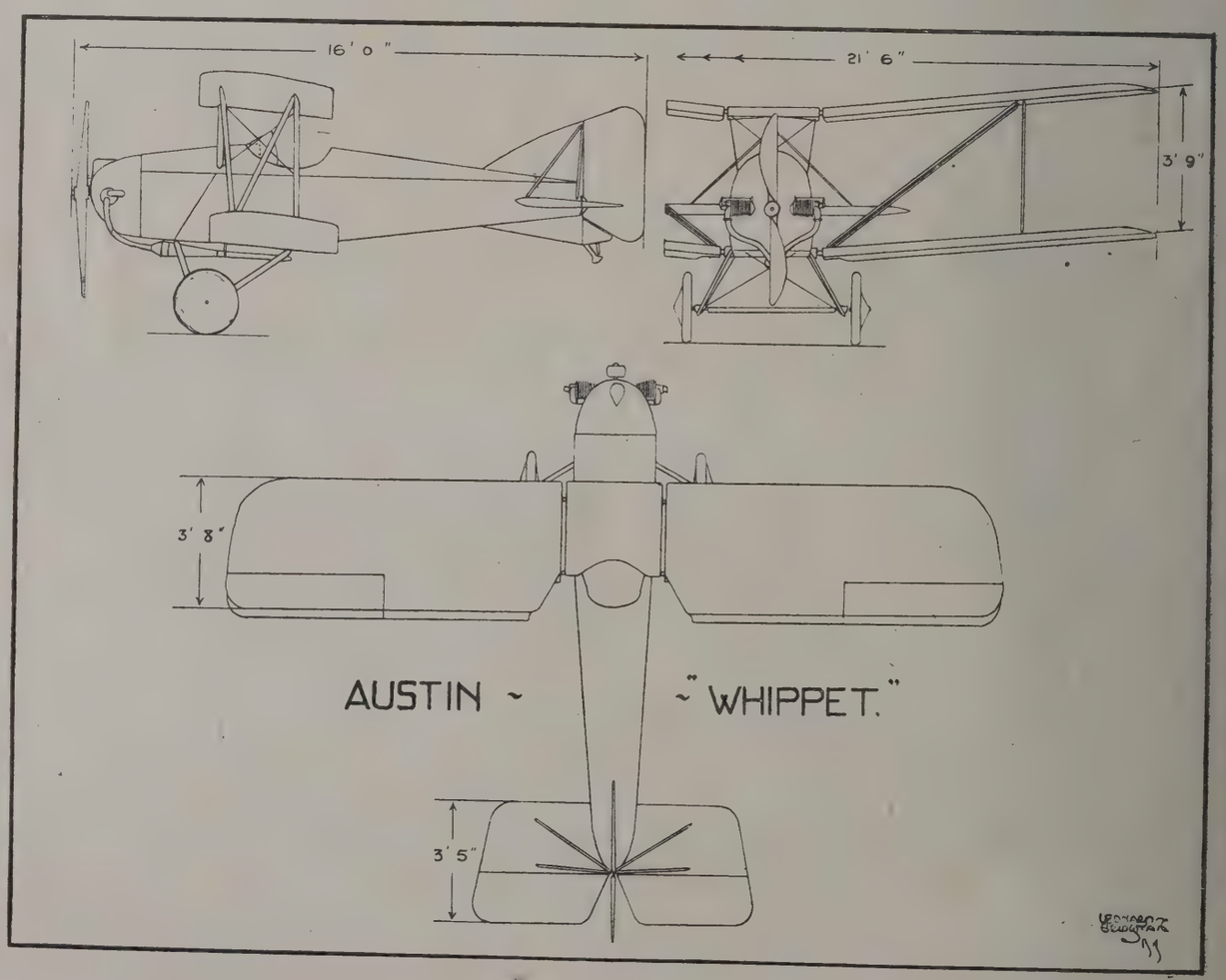
For storage purposes the wings are made to fold by releasing four locking bolts, bringing the span down to 9 ft.

The fuselage is made in two parts, the join being just in rear of the pilot's seat.

The main planes are built up in the usual fashion with hollow box-section spars and steel tube compression members, the whole wire-braced. One set of steel tube N struts are fitted either side of the fuselage, the steel "flying" tubes being fitted to the top of the interplane struts and the roots of the lower wing, so that they are not disconnected when the wings are folded. Ailerons are fitted to both upper and lower planes, and are interconnected by a steel strut. In the scale drawings a 40 h.p. A.B.C. "Gnat" engine is shown, but a six-cylinder 45 h.p. Anzani engine has been installed in the actual machine. The Anzani engine is overhung on the front of the fuselage and has a rubber shock-absorbing device fitted between the engine bearer and the fuselage.

The tail unit has fin area both above and below the fuselage. The tail skid is of the swivelling type, and is sprung by a spring inside a telescopic tube.

The machine has flown its tests successfully, and gave a speed range of 85—30 m.p.h., together with a climb of 5,000 ft. in 8 min. and 10,000 ft. in 18 min.



THE SUPPLY OF METEOROLOGICAL INFORMATION FOR AERONAUTICAL PURPOSES.

At a joint meeting of the Royal Meteorological Society and the Royal Aeronautical Society held some months ago, Lieut.-Col. H. G. Lyons delivered a lecture upon the subject indicated by the title above.

Limitations of space and the pressure of more urgent news has so far prevented the publication of this lecture, but the Schneider Cup fiasco has produced both the space wherein to print it and a practical illustration of the importance of the subject.

The LECTURER asked those present to indulge freely in criticism, as those who supplied the meteorological information were anxious to know the opinions of those who used it.

The following is an abstract of the lecture:—

The difficulties and risks of aviation are so greatly increased by unfavourable atmospheric conditions that the aviator is naturally strongly impressed by the importance to him of the best and fullest meteorological information that he can obtain; and he may be led to assume that the information that he requires must necessarily suffice for all other activities and all lines of investigations.

The truth is rather that the fullest meteorological information of all kinds is needed, so that it may be studied and worked upon by trained meteorologists in order that we may learn more of the principles underlying the phenomena that we observe, and from this standpoint be better fitted to advise aviators as well as all others to whom weather and climate are factors with which they have to be reckoned.

Though aviation makes probably larger demands on that part of meteorology which deals specially with weather, that is, with the short period changes of meteorological conditions, it does not thereby cover the whole field of meteorology any more than the chemistry required in the work of any branch of chemical industry necessarily covers the whole field of chemical science. The same phenomena which are of importance in aviation are among those which the meteorologist studies for the progress of his science. The interest and the importance of the force and direction of the wind at various altitudes above the surface of the earth, which are observed by means of pilot balloons, shell-bursts, and other methods, are not limited to the aviator alone.

The forecaster needs them in his work, in gunnery they are carefully observed and utilised, the meteorologist in his study of the physical conditions of the atmosphere requires them as data from a region where friction with the earth's surface, and heating and cooling of the air by convection, do not complicate the problems with which he has to deal. It is indeed impossible to say that any particular meteorological study is unnecessary or useless for aviation, for gunnery, or for any specific application of meteorological science.

OBSERVATIONS AT VARIOUS ALTITUDES

Measurements of wind, temperature, humidity at various altitudes, taken with all the precision that can be attained are indispensable to the meteorologist who is seeking the principles which underlie the phenomena that we observe, and which, when determined, represent a definite advance in our knowledge and thereby in our powers of practical application.

Observations made in one line of investigation will often, in practised hands, lead to advances in knowledge which are of the utmost importance in their application in quite different fields. Thus the observations which Major G. I. Taylor, F.R.S., made in 1912 on board s.s. "Scotia," which was chartered for studying the distribution of drift ice in the North Atlantic, have led him to most important advances in our knowledge of eddy motion in the atmosphere, which has thrown light on the conditions which determine the formation of mist, fog and low cloud, thus materially advancing our knowledge of a part of one subject which is of supreme importance to the aviator.

All meteorologists have long recognised that the weather of any particular region is only the local result of causes which belong to the general circulation of the atmosphere, so that a collection of the meteorological data of the globe was a first necessity.

THE RÉSEAU MONDIAL.

This is being provided in such a form as can be produced at present by the publication of the Meteorological Office, the "Réseau Mondial," in which the pressure temperature and rainfall for each month at a number of selected stations, two for each ten-degree square being taken wherever possible. This publication of which three years, 1911, 1912, 1913, have appeared, is only possible because of the uniformity and co-operation which has been achieved by international effort.

The next point for consideration in the supply of meteorological information is that for one special class of that information rapidity of transmission is of the highest importance.

That division of meteorology which deals with weather is primarily concerned, at least in extra-tropical regions, with the changes which take place from hour to hour and from day to day; and these changes take place often with great rapidity and spread quickly over large areas, so that if they are to be anticipated and warnings issued of such coming changes as little time as possible should be expended in the collection of reports and the issue of forecasts and warnings.

In this country forecasts have long been prepared thrice daily, from observations at 7 a.m., 1 p.m., and 6 p.m., but with the increase of aviation during the war and the necessity for the issue of forecasts of the weather at an hour before the day's plans for operation were under consideration, an additional forecast and report based on observations at 1 a.m. was introduced, and has been continued up to the present time.

For years past the meteorological services of most European countries, as well as those of India, Canada, the United States, Egypt, Japan, and some others have issued daily weather reports and maps of their area and of the surrounding regions, interchanging information by telegraph under international agreement. Europe was in this way fairly well provided with information of current weather from a large network of stations, to which were added in 1909 reports from ships of the trans-Atlantic steamship lines.

Under present conditions these international services can be and have been for the most part resumed, but the new demands for a quicker and more frequent supply of information are much larger and more numerous than those of five and six years ago. The forecaster must now receive his reports within an interval of not more than an hour after the observations have been taken and for them to be utilised to the full, his deductions from them should be available half an hour later.

THE DAILY WEATHER REPORT.

The daily weather report which was issued before the war from the Meteorological Office was a document which had grown up gradually and by successive changes. It had been the rule to publish with the map the statistical material which had been used in its production, so that the reader could check its correctness, and, if he pleased, draw his own deductions from it.

But under Service conditions something simpler, plainer, and more direct in its presentation of the opinions of the trained meteorologists who prepared it, was needed. Those who had to make use of the daily weather reports were usually far too busy to wish to study the statistical material before accepting the meteorological opinions which were offered to them.

They wanted a direct statement of expert opinion of which they could make use in preparing their own plans of actions. The desire for such expert assistance was also shown by many requests that forecasts should be expressed in "perfectly simple and non-technical language." To this very reasonable request it was not so easy to accede to as it may seem.

Such expressions as "a depression advancing from the westward," "a secondary depression developing over the Channel," "an anti-cycione spreading northward," are more than mere statements of fact; they convey to all who are acquainted with meteorology much additional information depending on the weather conditions described, which it would take several paragraphs to describe simply and in non-technical language.

Now that hostilities have ceased, the opportunity has been taken to revise the daily weather reports in order to make them more useful and more convenient for reference. The simplified morning report of war days has been transformed into a British daily weather report, in which all the information from the United Kingdom is included, and is issued before noon. Later in the day an International daily weather report is issued, in which all the data from foreign countries appear. In addition, a special two-page supplement, containing all upper air observations from the observatories of the Meteorological Office and meteorological stations of the Air Ministry as well as from some in France, is published daily at noon.

WEATHER MAPS FOR THE BRITISH FORCE IN RUSSIA.

Whenever forecasts have to be prepared, reports from many stations must be collected and a weather map drawn; and if drawn it should be issued to all whom it can reach in time. Thus on every war front, daily weather maps have been regularly issued, often several times daily, and at this moment one is furnished to the British Force in North Russia; and in all future operations the same will be required. This intimate co-operation between the different meteorological services which aviation necessitates, increases the importance of Imperial and international consultation, in order that information may be provided on all routes, and at all stations as nearly as practicable in a common form, and with the least possible delay.

Now that meteorological records are being more largely worked upon and will continue to be worked upon in the future, it is of the highest importance that there should be at a central institute as complete a collection of them as possible. Also, that at that institute, an highly efficient system of registration and indexing should be in operation so that inquirers and students may be referred readily to all sources of information, whether published matter, manuscript records, or investigations that have been carried out and then filed away. The last group is not the least important, for work of this kind may be needlessly repeated unless there is a ready reference to what has already been done.

There is a large amount of information of such statistical

character published in this country already; weekly and monthly weather reports of the United Kingdom appear regularly; but for the war the climatological atlas of the United Kingdom would have been published by the co-operation of the Meteorological Office and the Royal Meteorological Society. Pilot charts of the North Atlantic and the Indian Ocean appear monthly, and contain much information relating to these ocean areas, which have been collated from the valuable meteorological logs contributed by ships' officers.

A NETWORK OF METEOROLOGICAL STATIONS.

The British Empire possesses a very numerous and widely flung network of meteorological stations, numbering about 1,000 in all, besides those which record rainfall only, and the ships which keep meterological logs; these stations are organised under the meteorological services of this country, of the Dominions, of India, and of the Crown Colonies, so that they furnish us with opportunities for investigating almost any problem that may arise in meteorology, if competent meteorologists make full and proper use of them.

Bermuda, the Windward Isles, St. Helena, Ascension Island, the Falkland Islands, and South Georgia, provide a chain of stations from which, although they are not quite so conveniently situated as could be wished, the meteorological conditions over the Atlantic Ocean may be investigated, and the supplementary observations taken on sea-going steamers can be controlled. Their results can be compared with those which the islands of the Indian Ocean can provide, viz., Socotra, Seychelles, Mauritius, and Keeling Island, or again with those from the numerous islands of the Pacific.

Africa has been mentioned as the site of two air routes, and here there are many subjects of great meteorological interest. The Egyptian and Sudan Service has, during 15 or 16 years of its existence, thrown much light on the conditions prevailing over North-Eastern Africa.

NATIONAL CO-OPERATION.

National co-operation offers fewer difficulties in the way of uniformity, but in so widely distributed an Empire as ours local conditions vary so widely that more points of difference arise than would occur in a more compact geographical location. Conferences of the directors of all the various British meteorological services are the natural means for obtaining greater co-ordination, and to some extent these have been provided by the periodical International Conferences of Directors or meetings of the International Meteorological Committee. There are, however, greater advantages to be gained from Imperial meteorological conferences which can easily be held just before the international meetings. The present time is very suitable for such a conference and it is to be hoped that nothing may prevent it from being held at an early date.

DISCUSSION.

Maj.-Gen. BROOKE-POPHAM said the information to be got in France during the war as regarded meteorology was of the greatest possible value. They tried to do without a special meteorological service when the war started, but it was found absolutely necessary to have a local service, and it was started early in 1915.

In a short time the information received from it was quite remarkable for its accuracy, and they could not have done without it. The most important thing from the aviation point of view was that the information had to be got through very quickly.

Conditions were somewhat different now from those that prevailed in France. The local meteorological service there only concerned a rather small area of the world. In future the area the service would have to cover was vastly greater, and it might concern—as it did at present—the whole of the Atlantic, the North Sea, and right away to Egypt.

He thought that would rather introduce complications, and alter the conditions of the service that would be required. Col. Lyons said the information was got out at present by maps and particulars that were printed in the maps, but he thought in future they would have to have it by telegram if it was going to be of real value.

In France they had a regular code system. Something like that would have to be evolved for civil aviation. Using a code would reduce the length of the telegrams and increase the rapidity with which the information would be got out.

LIEUT.-COL. OGILVIE'S COMMENTS.

Lieut.-Col. A. OGILVIE said the lecture was one of the most stimulating to the imagination that he had heard for a long time. The vital point as regarded civil aviation seemed to be the fact that it would depend upon the weather. One could see no serious difficulty in the construction or operation of the machines. They might be a little bit expensive to work at first, but the thing in which it was really difficult to see the complete path open ahead was the meteorological question, and that lecture showed a sort of line of development which was coming.

Such difficulties as the weather presented were going to be particularly applicable in this country, where the weather was very bad. That was really an advantage. The weather conditions being very bad, the subject became so serious that one had to get after it and put it right. It was the same with regard to the pilots. He remembered Wilbur Wright telling him in 1908 that we should have the best pilots, as our particular conditions were so much worse than those of other countries that our fellows would have to be better than theirs to cope with them.

Similarly, as regarded the weather, the difficulties would be so great that we should have to develop systems and organisations, and study in every way meteorological questions, so as to enable us to operate at all. Two difficulties as regarded the weather seemed to be particularly prominent. The first was that of getting the knowledge of the conditions that were coming—such as fog, wind, and rain—and the second was the means of overcoming them.

Such a lecture as they had just heard did not enable machines to land in fog, rain, and so on, but it helped them to get the knowledge of where the fogs and rainstorms were going to be.

The Lecturer's remarks about the Nile struck him as being interesting, because some time ago he was messed up in an aeroplane expedition on the Nile, and those particular conditions were forcibly impressed on the minds of those concerned. Their machine did not do 120 miles an hour. Its maximum was quite 60, and it was not a particularly sensitive machine to any kind of weather conditions, and they were particularly sensitive pilots—he thought most of the old pilots were rather nervous and agitated people—and as soon as there were any gusts they used to hurry down.

They learnt after a considerable amount of experience that the wind was always blowing in an extremely steady way at certain times of the day. They got perfect flying weather from 7 to 10 in the morning, and from about 4.30 in the afternoon until it was dark. The wind during those times was blowing perhaps 30 miles an hour.

When they left Wadi Halfa at the beginning of the railway crossing the desert to El Hamid, although it was calm so far as the machine was concerned, it was going in a 30-miles-an-hour wind. Towards 10 o'clock or so the river appeared like a sheet of glass, but a little later, when the sun began to heat the ground, one saw ripples coursing over the surface of the river, and they knew that in half an hour or so those gusts would be coming up their way—they were going along at a modest 2,000 or something like that—and sure enough, after a decent interval after seeing those ripples, they began to "get the wind up" at the height at which they were flying.

On one occasion when they had to carry on till 12 o'clock the weather was horrible and the machine difficult to handle. He wished to emphasize the international nature of meteorological questions. Col. Lyons had expressed the matter very ably, but he would like to back up everything he had said. Aviation was not a thing one could do by oneself, and he thought it would probably have a very big effect on the whole inter-nationalisation of the world.

MAJOR WIMPERIS.

MAJOR H. E. WIMPERIS said the lecture by the honoured head of the chief meteorological service of this country must interest everyone connected in aviation. There were two sides to the meteorological work, ascertaining the best route, and supplying information which would enable one to judge what the weather was likely to be at the date one proposed to start to fly along the selected route.

For the latter the physics of the atmosphere had to be studied and problems as to the friction of fog and wind. It was difficult to get a continuous chain of observations in the upper air. Stationary balloons with observers attached were fascinating to meteorologists but rather deadly to aviators.

Lieut.-Col. H. T. TIZARD said the air conditions only became such that the meteorologists could deal with them in forecasts at fairly great heights, and as flights would probably be in future comparatively short and low forecasts could not be supplied with the rapidity and accuracy that would be of any use to aviators.

He thought the telegraph and telephone would be of no use for the purpose. A system of wireless should be established for this purpose, if necessary, by using continuous-wave wireless telegraphy for meteorological purposes and keeping other commercial uses to the ordinary wave telegraphy. Aviators should help the Meteorological Office by supplying the kind of information they required.

UNPLEASANT KITE BALLOONS.

Mr. J. S. DINES said he spoke rather as a member of the Meteorological Office than as representing the Meteorological Society. He was intimately concerned with the preparation of the reports Col. Lyons had talked about, and he emphasised how grateful they would be if the users of the reports would give them their opinions and criticisms.

They were asked to send reports by telegram and sent them regularly, but did not know whether they were quite what was wanted. If suggestions for their improvement could be made it would be of great service. What Major Wimperis said about kite balloons not being nice for airmen was true.

As Col. Tizard suggested, aeroplanes could take up thermometers and record the temperatures and in some cases get a fairly good idea of the drift of the wind at different levels. He hoped

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that in future there would be that co-operation, and that the meteorologists would get a great many reports of upper air conditions from aerodromes.

SHIP OBSERVATORIES.

Mr. T. F. GAYNOR asked the Lecturer if it would not be an important acquisition to the international meteorological service, especially for trans-Atlantic aerial navigation in the immediate future, if a few suitably designed station-ships were permanently stationed at regularly-spaced distances apart along known parallels of latitude—say 40 degrees and 50 degrees North latitude—fully equipped with meteorological instruments and telegraph devices, to observe conditions at their respective localities and report frequently to flying aircraft and to the American and European land stations and be maintained by the British and American Governments?

FORECASTS FOR ATLANTIC FLIGHTS.

Mr. F. H. BRAMWELL asked how much the percentage of accuracy in the forecasts fell off after various periods. A man starting to fly the Atlantic would want to know what chance he had of reasonable Atlantic weather some 20 hours or so after the time he left the ground, or probably more like 30 hours after the forecast was prepared by the Meteorological Office.

LT.-COL. LYONS'S REPLY.

Lt.-Col. LYONS, replying to the discussion, said with reference to the remark that the war front in France was a small area, the area for which the forecast was supplied was small, but the area from which the material was obtained was not small. It ranged from Iceland to North Scandinavia and down to the Algerian coast.

In Egypt the conditions were simpler and more stable, and the area became more manageable and distinctly smaller. In Egypt, as a rule, dealing with the ordinary weather forecast, nothing farther off than Malta directly affected them, in less than a couple of days. For use with telephones or wireless messages a code was necessary at the Meteorological Office, specially worked out to simplify and shorten the transmission of returns and forecasts.

He had experienced the strong night winds over the desert. He had never satisfied himself as to the reason for them. The information given by aviators to the meteorological service in France and in this country had been of the greatest value

He had not the figures in his head as to the falling off in accuracy of forecasts. It was an important point and should be followed up. He would like to take a particular case and look that up, and send the inquirer the information.

The Meteorological Office would be pleased to have the fixed stations suggested by Mr. Gaynor, but the practical difficulties would probably postpone them for a long time.

The PRESIDENT, in proposing a vote of thanks to the Lecturer, remarked that we had progressed a good deal since the days of Col. Ogilvie's memorable expedition up the Nile by what Col. Ogilvie called two frail pilots, but whom other people would call two of the pluckiest pilots that ever stepped.

In the near future he thought we should have aircraft which would stand anything but the most violent gale. It was to the credit of the Meteorological Office that they had advanced so far in securing a perfect organisation. He hoped the International Congresses and discussions now taking place would result in securing the co-operation of all the services interested in meteorological information for aviators in this country and abroad.

SAMUEL PIERPONT LANGLEY.

From a somewhat unexpected source—the "Johannesburg Star"—one gleans some interesting biographical notes concerning Samuel Pierpont Langley, the American pioneer, who, at the end of the nineteenth century, succeeded in constructing an aeroplane capable of flying. That it was not the first machine to fly was due to a chain of accidents such as often robs pioneers of the fruits of their labour.

Of all those who in these early days investigated the possibilities of dynamic flight, Langley was, undoubtedly, the best equipped by training, experience, and natural aptitude. He was the scientist of world renown, an engineer of uncommon merit, and his ultimate non-success was due mainly to an unbelieving Press whose criticisms and ridicule caused the cutting off of the funds which would have made a continuation of his experiments possible.

Langley was the descendant of a substantial and intelligent family of New England, among whom were skilled mechanics, business men, clergymen, and teachers, including a President of Harvard University.

He was born in Roxburg, Mass., on Aug. 2nd, 1834, and was educated at Boston—he was trained in architecture and civil engineering, and followed his profession in St. Louis and Chicago for seven years. Thereafter a natural fondness for astronomy prompted him to give up his business and devote himself to the construction of telescopes, after which he journeyed to Europe and spent three years in Observatories, Institutes, and Art Galleries.

Upon his return he was made an Assistant in the Harvard Laboratory, and later Professor of Mathematics and a Director of the Observatory at Anapolis. At 32 he was made Professor of Astronomy and Physics of the Western University of Pennsylvania, and Director of the Allegheny Observatory. During a stay of 20 years in this position, he commenced his experiments in aero-dynamics, starting in 1887, and continuing for over three years. The results of his tests are counted even now among the most valuable contributions to the science.

Whilst at the Western University, he persuaded the railway corporation to adopt a standardised time system for the operation of the trains, the time being signalled along many thousands of miles of railway twice a day from a Solar clock operated by Langley, thus linking astronomy and railway operation. Another of his astronomical triumphs was the investigation of sun spots and the invention of the bolometer, an instrument of such delicacy and precision that it indicates accurately variations in temperature of less than one hundred thousandth of a degree centigrade, and by this means he was able to analyse in detail the heat of the moon in the lunar spectrum.

In 1886, following a long succession of astronomical investigations of an original and far-reaching character, he became an assistant secretary of the Smithsonian Institute, with the privilege of continuing his research work at Allegheny Observatory, and he held this position until his death on Feb. 27th, 1906.

Unlike most other investigators in the field of mechanical flight Langley did not follow rule-of-thumb methods. He engaged first in the most painstaking research to determine and classify the fundamental principles involved; his progress begun in the laboratory and ended in the workshop.

His aeronautical work was divided into the following stages:—(1) His experiments in aero-dynamics at Allegheny Observatory, where for three years he confined himself exclusively to the making of tests for determination of principles and the development of data to be used later in constructing models and man-carrying machines.

(2) His experiments with rubber and steam-driven models, the result of which was to enable him to construct a steam-propelled model which flew for more than three-quarters of a mile.

(3) He then experimented with a ¼ scale petrol engine-driven model, and, after successful demonstration, constructed a full size man-carrying machine, propelled by petrol engine. It was not, however, until some years after his death, in the autumn of 1914, that this machine was successfully flown by Mr. Glenn H. Curtiss at Hammondsport, New York, in an attempt to antedate the Wright patents.

The principal piece of apparatus which figured in Langley's experiments was a large whirling table with a radius of 30 ft. which consisted of two diametrical wooden arms revolving in a plane 8 ft. above the ground.

It was driven by a gas engine of 1½ h.p. during the early days of experiments, but as this was found to be inadequate, it was later driven by a 10 h.p. steam engine, and a set of step pulleys furnished a variable speed device and according to the gear employed 25-50-100 or 200 revolutions of the table could be obtained for a thousand revolutions of the engine. During the last of the experiments the gear ratio of the bevels was changed again, and a new system of pulleys installed, so that at 120 revolutions of the engine per minute, 48-24 and 12 revolutions of the whirling table per minute was secured, corresponding respectively with 100-50-25 miles per hour at the end of the arms. The full usefulness of this whirling table was reduced by its position in the open, and the consequent effects of air currents. Nevertheless, some of Langley's results obtained with this apparatus were wonderfully accurate.

THE PROPOSED INSTITUTE OF AERONAUTICAL ENGINEERS.

A meeting was held at 180, Sutherland Avenue, Maida Vale, on Thursday, Sept. 11th, to discuss the formation of an Institute of Aeronautical Engineers.

Some twenty members of the profession attended, and Mr. L. Howard Flanders took the chair.

A letter from Mr. A. E. Berriman, wherein he strongly protested against the use of the title "Institute of Aeronautical Engineers" on the ground that it implied competition with the functions of the Royal Aeronautical Society, and against the formation of such an association because the R.Ae.S. did in fact fulfil the legitimate functions of such an association, was discussed at some length, and it was the general decision of the meeting that the functions of the two associations were entirely different.

Mr. Howard Flanders' proposal that the new society should be also a Defence Association—which would perform for its members the legitimate functions of a trade union—was then discussed at some length. As might have been expected, the meeting generally disliked the idea of a trade union. It was generally conceded that technical workers of the educated class needed some protective organisation to look after their interests. It was decided that the provisional council should obtain a statement of the legal standing of a Defence Association, firstly when registered as a Trade Union, and secondly not so registered, in order that prospective members might weigh the relative advantages of the two positions.



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PATENTS INDEX

The subjoined list of recent inventions has been specially compiled by THE AEROPLANE from the current Official Patents Records.

PATENTS APPLICATIONS.

Blackman, P. Landing-dock for aerial machines, etc. No. 16282. June 28th.
Brockelbank, C. H. Drift-indicators. No. 15929. June 24th.
Davis, E. A. Maps, etc., for motor vehicles and flying-machines. No. 15912. June 24th.
Drew, H. V. Aeroplanes. No. 16175. June 27th.
Gunn, F. Belts for aviators. No. 15852. June 24th.
Hefford, A. Clinometers for aircraft. No. 15980. June 25th.
Holt, H. E. S. Parachutes. No. 16260. June 27th.
Last, J. J. Means for determining angle of inclination of aircraft during flight. No. 15801. June 23rd.
Lesseps, M. de. Propellers for aerial or marine propulsion. No. 16159. June 26th.
Mooney, D. J. Fittings for metal aircraft construction. No. 16287. June 28th.
Page, F. H. Power unit for aircraft. No. 16245. June 27th.
Schneider, J. J. M. A. E. Shock-absorbing apparatus for landing carriage of aeroplanes. No. 16008. June 25th.
Snook, C. W. Means for turning aeroplanes. No. 16139. June 26th.
Tomlinson, H. Control of aeroplanes, seaplanes, and flying-boats. No. 15857. June 24th.
Whitham, F. E. Webs for aeroplane wings, floor coverings, etc. No. 16272. June 28th.
Whitham, F. E. Roofs, etc., of buildings, aeroplane wings, etc. No. 16273. June 28th.
Anderson, W. J. Aeroplanes. No. 16482. July 2nd.
Baratte, F. H. F. Aeroplane tail-supporting means. No. 16417, June 30th.
Barclay, S. F. Arrangements for prevention and extinction of fire aboard aircraft. No. 16438. July 2nd.
Bertrand, E. Aeroplane wings. No. 16407. June 30th.
Bertrand, E. Wings of aeroplanes. No. 16609. July 2nd.
Blackman, P. Clinometer for aircraft. No. 16441. July 2nd.
Blundell, E. O. Aircraft flying-position indicator. No. 16553. July 2nd.
Brizon, J. Speed indicator for aircraft. No. 16918. July 5th.
Brown, G. C. Heavier-than-air airship. No. 16392. June 30th.
Brown, W. Silencer for aeroplane engines, motor engines, etc. No. 16524. July 2nd.
Bygrave, L. C. Navigational apparatus for aircraft, etc. No. 16840. July 5th.
Cerruti, F. A. Aeroplanes. No. 16560. July 2nd.
Disney, C. Streamline bracing. No. 16799. July 4th.
Freeman, W. Parachutes. No. 16639. July 3rd.
Green, L. G. Propellers for aircraft. No. 16695. July 3rd.
Henshaw, T. A. Aircraft. No. 16656. July 3rd.
Hill, A. R. Aircraft. No. 16583. July 2nd.
Holt, H. E. S. Parachute flares. No. 16823. July 4th.
Howard, R. A. Method of building up boss of three-bladed airscrew. No. 16743. July 4th.
Kilburn, D. A. E. Method of enabling aeroplanes to ascend from or descend on land or water. No. 16873. July 5th.
Mackworth, J. D. Inflation systems for non-rigid aerostats No. 16772. July 4th.
Mackworth, J. D. Valve gear for balloons, etc. No. 16841. July 5th.
Mooney, D. J. Metal fittings for aircraft. No. 16683. July 3rd.
Nevin, G. Dirigible airship. No. 16664. July 3rd.
Rae, H. F. Flying-boat. No. 16369. June 30th.
Russon, J. W. Electric level indicator for aircraft when night-flying. No. 16883. July 5th.
Schneider, J. J. M. A. E. Aeroplanes. No. 16409. June 30th.
Summers, L. F. Clothing for aviators, etc. No. 16869. July 5th.
Warneford, W. J. Device to prevent stealing of motor-cars, motor-boats, aircraft, etc. No. 16525. July 2nd.
Warneford, W. J. Device to prevent stealing of motor-boats, motor-cars, aircraft, etc. No. 16857. July 5th
Wilson, C. L. Means for operating controls of aeroplanes. No. 16472. July 2nd.

COMPLETE SPECIFICATIONS ACCEPTED, PRINTS OF WHICH CAN BE OBTAINED ON AND AFTER JULY 17TH, 1919.

128262. July 5th, 1917. Cowtan, D. M., and Piccolomini, H. C. P. Girders and similar structures for aircraft and other purposes.
128266. July 6th, 1917. Hervieu, G., and Marechal, P. M. G. Portable sheds, hangars, and other similar structures.
128268. July 6th, 1917. Lecuyer, M. Flying-machines.
128277. July 11th, 1917. Vickers Ltd., Challenger, G. H. and Duncan, T. S. Means for controlling the fire of guns carried by aircraft.
128283. July 14th, 1917. Sopwith Aviation Co., and Kauper, H. A. Means for synchronising the firing of a gun with the rotation of a propeller upon aeroplanes.
128291. July 19th, 1917. Bruce, R. A. Fastenings of detachable or foldable aeroplane wings.
128294. July 20th, 1917. Calthrop, E. R. Method of, and apparatus for, destroying aerial craft.
128300. July 26th, 1917. Sopwith Aviation Co., and Hodgson, A. T. Fairlead.
128301. July 27th, 1917. Ellis, F. A., and Ellis, F. A. Screw propellers for aeronautical machines and the like.
128304. July 27th, 1917. Aeronautical Instrument Co., and Brewer, G. Balloons.
128310. July 30th, 1917. Wood, W. H. Manufacture of propellers and other parts of aircraft.
128313. July 31st, 1917. Blackburn Aeroplane and Motor Co., Booth, H., and Copley, J. W. Pulleys particularly applicable for the control or other flexible connections employed in aircraft.
128314. July 31st, 1917. Blackburn Aeroplane and Motor Co., and Booth, H. Folding wings of aeroplane flying machines.
128319. Aug. 1st, 1917. Sage and Co., F., and Feary, N. A. T. N. Fairings for the struts of aircraft.
128322. Sept. 7th, 1917. Brown, E. E., and Mooney, D. J. Metal construction for aircraft.
128329. March 1st, 1918. Thomas, G. H., and Hiscocks, S. W. Construction of laminated spar for aircraft.
128341. May 14th, 1918. Holle, A. A. Control of aeroplanes.
128345. May 16th, 1918. Taylor, W. Gyroscopic level indicator for use in aircraft, ships, and the like.
128352. June 6th, 1918. Grand, S. E. Parachute device for aeroplanes.
128367. June 15th, 1918. Kitchen, E. Stabilising and speed-increasing devices for aeroplanes and airships.
128388. July 18th, 1918. Joseph, E. L. Means for anchoring the ends of wires subject to tensile stress.
128421. July 3rd, 1918. Parnall and Sons, and Bolas, H. Means for cowling the rotary engines of aircraft.
128422. July 3rd, 1918. Thomas, G. H., and Tippen, F. J. Airships.
128423. July 3rd, 1918. Thomas, G. H., and Tippen, F. J. Airships.
128430. July 11th, 1918. Blackburn Aeroplane and Motor Co., Booth, H., and Petty, G. E. Flying-boats.
128457. Aug. 15th, 1918. Boulton and Paul, and North, J. D. Engine fairings or casings for aircraft.
128481. Oct. 3rd, 1918. Clowes, G. Portable steps for use in rigging aeroplanes.
128495. Nov. 26th, 1918. Silk, R. A. Platforms for use when adjusting the compasses of aircraft.

COMPLETE SPECIFICATIONS ACCEPTED, PRINTS OF WHICH CAN BE OBTAINED ON AND AFTER JULY 24TH, 1919.

128,593. Jan. 3rd, 1917. Brock, A. Aerial photography.
128,599. Aug. 2nd, 1917. Blackburn Aeroplane & Motor Co., and Booth, H. Lifting-attachments for aeroplane flying-machines and other aircraft.
128,602. Aug. 2nd, 1917. Back, W. E. Control of flying-machines.
128,603. Aug. 2nd, 1917. Gledhill, A. H. Apparatus for releasing bodies from aircraft.
128,605. Aug. 3rd, 1917. Blackburn Aeroplane & Motor Co., and Booth, H. Method of construction of boats or floats.
128,609. Jan. 3rd, 1917. Brock, A. Aerial photography.
128,611. Aug. 7th, 1917. Blackburn Aeroplane & Motor Co., and Booth, H. Hulls or floats for hydro-aeroplane flying-machines.
128,615. Aug. 8th, 1917. Fuller Accumulator Co., and Brown, H. C. Lamps or lanterns for aeroplane flying-machines and other aircraft.
128,619. Aug. 9th, 1917. Hutchings, W. Machine for measuring the blades of aircraft and marine propellers.
128,621. Aug. 10th, 1917. Flower, S. A. Transverse frames of airships.
128,622. Aug. 13th, 1917. Coles, S. O. Cowper-. Construction of metal wing for flying-machines.
128,629. Sept. 11th, 1916. Paulhan, L., and Chevardiere de la Grandvilla, H. J. L. M. de. Propellers particularly applicable to aerial machines.
128,630. Aug. 16th, 1917. Portadown Weaving Co., and Greeves, T. J. Transparent flexible material applicable for aerial wings and other purposes.
128,634. Aug. 18th, 1917. Austin Motor Co., and Austin, Sir H. Method of mounting an aeroplane propeller and means for use therewith for carrying a gun which fires axially through the propeller.
128,636. Aug. 18th, 1917. Calthrop, E. R. Aeroplanes and parachute-launching devices therefor.
128,643. Aug. 22nd, 1917. British & Colonial Aeroplane Co., and Reid, W. T. Aircraft fuselages.
128,644. Aug. 22nd, 1917. British & Colonial Aeroplane Co., and Reid, W. T. Engines for aircraft.
128,651. Aug. 23rd, 1917. Mayrow, J. J. Fuselages of aeronautical machines.
128,657. Aug. 28th, 1917. Mordey, H. F., Lane, W., and Houghton, P. H. Propellers for aircraft.

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COMMERCIAL AERONAUTICS & CIVIL AERIAL TRANSPORT

AIRY NOTHINGS.

By "MEDWAY."

We live in the era of standardisation. We are even told that things are to be carried so far as to entail the standardisation of the engines to be used on the Imperial aerial routes before these routes themselves are in existence. Personally, I should prefer to start by tackling simpler branches of the subject.

For instance, there will no doubt be a considerable number of meetings at which Under-Secretaries of Government Departments and other shining lights of the political world will desire to apply dope to the Aircraft Industry and the general public. It would save a lot of time, which is otherwise bound to be wasted by manufacturers and representatives of the Press in attendance at such meetings, if the officially inspired utterances were standardised and printed in advance.

The standard speech would, of course, need to be replete with that loquacious reticence which enables nothing to be said in a large number of words. It would require to indicate the overpowering goodwill of the Government towards the Aircraft Industry and the pioneers of commercial aviation, and equally the determination of the same Government to do nothing whatever which could possibly involve any expenditure at all of public funds.

Diplomatic Verbiage.

The preparation of the speech is really a job for the same tactful people as are charged with the duty of giving expression to the whole-hearted adherence of the Government to a policy of Free Trade combined with a complete system of Import Duties and a substantial Imperial Preference. In the meanwhile, despite my lack of experience in the stringing together of diplomatic verbiage, I put forward the following merely as a rough first draft to serve as a basis upon which the elaborately finished article could be built up:—

Gentlemen,—I am giving you the pleasure and honour of my company to-day for the purpose of making it abundantly clear that the Government, which is so fortunate as to be represented by me, intends to treat Commercial Aviation in such a way as to ensure the speediest possible development of aerial services, the supremacy of the British Industry, and the total avoidance of any financial expenditure in aid of aerial enterprise.

One of our first duties is to dispose of the Government's own property in the shape of aeroplanes and airships. In this connection, it must be clear that any unfortunate risk of realising inadequate prices for this property can be eliminated by the total destruction of the property in question. Various alternative courses of action also suggest themselves. The property might be given away, or it might be sold at an exorbitant price.

To Relieve the Government of Responsibility.

We have to consider the immense potential value of aircraft services to the community. We have also to consider the pockets of those whose one and only idea is an immediate temporary reduction of taxation. It would be extremely nice to recover much of the cost of the war by opening up and increasing the value of territories in many of the comparatively undeveloped portions of the Empire. The process must involve some capital expenditure, and it would, therefore, be still nicer if you, gentlemen, consented to incur that expenditure and relieve the Government of all responsibility.

I need hardly say that even the most socialistic members of the community do not desire to nationalise properties or services so long as these cannot fail to show a loss. If, however, as I hope and expect, you are all willing to club together in a patriotic spirit and carry us through this difficult period, the nation will be only too pleased to take over the enterprises at a nominal figure directly they have reached that period where a regular and substantial profit is assured.

Just at the moment it is the duty of the Government to set you all an example in economy. The form of economy most easily practised and appreciated by the majority of voters—who, as you must recognise, are the people who matter—consists of spending no money at all. The truer economy, which consists of investing money in order to increase its value, is not nearly so obvious or easily explained. Fortunately, words cost nothing; I will therefore provide you freely with as many as you require, or even more. Explanations, however, postulate brains, and brains are an expensive commodity in which wise Governments must be strictly economical.

Benevolent Neutrality.

The Air Ministry possesses a certain number of machines, and the Admiralty has reported that when the political situation has cleared up—as it may do within the next ten years or so—it may be able to give an approximate estimate of the number of aircraft or aerodromes that it may or may not require. You will agree that nothing could be more explicit or satisfactory. These two departments are prepared to combine in making the great sacrifice which is entailed by offering to sell their property to the highest bidder. This, in itself, you will recognise as a great inducement. You will also be permitted to read the weather forecasts in the "Times," and the Post Office has undertaken to adopt an attitude of benevolent neutrality.

The Postmaster-General has even gone so far as to permit me to assure you, on his behalf, that in the preparation of your schemes you are fully at liberty to utilise the facilities of the mail, telegraph, and telephone services at the customary rates. It is even conceivable—and this you will agree is a most gratifying assurance—that at some remote period the proposition of carrying certain limited classes of matter by the aerial method may be given some slight consideration, provided, of course, that you are able to quote rates per ton conveyed which compare favourably with those prevalent on the nationalised railways of the country. This should be an easy matter.

A Donation of Regulations.

As for the other Government Departments, I understand that the War Office is willing to subsidise you by the free gift of its valued esteem and gratitude. Mean-

while, the Board of Trade and the new Ministry of Transport are waiting, with their tongues out, to present you gratuitously with thousands of regulations as to how machines may not be built and services may not be operated.

What we aim at is close collaboration between the Government and the Industry. In the first instance we provide the risk—inasmuch as you never know how your prospects may be affected by our legislation. You merely provide the money. From that point onwards you take the risk and, if things go well, we will ultimately take the money.

As the poet has so aptly put it, "By just exchange, one for the other given." It would be impossible to conceive a more promising form of collaboration—for that matter you could not conceive a more promising Government. We make promises, leaving you simply to make progress.

Then, again, both deeds and words are required to bring our great mutual scheme to full fruition. We will provide all the words, leaving you merely to supply the deeds. The future of such a scheme is boundless, and, if you go into it in a business-like manner, we, with some trifling assistance from you, will retain that supremacy in the air which you—I mean we—have gained during the war. (Applause.)

A CLUB FOR THE AIRCRAFT INDUSTRY

By BACCHUS (Retired).

More than one natural history book has told us that man is a gregarious animal, which fact is chiefly the *raison d'être* for mothers' meetings, night clubs, and thieves' kitchens, and is equally a *sine qua non* of war or peace.

But for this characteristic in the species life would be but an empty shell, and the amenities of the punch-bowl and of the tea-table would remain the subjects of one's dreams rather than of actual experience.

The man, therefore, who invented the club was a benefactor to mankind. He provided an opportunity whereby a natural instinct could find expression; and once the club came its success was assured.

Now, as is generally known, there exist clubs for all manner of purposes: for ensuring the arrival of the annual turkey with its attendant dainties, for evading sundry Acts of Parliament and bye-laws, and for co-ordination of feasting, sport, and study.

When aeronautics first became a reality it was natural that there should arise an Aero Club, and it was equally natural that such a club should be patronised chiefly by sportsmen of relatively independent means, for in those days the privilege of working for 18 hours a day at a badly constructed aeroplane in a poorly equipped shop was a luxury known only to the man of means.

When war broke out the enlargement of the Flying Services brought into the aeronautical world and into the Royal Aero Club a crowd of people who were strangers in a strange land: they were mostly men who had been concerned with affairs more profitable than the heroic pastime of throwing good money after bad at Brooklands, Shellbeach, or elsewhere.

Most of them were cognisant of the buying, selling, and hiring of motor-cars and motor-bicycles, and they thought in terms of so much per centum commission.

They took the King's Commission; some of them died for their country with gallant promptitude; others were content merely to assume the King's uniform and to pursue those paths of military probity which led them nowhere nearer than within 50 miles of the firing line.

Many of them entered, for the first time, the outer circle of that mysterious world where certain things are done, and where certain other things are not done, and they noticed that the inhabitants of this newly discovered sphere, whose principal duty in the scheme of things was to officer the British Navy and Army, did not chose to forgather in their social occasions with persons engaged upon the prosecution of commerce.

As a result, those new recruits to the Service hierarchy who possessed a lack of foresight and proportion and who forgot that with the return of peace they would themselves find necessary a return to the pursuit of the essential shilling, decided that it was not *comme il faut* for them to share their club with an unnecessarily large number of their class who did not enjoy the privilege of wearing the King's uniform.

Now, the net result of this craving for seclusion has been to bar civilians from election to the Royal Aero Club, except in the case of individuals who are a force in the land, and although no official declaration has been made on the subject, the shelving of a number of candidates concerned with commercial aeronautics seems a fairly plain hint that the existing membership of the Club, as represented by the committee, does not wish to associate itself at the cocktail bar and in the dining room with members of the Aircraft Industry.

If a definite statement to this effect were issued the ground would be cleared.

Every individual and every community of men is entitled to select congenial associates. None will quarrel with that principle, and if the officers and gentlemen, permanent and temporary, who at present permeate the R.Ae.C. want to congregate alone, they are welcome so to congregate.

What has been said in this article is uttered without animus; it is merely a statement of things as they exist, and is designed to point to the need for a Club for the use of those engaged in the civilian Aircraft Industry.

Such a club, if it is to be a useful institution, and not merely an establishment in which evasions of the drink regulations are facile, must be properly organised, and the proprietors must be of such standing as will ensure the club a definite status from its inception. If its foundation is laid with worthy objects in view there is no reason why it should not be governed by an authoritative body which has already established a reputation among those concerned with commercial aeronautics.

The institution which comes naturally to one's mind in this connection is the Society of British Aircraft Constructors, an association of the most firmly established and reputable aircraft manufacturers in the country.

A committee of its members might very well be appointed to consider the whole question and to decide on what lines a club should be formed which would be of most practical utility to the industry.

A well-equipped clubhouse situated in the West End would be necessary, with a first-class kitchen (and cellar). In addition to the apartments to be found in most clubs, such as dining room, smoking room, library, and billiard room, there might very usefully be an information bureau where all notices and documents of a general and not confidential nature, which circulate in the Aircraft Industry, might be inspected.

Also facilities might well be granted for the inspection of approved catalogues of goods handled by such members of the S.B.A.C. as chose to supply them, as well as up-to-date lists of the current prices of standard materials and fittings used in aircraft construction.

The conduct of private business is objectionable in any club, but a series of small private rooms might be provided in which members could meet and discuss business, an arrangement which would remove any excuse for the conduct of commercial affairs in any other part of the building, and thus would assure members that they would receive no molestation from others whose commercial enthusiasm might at times overmaster their good taste.

Now that most buildings in town with large rooms have been commandeered for war service it would be difficult to select a clubhouse with a lecture hall, but if this were possible a large room, which would seat up to 500 people, would be invaluable for lectures on all manner of subjects concerning aeronautics, when non-members could be received for the interchange of ideas.

The soul of any club is its secretary, and for a club of the character outlined a man is required who, for preference, is well acquainted with the different classes of people who are concerned with commercial aeronautics.

It must be remembered that no man can serve both God and Mammon. Equally a secretary who is also an officer cannot serve his King and his club at the same time, and a civilian who has no other interests is therefore essential for the post.

The committee should be men of the best class found in the Aircraft Industry, and in order that the new club should be organised on seemly lines it might be well to insist that the first members of the committee should be members of some other recognised club.

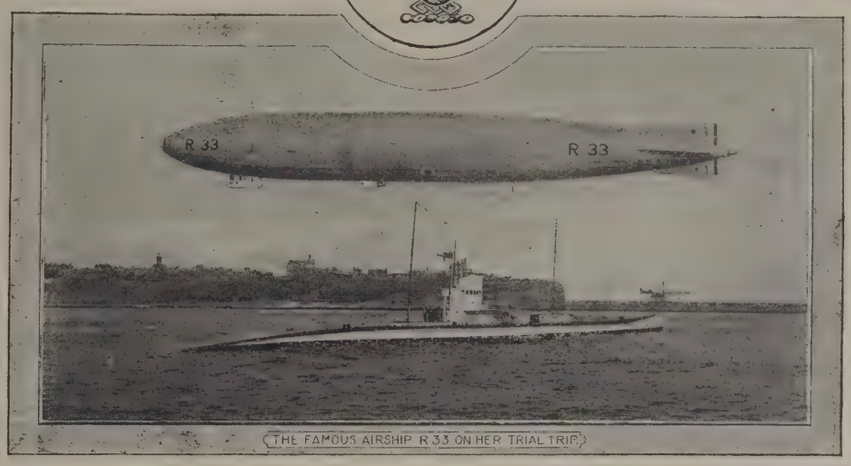
As regards membership, there is no reason why it should be limited to the administrative staffs of firms belonging to the S.B.A.C., but any person for whose respectability two members of the S.B.A.C. were willing to vouch should be eligible, subject to the approval of the committee.

A well-established club for the use of members of the Aircraft Industry would be of undoubted use for the interchange of information and ideas, and to encourage cordial relations between the different interests concerned.

It would certainly pay those firms who have been making riches out of aircraft to put up the necessary capital, not only as a direct financial investment, but for the good of the Industry as a whole.

Incidentally, it should be quite possible to admit to the membership of the club a limited number of approved members of His Majesty's Forces who are concerned with aircraft production.

TRADE MARK



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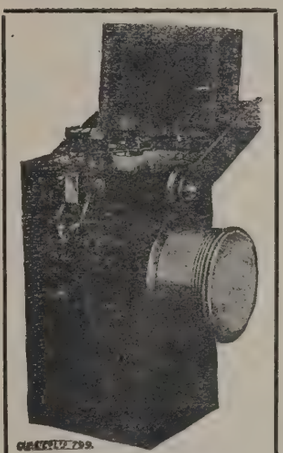
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The bulbs are large and don't easily burn out.

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CIVIL AERIAL TRANSPORT NOTES.

GREAT BRITAIN.

CIVIL AERODROMES.

The following lists of aerodromes are issued as an addition to the lists recently published. It may be seen that in the majority of cases the aerodromes referred to below can only be considered as possible emergency landing-grounds.

Attention is again drawn to the fact that these lists are purely provisional and subject to alteration or amendment from time to time.

LIST D. 4c.)

Aerodromes licensed as suitable for Avro (504K) and similar types of aircraft only. Except in very few instances accommodation does not exist. The licences have also been issued for limited periods only.

Aerodrome.	Nearest Railway Station.	Nearest Town.
Aylesbury (Race Meadow)	Aylesbury	Aylesbury
Conway (The Morfa)	Conway	Conway
Ashgate (Caushouse Farm)	Chesterfield	Chesterfield
Leicester (Aylestone Lane)	Leicester	Leicester
Derby (Race Course)	Derby	Derby
Marden	Cullercoats	Newcastle-on-Tyne
Stratford-on-Avon	Stratford-on-Avon	Stratford-on-Avon
Lochee Park	Dundee	Dundee
Perth (North Inch)	Perth	Perth
Warrington	Warrington	Warrington
Stoke-on-Trent (Sparrow Terrace)	Stoke-on-Trent	Stoke-on-Trent

LIST E. (A.)

STATIONS NO LONGER IN USE BY THE R.A.F.

These stations have been passed to the Government Surplus Property Disposal Board. They will be relinquished as soon as the Government property thereon has been disposed of. In many cases the aerodromes are now under cultivation, but it is probable that the sites still form the best emergency landing-grounds in the immediate neighbourhood.

Aerodrome.	Nearest Railway Station.	Nearest Town.
Hickling Broad (S)	Catfield	Yarmouth
Killingholme	Habrough	Grimsby
London Colney	Radlett	St. Albans
Shoreham	Shoreham	Shoreham-by-Sea
Seaton Carew	Seaton Carew	West Hartlepool

REFERENCES.—(S) seaplane station; (C) known to be under cultivation or otherwise unsuitable for landing.

LONDON—PARIS AIR SERVICES.

Date.	Type	Left Hounslow	Arr. Paris	Left Paris	Arr. Hounslow	Pass	Weather
Sept. 8th	D.H. 4a	12.30 p.m.	2.45 p.m.			0	
	D.H. 16			12.30 p.m.	2.54 p.m.	2	
Sept. 9th	D.H. 4a	12 30 p.m.	2.40 p.m.			2	
	D.H. 16	4.7 p.m.	6.12 p.m.			2	
	D.H. 9			12.40 p.m.	3.8 p.m.	1	Fog in Channel
Sept. 10th	D.H. 9	12.33 a.m.	3.25 p.m.			0	
	D.H. 4a			12.45 p.m.	2 46 p.m.	2	do.
Sept. 11th	D.H. 4a	12 30 p.m.	2.45 p.m.			2	
	D.H. 4a			12.30 p.m.	2.25 p.m.	2	
Sept. 12th	D.H. 16	12.30 p.m.	2.45 p.m.			4	
	D.H. 16			11.25 a.m.	1.25 p.m.	2	
	D.H. 4a			12.30 p.m.	2,34 p.m.	2	
Sept. 13th	D.H. 4a	12.30 p.m.	3.0 p.m.			2	Thick fog
	D.H. 16			3.20 p.m.	5.45 p.m.	4	

Express parcels were carried on every flight except on one each of September 9th and September 12th, when the Under Secretary of State for Air and the Controller-General of Civil Aviation chartered, and were flown in, a D.H.16.

AVRO NORTHERN STATIONS.

The Avro Northern Stations, of which Blackpool is the parent, have now taken up 20,000 passengers. The stations in questions are Birkdale (Southport), Manchester, Fleetwood, Morecambe, Waterloo Sands (Liverpool), Rhyl, Douglas, and Windermere. Preston has been licensed and it is hoped that active operations will soon be undertaken there.

A "Travelling Circus" has now been established which will tour various towns in turn, spending a few days at each, to give demonstrations and take up passengers. The dates arranged so far are:—Barmouth, Sept. 15th to 20th; Nottingham, Sept. 22nd to 24th; and Derby, Oct. 6th to 11th.

A LONDON TO ROME FLIGHT.

In the last issue of THE AEROPLANE an Air Ministry announcement was given. It stated that Lt.-Col. W. D. Beatty and Lt.-Col. W. O. Raikes, of the Air Ministry, had left Hounslow for Italy in a Bristol "Fighter" on Sept. 6th at 11.5 a.m.

They arrived at Lyons at 5.50 p.m. The next morning they started out at 6.30 a.m. They were at Fréjus at 8.5 a.m., arrived at Pisa at 1.50 p.m., and left at 3.15 p.m. The "Times" correspondent states that at 4.38 p.m. in the middle of the Campagna, north of Civita Vecchia, within 50 miles of Rome, their propeller dropped off. In spite of this they made an excellent landing.

They spent the night with the machine. While awaiting the arrival of a car from Rome, a fire swept over the Campagna and destroyed the machine. These fires are common after the drought of summer.

The journey was made to arrange certain outstanding points with regard to civil aerial communication.

BRIGHTON.

During the week ending Sept. 13th, 90 flights were made by the Avros at the Ladies' Mile Aerodrome, Brighton, and 185 passengers were carried. Two cross-country flights were made to Chichester and return—one return journey was made in 15 minutes.

CARDIFF.

S. Instone and Co., steamship owners and general export and import merchants, of Cardiff, have purchased from the Air Ministry a large machine with Rolls-Royce engines. They have engaged as pilot Lieut. F. L. Barnard (late R.A.F.), who is said to have made the record number of cross-Channel flights.

Owing to the serious delays which have occurred during the last three months in the transport of papers, samples, and other light goods, the company decided to start their own service of express communication. If the experiment proves to be a success, the firm will acquire a fleet of aeroplanes. Airships might also be used for commercial purposes.

CHICHESTER.

Twenty passengers were taken up in an Avro machine, which flew over from Brighton on Sept. 11th. Weather permitting, Thursday flying will continue to take place at Chichester.

DUNDEE.

During the latter part of the week ending Sept. 13th Aerial Photos, Ltd., of Edinburgh, held a very successful meeting at Fochlee Park, Dundee. Numbers of prospective passengers waited their turn to be taken up in the Avro machines.

Sir Wm. Don and his daughter were the first passengers. At the conclusion of the meeting Captain Simpson (late R.A.F.) gave a display of stunt flying.

MARGATE.

Avro joy flights at Manston numbered 319 during the week ending Sept. 13th. Among the many passengers were Miss Currie, the Marquis de Ruvigny, the Comte de Ruvigny, and Dr. Saner. These passengers have been most enthusiastic, taking flights day after day. The Comte de Ruvigny is especially keen on stunting.

A blind man waited many hours one day for his flight, determined to loop and experience every flying sensation. The weather has been perfect, and everything is going with energy and success on the aerodrome.

NORWICH.

The "Daily Sketch," "Evening Standard" and "Illustrated Sunday Herald" free flights announced to be given next Sunday have been postponed.

PAIGNTON.

Three three-seater Avro seaplanes were in commission here during the week ending Sept. 13th. One machine arrived from Hamble. There were 174 flights made and 264 passengers were taken up.

PERTH.

Aerial Photos, Ltd., of Edinburgh, were very busy taking up passengers in their Avro machines at North Inch, Perth, during the first part of the week ending Sept. 13th. The damage caused to the machines by the gale at Dunoon has been repaired. The young Earl of Kinoull was one of the many passengers carried. The inhabitants of Perth are so enthusiastic over flying that they propose holding another meeting soon.

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As manufacturers of weldless steel tubing, as tube manipulators, and as steel press-workers, we have a world-wide reputation for all-round excellence. Multitudinous are our products, and our reputation is behind every item.

We are right in the forefront with our "Apollo" tubular box spanners. They are becoming increasingly popular in progressive engineering work-shops. We make several patterns—including a special set for Ford Cars—all of which leave absolutely nothing to be desired in tubular spanner construction. Ask for our Spanner catalogue and price list. We can supply aircraft parts in big quantities, as in this connection we are specialists in tapering, bending, trapping, welding, and all other classes of tube manipulation and presswork.

To-day we recognise that aircraft builders have more time to manipulate their own components, but they need steel tubing, and we supply the very best. Further, let our war experience assist you in this matter of steel tubing and steel presswork. We may be able to save you money, because we have the tools for many components.

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THE Pilot is after all the man who matters—he can bear witness of a lubricant's efficiency when flying at an altitude of 20 or 30 thousand feet. That, too, is the time that matters. For this reason the makers of Dick's Aero Oil are grateful in acknowledging the many congratulatory letters that reach them from Pilots in regard to this Oil.

They take this opportunity of expressing their thanks and reiterating their assurance that the quality will remain unchanged until such time as it can be improved.

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LONDON.

CRICKLEWOOD.—During week ending Sept. 12, Handley Page, Ltd., carried 40 passengers and 1,200 lb. of freight on their London Paris air service. The average time for the journey was 3 hours 29 min. Arrangements have now been completed for the passengers to be carried to and from the destination aerodromes in landaulette motor-cars.

HOUNSLOW.—During the week ending Sept. 13th 118 flights were made and 189 passengers were taken up. Over 6,400 passengers have been taken up by the Avros at Hounslow since May 1st. The following cross-country flights were made during the week:—One to Hythe and back, one to Margate, one to Weston-super-Mare. Two new machines were flown down from Manchester and arrived safely.

Mrs. Atkey, of Chelsea, is learning to fly on an Avro at Hounslow and made her first instructional flight a few days ago. It is believed that she is the first woman to undergo a course of training for a pilot's ticket since the war.

A three-seater Avro biplane flying from Hounslow to Southend, piloted by Lieut. E. A. Sullock (late R.A.F.) and carrying two passengers, crashed in Southwark Park on Sept. 9th. The pilot stated that a cylinder blew off at a height of 2,500 ft. over Bermondsey. The park or the river appeared to be the only landing-place. On landing, the back of the machine broke. All escaped practically uninjured.

A Vickers-Vimy commercial aeroplane left Amsterdam on Sept. 15th at 1.40 p.m., and arrived at Hounslow at 4.30 p.m., thus completing the 300-mile journey in 2 hrs. 50 mins.

Eight passengers were carried, including the Chief Technical Naval Officer of the Dutch Aviation Corps and his wife, and two Dutch engineers of the Royal Dutch Aero-Dynamic Laboratory. All the passengers were complete with luggage, and while the Channel was being crossed at 500 ft., owing to dense clouds, the party enjoyed a salmon mayonnaise lunch.

KINGSBURY.—The "Daily Sketch," "Evening Standard" and "Illustrated Sunday Herald" arranged to give free flights at the Kingsbury Aerodrome on Sept. 14th.

SOUTHAMPTON.

With the return of the fine weather during the past week, the Supermarine Flying Boat Service was resumed at Bournemouth, the Isle of Wight and Southsea. The rough and heavy weather during the preceding fortnight had been all against comfortable flying for passengers. With the calm sea and good weather, many of the visitors availed themselves of sea and coastal flights, also trips over and round H.M. warships lying in Bournemouth Bay.

The pilot of one machine flying from Southampton to Bournemouth on Sept. 12th, reported that about four miles off Hurst Castle he sighted a mine. Half a mile further on was one of the Government tugs from Yarmouth. The pilot circled his machine passed low down near the tug, and pointed out to the captain the position of the mine. It was then observed that the course of the tug was altered, and on reaching the mine a boat was put out. Nothing has since been heard of the subsequent proceedings so far as the mine is concerned, as the pilot then headed to continue his journey into Bournemouth.

WESTON-SUPER-MARE.

Capt. D. G. Westgarth Heslam is now in charge of the Avro Aerodrome at Weston, and has been flying with great energy and success since he took over. During the past week only one three-seater was at work. This made 81 flights and took up 161 passengers.

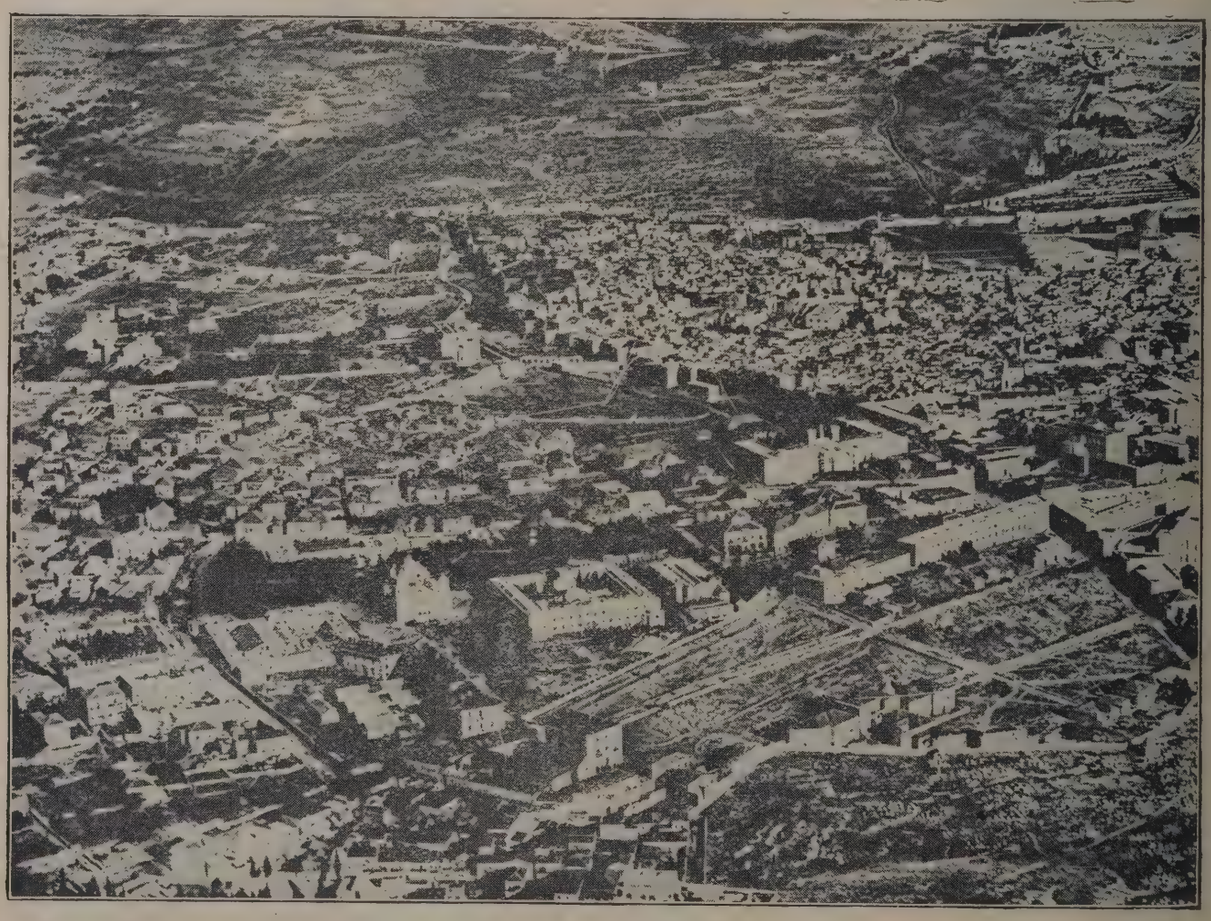
SWANSEA.

No flying was possible on the 7th, 8th, and 9th inst., owing to the weather, but nevertheless the Avros here—namely, three-seaters—made 204 flights and took up 244 passengers on the remaining days of the week.

CANADA.

An undated cutting from a local paper has been received from a correspondent in Victoria, British Columbia, which states that on a certain day seven visiting newspaper men made flights in the aeroplane "Pathfinder" in the afternoon, and a number of other visitors, including two ladies, were taken up on the next morning to see Victoria from the air. Among the brave journalists who took a trip on the first afternoon were Mr. W. J. S. Skidmore and Mr. J. H. PJalmer. [This is surely a new spelling for the universal night attire.—ED.]

The lifting power of the "Pathfinder" was well tested. Pilot Clemence, who did all the flying, had to coax the machine when taking off on one of the trips. In the front cock-pit was squeezed the hefty form of one of the editors, whose official weight was given at 225 lb. Another editor with 215 lb. to his credit was taken up for fifteen minutes.



An Oblique Photograph of Jerusalem taken from the air. The Mount of Olives can be seen in the background.

G R

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Aeroplanes.
New and second-hand, with and without Engines, A.W.F.K.8; B.E.2.E.; B.E.2.D.; Bristol Scout; Bristol Fighter; Caudron; De Hav. 4, 6, 9, 9a; F.E.2.B.; Sopwith Scout; Sopwith 2-seater; Sopwith Bomber; S.E.5.

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New and second-hand, with and without Engines. Fairey Seaplanes, Short 184.

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New and second-hand, with and without engines. N.T.2.B., H.16, F.3.

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New and second-hand Aero Wheels, Tyres, Inner Tubes, and Aero Wheels complete.

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2 and 4-bladed, all types, new and second-hand

Alloy Steels to Air Board Specifications.

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Tool Steels.
A wide range of Cast Tool Steel including Rounds, Hexagons and Flats comprising Various Brands, *i.e.* A.W., Jessops, Premier, Speedicut, Novo, Flathers, Jonas Colver and Paragon, also a quantity of Superior Cast Tool Steel Rectangular, suitable for Gauge and Bevel manufacture. Material lying at Waddon Depot, near Croydon.

All inquiries and applications for Permits to view should be addressed to the Controller, Aircraft Equipment Section, Disposal Board, Ministry of Munitions, Kingsway, London, W.C.2 Telephone: Regent 6700. Material can be viewed at the Depots, Regent's Park, Hendon, Aintree and Waddon. Samples can also be seen at the Show Room, York House. Tenders should be addressed to Room 596, York House, Kingsway. Goods are to be sold by private treaty unless otherwise stated

NOTE.—For the detailed list of Surplus Government Property for sale, apply at the nearest bookstall or to a local newsagent (to whom a standing order should be given) for

PRICE PRICE

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The Dunhill "Plane" Coat.



The R.A.F. "Plane" Coat is made on the best form Trench Coat design, in heavily proofed Twill of the favourite Khaki Mixture, or in Blue-Grey Twill.

Unlined, for Summer wear, the price is ... 4 Gns.

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Dunhills

LIMITED.

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Glasgow: 72, Vincent Street.

All the passengers were stunted, experiencing the sensations of the loop, spinning nose dive, falling leap, and half rolls. They enjoyed the trip immensely and wrote long articles on the flight to their daily papers. [The "falling leap" is a new stunt, apparently.—ED.]

The Aerial League in British Columbia is very busy carrying passengers at £4 for 15 minutes and taking them for urgent business trips.

BELGIUM.

It is intended that an aviation week shall be held at Ostend during next year open to aviators of all nations save those who were unfortunate enough to choose the wrong side in the late hostilities.

DENMARK.

The Danish correspondent of THE AEROPLANE writes:—

The arrival of Colonel Henderson, presumably on an Avro seaplane, is announced at Copenhagen, where the Naval air station at the Royal Dockyard had been prepared for his visit.

Other Allied aerial visits have been made by French Morane-Saulnier aircraft and by an Italian squadron, including Caproni. It was announced from London that Lieut. Brack-Papa, on the 700 h.p. Fiat biplane, would fly to Copenhagen before going to the Amsterdam Exhibition, but he has not arrived.

A spare Salmson engine having arrived by steamer, the Farman twin-engined Goliath now takes up passengers, piloted by Lieut. d'Ors. The visit of this French aeroplane has resulted in the formation of A/S Dansk Flyvekompagni (the Danish-French Flying Co., Ltd.) by Lieut. Krause-Jensen, which is to maintain a Paris-Copenhagen air service.

The discharged Flying Sub-Lieut. Pollner, lately an inspector of the Danish Sablatnig Co., is trying to form a new aerial company—Paul Pollner's Passenger and Post Packet. There are now five Danish air traffic ventures. Pollner has bought one of the four Rumpler biplanes which were flown up originally for the planned enterprise of Lieut. Foltmann. Two of these machines were abandoned by the German pilots. The farmer on whose ground one landed advertised for the owner to come and fetch it and to pay indemnity for harm to the corn, or he would sell it by auction. The second Rumpler biplane has been sold so many times over by auction at Roskile that the present owner cannot be found.

The Danish Air Shipping Co. indulges in provincial joy-ride business. The machines are flown by Army pilots on leave. The company will shortly start a flying school with a German chief pilot named Hubrecht. The moving power of the company is the sportsman Tholstrup, who has taken over a Fokker model VII scout and a Brandenburg seaplane beside a number of L.V.Gs. from a German business relation of his, who is the manager of the last-named works.

The Danish Air Express carries out at present only provincial joy-rides with one Sablatnig biplane, piloted by a German. As the German Sablatnig Company has acquired the late Naval air station in the city Aabenraa of the Sleswig part of Germany which is to be returned to Denmark, an air service to Copenhagen will likely be operated.

The Slesvig pilot Schmidt recently flew with a British Red Cross officer from Berlin to Copenhagen on a modern 230 h.p. Albatros and was out for a Danish circuit and altitude flight. On the return flight to Berlin, with an actor and his wife in the dark, he crashed as he had forgotten his map. He has returned to Slesvig for fresh efforts on a Sablatnig biplane.

The Danish Air Traffic Company is preparing for co-operation on the international air routes, but is not to get the Danish monopoly as was first planned. This is because the Air Bill before the Danish Parliament has been changed thus, that while a concession is still required for running a service, this concession does not give sole rights for that route.

The Naval experimental mail service has been stopped, and has left a good impression of reliability. It is to be resumed on an enlarged scale to Flensborg, when Sleswig returns to Denmark. On the 230 h.p. Benz-engined Friedrichshafen mail seaplanes, Flt. Lts. Thile, Lichtenberg, and Just-Rasmussen carried out a reliability flight last week with passengers. They flew from Copenhagen to the submarine base at the island Æro, via the air station Slipshavn, where petrol was replenished, and round Sealand back to the capital (520 kilometres).

At the request of the police the two first-named officers flew last Sunday with detectives in search of a jewel thief, who was believed to have stolen a yacht in efforts of crossing the Sound to Sweden.

Messrs. Nielsen and Winther have closed their aircraft department. They have lost a case brought against them by a Danish and a Finnish pupil for accidents while training at the firm's flying school. As the manager, the former Flt. Lt. Ussing, had not tested the machines, Blériot monoplanes, after changing the taxying planes for flying ones, the pupils both got their tuition fee and breakage deposit back, and one obtained indemnities for personal injuries.

FINLAND.

Hugo Ahlberg's Munition Works at Abo, in Finland, are being transformed for the manufacture of aeroplanes and automobiles, with a joint stock of five million marks that can be tripled.—HI.

FRANCE.

In addition to the military aerial services in the Near East described in the "Naval and Military Aeronautics" section of to-day's issue, the French military aviation service is running a civil aerial post between Constantinople and Bucharest. This route was opened on July 8th. The use of this line has brought Paris postally within six days of Constantinople. The following regulations are observed: (1) No letters are taken exceeding 50 grammes in weight; (2) Each letter is surtaxed one franc; (3) The total weight of correspondence carried by each postal aeroplane is 110 lb.; (4) Postal aeroplanes leave each Monday and Friday at 6 a.m. The service has so far been a complete success.

M. Chevillard, who left Toussus-le-Noble on Sept. 1st, flying a dual-control Farman biplane (F46 school type), reached Madrid on Sept. 9th.

It is understood that M. Louis Bleriot is acquiring the assets of the S.P.A.D. company, which is now in liquidation.

The "Aviette" on which M. Poulain attempted recently to win the Prix Peugeot, offered for a flight of twenty metres on a man-driven aeroplane, is of the following dimensions: Upper plane, 6 m. 50 by 1 m. 2; lower plane, 4 m. by 1 m. 40; bearing surface, 14 m. 66; weight of bicycle, 11 kilos. Total weight, 21 kilos. 200.

Certain manufacturers have announced their intentions as to the machines to be exhibited in the Salon de l'Aeronautique. M. Maurice Farman says that his firm will exhibit a "Goliath" fitted and upholstered in the latest fashion of aerial luxury, an F.40 school biplane and a tiny biplane fitted with a 40 h.p. Le Rhone motor. The Voisin firm intend to show a large model of their four-engined biplane, as the real machine is too large to rest happily on the stand. If possible, the fuselage of the big machine will also be shown in order that people may see to what degree comfort in the air has increased since the war ended. The Nieuport firm will show a type 29 biplane, one or two flying boats, and a small racing biplane.

An Italian Caproni machine, carrying 24 passengers, landed at Lille on Sept. 14th. The next morning it started for the Amsterdam Exhibition.

M. Paul Poiret, a Parisian costumier, and two of his mannequins were due to arrive at Hounslow from Paris on Sept. 16th with the principal costumes to be used in the production of "Afgar" at the London Pavilion on the next day. They intended making the trip on Sept. 15th, but were prevented from leaving, as one of the mannequins had not complied with the necessary passport regulations.

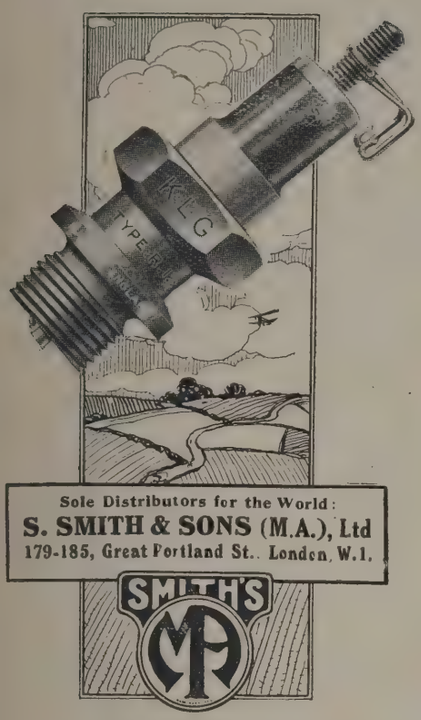
On Sept. 11th, Maj.-General the Rt. Hon. J. E. B. Seely, C.B., C.M.G., D.S.O., M.P., and Maj.-General Sir F. H. Sykes, K.C.B., D.S.O., were flown by Lieut. Shaw (late R.A.F.), in an Airco machine from Le Bourget to Deauville, where they were interviewed by Mr. Lloyd George.

GERMANY.

Defeated in the war, the Germans are making every effort to achieve a victory in peace. While the politicians wearily debate the future of the world with particular reference to the advantage of their own countries, the German commercial bodies are working consistently and determinedly to restore their country's lost supremacy in trade. In the aeronautical industry this effort to become commercially pre-eminent is clearly indicated by the recent opening of many aerial passenger services throughout Germany.

The following services are at present in operation. They are organised by the Deutsche Luft Reiderei and controlled by the Hamburg-Amerika Line. The machines used are five-seated A.E.G. biplanes and two-seated D.F.W. biplanes.

(1) Berlin-Weimar. (Twice daily.) Fares, single, 450 marks; return, 700 marks. (2) Berlin-Frankfurt. Fares, single, 600 marks; return, 700 marks. (3) Weimar-Frankfurt. Fares, single, 450 marks; return 700 marks. (4) Berlin-Leipzig. Fares, single, 350 marks; return, 500 marks. A second service is run by the Rumpler Company with machines carrying 2 passengers and 440 lb. of goods. (5) Leipzig-Weimar. Fares, single, 200 marks; return, 300 marks. (6) Berlin-Hamburg. Fares, single, 450 marks; return, 700 marks. (7) Berlin-Warnemunde. Fares, single, 400 marks; return, 600 marks. The Sablatnig firm also runs a service on this route with a continuation to Copenhagen. (8) Hamburg-Warnemunde. Fares, single, 350 marks; return, 500 marks. (9) Berlin-Hannover. Fares, single, 450 marks; return, 700 marks. (10) Berlin-Westphalen. Fares, single, 500 marks; return, 700 marks. (11) Hannover-Westphalen. Fares, single, 500 marks; return, 700 marks. (12) Berlin-Breslau. Fares, single, 500 marks; return, 750 marks.



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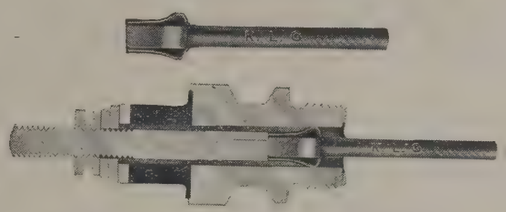
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THE

Grahame-White Rolls-Royce Aero-Limousine.



This machine, which can be seen in flight at Hendon, has been designed specially for pl asure and commerce. It is not an adapted war machine. Fitted with two 320 h.p. Rolls-Royce engines. It has a maximum speed of 115 m.p.h., and a flight radius of 4 hours. The limousine, luxuriously upholstered, and containing an electrically heated carpet, carries 4 to 6 passengers. The pilot, with whom communication is maintained by speaking tube, sits in a separate compartment above and at the rear of the passengers' quarters.

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Another service between Berlin and Munich will shortly be opened by the Rumpler Company. A new company is also in course of formation to open routes between Cologne, Hamburg, Bâle, Stuttgart, Frankfurt, Munich, and Breslau. This company will possess 200 aeroplanes.

The Danish Correspondent of THE AEROPLANE writes :—

It is now announced that the 230 h.p Benz-engined seaplane flown by Captain-Lieut. Christiansen, with Ship-Officer Wladika as observer, to Bergen and delivered there, was built by the Lübeck-Trawemünde Aircraft Works after the revolution.

Three L.F.G. seaplanes, fitted with 230 h.p. Benz engines and with cabins for three passengers, have been in service between Stralsund and the seaside resorts on the island Rügen. Flights to schedule time could not be carried out owing to lack of fuel. Two hundred and thirty-six flights, covering 7,061 kilometres, were made in one month from July 24th. The average speed made was 93 m.p.h. The flights made were chiefly passenger-carrying and going in search of thieves. A doctor was fetched in one for an operation which had to be performed quickly.

The nucleus of the coming German air police force has been formed by the Karlshorst Squadron under the command of Captain Kastner. They have two speedy scouts, supplied by the Home Office, and two giant aeroplanes for quantity transport of policemen. A landing ground is prepared by the Swiss frontier. More stations are to be built in Hamburg, Breslau, and Hanover.

The D.F.W. commercial biplane, with enclosed cabin for three passengers, the arrival of which near the E.L.T.A. was announced in large advertisements in the Dutch papers, was flown by Lieut. Diemer, carrying a lady and gentleman as passengers. "Flugsport" intimates that its presence was unpleasant to the Aero Exhibition authorities. It states that Mr. de Jonge, of the passage office (which it calls the spy office) offered immediately on its landing 3,000 fl. by a passenger who wished to fly to Copenhagen next morning, so that the machine might leave the exhibition. The arrival of more D.F.W. aeroplanes is announced, and the German journal lets its Dutch correspondent say that the German aeroplane trade has indisputably attained a pre-eminent success, which is justified, as the E.L.T.A. can show nothing even approaching the D.F.W. machine.

HOLLAND.

E.L.T.A. NEWS.

An Airco D.H.9R aeroplane, fitted with a 450 h.p. Napier engine and piloted by Capt. Gathergood, covered a closed circuit course of 137 miles at the Amsterdam Aircraft Exhibition at a speed of 145 miles per hour.

Thirty-five competitors finished the course in the closed circuit race. The D.H.9R. won over the next machine by 10 min. The speed of 145 m.p.h. beats the British record for a closed circuit, which was also held by a Napier-engined Airco machine, by approximately 15 m.p.h. The D.H.9R returned to England on Sept. 11th, and arrived at Hounslow in 2 hr. 8 min.

ITALY.

The carriage of "express" letters from the capital to Sardinia by aeroplane is announced as having begun from Aug. 6th last.—T. S. H.

According to the "Morning Post" of Sept. 11th, a gambling house at Capri, kept by Alfred Green, a British subject, has been raided by the police, who flew at night from Naples by aeroplane for the purpose.

The police realised that if they crossed to the island (which is 20 miles south of Naples) by the regular steamer their arrival would be known. They therefore travelled in a seaplane in the dark and thus made a successful raid on the place, in which baccarat was being played. Besides the proprietor, they captured a beautiful woman who acted as a decoy and a score of cosmopolitan frequenters of the place, who are well known in Naples. Money and gaming materials were also seized.

An aerial service between Milan and Rome began on Sept. 6th and is running regularly. The journey is made via Pisa, where a landing is made. The Milan morning papers are now delivered in Rome by noon on the same day.

The Seaplane Circuit of Sicily, to be flown on September 14th, was open to three categories of aeroplanes :—(1) F.B.A. seaplanes (160 h.p. Isotta Fraschini V.L.B. motors); (2) seaplanes of any type with two or more seats; (3) single-seated seaplanes. In the first category 19 entries were received, in the second 13, and in the third 4. The cash prizes, which range from £400 in the case of Palermo to £80 from the Société Vinicale Marsala Florio, amount in all to £3,120. A number of gold medals and silver cups were also given by various public bodies.

NORWAY.

The Handley Page biplane piloted by Major T. Gran which crashed on a roof near Christiania on Sept. 6th cannot be repaired easily owing to the extent of the damage. On Sept. 9th Capt. Stewart, one of the passengers, left for England, where it will be decided whether the machine will be repaired. The attempt to fly to Stockholm will not be abandoned, but it is not decided whether it will be done this autumn even if the machine is repaired, as it will be rather late in the year for flying.

The Danish correspondent of THE AEROPLANE writes :—

An incident showing how aeroplanes are coming to the fore as the means of transport in a case of emergency occurred the other day when the General Consul Akselsen from Flakstad received news that his children were on the point of death. He was staying at a Copenhagen hotel. As no steamers were due to leave and the railway journey to Northern Norway takes two and a half days, he availed himself of aeroplane transport. As there were no machines in Copenhagen, he ordered one by cable from the Thulin Aircraft Works in Landskrona, crossed the Sound in a speedy tug, and set off in an aeroplane immediately on crossing in spite of a strong head wind.

PERSIA.

One learns from a private source that Italy is starting a flying ground in Persia, an officer pilot from the neighbourhood of Menaggio having left for that destination.—T. S. H.

UNITED STATES OF AMERICA.

According to an official statement issued by the U.S.A. War Department News Bureau on August 20th, instructions are being issued to discontinue at once enlistments for the heavier-than-air and for the lighter-than-air branches of the air service.

The Rt. Hon. Winston Spencer Churchill, M.P., Secretary of State for Air, has sent a letter to Mr. John A. Jordan, the superintendent of the Cleveland-Chicago division U.S. air mail. The letter has been forwarded to Washington. It contains data on British air systems, enquires for data of the U.S. air mail and states that Great Britain is seeking every possible method to improve and develop aerial travel.

"The aerial mail service between New York and Washington and New York and Chicago has already saved the country $170,000 a year over the railway mail, and when the multi-motored aeroplanes are in operation there will be an annual saving of $1,500,000."

Assistant Postmaster General Otto Praeger made that statement before the Cleveland Chamber of Commerce, which held an aviation week in celebration of the one hundred days' perfect mail service between Cleveland and Chicago.

Alva Bradley, chairman of the aviation committee of the Cleveland Chamber of Commerce and vice-president of that body, read the following resolutions adopted by the directors of the Chamber :

"*Whereas,* For the past one hundred consecutive days the aerial mail service between Cleveland and Chicago has been operated successfully, thereby demonstrating the practicability of mail transportation by this means; and

"*Whereas,* The aeroplane terminal facilities in both Cleveland and Chicago are inadequate to accommodate even the present limited traffic; and

"*Whereas,* Owing to the increase of aerial transportation, an urgent need for Federal regulation of aircraft traffic is apparent; now, therefore, be it

"RESOLVED, That the Cleveland Chamber of Commerce urges upon Congress the desirability of enacting suitable legislation regulating aircraft traffic, and that the Chamber of Commerce further petitions the Post Office Department, in co-operation wherever practicable with the military and naval aviation services, to extend the aerial mail service as rapidly as possible throughout the United States, and especially to provide suitable terminal facilities in those cities where such mail service is now in operation."

Mr. Praeger said he expected the aerial mail to be in operation to Minneapolis, Omaha and St. Louis by early spring, when multi-motored ships, carrying as much as 3,000 pounds of mail, would be available.

As a result of the joint activities of the Cleveland Aviation Club and the Cleveland Chamber of Commerce twenty-two Ohio cities, including Cincinnati, set about establishing landing fields in the week ending Aug. 30th.

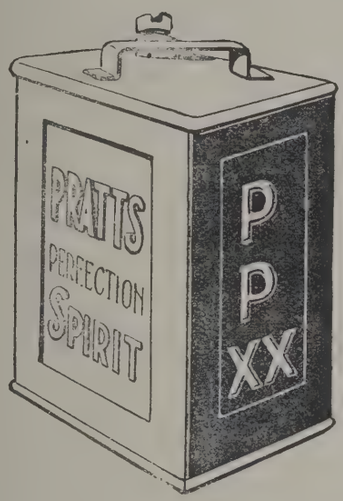
The "Aerial Age" of America states in its issue of Sept. 1st that five hundred American aeroplanes have been sold and delivered to individual owners since March, 1919. Over that number could have been sold if the manufacturers could have produced them more quickly, but they have been completing their Government contracts.

The demand for pleasure aeroplanes at $7,500 is as great as that for training machines at $2,500, and many buyers have acquired training aeroplanes only because they could not get pleasure machines. Over a hundred people are awaiting delivery of Curtiss Orioles and flying-boats.

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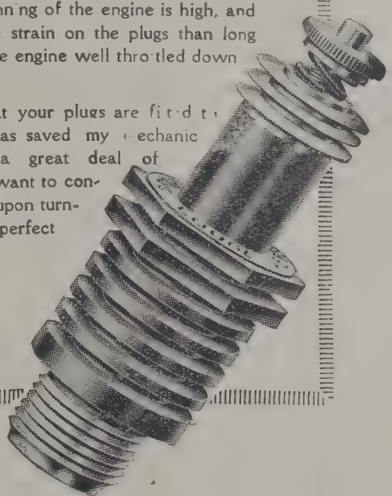
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Here is the opinion of Captain E. D. C. Herne (late R.A.F.) of the Porthcawl Flying Services.

"In consequence of a great deal of trouble with another make of sparking plug, necessitating resetting of the gaps after every few hours' flying, I fitted sixteen of your sparking plugs to two 90 h.p., R.A.F. engines installed in Armstrong-Whitworth aeroplanes which I am using for taking up passengers

Up to the time of writing one engine has done 100 hours' flying and the other 75 hours, and in not a single instance has one of your plugs needed attention: I have not even had to clean one. I consider this to be little short of marvellous, because the plugs have been working under unfavourable conditions. The engines are air-cooled, and when "taking off" and landing a large number of times daily the average time of "all out" running of the engine is high, and puts far more strain on the plugs than long flights with the engine well throttled down

The fact that your plugs are fitted to my engine has saved my mechanic and myself a great deal of work, and I want to congratulate you upon turning out so perfect an article."



Exactly the same plug as used by Capt. Herne.

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Write for particulars of aero plugs stating make and type of engine,

THE LODGE SPARKING PLUG CO., LTD., RUGBY.

Sweet Orr & Co., overall manufacturers, of New York, on August 20th sent out a salesman in an Aeromarine flying-boat. He flew from New York to Poughkeepsie and return, making numerous stops en route. Many orders for goods were given by clothing firms to the flying salesman. As a result of the success achieved the company announced that they would place orders for three similar type Aeromarine flying-boats.

Aeroplanes have recently been used in the Alabama mountains for locating illicit distilleries. Deputy-Marshal J. A. Wall made a trip over the territory and announced later that he expected that several arrests would be made.

The Central Committee of the Knights Templar Conclave which was held in Philadelphia in the week ending Sept. 13th arranged with the Philadelphia Aero-Service Corp. to provide hangars and flying accommodation for the Knights who came to the conclave by aeroplane. Provision was also made for a continuous free automobile service from the aerodrome to the centre of the city.

The Alaska Aircraft Transportation Company, of Seattle, Wash., incorporated under the laws of that State for the purpose of building and operating aeroplanes in Alaska for carrying freight and passengers, will make its first aerodrome at Valderz. They are planning to have, ultimately, landing grounds at all the important spots in Alaska to supplant the present difficult methods of transportation.

The president of the company, Mr. Tod M. Date, has had twelve years' experience with transportation problems in the north. He was formerly associated with the Standard Aircraft Corp., at Elizabeth, N.J., and the Naval Aircraft Factory at the League Island Navy Yard.

The aeroplane to be used is being designed to carry approximately six tons of freight. It will have a total supporting surface of 3,360 ft. and will be driven by four engines developing 400 h.p. each.

AERONAUTICS AT THE BRITISH ASSOCIATION CONGRESS.

The British Association Congress at Bournemouth held during the week ending Sept. 13th produced many papers dealing with the applications of science to the late war.

Aeronautices naturally figured to a considerable extent.

Before the Engineering Section, Dr. Leonard Bairstow, C.B.E., read a paper dealing with the progress of aviation during the period of hostilities; Wing Commander T. R. Cave-Browne-Cave, C.B.E., one on Airships; Capt. J. Robinson described the experimental work connected with the application of directional wireless to aircraft navigation, and Major T. Vincent Smith read a paper on Wireless in the R.F.C.

These technical papers will be dealt with in detail in future numbers of Aeronautical Engineering.

A paper read before the Economics Section by Sir Charles Bright on "Inter-Imperial Communication through Cable, Wireless, and Air" dealt generally with the utilitarian value of these three methods of communication.

Speaking of air mails and aerograms, Sir Charles said that while the mail to Australia took over five weeks, the aeroplane of to-day could cover the distance in 12 days. In those regions which were practically immune from fog or gale, air mails should have a considerable future, both as outstripping the mail ship over long journeys and as beating any telegraph system over comparatively short distances.

Lord Northcliffe said in a letter to Sir John Alcock:—"Just as in 1913, when I offered the prize, I felt that it would soon be won, so do I surely believe that your wonderful journey is a warning to cable monopolists and others to realise that within the next few years we shall be less dependent upon them unless they increase their wires and speed up." The letters and parcels that had been carried in the "Airco" aeroplanes between Folkestone and Cologne went to prove what could be done in this direction under properly organised conditions. The service was started on March 1st, and during that month 21 trips were made with 708 bags of mail outwards and 75 inwards. The letters could be sorted en route, sorting boxes being fitted to the aeroplane.

It seemed quite likely, too, that the aeroplane could be turned to account for the purposes of a highly efficient express letter service between different important centres throughout the United Kingdom. Mr. Holt Thomas, the controlling force of the Aircraft Manufacturing Company, had devised an ingenious plan of what he called aerograms for coming to the assistance of comparatively short distance telegrams or cablegrams by forming an "aerial connecting link," wherever congestion arose, between given telegraphic and telephonic systems. This promised to be of special use for the purposes of more rapid communication between, say, London and Paris, where telegraphic congestion occurred en route—in this case on the trans-Channel cables.

Great developments would now undoubtedly take place in the transport of correspondence by aeroplanes. The principal problem was really that of reducing the weight of the correspondence to such dimensions as were consistent with economy. Various expedients to this end had been suggested, but if systems of scientific language condensation were employed, a lengthy business communication could easily be transmitted on a sheet of paper the size of an ordinary postcard.

In a reference to the question of air communication Sir Charles said that the welfare of the Empire was likely to be considerably influenced by the position we eventually took up in these matters, whether we were first in the field, and the actual value of the air routes which we controlled. In days to come air stations would be at least as important as coaling stations were now. There could be little doubt that Egypt was admirably situated to become the Clapham Junction of the air.

The ultimate success of inter-Imperial commercial aviation really resolved itself into closely thought-out organisation backed up by no stinting—without actual waste—of the wherewithal to carry things out. It would remain for the Air Ministry, in concert with the Foreign Office, to work out the aerial navigation treaties with other countries, prepare the necessary aerodromes, meteorological and wireless stations, and make trial cruises with different types of machines in the various routes.

UNCONTROLLED CIVIL AVIATION.

The following letter has been received:—

Sir,—Apropos the incident of an aeroplane or some aeroplanes having caused trouble at Doncaster Racecourse this last week, and which caused Lord Lonsdale, as one of the stewards of the meeting, to at once telegraph the Air Ministry for assistance, you may have noticed that the A.M. replied by wire to Lord Lonsdale and asked for a report as to the full particulars of the case and the numbers of the machines.

To an ordinary observer of things in which one has no financial or any such interest, and therefore no necessity to acquire any knowledge of the regulations or working of the regulations of the "Air," it seems peculiar that the Air Ministry, after apparently admitting responsibility for the "incident" at Doncaster and the inconvenience to the Stewards, who no doubt had plenty to think about in controlling the meeting, which, by the way, was an instance of real organisation, should be bothered to send details of the matter to the A.M.

Why, I should like to know, could not the whole thing be dealt with by the police, who must have seen the machine and probably had every opportunity of "taking its number" and forwarding a report to the A.M.? Why not? I am quite sure Lord Lonsdale had no wish to act as "policeman" for the Controller of Civil Aviation.

We have been told on many occasions that the Civil Aviation people are, as it were, in "civvies"—we know that tailors in these days are very busy, and perhaps, therefore, one can excuse the uniforms still being worn, but procedure is presumably in "civvies"; anyway, the Controller told us so in more than one of his after-lunch or after-dinner speeches, and therefore I hope this incident will be dealt with in a "civil" manner and not necessarily on the lines of court-martial.

This matter at Doncaster is very serious and must not be repeated, because not only are lives endangered, but horses are also valuable, apart from which horse-racing is a real business and large sums are involved.

Passing to another "incident" this last week, you may have noticed at Bournemouth on Wednesday a land machine which flew over the sea, along the sands towards Boscombe, only about 50 ft. above the heads of the large crowds of people, and that on reaching Boscombe it appeared to crawl up the cliff, over the heads of the crowds there, and slowly disappear from view before turning round to do the "stunt" again. This machine had no number or mark on it at all. Now, I understand that all aircraft have to have numbers and be capable of being recognised when in flight.

Will the Air Ministry also inquire into this case, or, if we think of spending another day by the sea this year, are we to have momentary fears of this kind through Civil Aircraft un-Controlled?

I thought the exhibition of the old F.E. relic of the Air Board crawling along was bad enough, although there were cheers as it passed over the pier, but still it did have a number, even if a complicated one, but one would perhaps forgive that point, although I fail to see why aircraft should have these complicated numbers, such as P—ACK—1. Why not P 1225, which any policeman would recognise, and thus relieve people like Lord Lonsdale from furnishing reports "by request."

OBSERVER.



You couldn't see it from below

but it's nevertheless a fact—a fact which every flying man and aircraft manufacturer should note—that the majority of the machines competing in the Aerial Derby, including the three which were placed 1st, 2nd and 3rd, at the end of the race, were fitted with

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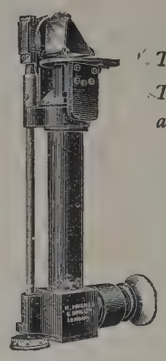
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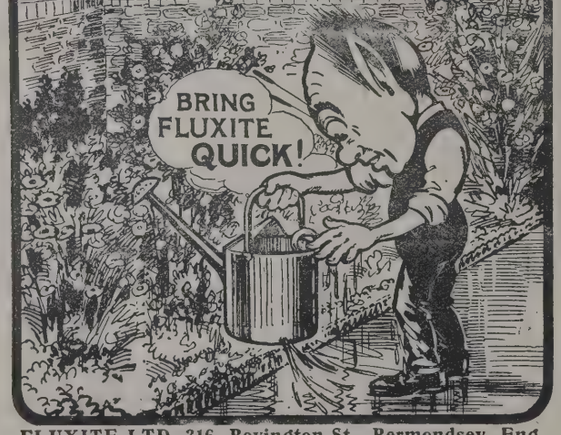
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AIRCRAFT FINANCE

CURRENT TOPICS

PETROL WILL NOT BECOME CHEAPER.

Petrol is not likely to become cheaper. This is the view held by those competent to judge the position. Happily, though the price of petrol has a direct bearing upon operating costs of aviation, it is not a supreme factor. In the course of time, however, when conditions of working have settled down on a more scientific basis, the price of petrol will become an item to be reckoned with.

THE OIL SHARE BOOM EXPLAINED.

This being so, the Aircraft Industry is particularly concerned with the sensational boom in oil shares now providing the outstanding feature in the Stock Exchange. This boom, of course, began over a year ago: it is now assuming a more remarkable phase which adds to the significance of the fact that it has already endured for more than twelve months. "After the boom, the slump," is nine cases out of ten a sound and logical inference, and no one need question the truth of the aphorism. But is it argued that the exception will be provided by oil shares, because the movement is not based upon the exaggeration of some extraordinary development of a temporary character, but upon a definite and permanent change in industrial organisation and method?

Thus the rise in coal as a fuel must eventually enforce the adoption of transportation facilities to the consumption of oil, which is economically cheaper in every way. It is already taking place, this change over to oil, and, with a constantly increasing demand for petrol for motor transport also, it is reasonably argued that petrol cannot become appreciably cheaper.

THE BASIS OF OPERATING COSTS.

Aviation in opening out commercially without the cheap, pre-war level of petrol is fortunate, inasmuch as a revision of the calculation is not necessary. This will be inevitable, however, if the price is established on a higher level. Incidentally, one ought to qualify the assertion that the boom in oil shares may prove the exception to the ordinary boom by pointing out that there are oil shares and oil shares. It is not solely the plausible financier who labels and embroiders his goods to mislead the gullible public.

WHITEHEAD SHARES BEING PEDDLED.

It appears that there are people who are attempting to sell Whitehead Aircraft Ordinary shares by backdoor methods. A case in point has just come to hand. Fifty shares have been offered to someone in the country who apparently has not followed the developments of the undertaking, for a lump sum of £20. This works out at 8s. per share. It is calculated that the shares are worth 1s. to 5s. to the prospective purchaser, and so it would be foolish, at all events highly speculative, to pay more than 4s. unless, of course, one is conversant with the inner movements of the business.

THE ACTIVITY OF ROLLS-ROYCE.

As regards Aircraft and kindred share values there is a considerable activity in Rolls-Royce, which are commanding up to 50s., it being said that the concern is now prospering exceedingly, and is booked up with orders for a long time ahead. There is also a constantly increasing demand for Darracq, but Sunbeams have been on offer at 38s. Armstrong-Whitworths announce an interim dividend at the usual rate of 1s. per share, free of income-tax, up to 5s. in the £. Assuming that the shares are maintained on a 12½ per cent. tax free dividend basis for the year, they would represent 6½ per cent., free of tax, to the purchaser at 38s., this would be equal to 9 per cent. on an investment subject to tax. Aircraft Manufacturing shares remain very much neglected, with both classes of preference standing about 14s.

INSURANCE MATTERS.

Underwriters are showing a keen interest in the regular air service inaugurated between London and Paris. They are fully alive to the possibilities of the situation; so far, there has not been any effect on the Insurance market. Business in aviation insurance generally is moderately brisk. Inquiries are numerous and come from all parts, including the United States, and there is said to be some activity in civil aviation in Italy.

JOHN SPENCER AND SONS' RESULTS.

John Spencer and Sons, of Newcastle, have been intimately concerned with Aircraft, but their chief business is steel making and engineering. The dividend for the past yea is to be only 6 per cent. instead of the 10 per cent. paid for the two preceding fiscal periods. Apparently, this is prompted by a policy of caution, for the figures available suggest that business was on a larger scale. Thus the gross profits at £99,400 is £25,300 higher. The net results do not compare so favourably. However, provision for the usual funds is on a larger scale, the allowance for renewals and improvements being £20,800, against £9,600; for depreciation £40,000, instead of £36,000. For the three years up to the outbreak of war the dividend was on a 6 per cent. basis.

AERONAUTICAL LIFE INSURANCE.

An insurance on the life of a passenger by the R.33, was effected for the cruise to the Continent and back on what appear to be very attractive terms to the insured. The amount at risk was £1,000, and the premium about £2, equal to 4s. per cent. Of course, the amount is really small. An American, who intends flying at home, has just covered himself for £100,000 here Clearly, he appreciates the merits of Aviation insurance.

BANKRUPTCY: A COMPOSITION.

W. J. STEVENSON.—The affairs of the debtor, who is the inventor of a chemical compound (acetate cellulose) have been before the Court upon the adjourned hearing to approve a composition of 10s. in the £ to unsecured creditors, which proposal has recently been entertained by the statutory majority of the creditors. The proofs of debt and proveable claims together amounted to £1,259, no realisable assets being disclosed by the debtor. Having regard to that fact and also to the fact that no patent had yet been granted in respect of the invention the Official Receiver had considered that the terms of the proposal were reasonable and calculatd to benefit the general body of the creditors. An order was made approving the proposal.

ENGINEERING PROPRIETARY, LTD.—DISCLOSURES.

Under a winding-up order made against this company, which was incorporated on July 17th of last year for the purpose of carrying on business as manufacturers of aircraft and component parts, the statutory meetings have been held. A statement of affairs submitted disclosed unsecured liabilities £4,347 and loans on debenture bonds £5,000, exclusive of debentures for £4,000 held as collateral security under contingent liabilities ranking pari pasu with those for £5,000. The assets, estimated to realise £7,387, leaving £2,387 to meet the claims of the unsecured creditors after payment of the loans on debenture bonds, comprised Robert Taylor's invention £5,000, good book debts £1,150 and a claim valued at £750. The company was incorporated with a nominal capital of £100 divided into shares of £1 each, and the Chairman reported that he did not propose to go into the facts which must be known to all those who were present. This was one of a "jumble of companies," and, although there was mention of a transaction involving £10,000 here, and another of £10,000 there, it was quite plain with its small capital, no such money had in fact passed, the items being merely cross entries in the books of the divers companies. There had, however, been some cash paid to this concern, and regarding a sum of £4,000 said to have been lent by a Mrs. Taylor that would have to be investigated. There were also other payments, and whether the money had gone into the directors' pockets or in some other direction would have to be ascertained. Lloyds Bank was a creditor for £3,000 odd, which money he supposed could be traced: but to his mind this was one of the several companies wasting its time with fictitious transactions with the result that there would have to be a great deal of investigation. There had been dealings with another company called Associated Aircraft, Ltd., by paying money to which Engineering Proprietary Ltd., had been wasting its own funds because it was now found that it had disappeared during the bankruptcy proceedings of one of the directors of that undertaking.

There was one matter to which he said he must especially allude, and that was this. Just when the winding-up proceedings were pending the directors put all the furniture, which was the only tangible asset, out of the reach of the company by leasing it to another company.

In any event the directors would have to bear the responsibility of their reprehensible conduct. Quarter day was coming and it was just possible that the company now holding the furniture might not pay their rent, when the landlord would distrain upon the furniture.

In reply to questions Mr. Nathan, a director, agreed that the directors of the company purchasing the furniture were the same as those of this company. But this concern was threatened with winding up and the other company wished to take its offices. The directors of Motor Maintenance and Associated Aircraft were also

the same: but he denied the suggestion that the furniture was transferred to put it out of the reach of the creditors of this company, which was never intended to be more than a holding company for shares. In the absence of a quorum, the meetings were formally adjourned for a week.

RUSHMORES, LTD.

Rushmores, Ltd., manufacturers of aeroplane spares, etc., Peterborough Road, Parsons Green, London, S.W.

A meeting of the creditors of the above was held on Aug. 26th, at the Cannon Street Hotel, London, E.C., when Mr. O. Sunderland, of the Automobile Trades Guardian Association, 15, Eastcheap, E.C., was elected to the chair. He submitted a statement of affairs which disclosed liabilities to unsecured creditors of £53,521 14s 1d., while the assets were estimated to realise £37,539 13s. 4d.

The principal creditors were the Ministry of Munitions, whose claim had been agreed at £40,000.

The company was originally known as Rushmore Lamps, Ltd., and it took over a business from a company which had a similar name. In 1917 the name was changed to Rushmores, Ltd.

The reason for the present position was the conditions which had arisen out of the war. While hostilities were in progress the company undertook war work and took up the manufacture of aeroplane parts, and production was becoming very satisfactory when the armistice occurred. Since then the company had attempted to return to peace work. A large contract was entered into with another company, which had since gone into liquidation. In connection with that contract there would be a claim against the Motor and Aircraft Supplies Co., Ltd., for any loss that was made, but a firm in Birmingham had entered into negotiations for the taking over of the contract. If those negotiations were successful and the contract was taken over, the claims against the company would be considerably reduced.

On the motion of Mr. E. H. Hawkins (Messrs. Poppleton, Appleby and Hawkins), seconded by Mr. A. Houstoun, a resolution was unanimously passed in favour of the voluntary liquidation of the company being continued, with Mr. Sunderland as the sole liquidator, and an informal committee of five of the principal creditors was also elected

A CHANGE OF TITLE.

From Aug. 5th, 1919, the style and title of the Air Navigation Company, Ltd., was changed to the Air Navigation and Engineering Co., Ltd. At their Blériot Spad works at Addlestone, Surrey, they are manufacturing a light car called the Blériot Whippet. It is a smart-looking little car and is fitted with an 8 h.p. engine. The provisional price is fixed at £175.

"ASCOL" SALE.

Consequent upon the liquidation of the Motor and Aircraft Supplies Co., Ltd., and the sale of all assets, the liquidators are now desirous of disposing of all the remaining stock both in Long Acre and at the works, and wish to do so quickly to enable them to vacate the premises by the 29th inst. There are many items which can be used for trades other than that of aircraft manufacture.

THE SUPER-SPECIAL TRAIN.

Aircraft Transport and Travel, Ltd., have issued a pleasing little book with a blue cover entitled "The Super-Special Train." It contains the story of one of the first civilian flights of great distance to be made in this country. The flight is that of Mr. Gordon Selfridge from Hendon to Dublin and back on June 25th. The story is entertaining, and the book is good to keep as a memento of that first long oversea flight. It is rather a pity that the book has been produced so long after the flight occurred.

On the last pages it is stated that the Private Hire Department of the Company is at the disposal of everyone who is prepared to pay the special fee required for one to be carried from point to point at 100 miles an hour. The fee varies from 5s. to 10s. per mile, according to the circumstances, and the charge for any particular flight may be ascertained by ringing up Victoria 7932.

The Company now has its own meteorological department which keeps the pilots informed of the weather which will be found ahead, at every stop on a flight.

GOOD LANDINGS.

To secure the co-operation of municipalities in the establishment of landing fields, the following article on "Good Landings," appearing in various magazines, is quoted in the official "News Letter" from Washington. The language is so quaint and so distinctly American that it deserves a wider circulation:—

For Aeroplanes and Seaplanes Wanted Everywhere and Soon. A new society has been founded which is intended to afford safe havens for our aviators. It is called the Good Landing Society. This new society, however, is new in name only. In reality it consists of the members and machinery of the Treasure and Trinket Society, one of our most useful war associations. With the ending of the war these worthy women, having quaffed deeply of the joys of work and the delights of service, have turned to other fields of usefulness, and picked the most important one of all—the one that has most pressing need of immediate attention. And there is suggestion, yes, inspiration—in their action. Why scrap useful war organisations simply because the war is over? Why not keep the organisation a going concern, but give a new work to do? Every city, town and village should have a landing station for aeroplanes and seaplanes. Those that are first with them will be first on the mail routes, first on the excursion routes, first on the package and parcel delivery routes, and first on the service routes.

These routes are being instituted NOW. The aeroplanes and seaplanes are here. They are not due to arrive next year, next month, or even next week. They are in operation and being extended as rapidly as landings are provided. In every city and town there is a war organisation of some kind. Don't scrap it. Give it a new job. Set it to work at providing a good landing for aircraft. Put your city or town on the aviation map and put it there before your rivals. Remember the early-bird cities will be the distributing centres, and slow-going neighbouring burgs will get their aerial mail, messages and parcels *via* your trolley lines and auto 'buses.

THE GLAD HAND.

The Germans are evidently intent on doing real business with this country, as the following extract from a letter shows:—

"We herewith take the liberty to approach you that in . . a . . . Luftreederei Akt. Ges. has been founded which shall serve to the private aerial traffic. Thinking that you have interest for such an undertaking in the German occupied territory, we inquire if you are disposed of partaking financial or material.

"Awaiting the favour of your reply."

Though the English grammar may be defective, the intention is evidently good, and the German shows his wisdom in believing that English design, together with German enterprise and organisation, would be able to capture the aerial transport work of the world. But will he receive the glad hand so easily in this country as he desires?



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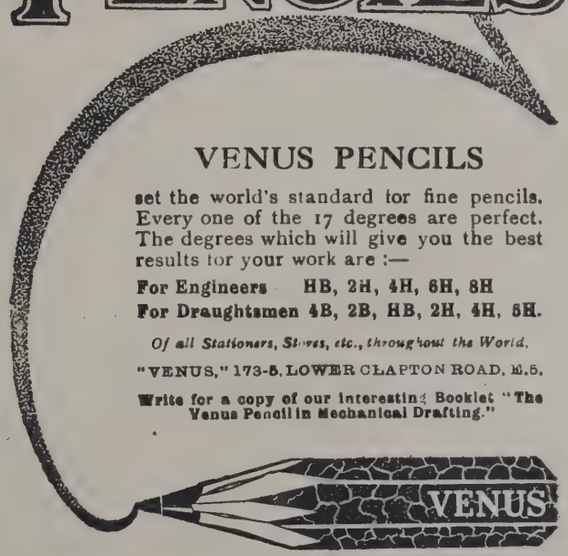
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THE GOVERNMENT AND AIRSHIPS.

The following longer account of the Conference on Government policy in regard to airships held at Australia House on Sept. 8th is published in the lack of any complete official report. The Air Ministry state that they have no official report to issue, and that the Press Association account is available for use by all. The general and technical Press were not asked to send representatives to the Conference.

About 100 representatives of commercial organisations were present.

General Seely said they were gathered together in order to see what could be done to the best advantage for the State in disposing of such surplus aircraft of lighter-than-air type as the Government had in possession, and to assist generally the lighter-than-air industry. Any nation which depended only upon Service vessels would be greatly handicapped by comparison with other nations which had commercial airship services. The Government had decided that airships were to be handed over to the Air Ministry. At a conference with the Admiralty it was agreed that in future it would be the duty of the Air Ministry to tell the Admiralty what could be done in the air, for the Admiralty then to state their requirements, and for the Air Ministry then to carry out their wishes. General Seely read a letter from the Admiralty in which it was stated that the Admiralty had recently reviewed, in the light of the latest appreciation by His Majesty's Government of the general political situation, the size of the Fleet and its attendant craft. The development of rigid airships was not yet at a stage where any fixed proportion of the fleet could be laid down. The immediate object must be to cut down expenditure, and the Admiralty had come to the conclusion that for their purpose not more than two rigids would at present be required, one of them being of the latest type. This conclusion was reached on the assumption that the Air Ministry would encourage commercial enterprise in development and construction, and that they would in the future be responsible for development, and able to supply the Admiralty in reasonable time with airships should they be required for naval purposes.

They had a very large number of non-rigid airships, mostly designed to escort ships and overcome the submarine menace. He thought about 85 of these were now in existence, of which five were called the North Sea type, good, serviceable vessels, of considerable size. In regard to rigids, what would be available depended upon what was decided by those present, in consultation with General Sykes's department. Supposing it were decided to have all the airships now building of which there were plans, there would be a very considerable number. The R.33 and the R.34 were now in existence; the 36, 37, 38, and 39 were in various stages of completion, and the 40 was planned. That meant that if they found it worth while, with the assistance of the Government, to take up all the airships available, there would be four and possibly more to operate the service.

Government Conditions.

On behalf of all the Government Departments concerned, General Seely assured his hearers that they would give every assistance that could profitably be given to a well-organised concern which would take over those ships under the conditions which, of course, it would be necessary to impose. The conditions would be similar to those which applied to such ships as would be available in case of emergency to be handed over to the Government, under very generous terms in view of the fact that the airship business was exceedingly costly. Assistance with regard to wireless telegraphy and meteorological information would be put whole-heartedly at their disposal, and the Post Office were anxious to help in every way they could. Experimental work would be continued, and information so obtained would also be available, as well as other technical information. He could not commit the Government to any subsidy, but he pointed out the enormous advantage in having so large a quantity of material now offered to them at what would be a very low rate. As those ships were surplus to Government requirements, of course they would not attempt to charge anything like the full price for them.

With regard to sheds and personnel, General Seely said that one huge shed was more than one-third completed. Probably anyone who wished to operate would wish to do so farther south—probably at Cairo—which would seem to be a central point. This shed would take the largest airship now built, and with a little additional length would take the largest airship they could at present contemplate, which would be of five million cubic feet capacity. The problem of the terminal points for airship services was most intricate and difficult. He thought he was right in saying that airships had travelled about two million miles with only one accident, through fire, involving destruction of the ship. That was a remarkable record, and showed what could be done. Recent efforts had shown that travel in the air was an accomplished fact, and that it had a very large percentage of efficiency. The promoters would have another great advantage in the very large number of demobilised personnel who would come back to a service such as they might start. Taking it all over, he thought the prospects for starting such a service were favourable, and he earnestly hoped that meeting would bear fruit. It would be most unfortunate if this country, which managed to secure air supremacy during the war, should lose it in the days of peace. He did not think there was much likelihood of that happening, but the lighter-than-air business was one in which they wanted the help of everybody. Germany got a long way ahead of us in it before the war, and we had nearly overhauled her now in our technical knowledge. If we were to confine ourselves only to service work there would be a great risk of falling behind in the race for supremacy in lighter-than-air. The future for it was boundless. It might be many years before it reached full fruition, but there was a vast future for airship travel.

Foreign Capital Question.

Sir Lionel Fletcher remarked that he thought that the attitude of the Government was going to be one of benevolent neutrality. A very important point, he thought, was whether the articles of association of the company should allow any foreign money, however clean, to be admitted. He thought they should get from the Post Office a pronouncement as to which route was to be developed first, and it would be an advantage if there was a priority list of routes to follow. He understood the Government would assist in any way with regard to designs, but he would like to know if they would take a strong line on that point. He would also like to know what stations were available for civil purposes, and whether they were to be sold or rented to the company. Could the company rely on the Government's support in every national way?

General Seely: Absolutely. He added that it would be an advantage if the capital were all British, especially in view of the fact that any scheme would have to provide for ships being taken over by the Government in time of war. On the other hand, it might well be that an airship company would be in a totally different position from any other, in that it constantly had to cross friendly States, to whom it might be desirable to give a share, so he would not like to lay down that all capital must be British. The scheme must be one which was approved, as regards its capital and directorate, by the British Government. With regard to design, he thought the divergence from our military type might become great, although it was likely to be less in the case of the airship than in the case of the aeroplane. He should think it would probably be wise for the Government to let the company design any kind of airship it wished, because, although it would not be as useful for service purposes, perhaps as a specially designed ship it would be more useful than no ship at all. With regard to the routes, it would be a convenience if they followed routes which would be best from an Imperial and strategical point of view, but he did not think they could impose any such conditions. Probably the Indian route was the one which promised the greatest chances of success. Most of the present stations would be at their disposal, but he did not think he could say definitely now whether they would be let or sold. It was a very urgent matter on the grounds of public economy that they should come to a decision at the earliest possible moment. He therefore begged them to put themselves in communication with each other and General Sykes with the least possible delay, and he hoped that within a month they would be in a position to come to the Government with a definite proposition.

Sir Trevor Dawson said he thought the scheme would be of great benefit to the Empire. He thought the only course to pursue was to get a few of the best financial people in the country and others interested in airship construction together, and try to form a large company to carry out the Government's wishes. Messrs. Vickers wished to assist the Government in every possible way.

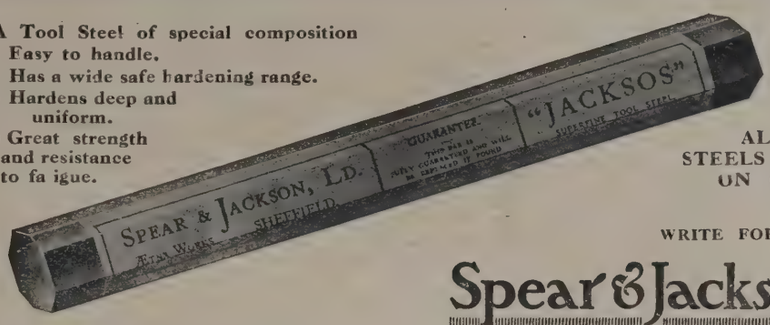
General Seely said that both he and General Sykes considered it was essentially a case for one big concern rather than for competing concerns.

Sir Glynn West, on behalf of Armstrong, Whitworth, and Company; a representative of Sir William Beardmore and Son, and others present promised their support.

General Seely said he had received cordial letters from Lord Weir, who took a great interest in the scheme, Viscount Cowdray, Sir Owen Philipps, Lord Inchcape, Viscount Northcliffe, Viscount Furness, and Lord Montagu of Beaulieu, who were unable to be present.

A suggestion was made that Sir Trevor Dawson should call a meeting of everybody interested, and Sir Trevor said he would be glad to do so.

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EXTRACTS FROM "THE LONDON GAZETTE."

GREAT BRITAIN.

NAVAL.

FROM THE "LONDON GAZETTE."

ADMIRALTY, August 12th.

R.M.—The commn. of Capt. N. B. Ward is terminated on transfer to the R.A.F., August 1st.

MILITARY.

WAR OFFICE, September 8th.

REGULAR FORCES.—OVERSEAS FORCES.—CANADA.—Can. Art.—Temp. Lt. (actg. Capt.) F. C. Higgins to be temp Capt., and to remain secd. to the C.A.F., July 1st.

2ND CENT. ONTARIO R.—Temp. Lt. J. C. McKeever ceases to be secd. for duty with the C.A.F. as Lt. (Flying), Aug. 23rd.

MANITOBA R.—Temp. Capt. (actg. Lt.-Col.) A. C. Maund, D.S.O., relinquishes his Can. commn. on appointment to a commn. in the R.A.F. in the rank of Maj., July 31st.

Can. A.S.C.—Temp. Capt. D. Carruthers ceases to be secd. for duty with the C.A.F. as Lt. (Flying), Aug. 23rd.

CAN. ORD. CORPS.—Officers cease to be secd. for duty with the R.A.F.:—Temp. Maj. H. R. Northover, M.C., Temp. Lt. G. F. Antell, June 30th.

WAR OFFICE, September 9th.

REGULAR FORCES.—COMMANDS AND STAFF.—The following relinquish their appointments:—GENERAL STAFF.—G.S.O., 2nd Grade—Temp. Capt. W. E. de B. Whittaker, Gen. List, and relinquishes the temp. rank of Maj., Aug. 8th

INFANTRY.—R. War. R.—Lt. W. H. G. Milnes, M.C. (attd. R.A.F.), resigns his commn., Sept 10th.

GENERAL LIST.—Lt. A. V. Faulks, from R.A.F., to be temp. Lt. for duty as a Cost Accounting Officer, June 16th

Sec. Lt. H. D. Giblett, from R.A.F., to be temp Sec. Lt. for duty as Cost Accounting Officer, May 19th.

ROYAL ARMY CHAPLAINS DEPARTMENT.—The Rev. R. V. O'Shaughnessy, temp. Chapln. to the Forces, 3rd Class, relinquishes his commission on transfer to the R.A.F., Aug. 1st.

WAR OFFICE, September 10th.

REGULAR FORCES.—ROYAL FLYING CORPS.—MIL. WING.—The following appointment is made:—Flying Officer.—Temp. Sec. Lt. (on prob.) R. H. Blackmore, Gen. List, and to be confirmed in his rank, from March 1st to June 19th, 1918.

INFANTRY.—DURH. L. I.—Sec. Lt. W. B. Judd (attd. R.A.F.) is cashiered by sentence of a General Court Martial, June 12th.

WAR OFFICE, September 11th.

REGULAR FORCES.—OVERSEAS FORCES.—CANADA.—Can. Mach. Gun Corps.—Temp. Lt. F. Hotrum ceases to be secd. for duty with the R.A.F., Aug. 22nd.

WAR OFFICE, September 12th.

REGULAR FORCES.—OVERSEAS FORCES.—CANADA.—QUEBEC R.—Temp. Lt. (actg. Capt.) C. F. Falkenberg, D.F.C., to be temp. Capt., Feb. 9th; Temp. Capt. C. F. Falkenberg, D.F.C., ceased to be secd. for duty with the C.A.F. as Flight Comdr., Aug. 23rd.

MANITOBA REGT.—The following officer retires in the British Isles:—Temp. Capt. W. A. Carrothers, D.F.C., Sept. 1st

WAR OFFICE, September 13th.

REGULAR FORCES.—ESTABLISHMENTS.—R.A.F.—Mil. Wing.—The following appointment is made:—Equip. Offr., 3rd Cl.—Temp. Lt. C. F. Bushnell (Serv. Bn. R. War. R.), and to be transferred to R.F.C., Gen. List, Sept. 4th, 1917.

MEMORANDUM.—Lt. K. H. Leake, M.C., from h.p. list, is restd. to full pay whilst empld. with the R.A.F., Jan. 28th.

AIR FORCE.

AIR MINISTRY, September 9th.

R.A.F.—The following temp. appointments are made at the Air Ministry:—Staff Officers, 3rd Class—(Air).—Flt. Lt. G. J. C. Maxwell, M.C., D.F.C., A.F.C., Aug. 29th, vice Flt. Lt. E. O'D. Crean; Flt. Lt. L. A. K. Butt, Sept. 1st, vice Flt. Lt. W. A. A. Chauncy.

The following temp. appointments are made:—Staff Officers, 2nd Class—(Air.—Capt. G. A. Scott, from S.O.3, Feb. 12th, and to be actg. Maj. till April 30th; (P.) Maj. E. V. H. Mackenzie, June 25th; (Q.) Capt. A. Smith, from S.O.3, May 30th.

Staff Officers, 3rd Class (P.).—Lt. R. Elphick, June 14th; Capt. D. C. Hydes, from S.O.4 (1st Grade), April 1st; Lt. G. S. Lardner, July 1st.

FLYING BRANCH.—Sec. Lts. to be Lts.:—(Hon. Capt.) H. J. Bullock, Aug. 25th, 1918 (substituted for notification in "Gazette," July 29th); H. Rhodes, D.F.C., Nov. 30th, 1918; G. A. Lynch, Dec 17th, 1918; F. A. Downes, Feb. 8th.

Sec. Lt. P. C. Bailey (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt. (A.), March 15th.

A. F. Williams (Lt., Mon. R., T.F.) is granted a temp commn. as Sec. Lt. (O.), May 23rd, 1918, and to be Hon. Lt.

The following relinquish their commns on ceasing to be empld.:—Sec. Lt. (Hon. Lt.) A. H. Waddy (Lt., Beds. R.), Feb. 9th; Lt. B. C. M. Ward (Lt., E. Surr. R.), Feb. 15th; Sec. Lt. F. L. Norden (Lt., R. Scots R.), July 1st; Lt. E. T. Weigall (Lt., R.H. and R.F.A.), July 20th; Sec. Lt. (Hon. Lt.) W. H. Norman (Lt., R.A.), Aug. 7th; Sec. Lt. W. Coker, D.F.C. (Lt. (T./Capt.), E. Surr. R.), Sept. 3rd.

Transferred to unempld. list:—Sec. Lt. W. M. Atkin, Sec. Lt. W. A. Bell, Sec. Lt. I. W. Beverley, Sec. Lt. H. P. Boucher, Sec. Lt. E. H. Bradley, Sec. Lt. R. F. Brown, Sec. Lt. T. G Davidson, Sec. Lt. H. E. A. Doxsee, Sec. Lt. J. T. Galligan, Sec. Lt. C. H Godfrey, Sec. Lt. F. L. Graisley, Sec. Lt. J. B Hoag, Sec. Lt. H. A. Hubbard, Sec. Lt. A. R. Mark, Sec. Lt. F. G. Winlow, Feb. 1st; Lt. J. R. Cudemore, Feb. 7th; Lt. H. H. S Fowler, Feb. 27th; Sec. Lt. H. S Boocock, March 8th; Lt. G. D. Batcup, March 30th (substituted for notification in "Gazette," April 29th); Lt. R. O. Rabbitt, April 1st; Sec. Lt. J. Sewell, April 3rd; Sec. Lt. C. M. Alchorn, April 10th; Capt. E. L. Foot, April 11th; Lt. H. F. Griffith, April 16th (substituted for notification in "Gazette," June 6th); Lt. G. T. Bysshe, Capt. E. H. Pullinger, April 17th; Lt. F. Westing, April 25th; Sec. Lt. F. J. Ellis, May 1st; Sec. Lt. L. H. Tuppen, May 8th; Sec. Lt. C. Craib, Lt. R. S. Warwick (substituted for notification in "Gazette," Aug. 1st), May 19th; Sec. Lt. J. A. Mitchell, May 25th; Lt. R. H. W. Empson, May 27th (substituted for notification in "Gazette," June 27th); Lt. J. J. C. Hamman, May 29th (substituted for notification in "Gazette," Feb. 21st); Sec. Lt. A. D. Cruickshank, May 30th; Sec. Lt. H. G. Walsh, June 13th; Sec. Lt. A. A. Moir (substituted for notification in "Gazette," July 20th); Sec. Lt. V. U. T. Watson, June 14th; Sec. Lt. G. J. Cross, June 19th; Lt. A. W. Slater, June 28th; Sec. Lt. W. S. Hanley, July 2nd; Sec. Lt. D. M. Fleming, July 5th; Lt. F. J. Horrell, July 6th; Lt. R. T. Hall, Sec. Lt. R. C. Hargrave, Sec. Lt. V. T. Harris, July 11th; Sec. Lt. H. Atherton, Lt. H. F. Cole, Capt. R. B. Corfield, A.F.C., Lt. P. La T. Foster, Sec. Lt. S. H. Hagerman, Sec. Lt. P. A. Hainstock; Sec. Lt. G. M. Hallatt, Sec. Lt. A. W. Hardy, Sec. Lt. E. F. Harrington, Sec. Lt. P. E. Hart, Sec. Lt. N. A. Walker, Sec. Lt. R. I. Walker, Sec. Lt. N. Wardlow, Sec. Lt. H. Wittup, July 12th; Sec. Lt. A. Hart, July 13th; Lt. R. Fitton, July 24th; Lt. A. Hanna, July 29th; Flying Officer P. Bushell (substituted for notification in "Gazette," Aug. 19th); Flying Officer E. V. J. Fenelon, Aug. 1st; Flying Officer A. D. Fraser, Aug. 4th; Pilot Officer B. R. Hartley, Pilot Officer G. T. Miles, Aug. 5th; Sqdn. Ldr. A. B. Adams, Aug. 6th; Flying Officer J. T. Wyre, Aug. 8th; Pilot Officer A. H. Miller, Pilot Officer A. R. Murray, Aug. 10th; Pilot Officer (Hon. Flying Officer) P. Franklin, Aug. 13th; Pilot Officer H. G Shaw, Aug. 14th; Pilot Officer J. S. Clark, Pilot Officer C. H. Howitt, Aug. 15th; Flying Officer L. Acton, Flying Officer D. M' Dening, Pilot Officer S. H. Hall, Aug. 16th; Pilot Officer J. E. Stevens, Pilot Officer J. M. Wilkie, Aug. 18th; Flying Officer A. Forson, Pilot Officer (Hon. Flying Officer) D. Wood, Aug. 19th; Pilot Officer A. E. Harris, Aug. 21st; Flying Officer T. W. B. Hinch, Flying Officer R. E. L. McBean, Flying Officer E. R. McCamon, Pilot Officer E. E. Middleton, Aug. 22nd; Flt. Lt. M. D. Barber, Aug 23rd; Pilot Officer (Hon. Flying Officer) J. T. I. Brownlee, Aug. 25th; Pilot Officer D. Denne, Pilot Officer W. Strang, Aug. 26th; Pilot Officer C. C. L. Baldwin, Aug. 27th; Pilot Officer (Hon. Flying Officer) T. Comrie, Flying Officer H. T. R. Ford, Pilot Officer J. S. Gourlay, Flying Officer H. L. Smith, Aug. 28th; Flying Officer C. St. C, Acheson, Pilot Officer H. R. Acteson, Flying Officer A. B. Agnew, Flt. Lt E. Anthony, Flying Officer C. W. Hamilton, Pilot Officer J. G. McGregor, Pilot Officer W. G. Morris, Aug. 29th; Pilot Officer G. W. Curry, Aug. 30th; Flying Officer C. H. G. Sanders, Sept. 1st; Flying Officer A. N. Donnet, Sept. 3rd; Pilot Officer J. H. Fitzgerald, Flying Officer E. W. Percival, Sept. 4th; Flt. Lt. G. Donald, D.F.C., Flying Officer H. E. Kathkins, Sept. 5th; Pilot Officer A. G. Holder, Sept. 6th; Flying Officer J. P. Seabrook, Sept. 9th.

The following relinquish their commns. on account of ill-health caused by wounds, and are permitted to retain their rank:—Capt. H. F. Davison, Aug. 29th; Lt. W. S. V. Oliver, Aug. 21st.

The following Lts. resign their commns.:—D. E. P Chaplin (Lt., R.H. and R.F.A.), Sept. 6th; W. H. G. Milnes, M.C. (Lt., R. War. R.), Sept. 10th.

The initials of Sec. Lt. G. W. Thornton-Inman are as now described, and not "D. W.," as stated in "Gazette," Aug. 26th.

The name of Lt. Philip Wilson is as now described, and not "P. Wilson" as stated in "Gazette," June 6th.

The name of Lt. E. C. Cockburn is as now described, and not "Cockwin" as stated in "Gazette," March 25th).

The notification in "Gazette," June 3rd, concerning Lt. G. F. Dell is cancelled.

The notification in "Gazette," July 18th, concerning Sec. Lt. R. W. Silk is cancelled.

The notification in "Gazette," Aug. 15th, concerning Lt. G. F. Bell is cancelled.

The notification in "Gazette," Aug. 26th, concerning Sec. Lt. A. K. Doull is cancelled.

ADMINISTRATIVE BRANCH.—Lts. (O.) to be Lts.:—R. S. Herring, M.C., March 18th (substituted for notification in "Gazette," April 15th, wherein this officer was described as Lt. R. R. Herring); T. Whitaker, April 17th.

Capt. G. R. Kevill-Davies (Capt., Dgn. Gds.) relinquishes his commn. on ceasing to be empld., July 7th.

Transferred to unempld. list:—Lt. (actg. Capt.) A. C. Carter, Jan. 10th; Sec. Lt. G. H. Tait (Cam'n Highrs., T.F.), Feb. 18th (substituted for notification in "Gazette," July 15th, wherein this Officer was described as G. H. Tait); Lt. N. A. Birks, Feb. 19th; Sec. Lt. F. H. Bronskill, March 3rd; Sec. Lt. E. Davey, March 15th; Sec. Lt. C. I. H. Dawson, April 30th (substituted for notification in "Gazette," June 10th, wherein this Officer was described as Sec Lt. C. H. Dawson); Lt. (Hon. Capt.) J. F. C. Bennett, April 20th (substituted for notification in "Gazette," May 13th); Lt. F. R. Bush, May 25th; Sec Lt. R. O. Hamilton, May 28th; Sec. Lt. F. W. Crawford, June 5th; Lt. J. W. Chapman, June 14th; Sec. Lt. F. Dunlop, June 15th; Sec. Lt. R. W. Silk, July 3rd; Sec. Lt. C. E. Harrison, July 13th; Sec. Lt. E. K. Fellowes, July 14th; Capt. B. M. B. H. Gyll-Murray, July 24th; Flying Officer H. G. L. Fletcher, Aug. 2nd; Pilot Officer A. S. Hartley, Aug. 10th; Flying Officer E. C. Batchelor, M.C., Aug. 13th; Pilot Officer M. H. McManus, Aug. 14th; Pilot Officer S. Gilchrist, Aug. 24th; Flying Officer J. M. Atkinson, Aug. 26th; Pilot Officer W. L. Wade, Aug. 28th; Flying Officer C. L. H. Dickinson, Pilot Officer S. W. Harrison, Aug. 29th; Pilot Officer (Hon. Sqdn. Ldr.) H. de L. Willis, Sept 8th; Flying Officer J. R. Webb, Sept. 9th.

The notification in "Gazette," June 25th, 1918, concerning H. E. Rea is cancelled

The notification in "Gazette," July 15th, concerning Sec. Lt. J. C. Duncan is cancelled.

TECHNICAL BRANCH.—Maj. G. P. Grenfell, D.S.O., is graded for purposes of pay and allowances as Lt.-Col. while empld. as Lt.-Col., Grade (A.), May 1st.

Sec. Lt. (Hon. Lt.) (actg. Lt.) L. W. Allen, M.C., to be actg. Capt while empld. as Capt., Grade (B), April 1st, 1918 (substituted for notification in "Gazette," Nov. 19th, 1918).

Sec. Lt. K. E. V. Beswick to be Lt., Oct. 11th, 1918.

Sec. Lt. (Hon. Lt.) E. A. Gulson (since demobilised) to be Lt., April 2nd, 1918, without pay and allowances of that rank prior to Nov. 1st, 1918 (substituted for notifications in "Gazettes," April 11th and May 23rd).

H. E. Rea is granted a temp. commn. as Sec. Lt., Grade (B), June 21st, 1918.

Lt. K. L. Williams (Lt., I.A.R.O.) relinquishes his commn. on reversion to I.A.R.O., May 17th.

Transferred to unempld. list:—Sec. Lt. B. Finnigan, March 19th; Lt. R. G. Watts, March 24th; Capt. (actg. Maj.) L. S. Metford, April 4th; Sec Lt. R. A. Wright, May 7th; Lt. G. Curgenven, Lt. A. W. Mansfield (substituted for notification in "Gazette," July 15th), June 21st; Lt. G. F. F. Eagar, M.C., June 23rd; Sec. Lt. J. C Duncan, June 11th; Capt. M. B. Walker, July 12th; Flying Officer S. J Furze, Aug. 1st; Flying Officer A. G. Forbes, Aug. 19th; Pilot Officer J. R. Cross, Flying Officer H. S. Evamy, Aug. 21st; Flying Officer C. P. Beadon, Aug. 22nd; Flt. Lt T. N. Gilbert, Aug. 23rd; Pilot Officer A. V. Jones, Flying Officer (Hon. Flying Officer) E. P. Lyon, Aug. 25th; Pilot Officer P. Heard, Aug. 28th; Flying Officer N. Couve, Sept. 3rd.

Maj. L. C. Hope relinquishes his commn. on account of ill-health, and is permitted to retain his rank, July 25th (substituted for notification in "Gazette," Aug. 5th).

The notification in "Gazette," May 13th, concerning Sec. Lt. J. Sewell is cancelled.

MEDICAL BRANCH.—Capt. (actg. Maj.) C. J. G. Taylor, M.B. (Surg. Lt. R.N.V.R.), relinquishes his commn. on ceasing to be empld., Aug. 1st.

Transferred to unempld. list :—Capt. W. S. T. Connell, Feb 3rd; Capt. T. R. Hunter, Aug. 22nd.

The nouncation in "Gazette," Aug. 8th, concerning Capt. (actg. Maj.) C. J. G. Taylor is cancelled

MEMORANDA.—Lt. G. H. Hill is granted the hon. rank of Capt., March 31st (substituted for notification in "Gazette," May 27th).

The following Cadets are granted Hon. commns. as Sec Lts. :—179774 C. W. S. Averill, Jan. 6th, 153359 L. A. L. Crawshay, Jan 8th; 180646 E. H. Whittaker, Jan. 14th; 508291 E. F. Smythe, Jan 16th, 181976 F. J. N. Moore, Jan. 17th; 184411 H. E. Collyns, 183776 R. R. Small, Jan. 18th; 179058 R. A. D. Johnstone, Jan. 19th; 179742 D. J. Jupp, Jan. 20th; 100426 C. S. Harman, 182039 W. Nithsdale, Jan. 31st; 220252 B. G. Calver, Feb. 12th; 188600 C. R. A. Penuington, Feb. 13th; G97316 G. D. Nicholl, Feb. 17th; 630443 G. C. Hamilton, Feb. 20th; 236113 A. Elword, Feb. 21st; 535239 N. S. F. Pippard, Feb. 23rd; 490260 G. F. W. Skinner, Feb. 25th; 77529 S. C. Elkington, 492250 W. J. Legge, Feb. 28th; 880389 W. S. Camp, March 1st; 175582 C. B. Ely, March 6th; 305857 E. C. Read, 117338 C. L. Walton, March 8th; 37692 W. R. Benson, March 12th; 149712 A. C. Baker, March 13th; 97127 H. Howarth, March 14th; 534917 F. S. Barnes, 117647 F. J. Tyzack, March 15th; 181342 G. E. Cunningham, 137179 C. L. Drower, March 20th; 28038 W. P. Calvert, March 23rd; 98057 J. L. Sharp, March 24th; 22616 F. H. Clarke, 99900 E. V. Chapman, March 26th; 84490 L. B. Southon, March 27th, 57847 S. O. G. Wilson, March 29th; 30857 C. V. Grace, 213201 J. H. Sturgeon, March 31st; 93248 E. M. Cook, April 16th; 3559 A. L. Heaume, April 17th; 266272 A. W. Holder, April 19th; 273552 C. H. Anstey, April 21st; 177116 O. J. C. Mayo, May 1st; 31087 R. H. Cater, 117702 C. H. Tinsley, May 3rd; 175301 K. A. Tayler, May 4th; 176873 R. Heape, May 28th; 137026 H. D. Nicholson, 137106 T. J. Savage, May 31st; 178283 B. W. G. Hutchins, 50788 R. P. C. Hurcomb, June 18th; T354817 W. E. Francis, July 4th.

The following relinquish their commns on ceasing to be empld. :—Temp. Hon. Lt. W. J. Parkinson, Feb. 23rd; Capt. W. A. A. Chauncy (Capt., Yorks. R.), Sept. 3rd; Maj. R. H. Woods, M.C. (Capt., K.R.R.C.), Sept. 7th; Lt. P. H. Morrissey, M.B.E. (Paymaster, R.N.), Sept. 1st.

Transferred to unempld. list :—Sec. Lt. A. E. Cripps, from (S.O.), June 3rd; Lt. (actg. Capt.) R. B. Longridge, from (S.O.), June 27th (substituted for notification in "Gazette," July 22nd); Capt. S. M. Wood, from (S.O.), July 25th; Flt. Lt. W. Burkinshaw, from (S.O.), Aug. 29th; Pilot Officer D. L. C. Evans, from (S.O.), Aug. 31st; Col. (actg. Brig.-Gen.) R. E. T. Hogg, C.M.G., C.I.E. (Maj (Bt. Lt.-Col.) Indian Army), resigns his commn., July 10th, and is granted the Hon. rank of Brig.-Gen.

AIR MINISTRY, September 12th.

R.A.F.—The following officers have been granted short service commns. in the ranks stated, with effect from Sept. 12th (except where otherwise stated). They will retain their seny. in the substantive rank last held by them prior to the grant of the short service commn., except where otherwise stated :—

SQDN. LDRS.—R. P. Willock (A.), T. B. Meyer (T.), W. Sowrey, A.F.C. (A.).

FLIGHT LTS.—C. G. Murray (S.O.), J. L. Robertson (S.O.), F. Hudson, M.C. (A.), E. D. Johnson, A.F.C. (A.), L. A. McDougald (T.), E. N. E. Waldron (Ad.), A. D. Spiers (T.), H. O. Fellowes (Ad.), H. J. Edgar (A. and S.), W. H. E. Kemp, A.F.C. (A.), H. O. Barnaby (S.O.), D. W. Clappen (T.), A. C. H. Groom, D.F.C. (A.), N. Keeble, D.S.C. (A.), C. G. Hetherington, M.B.E. (T.), A. L. Messenger (A.), E. J. P. Burling, D.S.C., D.F.C. (A. and S.), D. W. King (T.), T. L. Williams, M.C. (Ad.), W. H. Oakey (T.), C. A. Rea, A.F.C. (A.), H. V. Worrall, D.S.C. (A. and S.), A. E. Siddons-Wilson (T.), G. A. Richardson (T.), R. F. Osborne (T.), L. P. Ferris-Scott (Ad.), T. L. G. Pynches (T.), H. Cox (T.), F. J. Vincent (A. and S.), D. F. Lucking (T.), A. G. N. Belfield (Ad.) H. G. Etheridge (T.).

FLYING OFFICERS (FROM FLT. LTS.).—G. W. Hemming, D.S.C. (A.), R. C. Savery, D.F.C. (A.).

FLYING OFFICERS.—W. J. Standish (T.), R. V. Kann (A.), R. C. Bryant (A.), F. L. Barnard (A.), A. G. Jarvis (A.), H. C. Peirce (T.), L. L. Brown (A.), G. W. Lee-Barber (T.), L. C. Tyson (S.O.), H. J. Birtles (S.O.), E. C. Kelly (A. and S.), J. G. Walser, M.C. (A.), W. H. Howell (S.O.), A. H. Barnard (T.), A. F. Warner (T.), R. A. W. Powell (Ad.), H. E. Kirk (Ad.), T. A. Langford-Sainsbury, A.F.C. (A.), H. O. Brown, M.M. (A.), L. S. Punnett (A.), G. A. Lingham, D.F.C. (A.), P. D. Robins (A.), R. H. Bright (T.), C. H. Pownall (Ad.), G. L. Ormerod (A.), W. R. P. Allen (T.), S. M. Park (A.), D. H. Carey (A. and S.), A. J. Fyfield (T.), A. T. Shaw (T.), W. G. Pudney (A.), H. H. Sharp (T.), M. W. Baseden (A.), J. D. de Pencier (A.), G. A. Curtis (T.), F. H. G. Shepard, A.F.C. (A.), H. L. Woolveridge (Ad.), W. W. McConnachie (A.), E. R. Bruce (A. and S.), J. W. Milner (A.), K. A. Vosper (A.) J. L. Denman (S.O.), T. E. Drowley (T.), R. W. Godfrey (A.), G. R. Howsam, M.C. (A.), C. Eaton (A.), S. G. Linssen (T.), A. J. E. Broomfield, D.F.C. (A.), T. Rose, D.F.C. (A.), J. S. G. Wrathall (T.), J. T. Paine (A.), J. H. Dale (T.), S. R. L. Poole (T.), C. E. Horrex (A.), A. E. Sweeting, (A.), L. G. Harvey (A.), F. G. A. Robinson (A.), K. D. Marshall, D.F.C. (A.), H. E. F. Saunders (T.), W. N. Plenderleith (A.), A. L. A. Perry-Keene (A.), G. L. Blake (A.), L. G. Stevenson (T.), J. T. Rogerson (A.), R. W. Warner (Ad.), C. F. C. Wilson (A.), D. N. Dickson (A.), A. G. Knight, M.B.E. (Ad.), H. C. McDonald (A.), W. J. Sivewright (A.), B. R. Rolfe (A.), G. H. Howarth (A.), H. M. Struben (A.), J. H. Jennings (T.), F. Susans, M.B.E. (T.), J. Freeman-Fowler (Ad.), G. H. Bittles (A. and S.), F. G. Brockman (T.), H. E. Fenwick (A.), A. H. Scaife (T.), A. H. Burmann (S.O.), A. Walters (T.), B. C. Adamson (T.), W. Duff (S.O.), F. J. H. Ayscough (A.), M. W. Nolan (A.), C. E. Amoore (T.), W. Chapman (T.), H. B. Day (Ad.), J. W. Gage (T.), H. S. Alger (T.), A. J. Martin (T.), A. E. W. Finch (T.), H. P. Bridges (S.O.), W. C. Farley (T.), C. J. Polden (T.), S. G. Newport (T.), T. H. Sills (S.O.), H. W. Nicholl (T.), A. Grimshaw (A.), J. L. Miles (T.), G. Baker (T.), J. J. Ironmonger (T.), H. J. Lucas (T.), W. J. Cleasby (T.), H. F. Webb (S.O.), G. L. G. Watson (T.), E. S. Baker (T.), H. A. L. Way (T.), W. R. Fairbairn (Ad.), F. C. Worton (T.), J. E. C. Hammond (T.), S. C. Rose (T.), A. P. Woollett (T.), A. T. Wells (T.), A. J. Somers (S.O.), W. B. Francis (T.), G. W. Sturman (T.), A. Walters (T.), E. I. T. Duffield (T.), McD. Goodall (T.), J. S. Viner (T.), H. J. Adkins (T.), E. P. Dampier (Ad.), G. C. Maillard (Ad.), R. J. E. Haynes (T.), L. W. Hutchins (T.), G. J. Stroud, M.B.E. (T.), R. E. H. Allen (T.), A. H. Baker (T.), E. F. Thorpe (T.), W. Dickison, D.S.M. (T.), E. Parrett (T.), A. S. Berry (T.), E. V. E. Andrewartha (T.), C. A. Longhurst (T.), H. D. Fletcher (Ad.), J. F. Young (A. and S.), E. G. King (T.), G. W. C. Ravenhill (A.), H. F. J. Taylor (Ad.), A. W. Southall (A.), N. C. Waltho (A.), A. L. Courtenay-Dunn (A.), C. H. Flinn (A.), R. G. Mullette (A.), F. Cardwell (A.), C. E. Knight (Ad.), R. N. Walter (Ad.), A. M. Reidy (T.), J. M. Russell (Ad.), H. G. Sullivan (A.), A. C. Lobley (A.), R. L. G. Wright (A.), T. G. Bird (A. and S.), H. J. Gemmel (A.), V. G. A. Bennett (A. and S.), A. E. Pitcher (T.), S. Bingham (T.), R. G. Sims (T.), D. R. L. Powell (T.), E. W. Husband (T.), J. Mahoney (Ad.), R. W. Stevenson (Ad.), T. A. Higgs (Ad.), F. Dunlop (Ad.), D'A. D. A. Greig (A. and S.), J. B. Stockbridge (A. and S.), J. W. Bell (S.), T. L. Grey (T.), H. J. de Waal (Ad.), J. E. Slater (Ad.), J. G. C. Edgar (A.), J. S. Card (Ad.), G. A. F. Gibson (T.), C. Fenn (Ad.), A. H. Allan (T.), H. C. Haywood-Gibbons (Ad.), L. N. Sargent (Ad.), E. C. K. Kingston (A.), W. A. G. Goldsworthy (Ad.), N. Dainty (T.), W. A. Kyte (T.), J. McCarthy (Ad.), G. W. Robinson (Ad.), H. Cartwright (Ad.), V. B. Kanford (Ad.), H. A. Williams (Ad.), H. J. Bamber (Ad.), R. W. Stewart (Ad.), T. H. Jolley (Ad.), C. J. Elliott (Ad.).

OBSERVER OFFICERS.—H. Wisniewitz, M.C., W. L. Rutledge (with effect from Aug. 16th), R. A. C. Brie, J. C. Wallace, R. S. Langan, D.F.C., H. A. Bonilace.

It is intended that officers employed as Stores Officers or on "Q" duties shall belong to the new Stores Branch when formed. Officers appearing in this "Gazette" who are at present so employed will be transferred to this branch on its formation, and will accept these short service commissions on that condition. They will then come on to the rates of pay of that branch, but will meantime be permitted to draw the higher rates laid down in the new scheme for officers on the General List. Any officer posted to the Stores Branch on its formation will then have the option of declining his short service commission.

R.A.F.—FLYING BRANCH.—Maj. A. A. B. Thomson, O.B.E., A.F.C., is graded for purposes of pay and allowances as Lt.-Col. whilst empld. as Lt.-Col. (A.), from May 1st to June 30th.

Sec. Lts. to be Lts. :—I. M. Moffat, Nov. 27th, 1918 (substituted for the notification in the "Gazette" of April 11th); H. Booth, Nov. 30th, 1918; J. V. Scottorn, Dec. 26th, 1918; P. J. Baker, C. G. G. Fortune, March 1st; F. W. B. Anderson, July 24th.

Sec. Lt. R. A. Wade (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt. (A.), April 23rd.

The following relinquish their commns. on ceasing to be empld. :—Lt. (Hon. Capt.) (actg. Capt.) F. M. Hicks, Feb. 2nd; Sec. Lt. (Hon. Lt.) T. F. Blight (Lt., Manitoba R.), June 6th; Sec. Lt. P. S. M. Wilkinson (Lt., Wilts. R.), June 25th; Capt. A. Knight, M.B.E. (Lt., Loyal N. Lancs. R.), June 30th; Lt. G. Thompson (Lt. (temp. Capt.), Brit. Col. R.), July 8th; Lt. G. L. S. Rowell (Lt., R.A.), Aug. 5th; Lt. H. F. Attwater (Lt., North'd Fus.), Sept. 1st; Sec. Lt. C. H. Woolwin (Lt., Midd'x R.), Sept. 4th.

Transferred to the unempld. list :—Sec. Lt. S. W. Albertson, Sec. Lt. H. D. Anderson, Feb. 1st; Sec. Lt. W. Spriggs, D.F.C., Feb. 13th; Lt. J. S. Castle, Feb. 19th; Lt. A. Taylor, Feb. 26th; Lt. N. H. Auret, March 5th; Sec. Lt. C. F. Cawley, Sec. Lt. L. M. Thompson, March 15th; Sec. Lt. (Hon. Lt.) C. R. Cook, April 14th; Lt. J. C. Huggard, Sec. Lt. L. R. G. Langmead, April 15th; Sec. Lt. (actg. Capt.) J. S. Harvey (substituted for notification in "Gazette" of Aug. 26th); Lt. F. A. D. Vaughan (substituted for notification in "Gazette" of June 6th), April 16th; Lt. J. D. Clemence, April 19th; Sec. Lt. S. W. Cobb, Capt. D. P. Collis, April 29th; Lt. H. A. White, May 11th; Sec Lt. F. C. Wareham, May 15th; Sec. Lt. F. C. Ward, May 18th; Sec. Lt. W. A. Middleton, May 20th; Lt. T. Louw, May 29th; Sec. Lt. A. B. Anderson, June 12th (substituted for notification in "Gazette" of Aug. 19th); Sec. Lt. R. A. Lund, Lt. A. W. Scott, June 13th; Sec. Lt. (Hon. Lt.) W. W. E. Clarke, June 14th; Lt. F. W. Lowen, June 17th; Sec. Lt. (Hon. Lt.) C. H. Brown, July 7th; Sec. Lt. F. Nottingham, July 10th; Sec. Lt. G. Hanson, Sec Lt. R. Harper, July 11th; Sec. Lt. G. W. Axtell, Sec. Lt. H. F. Farncomb, Lt. S. Haydis, Sec. Lt. K. Hayward, Lt. H. E. Hirst, Sec. Lt. H. L. Lobb, Sec. Lt. F. H. V. Nostrand, Sec. Lt. C. H. Seffrey, Sec. Lt. H. Thomas, Lt. H. W. Turner, Sec. Lt. T. J. Wilson, July 12th; Sec. Lt. H. L. Lucena, July 14th; Sec. Lt. C. R. Crichton July 18th; Lt. E. T. Thorpe, July 26th; Lt. C. T. E. Smith, July 28th; Capt. L. W. M. Lloyd, July 29th; Lt. H. R. Clarke, A.F.C., July 31st: Pilot Officer F. Clayton, Aug. 2nd; Pilot Officer G. M. Edwards, Sqdn. Ldr. S. H. B. Harris, A.F.C., Aug. 11th; Pilot Officer W. Stevens, Aug. 14th; Flying Officer J. H. Hayward, Flying Officers, W. L. C. White, Aug. 15th; Flying Officer V. S. Green, Flight Lt. J. M. Warnock, Pilot Officer W. R. Waterman, Aug. 16th; Pilot Officer H. W. Spalding, Aug. 17th; Pilot Officer R. P. Gain, Aug. 19th; Flight Lt. H. E. Crawfurd, A.F.C., Flying Officer G. W. Mumford, Sec. Lt. N. J. Nock (submitted for notification in "Gazette" of Sept. 2nd), Aug. 20th; Pilot Officer H. A. Gibson, Flying Officer J. H. L. Gower, Pilot Officer C. H. Hobson, Pilot Officer J. D. H. Lewis, Pilot Officer H. R. Murray, Pilot Officer R. C. Styles, Flying Officer D. J. Waterous, D.F.C., Aug. 22nd; Flying Officer E. A. Hulme, Aug. 23rd; Flying Officer W. E. L. Courtney, Pilot Officer M. W. Edwards, Aug. 24th; Flying Officer A. E. Hill, Pilot Officer (Hon. Flying Officer) H. V. Taylor, Flying Officer R. J. K. Ward, Aug. 25th; Pilot Officer H. W. Robinson, Pilot Officer C. B. Smith, Aug. 27th; Flying Officer J. Austin-Sparks, D.F.C., Pilot Officer F. Bland, Flying Officer D. Davidson, Aug. 28th; Flying Officer W. A. Campbell, Flying Officer T. E. Howlett, Pilot Officer D. MacDougal, D.F.C., Pilot Officer J. Pinch, Aug. 29th; Pilot Officer G. W. Bucklow, Pilot Officer R. E. Hardwidge, Aug. 31st; Flight Lt. M. B. Blake, Pilot Officer D. E. Williams, Sept. 2nd; Pilot Officer C. W. G. McIntyre, Flying Officer J. H. Southey, Sept. 9th; Pilot Officer A. Bendelstein, Flying Officer H. H. Levin, Sept. 10th.

Capt. G. S. Creed (Lt., S.A. Defence Forces) relinquishes his commn. on account of ill-health, Aug. 25th.

Lt. J. E. Lewis relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain his rank, Sept. 3rd.

Sec. Lt. R. H. Harlow relinquishes his commn. on account of ill-health, July 12th (substituted for notifications in "Gazettes" of Feb. 4th and Sept. 2nd)

Lt. C. W. Wridgway (Lt., Midd'x R.) resigns his commn., Sept. 13th.

The initials of Capt. A. N. Wyatt are as now described, and not "A. M." as stated in "Gazette" of June 27th.

The surname of Sec. Lt. W. Cougle is as now described, and not "Gougle," as stated in "Gazette" of Dec. 10th, 1918, on page 14573 (substituted for notification in "Gazette" of April 18th).

The surname of Sec. Lt. W. R. Forster is as now described, and not "Foster" as stated in "Gazette" of July 1st.

The notification in "Gazette" of Sept. 6th, 1918, concerning M. A. Watts is cancelled.

The notification in "Gazette" of Feb. 18th concerning Capt. F. M. Hicks is cancelled.

The notification in "Gazette" of April 1st concerning Sec. Lt. W. H. Brown is cancelled.

The notification in "Gazette" of July 22nd concerning Lt. O. R. Gayford, D.F.C., is cancelled.

The notification in "Gazette" of July 29th concerning Lt. J. Stewart is cancelled.

The notification in "Gazette" of August 5th concerning Sec. Lt. H. Thomas is cancelled.

ADMINISTRATIVE BRANCH.—The following Sec. Lts. are graded for purposes of pay and allowances as Capts. whilst empld. as Capts. :—E. Bentley, to June 25th; (Hon. Lt.) A. G. Buxton, J. E. Carter, W. R. Fairburn, to May 31st; A. H. Jones, (Hon. Lt.) H. O. Newland, J. B. Slater, May 1st.

The following Sec. Lts. are graded for purposes of pay and allowances as Lts. while empld. as Lts :—J. E. W. Billings, to June 30th; T. Caine, R. N. H. Cole, J. S. Card, H. J. de Waal, E. I. T. Duffield, (Hon. Capt.) W. C. Green, M.C., H. C. Haywood-Gibbons, W. F. Hopkins, J. G. Le Brun, to June 25th; (Hon. Lt.) T. Mumford, F. H. Stapleton, to June 30th; H. J. Thomas, May 1st.

Sec. Lt. H. J. Grant is graded for purposes of pay and allowances as Lt. while empld. as Lt., from (T.), May 1st

The following relinquish their commns. on ceasing to be empld. :—Lt. (Hon. Capt.) R. J. Porter (Capt. and Qrmr., R. Innis. Fus.), June 21st; Sec. Lt. C. W. Clutson (Sec. Lt., Glouc. R.), Aug. 19th

Transferred to unempld. list :—Sec. Lt. G. C. D. Lindsay, April 24th;

Sec. Lt. J. Patenaude, April 30th; Sec. Lt. (Hon. Lt.) J. A. Bonnyman, M.B.E., May 30th; Lt. S. B. Browning, June 16th; Maj. R. D. Anderson, O.B.E., July 25th; Sec. Lt. C. S. Thompson, M.B.E., July 29th; Flight Lt. P. P. Capelli, Aug. 17th; Flying Officer A. Holden, Aug. 20th; Flying Officer A. C. Simpson, Aug. 21st; Pilot Officer R. N. Lamb, Aug 22nd; Flying Officer L. A. Christian, D.F.C., Aug. 23rd; Sqln. Ldr. M. Marsden, Aug. 26th; Flying Officer C. Wrigglesworth, Aug. 27th; Pilot Officer J. D. L. Garrod, Sept. 3rd.

The following relinquish their commns. on account of ill-health, and are permitted to retain their rank :—Lt. C. Lyons, Aug. 29th; Lt. P. Sormani, Sept. 5th; Sec. Lt. R. R. W. Millward (caused by wounds), Aug. 28th.

Sec. Lt. (Hon. Lt.) A. G. Buxton relinquishes his commn. on account of ill-health contracted on active service, and is granted rank of Capt., Sept. 3rd.

TECHNICAL BRANCH.—Capt. A. H. Kendall is graded for purposes of pay and allowances as Maj. while empld. as Maj., Grade (A), May 1st (substituted for notification in "Gazette," Aug. 1st, wherein this officer was described as Capt A. K. Kendall).

The following Sec. Lts. are graded for purposes of pay and allowances as Capts. whilst empld. as Capts., Grade (A) :—A. G. Rigdon, E. J. Thorpe, May 1st.

The following Sec. Lts. are graded for purposes of pay and allowances as Capts. whilst empld. as Capts., Grade (B) :—(Hon. Lt.) G. F. Antell, G. Baker, (Hon. Lt.) W. J. Cleasby, to June 30th; L. A. Lavender, (Hon Capt.) E. R. Tongue-Croxall, A. Walters, May 1st.

Sec. Lt. (Hon. Lt.) S. Waring is graded for purposes of pay and allowances as Capt. whilst empld. as Capt., Grade (B), from (Ad.), May 1st.

The following Sec. Lts. are graded for purposes of pay and allowances as Lts. whilst empld. as Lts., Grade (A) :—W. J. Coadwell, W. R. Day, to July 31st; R. McG. Freemantle, M.B.E., J. W. Hutchins, L. E. Heather, H. O. Keenan, E. G. King, J. B. Meilke, M. F. Morris, H. W. Nicholl, J. A. Owen, P. R. Pratt, C. H. Paget, T. J. E. Thornton, J. Turnley, E. J. Williams, H. Williams, May 1st.

The following Sec. Lts. are graded for purposes of pay and allowances as Lts. whilst empld. as Lts., Grade (B) :—(Hon. Lt.) A. Daniels, T. A. Dimon, (Hon. Lt.) T. L. Grey, J. A. Joyce, C. A. Longhurst, P. G. Price, F. B. Reed, C. O. Towler, to July 31st, May 1st.

Sec. Lt. A. F. Stevens is graded for purposes of pay and allowances as Lt. whilst empld. as Lt., Grade (B), from (Ad.), May 1st.

Sec. Lt. H. Dear to be Lt., without pay and allowances of that rank, April 2nd, 1918 (substituted for the notification in the "Gazette" of March 7th).

Sec. Lt. E. G. King (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt., Grade (A), July 5th, 1918 (substituted for the notification in the "Gazette" of Sept. 10th, 1918, wherein this officer was described as E. C. King).

Sec. Lt. F. Denham (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt., Grade (B), July 20th, 1918.

Sec. Lt. C. C. N. Wade (Capt., K.O.Y.L.I.) relinquishes his commn. on ceasing to be empld., Aug 2nd (substituted for notification in "Gazette," July 22nd).

Sec. Lt. P. O. Lovett relinquishes his commn. on ceasing to be empld., March 12th (substituted for notification in "Gazette," April 1st).

Transferred to unempld. list :—Sec. Lt. (Hon. Lt.) W. H. Brown, M.C., March 5th; Sec. Lt. H. B. George, July 6th; Capt. P. K. Paul, July 23rd; Sec. Lt. C. R. English, July 25th; Flying Officer F. Knight, Aug. 8th; Flight Officer J. Clinskill, Aug. 11th; Pilot Officer E. J. Harding, Aug. 16th; Pilot Officer (Hon. Flying Officer) G. W. North, Aug. 20th; Flying Officer G. A. B. Wheldon, Flying Officer A. Wyatt, Aug. 21st; Flying Officer C. W. Triggs, Aug. 22nd; Flying Officer R. C. Wallace, Sept. 3rd; Flying Officer R. E. Pudney, Sept. 9th; Pilot Officer (Hon. Flying Officer) J. C. Graydon, Sept. 10th.

Lt. C. B. Maddocks relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain rank, Aug. 29th.

The notification in "Gazette," July 4th, concerning Lt. C. B. Dickcleland is cancelled.

MEDICAL BRANCH.—Capt. W. H. Cam is transferred to the unempld. list, Aug. 2nd.

MEMORANDA.—The following Lts are granted hon. rank of Capt. :—F. L. Mond (decd.), May 1st, 1918; A. L. Chick, A.F.C., Oct 13th, 1918

The following Overseas Cadets are granted temp. commns. as Sec. Lts. with effect from Feb. 15th, and relinquish such commns. with permission to retain rank from the day following termination of the standardised voyage in the case of those claiming immediate repatriation, and from the day following demobilisation in England in all other cases :—796 E. Addleton, 107079 J. A. J. Boulton, 316817 I. J. H. Black, 177685 F. O. Cole, 46668 R. Ellis, 5241 N. F. Esseler, 316162 G. Farmer, 316779 G. C. Godfrey, 316219 H. F. C. Greenwood, 312025 B. F. Gibbs, 30694 D. P. Hogg, 171590 J. J. Higgins, 316002 E. J. Horney, 171676 S. Hampton, 316028 A. Long, 410924 H. Marshall, 87669 W. H. MacMinegal, 154360 W. Nixon, 114563 W. Pipe, 316351 C. Relph, 178835 J. S. Sheddon, 181826 R. S. Sanders, 154657 G. A. Williams, 12836 S. A. Watkins, 1262323 W. F. Wright.

The following Cadets are granted hon. commns. as Sec. Lts. :—180021 A. S. H. Cook, Feb. 5th; 202922 W. Robb, Feb. 28th; 1935 W. W. Varney, March 5th; 8538 A. R. H. Stewart, March 23rd; 59277 I. N. Elder March 26th; 70675 T. E. Tiffin, March 30th; 157723 S. S. Burridge April 6th; 178043 S. Charnock, April 8th; 405843 R. L. Taylor, April 18th; 137027 R. G. Netting, April 19th; 1369 W. H. McPherson, May 1st; 95234 C. L. MacDonald, May 3rd; 137298 R. Boyd, May 5th; 64793 B. J. Starling, July 1st.

Lt.-Col. (actg. Brig.-Gen.) J. A. Houison-Craufurd, C.M.G., C.B.E. (Maj., retd. I.A.) (Hon. Lt.-Col. in Army), relinquishes his commn. on ceasing to be empld., June 1st, and is granted the hon. rank of Brig.-Gen. (substituted for notification in "Gazette," July 25th).

The following relinquish their commns. on ceasing to be empld. :—Temp. Hon. Capt. R. J. Bray, Feb. 8th; Temp. Hon. Lt. T. Spencer, Aug. 16th; Temp. Hon. Lt. C. Watt, Aug. 31st; Capt. P. Sidney (Capt., North'd Fus.), Sept. 2nd.

Flight Lt. E. D. Cole is transferred to the unempld. list, from (S.O.), Aug. 20th.

The notification in "Gazette," July 25th, concerning 5647 Cadet J. N. Cartier is cancelled.

PERSONAL NOTICES.

MILITARY.

ENGAGEMENT.

MALTBY—PATERSON.—An engagement is announced between Major Paul Copeland Maltby, D.S.O., A.F.C., Royal Welch Fusiliers, attached Royal Air Force, younger son of Mr. and Mrs. C. J. Maltby, Walgrove, Harpenden, Herts, and Winifred Russell, eldest daughter of Mr. and Mrs. J. H. Paterson, 6, Moray Place, Edinburgh.

MARRIAGE.

KINGSCOTE—PAUL.—On Sept. 9th, at St. Margaret's, Westminster, at 2.15 p.m., by the Rev. S. J. Marriott, Vicar of South Queens Ferry, assisted by the Rev. R. French, Lt.-Col. A. R. F. Kingscote, M.C., R.A., younger son of the late Col. Howard Kingscote, and Marjorie Paul, widow of Percival Paul, and younger daughter of Mr. and Mrs. Douglas Hindley, of Folkestone.

PRESTON—DONALDSON.—On Sept. 8th, Capt. Overton Preston, M.C., R.A.F., second son of the late Martin Inett Preston and Mrs. Preston, The Park, Nottingham, was married at the Registrar's Office, Henrietta Street, Covent Garden, W.C., to Victoria Mary, third daughter of the Rev. Peter Donaldson, M.A., B.D., late Pro-Consul at Salonika.

BIRTH.

LEARMOUNT.—On Sept. 11th, at "Bienvenu," 86, Rosebery Road, Muswell Hill, N.10, the wife of Major L. W. Learmount, D.S.O., M.C., R.A.F., of a son.

AIR FORCE.

DEATH.

COULSON.—Lieut. W. E. Coulson, R.A.F., aged twenty, who was killed in Lincolnshire whilst flying from Cologne on the 5th instant, was buried with military honours at Epsom on Sept. 11th. During the war he had been shot down and made a prisoner in Germany.

ENGAGEMENTS.

CROSBIE—MATTINGLY.—The marriage arranged between Flt. Lt. D. S. Crosbie, R.A.F., and Dorothy Grace Mattingly will take place very quietly at the church of St. Mary-le-Strand on Wednesday, Oct. 8th, at 12.30 p.m.

MACKEY—BRIGGS.—The engagement is announced between Capt. C. W. Mackey, R.A.F., younger son of Mr. and Mrs. W. J. Mackey, Highlands, Maidstone, and Kathleen, younger daughter of Professor and Mrs. H. Briggs, 3, Rodney Street, Liverpool, and Hoylake, Cheshire.

TURNER—BANKART.—The engagement is announced, and the marriage will shortly take place, of (Temp.) Major George Bankart Turner, M.B.E., R.A.F., son of Colonel F. Mansel Turner (late R.A.), of Norton, Guildford, and Kathleen May Graham, youngest daughter of Mr. and Mrs. Bankart, of Manton Grange, Oakham.

TURNER—HOPKINS.—A marriage has been arranged, and will take place on October 2nd, between Capt. Charles F. Turner, R.A.F., and Miss Elsie Hopkins, only daughter of Mr. and Mrs. T. E. Hopkins, of Perrysfield, Oxted, Surrey.

MARRIAGES.

BREBNER—WALKER.—On Sept. 10th, at Christ Church, East Sheen, by the Rev. J. R. Macvicar, M.A., Noël James Brebner (late Lieut., R.A.F.), only son of Mr. and Mrs. Percy J. Brebner, of East Sheen, to Ethel Maud, younger daughter of Mr. and Mrs. John Walker, of East Sheen

ELLERTON—HUSBAND.—On Sept. 13th, at the Chapel Royal, Savoy, Flt. Lt. A. S. Ellerton, O.B.E., R.A.F., was married to Maureen Gilliland, daughter of Mr. T. F. Husband, I.S.O., M.A., and Mrs. Husband, of 69, Belsize Park Gardens, Hampstead, by Sqdn. Leader the Rev. B. W. Keymer, O.B.E., C.F., R.A.F.

JUDGE—EADIE.—On Sept. 10th, at Bromsgrove Parish Church, by the Rev. A. D. Ager (Vicar of Catshill), Capt. Herbert E. Judge, late R.A.F., son of Mr. and Mrs. James Judge, of Cambridge, to Olivette, elder daughter of Mr. and Mrs. Albert Eadie, of Rigby Hall, Bromsgrove.

BIRTHS.

HARBER.—On Sept. 3rd, at Glenmore, Sutton Courtney, Berks, Nellie (née Halford), the wife of Capt. L. Geo. Harber, R.A.F., of a daughter.

EDWARDS.—On Sept. 6th, at the Vicarage, Cottage, Wressle, Yorks., the wife of the Rev. M. H. Edwards, Chaplain, R.A.F.—a daughter.

ORDISH.—On Sept. 10th, at 42, Northcote Avenue, Ealing, to Phyllis (née Megginson), the wife of Sec. Lt. R. W. A. Ordish, R.A.F.—a son.

WYNNE WILLSON.—On Sept. 13th, at 21, Endsleigh Street, to Elsie and Linton Wynne Willson, Major, R.A.F., Donibristle—a son.

KENLEY COMMON.

The inhabitants of Kenley are somewhat distressed over the prospect of Kenley Common being permanently occupied by the Royal Air Force (according to the "Times"). It was an open space, but part of the ground has been fenced off, and hangars of the latest type have been put up.

AEROPLANE BONFIRES.

It is reported that many thousands of aeroplanes have been broken up in France recently, and great bonfires have been made of them which have been visible for many miles around.

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ON CUTTING CONTRACTS.

There is a tale of an Irishman who, having sold a pig, was asked what sort of price he had got for it. His reply was simply:—"Well! I didn't get what I expected: but then I didn't think I would!"

That is pretty well the mental attitude of the Aircraft Industry over the contracts which have recently been cut off, as related with much apparent relish in the daily news-sheets of September 18th.

As a matter of fact, there was no sudden all-round cancellation of contracts, as one might have been led to believe by the aforesaid reports. Two or three firms had some rather recent "post-war" contracts cancelled during the week preceding September 18th, in accordance with a policy which was initiated some time ago, but the majority of the firms in the Aircraft Industry are to-day precisely where they were a month or three months ago, so far as Air Ministry contracts are concerned.

Even those who have inquired directly, indirectly, or obliquely, from various Departments of the Air Ministry cannot discover any fresh policy of cancellation. If a further raid on aircraft contracts is being contemplated by the False Economy Department of the Government's Propaganda Agency, it is being very skilfully hidden, for apparently nobody at the Air Ministry knows anything about it.

Therefore one is inclined to think that the daily Press has discovered another mare's nest, or at best a sea-serpent which is in reality a very small worm. But, to tell the truth, the Aircraft Industry as a whole is not vastly perturbed over the affair, for it gave up long ago any hope of being able to exist on Government orders or on the promises of the Under-Secretary of State for Air.

As soon as the Armistice broke out, everybody in the Aircraft Industry expected that their contracts would be cancelled forthwith. Some wise firms anticipated the cancellation of their contracts by starting at once to look for other business. Some fortunate firms thanked their Maker that they could now snap their fingers at the Air Ministry and all its works, and could return to their profitable pre-war business from which they had been dragged by D.O.R.A. Some firms, less wise and less fortunate, decided to run on with their aeroplane contracts as long as possible, and then either retire on their profits or wait for something else to turn up.

Everybody was more or less surprised that contracts were allowed to run so long after the Armistice as they were, for the Aircraft Industry, being composed almost entirely of civilians, hardly realised the difference between an Armistice and a Peace. Even those who did so were more or less under the impression that the German Army was broken as well as beaten.

A State of War.

Only a few saw that we were still in a state of war and that Germany still possessed a powerful Army, consolidated by the common sorrow of defeat, whereas the Armies of the Allies were enervated by relaxation after victory, and so would be less willing to start fighting again than the German troops would be. That being so, it was necessary to maintain all our establishments for the conduct of war until it was plain that fighting would not be renewed. And so the Aircraft Industry was allowed to continue to make aircraft matériel.

The fact that no further fighting took place on the West front after the Armistice seems to speak well for the good sense of those who took control of the Deutsches Reich in the absence of the Emperor, and also for the mutual respect in which the Western belligerents hold one another. The continuance of fighting on the East German front seems equally to show that the Slav cannot be trusted either to stick to agreements which he has made or to show ordinary common sense, and it would not be at all surprising if the war with the Slavs, which one ventured to prophesy some few months ago, were to develop straight out of these fights along the old East-European front, without any intervening period of peace. Perhaps such a prospect may brighten the outlook for those in the Aircraft Industry who cannot see any future for their business except in the supply of war material.

The Duty of a Leader.

Be that as it may, the continuance of war contracts for so long after the signing of the Armistice led a good many people to hope against hope that the Government was quietly using this peace-in-war period for the purpose of building up such a huge Air Force that when Peace actually arrived it would be impossible to scrap the personnel and matériel of the Force and its attendant Industry because of the waste involved in doing so. Such a hope was obviously giving the Government credit for more patriotism and courage than any agglomeration of politicians could possibly possess. And those who nursed such a hope were reckoning without their Mr. Lloyd George.

Of him one may say, as the "Morning Post" said of the late John Redmond many years ago, that he is one who believes that the duty of a leader is to lead—even in retreat. When the great god Demos began crying out for economy what could be more natural than that Mr. Lloyd George, the great leader of national extravagance as founder of the Ministry of Munitions, should head the mad stampede in the direction of false economy?

A French humorist, M. Arthur Rozier, writing in "La France Libre," has called Mr. George a man of rapid evolutions. M. Rozier describes him as an agile fellow always ready without scruple to rid himself of old friends for whom he has no further use and to take up others more popular with the electorate. Mr. George's cleverness in looping the loop in relation to his political views leads M. Rozier to label him "the ace of aces" among politicians.

The appositeness of M. Rozier's description applies neatly to Mr. George's actions in relation to aircraft.

When German air raids impressed the electorate with the importance of Air Power, Mr. George, at the earnest solicitation of Lord Weir, gave aircraft priority over all other war material. To-day, when aircraft cannot affect votes, aircraft may be scrapped with impunity—so far as the popularity of the Premier is concerned, if not with regard to the vital necessity of Air Power to the British Empire.

The Crimes of History.

It is the price we must pay for Democratic Government, in which those in power are elected by a scarcely educated proletariat—of which it is doubtful whether more than a small percentage are capable of being educated. A very able engineer, who during the war has become a distinguished officer of the General Staff, remarked recently that the two greatest crimes in history were the writing of "Uncle Tom's Cabin" and the passing of the Education Act of 1870. Though our generation is not likely to see the full fruition of the former crime, we are feeling the effect of the latter when the welfare of the Empire is in the hands of a man like Mr. George—the Mr. Smillie, or worse, of ten years ago—who depends for his existence on his ability to lead a fractionally intelligent public in the direction in which that public is most inclined to stampede.

It is not surprising that some of the most hardened Tories among us are praying for the advent of a Labour Government composed of honest men of the type of Mr. Roberts, Mr. Brace, and Mr. Clynes, who have at least a clear altruistic policy and are not mere political weathercocks.

It was because nobody really believed in the hope of a big Air Force after the war that nobody thought that they would get what they expected. Consequently nobody is surprised at the cancellation of their contracts, however much they may be annoyed.

"All Things Work Together for Good."

According to the Buddhist belief, best known probably to most of one's readers by way of the Lama who was the friend of the immortal Kim, "All things work together for good." So one is prepared to believe that just as the politician and the *pulex irritans* has each his place in the scheme of things so the cancellation of contracts may be all part of the scheme of an All-seeing Providence to give to the British People the Command of the Air. Just as our vile climate and small fields have constrained us to produce the finest aviators and the finest aeroplanes in the world, so the complete cutting off of Government support in the form of orders, and constant hindrance by Government departments in the form of restrictions and regulations, ought ultimately to produce a flourishing Aircraft Industry which has succeeded on its merits.

There are those who cry out for subsidies for air lines, for orders which will save the Trade alive, and for other forms of official aid. Personally one inclines to the belief that the cancellation of orders is the best thing that could possibly have happened to the Aircraft Industry, even though it may be the worst possible policy as concerns the Air Power of the Empire and the proper equipment of the King's Armed Forces.

The cancellation lands the Industry flat on its own bottom, and the future of the various firms composing that Industry depends entirely on the energy and initiative of each individual firm. A spoon-fed industry is no good to anybody, least of all to the members of that industry. Spoon-feeding in extreme youth is necessary. The Aircraft Industry has had all the spoon-feeding it ought to have had—thanks to the war, though before the war the Government's attempts at spoon-feeding were lamentably sloppy.

Subsidies are economically unsound, as is perfectly well known to every serious student of political economy. The only way in which a man or a business or an industry can be established on a sound financial footing is by payment for work done. In spite of the doctrines of certain Trade Unions, payment by results is the first law of nature. "By the sweat of thy brow shalt thou earn thy bread" is the simplest statement of that law.

The Aircraft Industry has now to make good on its merits. Possibly the particular kind of mental ability—some people might call it obliquity—which was successful in securing Government orders during the war may not be so successful in building up a sound business in civil aviation. But the business is there to be had if it is sought in the right way, and the absence of Government orders clears that way for commercial enterprise.

A Free Industry.

Already certain firms are laying the foundations for big aerial transport undertakings abroad. They will find their work simplified by the fact that they can build their machines for those services without interference by Government officials in this country.

When disputes arise as to the suitability or otherwise of certain machines or engines or other material for civil aviation in this country the makers can now put up a straight fight against the officials concerned, because henceforth they will be free from that ever-impending threat which, put into bald language, amounted to the statement that if the firm annoyed the officials concerned the said officials would take precious good care that the firm had trouble over its orders for the Government.

Even where firms and officials worked amicably together, as happened in some cases, the fact that Government and commercial machines were being built at the same time caused trouble and hindrance, merely because Government work had priority over everything else. The Government machines might be only produced in order to be smashed up by the Disposal Board, or to be stored indefinitely in a wet tent or leaky shanty, but while they were being built they prevented the production of useful machines or they prevented the works from being converted for the production of some other and still more useful commodity.

A Matter of Policy.

Apropos the conversion of aircraft factories to other purposes, there is a point which deserves the attention of the S.B.A.C., if the rumour on which it depends proves to be true. It is said that, in a praiseworthy effort to preserve the Trade alive, the Air Ministry's policy is to give what orders are permitted by the Treasury to firms which only make aeroplanes and have no other means of subsistence.

This would be the worst possible policy, for obviously the orders which are to be given in the future must be largely for experimental aircraft, and it seems fairly evident that the firm which has had the energy and independence and foresight to turn over part of its factory to an entirely new and paying business is precisely the firm which is likely to have the energy and independence and foresight to produce new and valuable types of experimental aircraft. On the other hand, any firm which, having made aircraft with more or less success, settled down into a groove to make aircraft and nothing else during this devastating Peace would be precisely of the kind which would find it most difficult to get out of its groove and produce anything of a progressive nature.

Moreover, a firm which was making money out of bassinettes for war babies or bath-chairs for wounded heroes would probably be inclined to spend money on

experiments in its aircraft department, and so would produce new types quickly. On the other hand, a firm which was dragging along on the little it could extract from Government orders would be likely to "ca' canny" and make those little orders last as long as possible.

So far as one can gather, every firm of note is laying itself out to make money out of some other business, so as to have money to spend on its aircraft work as soon as ever there is any sign of another aircraft boom, either in civil aerial transport or in the supply of aircraft to both or all the belligerents in some war in which we are merely benevolent neutrals. But there may be some firms which hope to exist solely on orders from the British Government. If so, they must either have vast political pull or an astonishingly optimistic management.

At any rate, there is the rumour as commonly circulated. If it is the Government's policy, it is just about as unsound as most of the other policies of politicians. There is no use in wet-nursing incapacity. If a firm can produce good things it should be supported. And it is well to remember that a firm which has a huge and well-organised factory, only part of which is concerned with the production of aircraft, can easily turn the whole factory onto aircraft in case of war, or of a boom in commercial aviation, whereas a small factory concerned entirely with aircraft has no immediate capacity for expansion of output.

EMANCIPATION.

Be that as it may, here we are to-day with the best-equipped Aircraft Industry in the World, free from Government hindrances in that it is not beholden to the Government for its support, free to tackle the markets of the World, free to fight Government interference with design or construction: as free, in fact, as a demobilised soldier who can give back-chat to his former regimental serjeant-major.

It is to be hoped that the Industry will make good use of its freedom. If it has the energy and initiative which belonged to its great ancestor the Shipping Industry, it will become one of the greatest industries in the World. If it sinks to the level of the motor trade and becomes small-minded, narrow, and self-satisfied, it will leave the World's markets open to German and American competitors. And then this paper, which for eight hard years has fought the battles of the British Aircraft Constructor, will have to grow fat on foreign advertisements and become dull and respectable. Which would be a horrible fate.—C. G. G.

ECONOMY AND CONSISTENCY.

The editor of the "Times" newspaper is evidently one of those who agree with the philosopher who said, "Consistency is the vice of fools." It was necessary to comment recently on an article in that paper which advocated that the Air Force Vote should be cut down from a matter of 25 millions of pounds to something in the nature of 12 millions. Also, that great financier Lord Rothermere stated definitely in his own paper that he could run an adequate Air Force on the latter sum.

Now we have the "Times," on Sept. 20th, holding forth against the Air Ministry for economising by stopping airship construction and by not spending money on Civil Aviation. The "Times" does not appear to attempt to reconcile its two articles, relying apparently on the ephemeral effects of its "thunder" in these days for absence of unkindly recollection of its previous tirade in favour of economy. Those who recall that tirade will be amused by the later effort, which reads as follows:—

AIRSHIPS.

A correspondent whose letter we printed yesterday attacked the Government's decision to stop airship construction—a bold line of attack at a moment when public opinion has hurried the Government into a typical con-

THE FIRST BRITISH WOODEN AIRSHIP.—H.M.A. R.31 was the first rigid airship constructed in this country, with a skeleton of wood, and was built by Messrs. Short Bros.

She is here seen over her shed at Bedford.

She has a length of 615 ft. and a total capacity of 1,550,000 cubic feet to lift 47 tons, and is fitted with five Rolls-Royce engines, totalling 1,500 h.p.

Running through the keel, there is a triangular structure of girders which forms a passage way, from each side of which there are suspended the petrol tanks, water ballast bags, and, in war time, bombs.

The Rolls-Royce engines are in five units, two in the forward car, two amidship, and one in the after car. The airscrews, each 17 feet diameter, are direct driven, and the engines amidships have a reversing gear.

The ship is divided into 21 compartments; in each of these is a gas bag. There is a clear air space between the outer cover and gas bags which tends to keep an even temperature.



vert's zeal for economy, especially economy of a spectacular kind. To stop airship construction is certainly spectacular, but whether it is economical or not is not so certain. Our correspondent denies that it will save much money, and if it will not do that it is extremely hard to justify. As long ago as last March we said that there was a real risk that the Treasury—in its necessity to ensure economy—might "follow the line of least resistance" and might "try to starve new Departments." That was at a time when the Government were disposed to treat attacks on their scale of expenditure with superb disdain. They know better now, but we are by no means sure that in stopping airship construction they have not done exactly what we feared they might do.

Airships will be most useful for some time to come as passenger or goods carriers in the new air taffic. They are predestined for the long air voyages which will bring the most distant parts of the Empire, and of the world, within the compass of a few days' journey from these islands. Their military value is small, for, though they are indispensable as fleet adjuncts, the possibility of naval actions is much more remote than that of a flourishing system of air transport. Such a system is certain within a very few years, and the airship is the indispensable craft for its wider ranges. If Great Britain does not lead the way in providing them some other country will.

France has repented quickly of a hasty decision to stop the construction of airships. The United States, unless report lies, is convinced of their value. Germany, if British experiments cease, still leads the world in the science of building them. The airships which were building when the Government interdicted the work were far in advance of the German models which the fortune of war had delivered into our hands. If they could be completed, and the others be built which are projected already, Great Britain would be pre-eminent in the craft of airship construction. No Power depends as the British Empire depends on quick communication between its States and Dependencies. But all this has not weighed with the Government.

Aircraft experiments are a young vintage of State expenditure without the fine bouquet of the recognised brands. Though that may not be the reason why retrenchment has fallen upon them, its hand at least has been ruthless.

General Seely, Under-Secretary for the Air, has intimated to the firms interested in the construction of aircraft that, "in the case of any well-founded scheme" of commercial air transport, airships will be sold "at a very cheap rate"; but this is a poor substitute for Government building, for expert opinion has never wavered from the conviction that it will be impossible for private firms to develop aircraft on a large scale without Government help, and the air liner will not be cheap to build.

Ill-fortune still dogs the steps of Civil Aviation in all its forms. The Air Ministry do nothing to help it, and this raid on airship construction is only the latest of a series of misfortunes.

Needless to say, one agrees with almost everything in this article, which is unusually ably written and shows close acquaintance with the subject. One need only add that General Seely's apparently generous offer is worthy of his peculiar mentality. To him, seemingly, any airship is an airship, and therefore suitable for any work for which an airship is suitable. He appears to be blissfully ignorant of the fact that no existing airship is of the slightest use for commercial purposes, except that the smaller non-rigids would provide excellent sport for what one may call "Blimp Yacht Clubs."

R.34, for all her record-creating performances, is useless, for she could barely carry petrol enough to take her and her working crew to America. She and the rest of her class have no margin for goods and passengers. Consequently, any commercial concern which bought any of the Government's rigid ships would be merely wasting money.

The only use for the airships now existing is as training vessels for the crews of the real commercial airships of the future. Or they would have a certain value for the elementary education of an infants' class of Admirals in their second childhood as to the first principles of the use of lighter-than-air craft in co-operation with a fleet in being. But now the Government has chosen to stop the construction of the first ships which might be commercially useful, influenced largely by the panic for false economy which has been caused by the daily Press.—C. G. G.

A THREATENED RESURRECTION.

The "Sunday Times," a paper which is usually more than well informed, stated on Sept. 21st that it is very probable that the Lord Rothermere will return to office, and suggests that he may go to the War Office in place of Mr. Churchill. The "Sunday Times" also says that at the War Office "Mr. Churchill has succeeded only in adding to his unpopularity."

As concerns the latter statement, one assumes that the paper quoted refers to Mr. Churchill's unpopularity with the uneducated or uneducatable public, for it is too well informed to imagine that Mr. Churchill is unpopular with the Staff at the War Office, with the Army, or with the Royal Air Force. At the War Office he is regarded as being mentally the greatest and personally the most acceptable War Minister of the present generation. In the Army and in the Air Force he is respected as a brave man physically and morally, and as a statesman who believes in and knows the value of the King's Armed Forces and is prepared to fight the mere politicians for the welfare of the Services.

Mr. Churchill is unpopular with a section of the public because, instead of calling on our troops to come scuttling out of Russia in obedience to the cry for economy, he insists that the British Government shall act as if they were gentlemen and shall keep their word to our Allies, the remnants of the Army of His Late Imperial Majesty the Tsar of All the Russias. It may be in our own interests to scuttle and leave our deluded Allies to be massacred by Bolsheviks, just as our Fleet scuttled out of Quiberon and left the Vendéeans to be massacred, for ultimately it is for the good of Europe that the Slavs should massacre one another to the greatest possible extent. But it is not the act of a gentleman to promise support to one party and then to back out and leave it to its fate. It is such acts as this that have won us the name of "*perfide Albion*" on the Continent.

Apart from which, it would probably pay us better in the end—and also the International Jew Financiers who pull the strings in all these so-called "Labour agitations"—if we kept the fires of civil war alight in Russia by supplying arms and ammunition, and a small volunteer army and air force, to the anti-Bolshevik forces, for in that way still more Slavs might be induced to massacre one another. Thus we might be able to postpone the time when goods produced with cheap Russian labour will undersell our home products and put all our workpeople out of work, and the later time when a rich and powerful Russia with a great leader and a well-organised army will conquer Western Europe and show our canting humbugs how to commit real atrocities on a big scale instead of in amateurish sporadic outbreaks as did the German troops.

If Lord Rothermere goes to the War Office and reverses all Mr. Churchill's policies, he will merely increase his own unpopularity among Army officers, and thus will end by upsetting the *moral* of the Army. If he takes on the control of the Air Ministry as well—as Mr. Churchill has done—it means death and damnation to the Royal Air Force, for it is fairly obvious that it would be impossible for him and Sir Hugh Trenchard to work together, and if Sir Hugh left the Air Force at the present critical time in its development it would mean that the whole spirit of the personnel would fall to pieces and that it would take years to re-establish their faith in the R.A.F.

That might be quite satisfactory to Lord Rothermere, who might be well satisfied by the economy effected in the pay list through the resignations of those officers who resigned in disgust; but it would not satisfy those who know Lord Rothermere's methods of running a fighting service, and who believe that a strong, loyal, and efficient Air Force is necessary to the safety of the Empire.

The alternative is that Lord Rothermere may take the War Office and let General Seely loose at the Air Ministry. That is perhaps preferable, for at any rate General Seely means well, and is honestly enthusiastic about aerial affairs. Moreover, it is possible for officers and gentlemen to work with him without fear of being intrigued out of their positions by the junior ranks of the Force.

It has been suggested that perhaps Lord Rothermere may go to the Admiralty. That seems to be the most suitable place for him, for his particular methods of running a Service department may commend itself to senior Naval officers. The fact that the rumour has been denied "from an authoritative source" does not lessen the prospects of Lord Rothermere's official resurrection.—C. G. G.

A USE FOR OUR AERODROMES.

Hunts County Council talks of buying Wyton Aerodrome from the Disposal Board.

The aerodrome, which is four miles from Huntingdon, occupies over 200 acres, and is equipped with many permanent buildings besides hutments.

It is suggested that the buildings might be used as a sanatorium and the land developed as a farm colony.

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ECHOES FROM THE SCHNEIDER CUP.

The Aeronautical Correspondent of the "Times" delivered himself of the following conclusions concerning the Schneider Cup fiasco in the issue of that paper for September 12th :—

"The seaplane race held at Bournemouth on Wednesday was a great disappointment both to the general public and to industrial aviation.

"From the spectacular point there was no race at all, but two facts were very clearly brought home by the events of the day. The first was that the seaplane during the war has not progressed anything like as much as the aeroplane, and the second was that an aeroplane cannot efficiently be adapted for sea use by the substitution of floats in the place of wheels. It was demonstrated that a specially designed machine in the shape of a flying-boat was necessary.

"Both the British seaplanes broke their floats either in landing or taking off, both the French machines did the same thing, while the two competing flying boats experienced no trouble

"The exponents of the seaplanes agreed, after Wednesday's race, that the weather was all against them, and that owing to the absence of any wind it was necessary for the machines to attain such a great pace on the water before reaching their flying speed that their boats collapsed under the strain. This is certainly correct, but it shows that even in calm weather a machine designed for high speed and fitted with floats is a failure. On the other hand, in a wind they are also a failure, as a fresh breeze generally means a rough sea, and small choppy waves break the floats of a seaplane quicker than anything else. Floats which are made sufficiently strong to stand the strain are so heavy and cumbersome that their weight and resistance take off much speed, and it is evident that constructors, to get the increased speed for this race, tried a light float, which proved altogether too fragile. The fast seaplane, then, would appear to be altogether unseaworthy.

"There is little doubt that the only efficient machine for use on water is the flying boat, which is so designed that the fuselage of the machine while on the water forms a proper seaboat, and when the machine is in the air becomes a natural fuselage, offering very little more resistance than the fuselage of a land aeroplane."

A Seaplane Designer's Views.

The general inaccuracy of the statement of facts and the futility of the conclusions drawn therefrom have moved Mr. C. R. Fairey to produce, by way of protest, the following letter addressed to the Editor of the "Times"—

September 12th, 1919.

Sir,—

The conclusions drawn by your Aeronautical Correspondent in to-day's issue of the "Times" on the subject of seaplanes are so erroneous that I feel they should not remain unanswered.

In the first place his facts are entirely incorrect. None of the British Twin Float Seaplanes suffered damage to the floats with the exception of one competitor, and this, I believe, was done in avoiding a bather close in shore. Moreover, this was a machine built entirely for a speed contest.

On the other hand, one of the flying-boats entered damaged its hull in making the official landing, leaving the honours equal in respect of the two types. The failure of the race was entirely due to the weather conditions making it impossible to see the mark boat. The "Fairey" machine and the "Avro" (in reserve) both returned home in the evening, having made several landings without damage. Moreover, I would add that the "Fairey" machine entered for this contest has in fact made several hundred landings on the same floats and under various conditions. Having been delivered to the Government in July, 1917, it was re-purchased by us in March, 1919, having been in service during the intervening period, and the same floats are now on the machine as when originally delivered.

His remark that the seaplane has not advanced to the same extent as the land machine is also the exact reverse to the truth.

The land machine has not progressed at all; its improved performance is due to the great advance in engine design and construction. The 1913 "Avro" is still in production as a standard type and if fitted with a modern engine and strengthened accordingly would not differ in any respect from the most modern two-seater. The landing question with aeroplanes is further from solution to-day, in view of the advance in speed, than it was before the war.

On the other hand the seaplane has advanced to a very considerable extent. It has doubled its top speed, and although carrying a much greater load than its pre-war prototype it lands even slower and with much more safety.

While mankind has been rolling the turf for his aeroplanes nature has left the sea in the same condition as before. The seaplane can now deal with moderately rough conditions at sea. The modern land machine requires a more carefully prepared aerodrome than the cross-Channel Blériot of 1919.

The seaplane of to-day of equivalent performance to a similar land machine and in spite of the handicap of its sea-going gear, is carrying nearly 12 lb. to the sq. ft. of wing surface and 17 lb. per horse-power of its engine against the land machine's 7 lb. per sq. ft. and 14 lb. per horse-power.

Folding gear (Short), the variable camber wing, the flexible hull (Linton Hope), and the servo-motor for relaying controls (Cooper) are among the principal advances in seaplane design. America, with the retractable chassis, has made the only advance of consequence in aeroplane design.

The statistics in possession of the Air Ministry prove that the flying life of a seaplane is immeasurably greater than that of the land machine, the percentage of accidents and of lives lost per mile flown is beyond all comparison better than for the land machine.

The "Seaplane v. Flying-Boat" controversy was active in the R.N.A.S. some three years ago and has resulted in each type being relegated to its proper sphere, i.e., the flying-boat in large sizes for the trans-ocean routes and the twin-float type in smaller sizes for coastal work and use on rivers and lakes where its facility for manœuvring in restricted spaces and leaving the water quickly gives it the advantage.

In conclusion, I would state that at a time when the seaplane by its superior lifting capacity, its lower depreciation, its independence of prepared aerodromes and its immensely greater safety, appears in the eyes of many experts to be the only form of aircraft having an immediate commercial future it is unfortunate that the British Seaplane Industry should be the subject of such ignorant criticism, particularly in the pages of so responsible a journal as the "Times."

(Signed) C. R. Fairey,
Chairman, The Fairey Aviation Co., Ltd.

A Few Comments.

Both the "Times" article and Mr. Fairey's letter call for further comment, apart from the fact that so far as one has seen, the "Times" has not had the courtesy to publish Mr. Fairey's *démenti*.

Mr. Fairey has dealt fairly adequately with the absurd statement that "the seaplane has not progressed anything like as much as the aeroplane," but he might have asked the "Times" "expert" to explain wherein lies the difference between the float seaplane and the land-going aeroplane except in the substitution of floats for wheels. Any progress in aerodynamic design, constructional detail, or engine efficiency made by one has been at once available for the other.

He might also have explained that so far from "a specially designed machine in the shape of a flying-boat" being necessary, a float seaplane is the only type of small seaplane which can be used in a rough sea. Flying-boats, though excellent for lake and river work and for smooth water, are only usuable in really rough water in their larger sizes, owing to the fact that in the smaller sizes the whole boat and the lower planes are submerged by any considerable wave.

As to the further inaccuracies of the "Times," no machine broke its floats in "taking off," and only one British and one French machine did so in alighting. The other French machine stove in a float on a stone in "landing," in the literal sense though not in the sense intended by the "Times" "expert." Incidentally, one does expect moderately accurate language in a paper of the standing of the "Times," and so one is somewhat surprised to find the paper's expert writing of "landing" on water.

The statement that "the exponents of the seaplanes agreed . . . . that owing to the absence of any wind it was necessary for the machines to attain such a great pace on the water before reaching their flying speeds that their boats collapsed under the strain" is entirely false. The seaplane people did not and never would agree to such a ridiculous statement. The floats (which the "expert" is here pleased to call boats) of two machines only collapsed on alighting, because they were built specially light for racing, and because, owing to the absence of any wind, the machines had to come down at flying speed on water as smooth and hard as glass.

Contrary to the belief of the "expert," as expressed by the word "even" in the next sentence, those same floats would have stood up to their work perfectly well if there had been a breeze and a slight sea to give them some braking effect in alighting. The benighted ignorance of the "Times" expert is shown by his last paragraph, for if he knew anything at all about sea-flying he would know that in the smaller sizes up to, say, 350-h.p., the float seaplane can actually lift bigger "useful loads"—that is to say, more bombs or more passengers or more fuel—off the water than can a flying-boat of the same power, and can fly faster with equal loads. The flying boat scores all round in the bigger sizes, and in the smaller it has the advantage in comfort for the crew when in the air, and in ease of handling when in tow or under power on smooth water.

So far as Mr. Fairey is concerned, he is guilty of one inaccuracy, namely, in stating that one of the flying-boats



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"damaged its hull in making the official landing." That was the general impression on the day of the race, while the Supermarine people were busy salving the boat. It was not till later that they had time to make known the fact that the bottom was torn out of the boat by some kind of flotsam in Swanage Bay, where the pilot had alighted in the hope of finding the mark-boat.

On the whole both the float machines and the flying-boats come out of the Schneider Cup fiasco with less damage to their reputations than either the Committee of the Royal Aero Club or the "Times" seaplane "expert."—C. G. G.

An Engineer's Opinion.

The following letter from one of the pioneers of British Aviation is of particular interest :—

Sir,—I have read with considerable interest your scathing attack on the organisation of the Schnieder Cup, and I must say that you are more than fully justified in your remarks. One thing I noticed in your report was the consistent failure of all the float machines used due to the bursting of the floats fitted.

Until manufacturers of high speed seaplanes appreciate that it is quite impossible to manufacture a rigid float which is both light and strong, no progress can possibly be made with this type of machine. It is quite possible, however, to construct floats which are resilient and at the same time keep their shape sufficiently to enable the machine to plane off the surface of the water.

Mr. Turnbull has invented and patented such a float which would satisfactorily overcome this trouble. In carrying out tests with an experimental float which we constructed it was possible to pick up the float by one end and use it as a flail against any hard object without damaging the float in any way. The planing surface of the float is perfectly rigid and also the attachment to the machine. It is practically impossible to burst the float or puncture it so that it would leak.

At the time of the Armistice floats of this type were being made for the Admiralty, but the order was cancelled with the cessation of hostilities.

If any high-speed seaplane maker is interested in the matter we should be happy to supply him with details of the invention and permit him to make a pair to suit his machine under the nominal license of half a guinea, and we are sure that if there is any manufacturer who will avail himself of this offer he will be in a position, anyhow as regards his floats, to compete with success in the next Schneider Cup race or any other seaplane speed competition.

A point which I have not mentioned so far is that the floats can be made in perfect streamline form and so reduce head resistance considerably.

(Signed) E. C. GORDON ENGLAND.
(Director) p.p. England & Turnbull, Ltd.,
193, Regent Street, W.1.

The French View.

The following letter gives the French view of the Aero Club's muddled management :—

Sir,—The French pilots and the Aero Club authorities here are very much in favour of the prize being given to the Italian aviator, and the chief argument they are using is that if he did not complete the course it was because the Avro which undertook to point out the course before the race went round the particular mark boat which was used by the Italian pilot for the 10 circuits he made.

It is openly said that this was purposely done by the Avro, and a considerable harm to British aviation in general has been done by the way in which this race was organised and conducted.

Indeed, I should not be surprised if the effect is to keep British machines and engines out of this market for the whole of next year, and as this is bigger than the British market the effect would be very much felt.

Your article in the current number has just the right tone to clear the air. "PARISIAN."

Concerning Engines.

The following letter has been received :—

Sir,—Owing to the number of conflicting reports which have been circulated regarding this race, held on Wednesday last, I have made careful examination to ascertain the cause of the British competitors', and particularly the two fitted with 450 h.p. Napier aero engines, not completing even one lap of the course.

I understand that the trouble was due to the bad visibility in the neighbourhood of the Swanage mark-boat, which the competitors had to circle, and which could not be found by any of them.

The Supermarine flying-boat, which was fitted with a 450 h.p. Napier aero engine, ran into a mist over Swanage Bay; the pilot lost his bearings and made a landing in Swanage Bay in order to ascertain his position. Upon taking off, the machine hit some wreckage, and the pilot did not know the extent of the damage until landing near Boscombe, where he tried to beach his machine.

It is regrettable in the interests of aviation generally, and particularly British aviation, that this race was allowed to commence without ascertaining the extent of the mist over the whole course, and thus turned the race, which should have been of great assistance to aviation, into a fiasco, which might do incalculable harm to the progress of the British Seaplane Industry.

I understand that both Napier engines were running perfectly in the British machines when on their trials.

(Sgd.) H. T. VANE,
Managing Director, D. Napier and Son, Ltd.

The Handling of Seaplanes

A reader of THE AEROPLANE states that in his opinion the breakages to the floats of certain machines in the Schneider Cup competition were due to an error of judgment on the part of the pilots. The pilots somewhat naturally endeavoured to bring their machines onto the water as slowly as possible, but owing to the absence of wind this speed was very high in spite of their efforts. The result was that the tails of their floats hit the water fast at a large angle, with the result that the front of the floats slapped down onto the surface so hard that the bottoms were knocked in. In his judgment it would have been better if the pilots, instead of trying to make a slow partially stalled alighting, had deliberately come down fast in a flying position. In this case the floats would have skimmed over the water until the speed was reduced instead of hitting it flat. The theory is worth consideration by pilots of racing seaplanes.

Pleasing Recollections.

One who was present at the Schneider Cup fiasco remarks that it quite reminded him of the old days of flying competitions in 1909 and 1910 because there was no flying and no organisation.

In his opinion the noise of the aeroplanes and their engines and the rules and regulations restricting free circulation on aerodromes in these days completely spoils what would otherwise be very pleasant social gatherings.

An Unfounded Impression.

Many spectators at the Schneider Cup fiasco were anxious to know the meaning of the letters "G—EAKI" on the Sopwith machine. It seems well to explain that they do not represent an aboriginal Australian war-cry adopted by Mr. Hawker, but that they are merely the Air Ministry's idea of an identification mark.

A Consolation Race.

It is announced in the Royal Aero Club official notices on page 1196 that a race will be held for seaplanes in October for a handsome prize. It will be remembered that a suggestion to this effect was made in THE AEROPLANE last week. The prize of £500 should produce several new entries, and the sportsmanship of Lieut.-Col. McClean, the father of British Naval Aviation, in putting up a £100 cup adds materially to the interest in the race. The conditions of the race are worth studying.

THE AIRSHIP EXHIBITION AT PRINCES GALLERIES.

Since the opening day the number of exhibits has been increased by a very excellent collection of photographs and models kindly loaned by the Italian Government. Also there are now very many more additional models, pictures, etc., from various sources in this country. The exhibition, on the whole, is quite one of the best shows of its kind yet seen, and one is glad to hear that the attendance has improved immensely since the first few days.

Owing to the little idiosyncrasies of the Police regulations, a very novel form of advertising arranged for the opening day was barred, so that the only intimation that the exhibition was opening appeared in the usual out-of-the-way portions of various newspapers.

Unfortunately, the position and size of the Galleries prevent the showing of any full-sized aircraft or parts, barring a few interesting relics of the past, such as the fuselages of the first Santos-Dumont and the Spencer airships, so that by far the best feature of the exhibition is found in the exceedingly fine collection of photographs loaned by the British, French, and Italian Governments, and also a series of paintings by Capt. A. E. Cooper, illustrating some of the work of the Airship Section of the R.N.A.S. and R.A.F. during the war.

A large quantity of models illustrates practically every type of lighter-than-air craft built by the various Allied Governments during the war, as well as a number of post-war designs projected by various firms, who, fortunately, realise the vast amount of possibilities of airships in connection with long-distance travel and exploration.

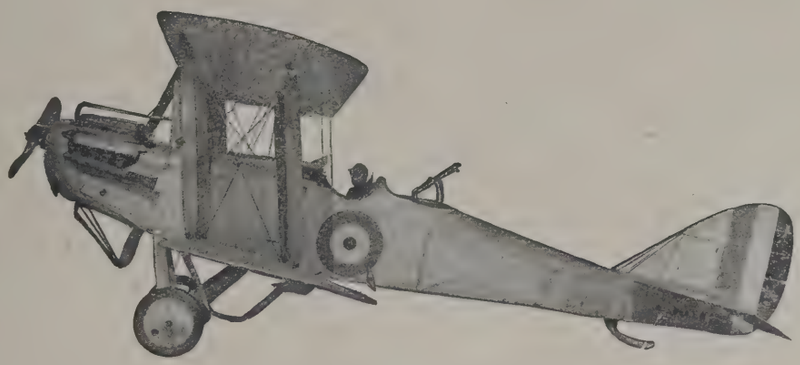
One can only repeat that it is to be earnestly hoped that the expectations of its promoters will be handsomely exceeded not only in realising a suitable profit to hand over to the St. Dunstan's Home for the endowment of an "Airship Bed," but also, in bringing before the public the great possibilities of the airship.

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The WORLD of AERONAUTICS

NEWS OF THE WEEK FROM ALL QUARTERS

The Meteorological Conference.

A conference of meteorologists of the British Dominions will be held in London next week. The official meteorologists of Australia, New Zealand, South Africa, Canada, India, Ceylon, and Egypt will be present. The programme, as at present drawn up, opens with a reception at the Meteorological Office on Monday evening. On Tuesday, in the rooms of the Royal Society, Col. Blandy, D.S.O., R.A.F., Controller of Communications, will speak upon the transmission of weather reports by wireless, and there will be a visit to the radio-telegraphic receiving and distributing stations of the Air Ministry. Kew Observatory will be seen on Wednesday. On Thursday, during the morning, the delegates will visit the Kite Balloon Station at Kingston Hill, and in the afternoon the R.A.F. Meteorological Station at Bedford.

Other visits during the week include the Admiralty Meteorological Station, the British Rainfall Organisation, and the Aerological Observatory at Benson.

The Leon Morane Altitude Prize.

The late M. Léon Morane, whose modesty and charm of manner endeared him to all, told his brother some years ago that he intended to found a prize which should bear his name. He died before his intention was put legally into effect, but M. Robert Morane has loyally carried out his dead brother's wish.

He has presented to the Aero Club de France 10,000 francs and a Cup to be entitled the Challenge Léon Morane. The Cup will be awarded to the French aviator for the French height record gained on a French-built single-seated aeroplane. It will become the definite property of the French aviator who holds the record for a year at least. The 10,000 francs prize will be awarded to the definite holder of the Cup.

The period during which the present regulations are effective is from Oct. 19th, 1919, to Oct. 19th, 1923. If, at the latter date, nobody has won the Morane prize, the Cup and a prize of 1,500 francs will be given to the last French holder of the French height record. The 10,000 francs unawarded will then be competed for under new regulations.

A Spanish Race.

The British Chamber of Commerce at Barcelona announces that the forthcoming Spanish aeroplane race will be open to Spanish aviators and to foreigners resident in Spain for more than one year. Other foreign pilots can enter, but without any right to the prizes in the contest. If more than three enter special prizes will be allotted. The trial will be entirely one of speed. The course will be as follows: Prat de Llobregat, Barcelona, Badalona, Sabadell, Tarrasa, Tibidabo, Barcelona, Prat de Llobregat—a total of 110 kilometres.

Entries are free, and must be made by Sept. 30th. The British Chamber of Commerce will be pleased to enter any pilot of British nationality who wishes to take part in the race.

Prizes for Portuguese and Brazilians.

A prize of £300 for the first Brazilian or Portuguese military aviator to fly between Lisbon and Rio de Janeiro is proposed in a resolution that has been introduced in the Brazilian Chamber of Deputies. The measure calls for the Government to finance preparations for the flights up to an amount not exceeding £30,000. It is provided that the flight shall not require more than 168 hours.

The Portuguese Government on June 6th offered a prize of approximately £6,700 for the first Portuguese or Brazilian aviator to fly from Portugal to Brazil.

34,610 Feet.

It is claimed that Mr. Roland Rohlfs, in a Curtiss K.12, on Sept. 18th broke the world's altitude record by rising to a height of 34,610 ft. in a 400 h.p. Curtiss triplane. He attained over 34,000 ft. last week, but the flight was unofficial.

The flight was observed by officials of the Aero Club, who sealed Mr. Rohlfs' instruments when he landed and sent them to Washington for verification. The pilot reported that he experienced trouble in breathing at 20,000 ft., being obliged to use his oxygen bottle. At the top of the climb the thermometer registered 43 deg. below zero. At 31,000 ft. the machine frightened the pilot by its antics, finally dropping 600 ft. vertically, as recorded by the barograph. Mr. Rohlfs reached his record height in 78 min.

Balloon v. Aeroplane.

As claims are being made for new altitude records almost every week one begins to wonder how long it will be before the heavier-than-air record equals the balloon record with passengers. As already announced, Mr. Roland Rohlfs, one of the Curtiss Co.'s testing pilots, claims to have ascended to a height of 34,610 ft.

In September, 1862, Coxwell and Glaisher ascended in a balloon to a height of 37,000 feet.

Aeronautics at the Polytechnic.

The Polytechnic, Regent Street, announces that a series of evening classes dealing with aeronautics will be instituted during the session 1919-20.

The Syllabus, which has just been issued shows that a complete course of instruction in aeronautical engineering has been laid down, which is to be completed in three years, and which very completely covers the whole field, including the history of aviation, mathematics, aero-mechanics, the principles of aeroplane, airship, aero-engine and airscrew design, draughtsmanship, and the principles of practical construction and of workshop practice.

The reputation of the Polytechnic, and the fact that Major T. Worswick, O.B.E., M.Sc., A.F.R.Ae.S., late R.A.F., is the Assistant Director of Education of this institute, should be a guarantee that this new branch of its activities will be well and efficiently operated.

Intending students should note that the head of the Engineering Department and the teachers will be in attendance at 307 to 311, Regent Street, from 6.30 p.m. to 9 p.m., every evening between Sept. 22nd and Sept. 26th to advise upon the choice of classes.

A Banquet.

Mr. Handley Page was the guest on Saturday, Sept. 20th, at a banquet given by his fellow-townsmen at Cheltenham. The proceedings were arranged by the local Chamber of Commerce and Traders' Association, and its president, Sir James Agg-Gardner, M.P., was in the chair.

The toast of "Our Guest" was proposed by Mr. Oliver J. Williams, who in the course of his speech likened Mr. Handley Page to Hermes, the messenger of the gods, to Mercury, the man who travelled from continent to continent, and even to Ganymede, the "page" of the gods.

Their guest, he said, had taken a great part in revolutionising not only the art of war, but transport all over the globe. If it had not been for the German army cracking up at the moment when we least expected it, they knew that the Handley Page machines would have given Berliners a lesson that they would never forget. Thanks to the efforts of such men as their guest, the air machines would in the future take the place of the ordinary passenger steamer and the railway train.

Mr. Handley Page, who received a very hearty reception on rising to respond, paid an eloquent tribute to the services of the Royal Air Force in the war. At times, he said, the officers would say that they had the rottenest machines, but, in spite of everything, they could depend upon the men always, and the same courage which won Trafalgar won the last battle in the air.

He had hoped that they might bomb Berlin, and the machines were ready. They had hoped the Armistice would not be signed for a day or two, but what was to them a disappointment became pleasure and joy to many thousands, as it meant the avoidance of further bloodshed.

They had been able, however, to take the machines to the capital of Afghanistan, and show there what they could have done to Berlin. But those engines of war could easily be transformed into engines of peace, and to-day they were sending machines daily to and from Paris. He felt that such easy means of communication would be the best means of preserving peace in the future, as it would prevent international misunderstanding. The best League of Nations would not be built up by paper, but by aeroplanes.

A Rumour.

The rumour that the Department of Civil Aviation will soon be incorporated in the Ministry of Transport is being much discussed. The general opinion is that the immediate result would be a fresh crop of hampering regulations.

Government Aircraft Competition

An important clause in the £64,000 prize conditions.

"16. Soundness and quality of construction will include—

(a) Fire protection, including use of self-sealing tanks (from the point of view of safety from fire in the event of a crash), fire fighting appliances and accessibility of same."

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The WORLD of AERONAUTICS

The Australian Government Competition.

The following communiqué was received from the Air Ministry on Sept. 19th :—

The flight for a prize of £10,000, which was offered by the Australian Government in March last was the subject of a Conference to-day between representatives of the Air Ministry, the Australian Commonwealth, the Royal Aero Club, and the competitors.

It has always been recognised in official quarters that a flight between England and Australia would be a performance of very great difficulty in the present state of ground organisation, and that considerable time must necessarily elapse before the project could mature. Since little information was available on the proposed line of route beyond Calcutta, it was decided jointly by the Commonwealth Government, the Air Ministry and the Royal Aero Club that no competitor should be allowed to start until the Air Ministry had been able to obtain reliable data concerning the section of the route between Calcutta and Port Darwin.

Brig.-General A. E. Borton, D.S.O., and Capt. Ross-Smith, of the Australian Flying Corps, were accordingly dispatched without delay to carry out a special survey of this section, and to report on the possibility of the flight being successfully attempted. These two officers have now returned to England, and to-day furnished detailed information regarding their investigations. They reported that beyond Calcutta the route lies over country far from favourable for aeroplane flying. Between Calcutta and the Dutch East Indies the only landing grounds suitable for immediate use are the Race Courses at Rangoon and at Singapore. Beyond Singapore, where the route lies over the Dutch Islands, the next place where good landing facilities exist is Bandoong, and thence no landing ground is at present available for the intervening 1,760 miles to Port Darwin.

As the weather after the end of November is most unfavourable, General Borton expressed the view that if the flight is to be made this year only aeroplanes possessing a range of at least 2,000 miles could make the attempt with any hope of success. He explained also, that the difficulties would be considerably lessened if competing machines were fitted with floats at Calcutta and continued the journey as seaplanes, as there are several suitable harbours and inlets on the route to Australia.

With regard to the portion of the route between London and Delhi the same difficulties do not present themselves, as the organisation created by the Air Ministry for Service flights is meantime available. Owing to the weather conditions after the beginning of November, however, it may be necessary for competitors to fly via Malta and the North Coast of Africa to Cairo. From Cairo to India the difficulties to be faced are greater, and vast stretches of uncivilised country have to be traversed. Although more than one flight has been made over this portion of the route, it cannot be said to be in regular operation.

The Air Ministry have placed all available information at the disposal of competitors, and are arranging for the granting of such facilities as have been created and exist, and to keep competitors posted with any progress or developments.

Flying and Tennis.

A correspondent writes :—

I used to like aeroplanes; before the war I invariably rode a push-bike from London to Brooklands to watch the flying every Saturday and Sunday. I still rather like aeroplanes (both flying them and watching them), and people think me a damned fool because I always rush to the window with a pair of field-glasses every time I hear a machine; in fact, I used to have a very busy time with my squadron in France owing to this habit of not being able to hear an aeroplane without wanting to see it.

Lately I have started playing in tennis tournaments. Doubtless, many readers who are cricket enthusiasts will recognise the identity of the batsman who would never play at Lord's because he was quite certain that as soon as he was called upon to face the bowler from the pavilion end someone in the pavilion would get up and take his hat off to an acquaintance which would catch his (the batsman's) eye, and, if the ball was a straight one, he would be bowled.

I have every sympathy for that man. This week I have been playing tennis at Eastbourne. Every time I threw a ball up for a serve I expected to see, and very often did see, either a land or seaplane belonging to the E.A.C. cross my line of vision; of course, this distraction usually caused a fault. Possibly someone will say that it is the same for all; perhaps it is. But, personally, I think it affects some people more than others; for myself it is sufficient to take my eye off the ball to hear an aeroplane near me.

Here let me say that I do not blame the pilots, since during the whole meeting no machine actually flew within three hundred yards of Devonshire Park, and certainly no one repeated the performance of the gentleman (alleged) to whom reference has already been made by me in a previous number of THE AEROPLANE who tried to get a free view of the tennis at Wimbledon from a machine.

From what I know of Major F. B. Fowler, if the Committee had 'phoned him and asked him to keep his machines to the east side of the pier when flying at a height of under 5,000 ft., I am quite sure he would have been only too pleased to comply.

I know that the seaplane which was the worst offender very much interfered with everyone's game, and, as a competitor remarked, "They should shoot the blighters down before each match."

Seriously speaking, though, there is no doubt that a machine in the sky interferes considerably with any game in which eye and concentration are needed, and pilots would do well to keep as far away as possible from all cricket matches, tennis tournaments, etc., since interference with games will do more harm to flying and make it unpopular far quicker than any other way.

There is nothing that upsets the average Englishman more than interference with his games. Certainly, it has provided me with an excellent excuse when asked by friends why I was beaten in the first round of all events!—G. D.

A Projected Airship Scheme.

A "Daily Express" correspondent at Selby, Yorks, understands that Armstrong, Whitworth, Ltd., will shortly submit to the Government a scheme which, if adopted, will mean pushing ahead at once with the construction of giant commercial airships.

The type of air-liner they have designed and are prepared to build is the last word in luxury and efficiency. These ships, built entirely of steel, and equipped with saloons, dining-rooms, smoke-rooms and sleeping cabins, would have a carrying capacity of between sixty and seventy tons, and a gas capacity of about 3,500,000 cubic feet. They would be able to do a 6,000 mile trip without trouble of any kind.

An improved airship engine, combining speed with reliability and endurance, is being designed, which should give the airships a speed of at least eighty miles an hour.

The Cambridge Flying Club.

A flying club is to be formed at Cambridge intended principally for undergraduates who have served in the R.A.F., and who wish to continue flying. The necessary arrangements are being made by the Cambridge School of Flying, and it is hoped that when the men return next term at least 100 will join.

It is understood that H.R.H. the Prince Albert has promised to make use of the aerodrome if he requires it while in residence.

The machines to be used are Avros and D.H.6's, but negotiations are in progress for insurance, and it is possible that D.H.6's only will be used. The Secretary of the Cambridge School of Flying and Aerodrome Co., Ltd., is Capt. J. L. Lee-Jones, B.A., Oxon, whose address is 2, Downing Street, Cambridge.

"Popularity Jack."

From the "Daily Mail" of Sept. 22nd :—

"At a reception to returned soldiers at Langley Mill, near Ilkeston, on Saturday night, General Seely, the Under-Secretary for Air, accepted a challenge by the vicar, the Rev. H. Gilgryst, to sing, the audience to adjudicate. The vicar sang the 'Anchor's Weighed,' and General Seely followed with 'John Peel,' accompanying himself at the piano.

"The verdict of a draw was received with applause. Each was presented with a box of chocolates."

[One commends to the Under-Secretary of State for Air a study of the gentleman of whom Herodotus relates that by way of showing his appreciation of a banquet he stood on his head in the middle of the table and waved his legs in the air. —Ed.]

The Economy Campaign.

Some officials have enjoyed a laugh at the expense of Mr. A. R. Atkey, M.P. for Central Nottingham, who caused a stir in the House recently by asking whether a new anti-aircraft gun was being erected on Wilford Hill.

It has now transpired that the gun, which was seen being placed in position at Wilford, had been to Leicester to fire the Royal salute on the occasion of the King's visit to the city.


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London-Paris Air Express

Summary of First Month's Flying.

August 25th, 1919, to September 20th, 1919.

Flights Scheduled	56
Flights accomplished	54
Prevented by weather . . .	1
Interrupted by mechanical defect	1
Number of Miles flown . .	13,750
Average Speed (Miles per hour) .	106½

The following is an official summary of the weather flown through during the month.

Days favourable for flying	3
„ unfavourable for flying . . .	13
„ noted officially as "unfit" for flying .	8

Only once, when the wind attained a velocity unknown for years, was it necessary to abandon a flight; and even then, though there were squalls of 100 miles an hour strength, only one of the two Daily Services was suspended. Though the machine from London did not start, the one from Paris not only started but arrived at Hounslow before its scheduled time.

LONDON:
AIRCRAFT TRANSPORT & TRAVEL, LTD.,
27, Buckingham Gate, S.W.1.

Full particulars regarding Rates and Freights can be obtained from Aircraft Transport & Travel, Ltd., 27, Buckingham Gate, S.W.1, or from the American Express Co., Queen Street and Haymarket; Thos. Cook & Son, Ludgate Circus, E.C.; General Transport, Ltd., 52, Crutched Friars; J. Jackson & Sons, 7-8, Charing Cross, and King William Street, E.C.; Henry Johnson & Sons, 18, Byward Street and Beak Street, W.; Lepaerial Travel, Piccadilly Circus (Criterion corner); Carter, Paterson & Co., 6, Maddox Street, W., and 3, Cannon Street, E.C.; and Hernu, Peron & Co., 98-100, Queen Victoria Street, E.C.

PARIS:
COMPAGNIE GENÉRALE TRANSAERIENNE,
118, Champs Elysees.

NAVAL & MILITARY AERONAUTICS

GREAT BRITAIN.

[The Official Gazettes, Honours Lists, and Personal Notices will be found on page 1203.]

THE PEACE TERMS TO BULGARIA.

The Draft Treaty of Peace was handed to the Bulgarian Peace Delegates in Paris on Sept. 19th. Part X—Aerial Navigation—is identical with Part X of the Austrian Peace Treaty.

PART IV.—MILITARY, NAVAL, AND AIR.

AIR.

The air clauses provide that the armed forces of Bulgaria must not include any military or naval air forces. The entire personnel of the air forces in Bulgaria is to be demobilised within two months.

The aircraft of the Allied and Associated Powers is to enjoy full liberty of passage and landing over and in Bulgarian territory until the complete evacuation of that territory by the Allied and Associated troops.

The manufacture of aircraft and parts of aircraft is forbidden for six months. All military and naval aircraft, including dirigible and aeronautical materials, are to be delivered on the ratification of the present Treaty.

NAVAL.

ADMIRALTY APPOINTMENTS.

The following appointments have been made:—
Sept. 17th.—Gnr.—H. A. Haynes, to "Argus," Sept. 16th.
Sept. 19th.—Lieut.—D. C. Sealy, D.S.C., to "Argus," Sept. 18th.
Sept. 20th.—Art. Engrs.—A. Lambert to "Ark Royal," Sept. 19th.

THE CASUALTY LIST.

Reported Sept. 9th.

WOUNDED.—Maj. A. C. Barnby, R.M.L.I.

MILITARY.

OFFICIAL COMMUNIQUE.

The War Office issued the following communiqué on Sept. 19th:—
The Bolshevist fleet of 15 vessels which sailed north-east from Petrozavodsk to intercept one of our columns which was being landed on the west shore of Lake Onega was attacked by our aircraft with machine-guns and bombs and forced to return to its harbour in confusion.

THE CASUALTY LIST.

Reported Sept. 22nd.

PREVIOUSLY REPORTED MISSING, NOW REPORTED KILLED.—Muir, Sec. Lt. J. W., R.F.C.

* * *

OPERATIONS IN RUSSIA.

Kronstadt was bombed on Sept. 13th and again on Sept. 14th by British aviators. In the first raid, although the aeroplanes were subjected to a severe bombardment, all returned. In the raid of the 14th one of the aviators was forced to descend in Finland owing to engine trouble. In both raids hits were observed.

Another account states that the pilot of this machine, which the account says fell into the sea near Bjorkoe, was drowned.

Kronstadt was again raided on the night of Sept. 15th by the British, thus making the third raid in succession.

* * *

News of another attack on the 17th-18th states that both fighting and bombing aeroplanes took part in this raid. The weather was bad; there were both rain and wind and the night was dark. One of the fighting aeroplanes met with an accident when starting and fell into the sea. The pilot was killed. Two other machines of unstated types came down later and their crews are missing. The remaining machines reached their objective.

* * *

Another air raid was carried out upon Kronstadt on Sept. 19th, sixty aeroplanes taking part. Many fires were observed, and the anti-aircraft defences were active.

* * *

THE RAID ON KABUL.

Reuter's correspondent at Simla communicated the following to the Press apparently upon Aug. 16th, although it has only just been published. One can find no previous record of the appearance of this account:—

It is interesting to learn that the aeroplane which a few months ago bombed Kabul was the Handley Page machine in which General N. D. K. MacEwen, C.M.G., D.S.O., came out to India from England in January. It will be remembered that in March last, after the machine finally arrived at Delhi, after many vicissitudes, Captain R. Halley, R.A.F., piloted it to Ambala and Lahore, and afterwards to Risalpur.

It was from Risalpur on May 24th that Captain Halley, with Lieut. Villiers, R.A.F., as observer, started to attack Kabul. The machine left Risalpur about 3 a.m. on its flight of nearly 400 miles. Owing to the great heat and atmospheric conditions considerable difficulty was at first experienced in getting it to rise to the required height. Having succeeded, it proceeded across the Khyber and followed the River Kabul to Jellalabad, in which city the effects of bombs previously dropped by other machines were plainly visible. Thence it flew straight to Kabul, having to ascend about 8,000 ft. to cross one high ridge.

A good deal of difficulty was experienced from air pockets. Kabul was reached about 6.30 in the morning. The machine had good luck in one direction, in that it made its voyage to Kabul with a tail wind, and after it had accomplished its journey the wind immediately changed round and assisted it to make its return journey. This fact probably lessened the time of the flight by at least an hour and a half.

After arriving at Kabul the Handley Page descended to some 1,600 ft. above the city, which is situated at about 6,000 ft. elevation. The whole visit over the city only lasted some ten minutes. The aviators saw large numbers of people rushing about in alarm. Several big bombs were dropped, apparently with considerable success, on the arsenal buildings. The great Bala Hissar Fort stood out very prominently among all other structures.

The Handley Page finally returned to Risalpur, thus accomplishing one of the longest and most difficult air raids yet carried out by the Air Force. Moreover, this was really the first time that a four-engine Handley Page had taken part on active service. Having accomplished such an extremely hazardous flight as it made last January from England to India, the greatest credit is due to the pilot and crew for navigating the machine through such a difficult, unknown and treacherous country as Afghanistan. There is little doubt from reports which have since filtered down from Kabul that the aeroplane's visit to the capital had an extremely important effect both from the military and political point of view, and at the recent conference at Rawalpindi more than one of the delegates confessed that the Afghans had been deeply impressed by the air raid.

A RESOLUTION OF THANKS.

At a meeting of the City of London Corporation on Sept. 18th Alderman Sir William Treloar moved the following resolution:—

That this Court desires to record its appreciation of the effective measures taken for the defence of London on the occasion of the many raids by enemy aircraft during the war, and especially on the night of May 19th, 1918. This Court wishes to express the great indebtedness of the citizens and inhabitants of London for the untiring devotion and splendid services of the pilots, airmen, gunners, and others engaged under the command of Major-General Ashmore on the night of May 19th when not only were seven of the enemy machines brought down, but so much further damage was done to the enemy that the Germans finally decided to abandon attacks on London.

The resolution was carried.

THE WAR MEDAL.

The decision of the War Office to award the British War Medal to Y.M.C.A. workers who served in any of the war areas and to allow those who served overseas between August, 1914, and Dec. 31st, 1915, has been received with mixed feelings. Some people do not think it quite fair that a flying instructor who was not allowed to go overseas because he was too useful and who risked his life trying to train dud huns in England should have no medal, whereas the man who handed out tea in a Y.M.C.A. hut at a pleasant sea-coast town base a day's journey from the front should be given the honour of wearing the ribbon that is supposed to denote that the wearer has risked everything for his country.

However, there is so much unfairness in these matters that one cannot imagine how any really good man who knows that he has done his duty can worry about such things.

AIR FORCE.

The R.A.F. Recruiting Campaign.

It is officially stated by the Air Ministry that although it is only a few weeks since the R.A.F. opened its special recruiting campaign recruits have come forward in such numbers that the Force is now up to its present authorised strength.

Accordingly, all recruiting has now been suspended except for carpenters, cooks, and clerks, for which trades a certain number of vacancies still remain.

The attractive new conditions of service and rates of pay are, of course, largely responsible for this satisfactory result, and the authorities are extremely pleased with the class of men who have come forward.

As the number of applications still being made show no sign of diminishing, men of the trades for which vacancies still exist and who desire to enter the R.A.F. would be well advised to apply without delay.

The Relinquishment of Aerodromes.

The Air Ministry announces that it has been decided to relinquish and dispose of the following Royal Air Force Stations, and arrangements are being made accordingly :—

Wight, Cowes (aerodrome), London Colney (aerodrome), Beaulieu (aerodrome), Lydd (balloon school), Dover (seaplane station, temporarily transferred to the Admiralty).

The London-Bombay Service.

Lieut. Crichton, R.A.F., and Lieut. Coombs, R.A.F., who arrived at St. Raphael (Var) on Sept. 13th, left there for Taranto on Sept. 15th. They are visiting Taranto in connection with the proposed London to Bombay aerial service.

An Accident at Simla.

A telegram from Simla states that an aeroplane, while trying to land in the Residency at Quetta, fell to the ground and burst into flames. A passenger, Capt. Steele, and two Brahmins were killed. The pilot, an officer of the Royal Air Force, was severely shaken.

On Air Stations in Particular.

It was recently one's good fortune to see two of His Majesty's Royal Air Stations in being—or rather in that state of being that is permitted them by an economical daily Press. In these days of Peace, so quickly are the Services forgotten that it appears to be well to draw the attention of the general public to the fact that there are still air stations at Lee-on-the-Solent and Calshot, and that, weather permitting, there is flying done at these stations.

Lee-on-the-Solent is an air station which is extremely anxious to disclaim any connection with the Navy. Being a seaplane training station, naturally practically all the staff are late R.F.C., although the O.C. is a former R.N.A.S. officer.

Lee-on-the-Solent is an awkward place to get at, but when reached is well worth the trouble. From the strictly naval atmosphere of Portsmouth Harbour, through the equally strictly military one of Gosport, out—at length—to such a distinctly Air Force atmosphere as Lee-on-the-Solent, gives one a very good impression of His Majesty's Three Services.

Lee is a pretty place, but too quiet. The inhabitants, having nothing to do, talk R.A.F. scandal all day. Be that as it may, no inhabitants appeared on the afternoon in question, and having presented the pass one proceeded on a tour of inspection.

One was taken round the shops and the sheds. Short folder seaplanes, Norman Thompson flying-boats, and an experimental Sage two-seater—which is "quite fast"—were the apparent complement. Lee is a training station—forty officers having arrived in the last few days for training purposes, and all machines, except possibly the Shorts, seem to be fitted with dual control.

One regrets that after all arrangements had been made there was no time to visit the W.R.A.F.'s hostel, particularly as the W.R.A.F.s are leaving Lee shortly. But when trains are one an hour, and there is a dinner at the other end of a long journey, one is not running any risks.

The day on which the visit to Calshot was made was quite a good one on which to travel to the ends of the earth. The steamer from Portsmouth to Southampton conveys one to Calshot, where it is met by an R.A.F. launch, which takes one ashore. Even then there is a drive of some ten minutes before one reaches Top Camp.

Top Camp consists of living quarters for the personnel, a recreation ground, canteens, etc. Everywhere was deserted, of course, but very clean. Calshot is a busy station.

On the Spit, where everybody seemed to be, one saw workshops and power station, sheds full of F. boats and Short folders, etc.—and everywhere men at work.

The station, being a permanent one, is being enlarged in order to accommodate a larger personnel. During the war this station, which had a personnel of something like a thousand, had accommodation for two hundred, and Peace, coming as it did when all were unprepared for it, discovered the station in the process of the alterations which are now approaching completion.

There is a vast deal more to be seen at Calshot than at Lee-on-the-Solent; therefore one's apologies for the incoherence of this article are necessary; but when one crowds into an afternoon sufficient impressions to last one several days the result is naturally some chaos of thought.

The visit came to an end with the signalling of the Cowes boat, and one re-embarked on the launch and at length arrived aboard the steamer.

The chief thing about Calshot is its absolute "ungetatableness." In the summer it might possibly be bearable, but in winter it must be ghastly. Certainly one realises the need of a cinema and a theatre, for the only connection with the outer world seems to be the launch and the Southampton-Portsmouth boat.

At any rate, one spent two pleasant afternoons among people who did not find it too much trouble to be nice.—

S. F. B.

A Gift for the R.A.F.

Vice Air-Marshal Sir Godfrey Paine, Inspector-General, Royal Air Force, opened at Netheravon an institute which has been presented to the Royal Air Force by the Church of England Board for the welfare of the Imperial Forces in the diocese of Salisbury.

Sir Godfrey emphasised the fact that it was the first institute presented by anybody to the Royal Air Force. There might be bigger institutes, but he knew of none that was so comfortable and well equipped, and the gratitude of the whole of the Royal Air Force was due to the Church of England Board for its munificent gift.

The institute, which has been erected at a cost of £4,000, has accommodation for 600 persons, comprises a lounge hall, billiard room, buffet, and a chapel or devotional room, the last-mentioned being formally dedicated by the Bishop of Salisbury, who presided at the opening function.

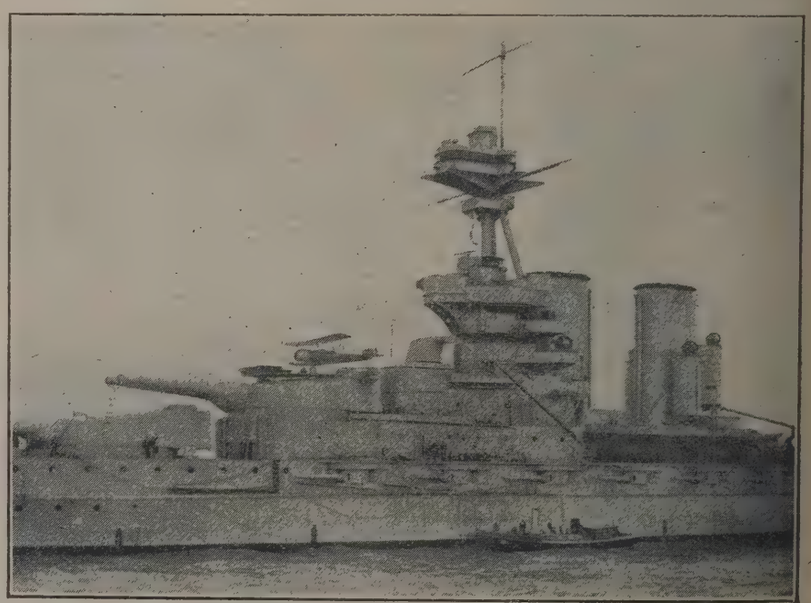
AUSTRIA.

The Italian correspondent of The Aeroplane writes :—

"Il Cielo" publishes the following, which is taken from an official Austrian report on Austro-Hungarian Military aviation :

When the armistice was signed the Austrian Air Force was testing the following machines as to their war efficiency :—

The "Bergmann K," or "Kampfdoppeldekker," built by the



A Sopwith 1½-strutter (130 h.p. Clerget engine) above the 15-in. guns of H.M.S. "Queen Elizabeth."

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Austrian Flugzeug-Fabrik, which machine had given the very best results.

The "Phönix" two-seater, doing 195 kil. per hr., with a ceiling of 7,000 metres.

A later type "Phönix" "hunter" with a 300-h.p. motor, smaller dimensions and greater speed.

The "Bergkampflugzeug" built by the Aviatic Co. and intended for "hunting" over mountain ranges. This craft had a Hiero motor, could leave the ground in 60 metres, and excelled in evoluting.

The "Ago" bombardment triplane—less speedy than the biplane of that name, much more stable, and obviously a better weight carrier.

Though the official results of its tests were not made public, it appears that the machine satisfied neither the hopes of its designers nor the demands of the pilots at the front.

The "Mises," a Caproni type with two Austro-Daimler 300 h.p. motors and a span of 18 metres. It was intended to carry a crew of six and did so on its trial flight till it crashed, killing them all.

Of the five numbers painted on all Austro-Hungarian war machines the first group of two stood for the factory number and the series, the second group for the machine's individual number in the series. Low factory and series numbers were existing evidently, neither running into double figures. The nine factories were numbered as given lower down. Machines contracted out apparently bore the designer-firm's number. So the big "Skoda" firm engaged on building "Albatros" and a "Spad" type seems to have had no distinguishing number allotted to its productions for this reason.

Of motors, the Hiero 240, the Hirla 160 and 240, the Vienna "Fiat" 200, the Benz and Austro-Daimler seem to have been most favoured.

AUSTRIAN FACTORY NUMBERS.

Löhner Werke, No. 1; Albatros Werke, No. 2, at Stadlau; Aviatik, No. 3, at Vienna; Lloyd Werke, No. 4, of Colmar; Ofbag, No. 5 (Osterreicher Flugzeugfabrik A-G); Uffag, No. 6 (Ungarisce Hugzeugfabrik A-G); Fischamend Werke, No. 7; Wienerkarosserie, No. 8; Thöme-Fiala, No. 9, of Vienna.—T.S.H.

FRANCE.

FALSE REPRESENTATION.

A M. Alain Barbier du Doré was arrested recently on a charge of wearing an army captain's uniform decorated with the Legion d'Honneur and the Croix de Guerre with seventeen palms. He had attempted to obtain credit financially and morally as Captain Heurteaux. He has instead been sentenced to eight days' imprisonment.

A PARIS-CONSTANTINOPLE FLIGHT.

Capt. Lenne, accompanied by a Greek military aviator and a mechanic, Perrin, reached Constantinople on Sept. 12th, after a flight from Paris, via Rome. No details as to the time taken up on the journey, or of the landings made, are available. They crossed the Albanian Mountains through a violent storm.

THE FRENCH UNIFORM.

The form of the uniform of French troops has now been laid down definitely. The red breeches disappear and troops of all arms, save the Chasseurs and the African and Colonial formations, will in future wear the sky blue kit which was introduced early in the late war. The Chasseurs will continue to wear their old uniforms and the African and Colonial troops will be put into khaki.

The képi, alone of all pre-war kit, is retained. Officers and men are given two years in which to wear out their present uniforms.

GERMANY.

The Danish correspondent of THE AEROPLANE writes :—

A German seaplane tender to the mine-sweeper flotilla operating in the North Sea, off Esbjerg, supplied a proof of utility aviation the other day, when it turned up in the harbour to order some pastry for a feast of the lickerish commanders, bringing them safely to their destination upon completion.

ITALY.

The "Corriere della Sera" says that a squadron of aeroplanes, which deserted from Ajello has arrived at Fiume.

RUSSIA.

OFFICIAL COMMUNIQUÉS (BOLSHEVIK).

Sept. 16th.—Enemy aeroplanes carried out a raid on Kronstadt, dropping bombs.

Sept. 19th.—Enemy aeroplanes appeared over Kronstadt at 4.30 a.m. on Sept. 18th and dropped four incendiary bombs. An empty wooden barn caught fire through one of them exploding. We brought down one of the enemy aeroplanes on its return journey. The aeroplane was of the type Ilia Murometz, and came down near one of our forts. The aviator was drowned.

[Presumably "Ilia Murometz" (which was the name of the Sikorski biplane) merely means a big aeroplane of some sort. Slav veracity is a negligible quantity, so the communiqué does not impress anybody.—ED.]

Sept. 20th.—Near Kronstadt we have brought down an enemy aeroplane.

BOLSHEVIK EQUIPMENT.

The first junction between the armies of the Polish General Pilsudski and the Russian General Denikin was made recently by a Polish aviator, one, Lieut. Weber, attached to the French aviation squadron which is serving in Poland. Lieut. Weber landed at Kieff on Sept. 13th, carrying as passenger the "Morning Post" special correspondent, who writes :—

General Kamenieff, of the former Russian Command, who directed the Bolshevist operations, and probably had fifty thousand men with perhaps 250 guns at his disposal for the defence of the city, also managed to get into action a greater number of technical appliances, such as armoured motor cars, aeroplanes, and the like, than Denikin's army ever encountered before.

SPAIN.

An aeroplane flying at a great height over the aerodrome at Madrid on Sept. 19th fell to the ground, the pilot, Capt. Rocha, and a passenger, Capt. Navarro, were killed.

SWEDEN.

The Swedish Army aviator, Rodehn, established a Scandinavian record on Sept. 21st by flying the whole length of Sweden from Ystad to Haparanda and thence to Boden, a distance of 1,420 kilometres, in seven and a half hours, without landing. Rodehn used a 260-h.p. Swedish aeroplane.

U.S.A.

THE DEMOBILISATION OF AIR SERVICE OFFICERS.

The following table shows the number of officers demobilised between Nov. 11th, 1918, and Aug. 20th, 1919, and the number still retained on the strength :—

BRANCH OF SERVICE.	On strength 11th November, 1918.	Demobilised by August 20th, 1919.	Percentage Demobilised.
Aircraft Production ...	1,870	1,505	80
Military Aeronautics	19,378	15,287	79

THE AIR SERVICE UNITS ON THE MEXICAN BORDER.

The Mexican border is still a source of trouble to the United States Government and a large number of troops is stationed over that area. There is little actual fighting, but the threat is constant.

Nine squadrons in all are allocated for duties along the border and are distributed as follows : the 9th and 91st Observation Squadrons are based on Rockwell Field, and the 8th, 90th, and 104th Squadrons of the Surveillance Group with the 11th, 20th, 96th and 166th Squadrons of the Bombardment Group are to take station along the eastern stretches of the border. The First Pursuit Group from Selfridge Field is also under orders for the border, where it will be employed as tactical conditions dictate.

The disposition of flying units on the border during the early part of the present month is shown in the following table :—

Unit.	Station.	Strength in Aeroplanes.	Aeroplanes fit for S'rvice	Pilots	Observers
9th Squadron	San Diego	18	14	30	—
11th Squadron					
A Flight	Marfa	6	6	9	2
B Flight	El Paso	14	7	16	2
96th Squadron					
A Flight	Douglas	4	3	8	0
B Flight	El Paso	13	7	8	1
8th Squadron					
A Flight	MacAllen	8	4	9	8
B Flight	Laredo	6	6	5	5
		69	47	85	18

Aviators and mechanics who have served overseas are daily being drafted to border units that their experience may assist the general progress of military operations.

These units are working daily in close liaison with other arms of the Service and considerable progress in training is being made. Maps of the district are inaccurate and incomplete and the flying units are assisting in a new survey of the area.

An Aviation General Supply Depôt at San Antonio is at present engaged equipping aeroplanes with Lewis and Marlin machine guns. Three hundred and forty mountings for Lewis guns and five hundred locks for Marlin guns were expected during the present month.

MUSIC AND THE R.A.F.

Major Geoffrey Toye, late R.A.F., is to conduct the Gilbert and Sullivan operas which are to be revived in London shortly. Major Toye was very successful at the Philharmonic concerts last season.

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THE WEEKLY COMMENTARY.

The proposal to form an Institute of Aeronautical Engineers and the suggestion that this Institute should also act as a professional Trades Union for its members have drawn from Capt. Sayers a lengthy essay on the subject.

He examines some of the numerous difficulties and dangers which will beset the path of such a body, and arrives at the general conclusion that the educated classes of workers must seek for some form of organisation which will adequately represent their interests if they wish to maintain their present position.

Some of the more recent designs due to the famous firm of Short Bros., Ltd., form the subject of this week's instalment of "Modern British Aeroplanes."

Two interesting types of German aeroplanes are described and illustrated in this issue.

One, the Linke-Hoffmann, multiple-engined type is a war-time product.

The other, the Hannover Triplane Limousine, is a commercial passenger-carrier of the most recent type.

A summary of that part of Sir Charles Parsons' presidential address to the British Association which refers to Aeronautics will be found on page 1183.

THE INSTITUTE OF AERONAUTICAL ENGINEERS AND PROFESSIONAL TRADES UNIONISM.

By Capt. W. H. SAYERS, Late R.A.F.

The proposal put forward some weeks ago by Mr. R. W. D. Shaw for the formation of an Institute of Aeronautical Engineers has raised for discussion a number of points of very great importance to the profession concerned.

It may be recalled that Mr. Shaw's original proposal was that an association be formed from among those engaged in the technical branches of the Aircraft Industry, membership whereof shall only be gained on passing an examination sufficient to exclude any but properly qualified technicians, and that the Institution should aim at giving to its members a professional status which would be recognised in the aeronautical world, just as the status of a member of the Institute of Civil Engineers is recognised in the engineering world generally.

To this original suggestion there can be no serious objection in principle.

Practical Difficulties.

In practice there are certain difficulties. General experience shows that examinations are usually second only to statistics in the misleading nature of the conclusions to which they give rise. Thus there are many who could pass successfully the qualifying examinations for the Institute of Civil Engineers whose practical value as engineers might be inferior to that of the average bricklayer.

Nevertheless, a certain minimum standard of technical education can quite properly be demanded from anyone who aspires to be known as a member of the engineering profession, and provided that examinations can be kept out of the control of that mystery-mongering class who acquire their living by professing rather than by practising, they are probably the most satisfactory method of securing that such a standard is maintained.

The alternative method of requiring a candidate to submit particulars of his own qualifications to the committee of the association, who thereon decide as to his fitness, or otherwise, has—in theory—certain advantages. It has the disadvantage that it is practically impossible to establish a definite qualification standard, and that the quality of those admitted to membership is apt to vary very considerably with changes in the personnel of the committee. This is very likely to occur in either case. Thus an old-established institution always tends to exclude from amongst its members those who show in their examinations signs of having absorbed new and more or less heterodox ideas, and so such societies have in more than one instance tended to discourage rather than to encourage the growth of knowledge.

A Forcible Objection.

In this particular case the proposal to form an association which will guarantee the possession of proper professional qualifications has drawn from Mr. A. E. Berriman a rather lengthy and forcible expression of disapproval.

Mr. Berriman suggests that the title of "The Institute of Aeronautical Engineers" in some sense implies that it is intended to usurp the functions of the Royal Aeronautical Society, and that this is further accentuated by the proposal to call upon candidates for membership to show some measure of technical qualification, since that requirement is also made by the R.Ae.S. before admission to the Society as an Associate Fellow or a Fellow.

This appears to be a somewhat far-fetched objection. There is a very considerable distinction between the functions of such an association as the Royal Aeronautical Society, which naturally has amongst its members many aeronautical engineers and those of an Insti-

tution of Aeronautical Engineers. The one is, or should be, an association of those in any way interested in the science of aeronautics for the spread of the knowledge of that science.

An Institute of Aeronautical Engineers should be—by analogy with other Institutions of Engineers of one kind or another—an association of professional men for the furtherance of their efficiency in that profession.

A mathematician—such as Professor Bryan, for instance—who has by his work made an appreciable contribution to the theory of any branch of aeronautical science may quite properly be a Fellow of the Royal Aeronautical Society, solely on the ground that that contribution is evidence of his qualifications as an aeronautical scientist.

That achievement by itself could not properly qualify Professor Bryan as an aeronautical engineer, though it might properly be recognised by an Institute of Aeronautical Engineers by making Professor Bryan an honorary member.

Inversely, the managing engineer of a factory engaged solely upon the production of standard aircraft of proved types would, on his engineering qualifications and the nature of the work upon which he was employed, be a fit and proper person to become a member of an Institution of Aeronautical Engineers.

He might quite conceivably possess no knowledge of aeronautical science which would justify his election as a Fellow or Associate Fellow of the Royal Aeronautical Society.

The two bodies will necessarily overlap to some extent in their activities; if they are both intelligently directed, they should often co-operate; and if in effect they do compete in certain spheres, this should stimulate both.

A Complication.

So far, there is little room for serious adverse criticism of the scheme, but the situation has been very considerably complicated by a proposal—due to Mr. L. Howard Flanders—that the Institution should also be a Defence Union for its members, and should be registered under the Trades Unions Act.

Proposals for the formation of Trades Unions for technical and professional workers are by no means new. In the engineering world they have been made at intervals for the past twenty years or so, with no appreciable result up to the present. There does exist a Society of Technical Engineers which has been registered under the Trades Unions Act, and which has, it is believed, a membership of over 20,000. This particular body is of such recent growth that it can scarcely yet be described as an effective force.

With this one exception, all such attempts have failed because technical men have fought shy of the idea of becoming Trades Unionists.

To some extent this has been due to a feeling that by so doing they would declass themselves.

Others have feared the enmity of their employers to such a movement, and still more have felt that Trades Unionism means inevitably some limitation to the liberty of the subject and might hamper their freedom to make for themselves the best terms when marketing their abilities.

A Fact To Be Faced.

However, to-day the technical and professional man is faced by the fact that the manual workers of all types and all nations have banded themselves together into associations so powerful that these bodies have attained throughout the civilised world a legally recognised status, and that through these bodies the working classes do possess enormous political and economic power.

Under the Trades Unions Act the workers' organisations are empowered to act in a manner which would bring any body not registered as a Union into the civil courts upon a charge of illegal conspiracy.

There are not wanting signs that the extra-legal powers of these bodies will, when a fitting occasion arises, be used remorselessly in the interests of the classes which they represent, and with very little consideration for the just claims of the unorganised brain-workers of the world.

It is useless to decry Trades Unionism on this account.

The Trades Union movement is—in theory, at least—unassailable. It is impossible in any highly organised modern community for a single individual with a grievance against the community in general to secure a perfectly just rectification of that grievance. It is impossible because the conditions of life are so complicated and the individual circumstances are so various that perfect justice to one may involve a positive injustice to another.

Therefore the governing body of any community can do no more than try to establish a code which shall do approximate justice under average conditions to the majority of the citizens.

The Practical Value of Trades Unions.

It is obviously easier to determine what is approximately just and what is not when that community is organised into a series of bodies, each speaking with one voice, and each representing the general opinion of its members as to their most acute grievances, than when it consists of an entirely unorganised crowd, each member of which is engaged in incoherently squealing over his personal grievance.

Let it be granted that the Trades Union movement as it exists to-day has many bad features, and that it threatens great evils to the State.

Any great organisation, representing a sectional interest alone, whether the interest be that of shopkeepers, newspaper proprietors, automobile manufacturers, or dog fanciers, would threaten equal evil had they the same clear field as the Trades Unions now possess.

Such a sectional organisation is a perfectly legitimate political weapon; it can properly be met by those whom it threatens with a similar sectional organisation of their own.

If the Trades Unions of the manual workers are left with a clear field and with no competition—beyond the general opposition of a disorganised mob provided with no settled programme and no generally agreed policy—they are fairly entitled to any victories that they may gain, and the so-called brain-workers can only blame their own stupidity if they suffer from their own lack of organisation.

The Futility of Mere Grumbling.

Therefore it seems fairly clear that any profession which contents itself with ineffective grumblings against the delinquencies of the Trades Unions, and which refuses to organise itself into an association armed with substantially the same powers as those possessed by those Unions, will have only itself to blame if it is overwhelmed by the interests of those who have shown themselves possessed of more common sense than they.

Mr. Flanders' proposal that the Institute of Aeronautical Engineers should become in effect a Trades Union, therefore, must not be defeated by any feelings of mere snobbery, or by the fear that such a body may interfere to some extent with individual liberty of action.

If the association is to be a success, it must so interfere.

Organisation of any sort is impossible without discipline, and discipline implies some sacrifice on the part of the individual for the sake of the whole body.

At the same time the actual details of the scheme will require very careful consideration.

No Trades Union or similar body can nowadays con-

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cern itself solely with the internal politics of the trade which it represents.

It is bound to be to some extent concerned with general political affairs which directly or indirectly may have an effect on the trade or profession with which it is associated.

Thus any Trades Union offers itself as a possible field for the purely political agitator, and many Trades Unions to-day are found to be under the control of those who have little or no real interest in the industry they are supposed to represent, and who are solely concerned with it as a source of political power.

It is probably impossible to frame the constitution of the body in such a way as entirely to prevent this state of affairs, but every care should be taken to make it as improbable as possible.

A provision that a necessary qualification for a seat on the council or managing committee be the earning of one's bread-and-butter by the practice of the profession would assist and would also aid in keeping the control of the Institute out of the hands of retired and eminent fossils.

A Serious Objection.

The most serious objection to the proposed Trades Union, however, is the very limited class to which membership would appear to be open.

It is one of the most objectionable features of Trades Unionism as it now exists that it is divided up into a series of small sectional associations, and has tended to encourage the idea that once a man has become a carpenter, or a bricklayer, or anything else, that he must necessarily always remain so.

Thus the mining of coal, as it is now practised, is no fit occupation for a decent human being. Therefore there exists a natural tendency for the more intelligent and progressive of those engaged in that trade to forsake it for others offering better conditions. This would naturally lead to a falling off in coal production, and would force mine-owners to improve the methods employed in gaining coal till it permitted the miners to live on terms more or less equal to those of the more human trades, and at the same time would, by tending to raise the price of coal slowly but surely, encourage the development of alternative sources of power.

As it is, the Trades Unions actively oppose the practice of abandoning one trade in favour of a more congenial one.

This policy of "once a miner always a miner" necessarily involves them in opposition to any scheme for improved machinery or process which will seriously reduce the number of those who have to lead a bestial and brutalising life—since that will lead to unemployment—and they are forced to attempt to ameliorate the lot of their members by a process of cutting down production and increasing wages, which leads not to a steadily and slowly increasing cost of coal, or to a gradual decrease in its production, to which the community as a whole could adjust its methods of life, but to occasional violent upheavals which dislocate the whole life of the nation.

A Liberty Worth Safeguarding.

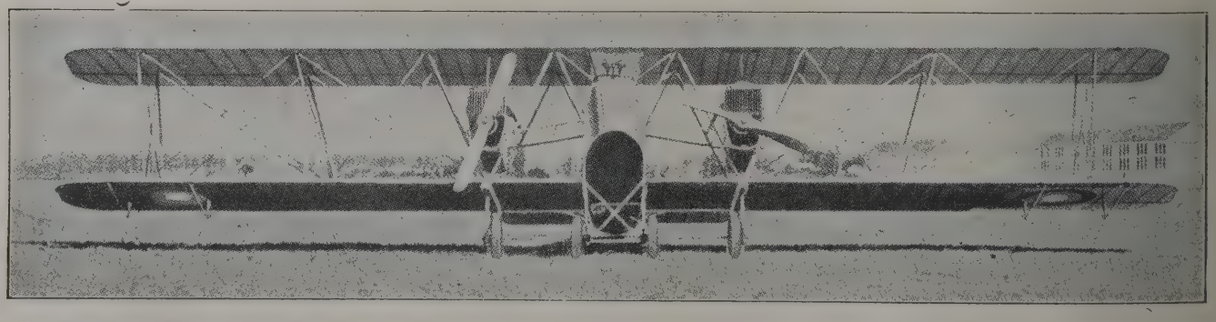
The educated professional classes, without any organisation comparable to those of the Trades Unions, have and still do manage to secure for themselves fairly decent working conditions, simply by virtue of their freedom to change their occupation.

Any occupation which is ill-paid or overworked is avoided by the intelligent and ambitious, and becomes a haven for the lazy and ineffective, whose employers, finding none but wasters will work for them, are—slowly perhaps, but inevitably—forced to alter the conditions of employment to attract reasonably capable men to their business.

It is of the very highest importance that this absolutely automatic effect of freedom to seek any employment should not be destroyed, as it has been in the workers' organisations, by the imposition of rigid rulings as to formal qualifications for membership of the proposed union, such as a defined period of apprenticeship or the like.

THE INSTITUTE OF AERONAUTICAL ENGINEERS.

At a meeting of the Institute of Aeronautical Engineers held on the 11th inst. Mr. R. L. Howard Flanders presided. Correspondence exchanged with Mr. A. E. Berriman relating to the scope, purpose, and title of the Institute was read and discussed. It was decided that the Institute could not rightly be accused of trespassing on the ground of any existing aeronautical institution. It was shown that the Institute would take the initiative in the holding of examinations, thereby making for a sound classification, or grading, of aeronautical engineers and for educational advancement generally. A temporary Council was elected. The members of this Council are Mr. R. L. Howard Flanders, President; Major S. J. V. Fill, R.A.F.; Mr. H. P. Folland, Mr T. C Letcher, A.M.I.N.A.; Mr. H. B. Molesworth, M.I.C.E.; Major F. G. Moore, M.A., B.Sc., M.I.M.E., M.S.E.; Mr. Frederick R. Simms, M.I.M.E., M.I.A.E.; Mr. Clarence Winchester, and Mr. W. R. D. Shaw, Organising Secretary. The newly formed Institute is to be an authoritative body on the technique of commercial aeronautics and a fountain-head for technical information. The Institute is to be governed by a council of distinguished aeronautical engineers and theoretical and practical courses of instruction are to be promoted. The Institute will also publish a periodical for educational and reference purposes. Those who have expressed a wish to be associated with the Institute as founders have been elected Honorary Founder Members. This grade was specially decided on to meet the exigencies common to any newly formed body, and it must not be regarded as a technical qualification. Forms of application for admission to the various technical grades of the Institute have been approved of by the Council, and Honorary Founder Members will receive copies of these in due course. It has been decided not to restrict membership to aircraft and aircraft engine designers and constructors only, but to embody also other men of science who have rendered signal services of benefit to aviation and aerostation. It is being ascertained to what extent the Institute can protect the interests of its members without registration under the Trades Union Acts, and legal advice on the question may be sought. Provisionally, an entrance fee of half-a-guinea is being levied for all grades, and an annual subscription of two guineas for Members, Associate Members, and Pilots. A meeting of the temporary Council has already been held.



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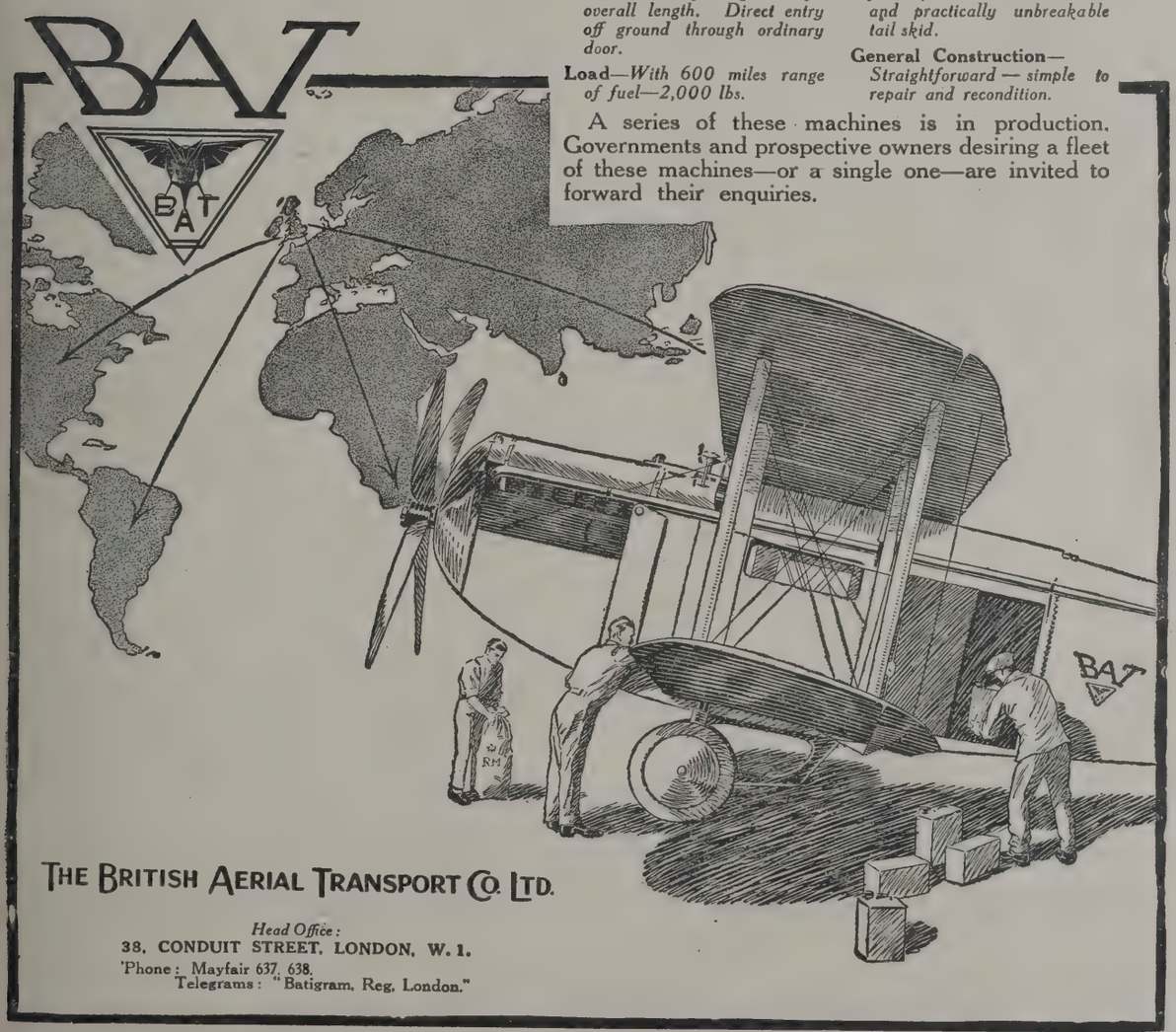
Fuel Cost at full load—*7·2 pence per mile.*

Chassis—*A sturdy job, sprung by an unique combination of oleo and rubber shock absorbers.*

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MODERN BRITISH AEROPLANES.

XVI.—Short Brothers, Ltd.

Short Bros. can claim to be the oldest firm of aeroplane constructors in Great Britain. The firm was originally formed by the brothers Eustace and Oswald Short in 1898 for the manufacture of balloons. The original founders were joined by their elder brother, the late Horace L. Short, in 1908, when they added to their Battersea balloon factory an aeroplane factory at Shellness, Leysdown, Isle of Sheppey.

In 1909 Mr. J. T. C. Moore-Brabazon, on a Short biplane, fitted with a Green engine, won the "Daily Mail" £1,000 prize for the first closed circuit flight on a British-built aeroplane.

In 1910 Short Bros moved their aeroplane factory to Eastchurch, and there produced a number of multiple-engined machines, which were undoubtedly the first of their class to fly. During the same year they also built the machines upon which the first four naval members of the R.F.C.—the original Naval Wing which later developed into the R.N.A.S.

In 1911 the firm commenced to build seaplanes—a practice wherein they have persisted with continuous success until this day.

In 1913 Short Bros. introduced their folding wing gear—a device now universally employed on large machines—which did more to facilitate the use of aircraft at sea than has any other improvement yet made.

During the same year large new works were established at Rochester, which, when war broke out in 1914, proved to be of the greatest possible value to the R.N.A.S.

At the outbreak of war the Short 160 h.p. Gnôme-engined two-seater was the main stay of the R.N.A.S. for sea patrol work.

This machine was followed by Salmson-engined seaplanes of very similar type, and then by the famous 150 and 225 h.p. Sunbeam-engined machines.

The 225 h.p. machine, somewhat modified, and fitted with the 260 h.p. engine of the same make, known as the S.184, survived to the conclusion of hostilities, and was manufactured in larger quantities, and by more different sub-contractors than any other British seaplane.

Another machine of historical interest and importance was the Short 320 h.p. torpedo-carrying seaplane, a fair number of which were sent to the Mediterranean early in 1917—but which were never given a real opportunity of showing their usefulness.

Of the more modern productions of the firm the machines hereafter described will give a fair idea.

THE SHORT N.2B. SEAPLANE.

This machine was designed, and the first edition was produced early in 1917, in response to the Air Department, Admiralty, Specification N.2B, which called for single-engined two-seater bomb-carriers for sea patrol and anti-submarine work. By the time the first machine was ready for trials the production of seaplanes had fallen into the hands of the Air Board, and the Royal Aircraft Factory had embarked upon a design to the same specification—which eventually appeared some time in 1918 as a kind of enlarged F.E. grafted on a Linton-Hope type hull to form a kind of "Bat-Boat," and with a performance considerably inferior to the Short.

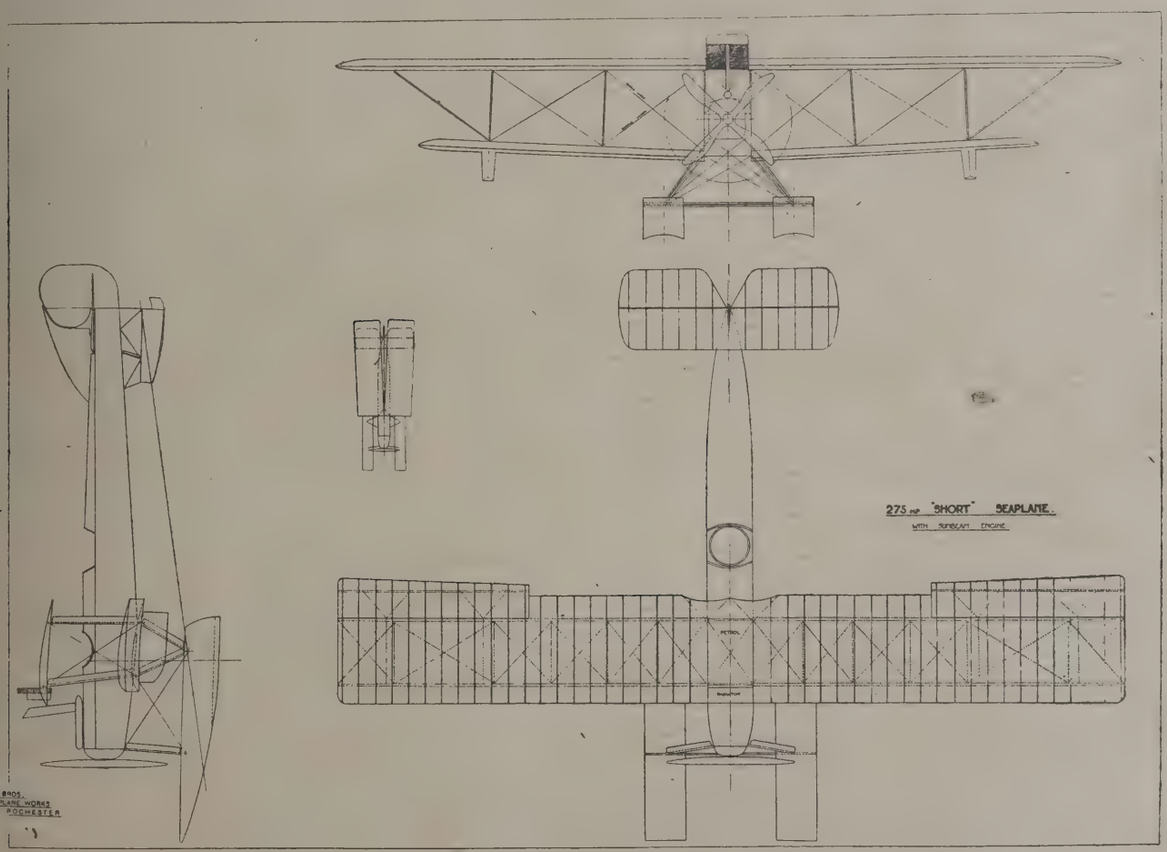
Quite naturally the Short design was hung up to await the appearance of the R.A.F. boat, and the machine was only produced in small numbers too late in the war to produce any serious effect.

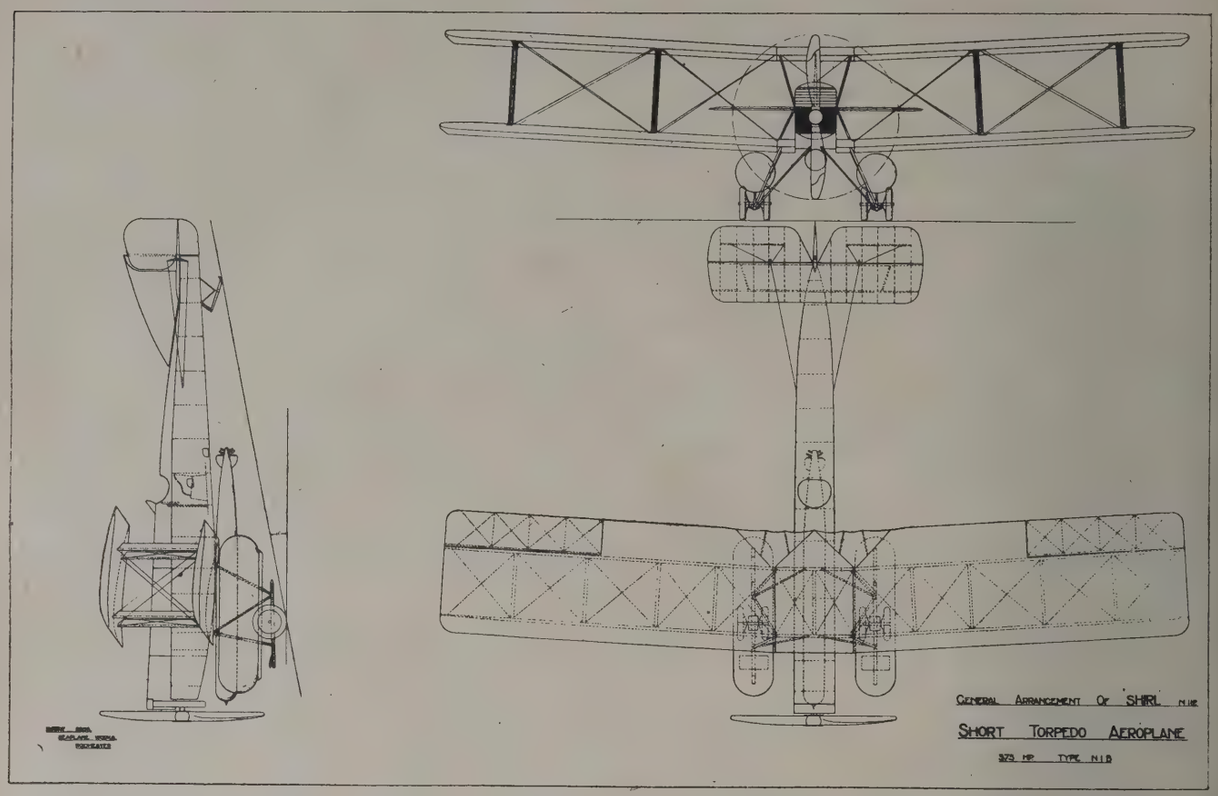
As may be seen from the line drawing, the machine is a very straightforward two-float tractor seaplane, fitted with wing-tip and tail auxiliary floats. The two seats were arranged, pilot ahead below the top centre section, and observer clear of the wings aft in a cockpit furnished with a Scarff gun-ring.

The following table gives the main particulars :—

SPECIFICATION.

Type of machine	Float Seaplane.
Name or type No. of machine...	Short N. 2 B.
Purpose for which intended	Bombing.
Span	55 ft.
Gap, maximum and minimum ...	7 ft.
Overall length	40 ft.
Maximum height	13 ft. 9 in.
Chord	7 ft. 6 in.
Span of tail	15 ft. 6 in.
Maximum cross section of body	11.5 sq. ft.
Engine type and h.p.	Sunbeam-Coatalen "Maori," 260 h.p.





Airscrew, diam., pitch, and revs.	10 feet 6 inches, diameter.
Weight of machine empty	3,050 lbs.
Tank capacity in hours	4½ hrs.
Tank capacity in gallons	70 galls.
PERFORMANCE—	
Speed low down	90 miles per hour.
Speed at 10,000 feet	88 miles per hour.
Climb—	
To 5,000 feet in minutes	12½ minutes.
To 10,000 feet in minutes	40 minutes.
Disposable load apart from fuel	1,170 lbs.
Total weight of machine loaded	4,800 lbs.

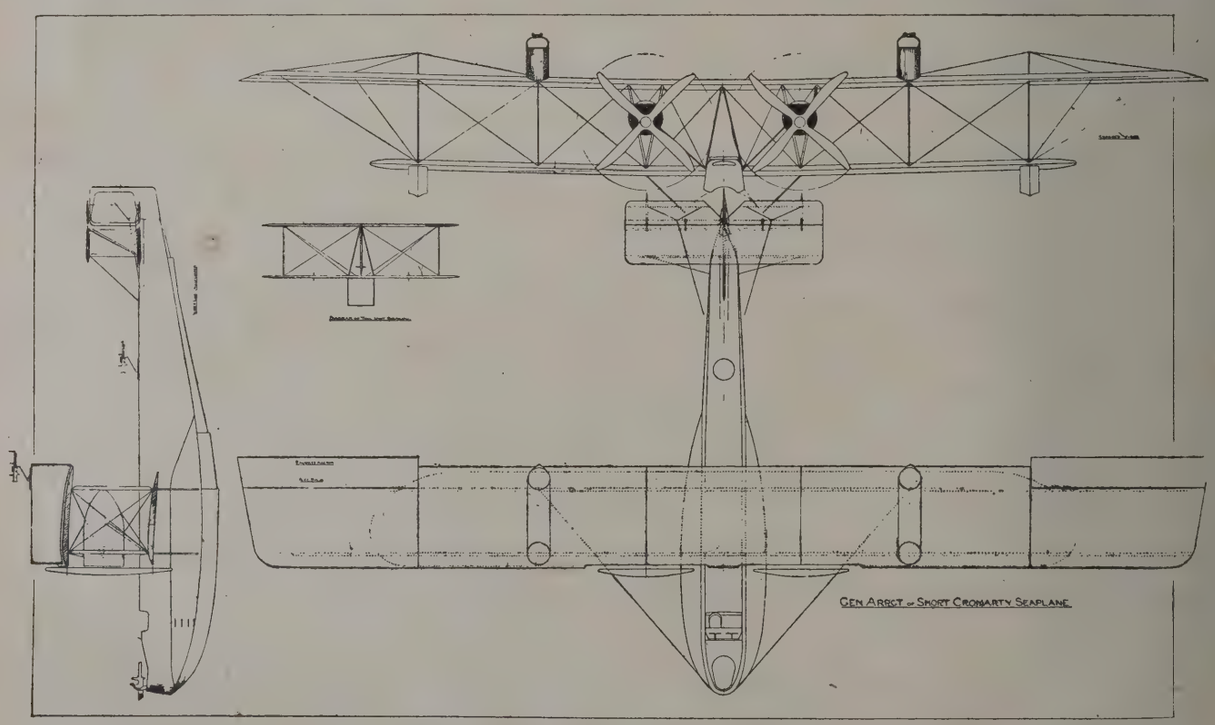
THE SHORT "SHIRL" TORPEDO CARRIER.

The experiences of 1916 and early 1917 with torpedo-carrying seaplanes led the powers that were to abandon seaplanes in favour of the "get-off-the-deck" type of aeroplane for torpedo attacks, and Short Bros., therefore, designed and produced the "Shirl" torpedo-carrier.

This machine differs little in essentials from the "Short" seaplane type—except for the absence of floats.

The undercarriage is a twin-skid affair—each skid carrying twin wheels—and with a clear drop way for the torpedo which is carried close up to the fuselage.

Above each skid a large air bag—inflatable from the cock-



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pit—is carried to give buoyancy in the event of a forced alighting in the sea, and the nose of each skid carries a small "hydrovane" upon which the first shock of alighting is taken.

The main planes are slightly Vee'd backward in plan, and are, of course, fitted with the Short folding gear.

SPECIFICATION.

Type of machine	Aeroplane.
Name or type No. of machine	"Short Shirl."
Purpose for which intended	Torpedo carrying.
Span	52 ft.
Gap, maximum and minimum	6 ft.
Overall length	35 ft. 6 in.
Maximum height	
Chord	8 ft. upper; 7 ft lower plane.
Span of tail	15 ft.
Maximum cross section of body	11 sq. ft.
Engine type and h.p.	Rolls "Eagle" 8, 400 h.p.
Airscrew, diam., pitch, and revs.	10 ft. dia.
Weight of machine empty	2,850 lbs.
Tank capacity in hours	Max. 6½ hrs.
Tank capacity in gallons	137 galls.
PERFORMANCE—	
Speed low down	99 m.p.h.
Speed at 10,000 feet	97 m.p.h.
Climb—	
To 5,000 feet in minutes	13 minutes.
To 10,000 feet in minutes	30 minutes.
Disposable load apart from fuel	2,500 lbs. normal.
Total weight of machine loaded	5,950 lbs.

THE SHORT "CROMARTY" FLYING-BOAT.

Late in the war Short Bros. turned their attention to the design of large flying-boats, and produced the design shown herewith for overseas patrol work.

The machine was designed to be self-protecting and was to be fitted with two gunners' nacelles on top of the upper plane each with two gun positions.

Instead of the usual armament of rifle calibre guns, four one and a-half pounder automatic cannons were to be fitted as well.

The line drawing and the specification give clearly the essential features of this design.

SPECIFICATION.

Type of machine	Boat Seaplane.
Name or type No. of machine	"Short Cromarty."
Purpose for which intended	Fighting and Bombing.
Span	113 ft.
Gap, maximum and minimum	10 ft.
Overall length	59 ft.
Maximum height	22 ft.
Chord	11 ft. + 10 ft.
Span of tail	23 ft.
Maximum cross section of body	56 sq. ft.
Engine type and h.p.	Rolls "Condor," two 700 h.p.
Airscrew, diam., pitch, and revs	15 ft., 970 r.p.m.
Weight of machine empty	11,000 lbs.
Tank capacity in hours	12 hours' cruising speed.
Tank capacity in gallons	650 galls.
PERFORMANCE—	
Speed low down	101 m.p.h.
Disposable load apart from fuel	2,500 lbs.
Total weight of machine loaded	18,000 lbs.

THE DESIGN OF RIGID AIRSHIPS.

The following letter has been received:—

Sir,—You are to be congratulated on your Airship Number, containing as it does a vast amount of information for the student of airship design. There is, however, a great deal of information and data still required to be made known, particularly with regard to the problem of rigid and semi-rigid airship design.

Unfortunately this knowledge is locked away in the minds of one or two men who may be called the pioneers of rigid airship design in this country. These gentlemen openly affirm that they alone in Great Britain have worked out and fully understand the problems and theories involved in the design of rigid airships.

This knowledge is naturally a carefully guarded secret, and no doubt a very great asset to the particular firm for which they are contracted to work. Whether this state of affairs is good for aviation in Great Britain is questionable.

It is extremely unfortunate that, when the Admiralty decided to proceed with rigid airship construction in 1915 they did not commandeer one of these men for the position of chief airship designer for the country; as it is, they were sent to a private firm, who naturally have shareholders to satisfy.

What actually happened was the appointment of a gentleman with very little knowledge of airship design. This gentleman, a member of the Royal Corps of Naval Constructors, was previously a submarine hull overseer. Reluctance to furnish privately and laboriously gained data to an outsider placed in a high position is natural, and one must blame the Admiralty for its choice of a chief airship "designer." Designer is a complimentary title, for the work carried out by his department appears to be the making of "Chinese" copies of the various German airships (of an oldish type) brought down in this country and elsewhere.

Unfortunately again, and most shortsightedly one thinks, the material for building a large shed was withheld by the Ministry of Munitions owing to shortage of steel. It almost looks as though there was some design against the firm who were admittedly the pioneers of rigid construction.

The whole history of rigid airships seems to have been marked by one unfortunate blunder after another One could mention acts of "cussedness" as far back as the "Mayfly" age.

These remarks are plain facts, and the writer has nothing but the good of British aviation at heart in submitting them for publication. That the future of the nation itself is vitally dependent on the ultimate triumph of this rapid means of transit is apparent. One remembers being taught that the prosperity of this nation is due to the large deposits of coal, but now that the production of our staple commodity is dwindling, one looks to our overseas Dominions for salvation. The airship, if really strenuously developed, would seem to be the one method for reducing the distances which separate the great English-speaking peoples from their headquarters; and, cost what it may, a big programme of airship building should be begun with the help of our rich Dominions and Colonies.

Passing from what ought to be done, we read that the airship construction programme is to be abandoned! Who is responsible the nation will wish to know. It can only be compared with the losing of the greater part of Northern America, or the giving up of Helgoland. Criminal "hypermetropia," but what a shining example in economy in these days of wicked waste!

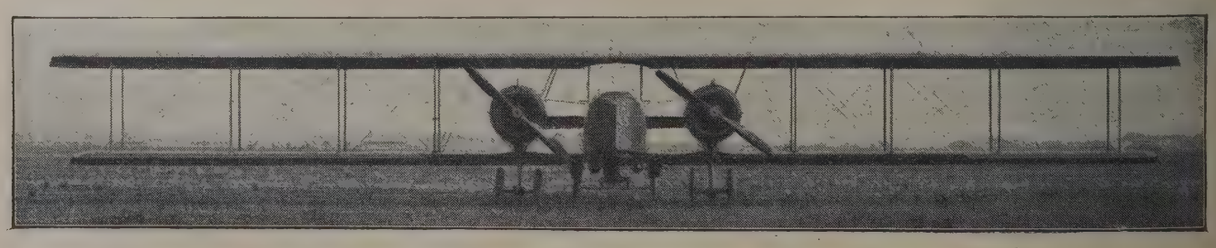
Regarding the Editor's remarks: his one drawback the danger of fire. To those unfamiliar with airships this danger is very real, and no doubt it is the cause of anxious consideration. Yet when one calmly considers that in a rigid airship the engines are carried well away from the envelope, and there is usually a large well-ventilated air space at the bottom (unless the gas containers are quite full as at high altitudes), the peace risks appear small. Smoking compartments will no doubt be required for passenger airships, but they can be supplied with electric cigar-lighters, and be well insulated by fire-screen bulkheads.

Possibly, also, "lifeboats" in the form of gliders may be fitted (one remembers the photograph of an aeroplane leaving a rigid in flight at the exhibition in the Grafton Galleries). Personally the fear of fire would be far more real in an aeroplane, from which escape would be more difficult. The fear of fire should, at any rate, not be set against the use of passenger airships, and the timid should not suggest the postponement of airship service in the hope that helium will be made cheaper.

There should be started a national "crusade" for hustling the Government in airship construction. We already have the precedent of the Australian Government ordering passenger liners to use in competition with the shipping trusts; can we not use a few days' revenue to help build up a nucleus airship fleet?

Referring to Mr. Godfrey's remarks on our airship designers, as one said before, we have original designers, but they were not placed in their correct position according to their national importance.

"LIGHTER THAN AIR."



The Caudron Type C.23 Machine (two 250 h.p. Salmson engines).

MORE INTERESTING GERMAN AEROPLANES.



View of the Experimental Linke-Hoffmann Giant with central power plant, showing the huge body and the air-screw mountings.

THE LINKE-HOFFMANN GIANT AEROPLANES.

Illustrations of two types of four-engined Linke-Hoffmann machines with the central power plant arrangement have been given in earlier issues of this paper, and the following information as to the history of the type together with some details of construction will be found to be of interest

The curious-looking R.1 machine with the enormous body must be considered purely as an experiment. The size of the body was largely the result of certain tests made in the wind tunnel of the Göttingen laboratory, which showed that a body entirely filling the interplane gap gave a better overall lift to drag ratio on the whole machine than did one which only partly filled that gap.

That the experience of the full-size machine by no means agreed with the results of the model test is interesting—particularly as it is believed that certain model tests made at the N.P.L. with a body reaching to the upper plane produced similar results, equally in discord with the full-size facts.

Notwithstanding the poor performance obtained with this original Linke-Hoffmann, it is said that the machine had excellent manœuvring qualities, although it was somewhat slow in answering to its ailerons and was difficult to land.

The following table gives the main dimensions and particulars of this machine :—

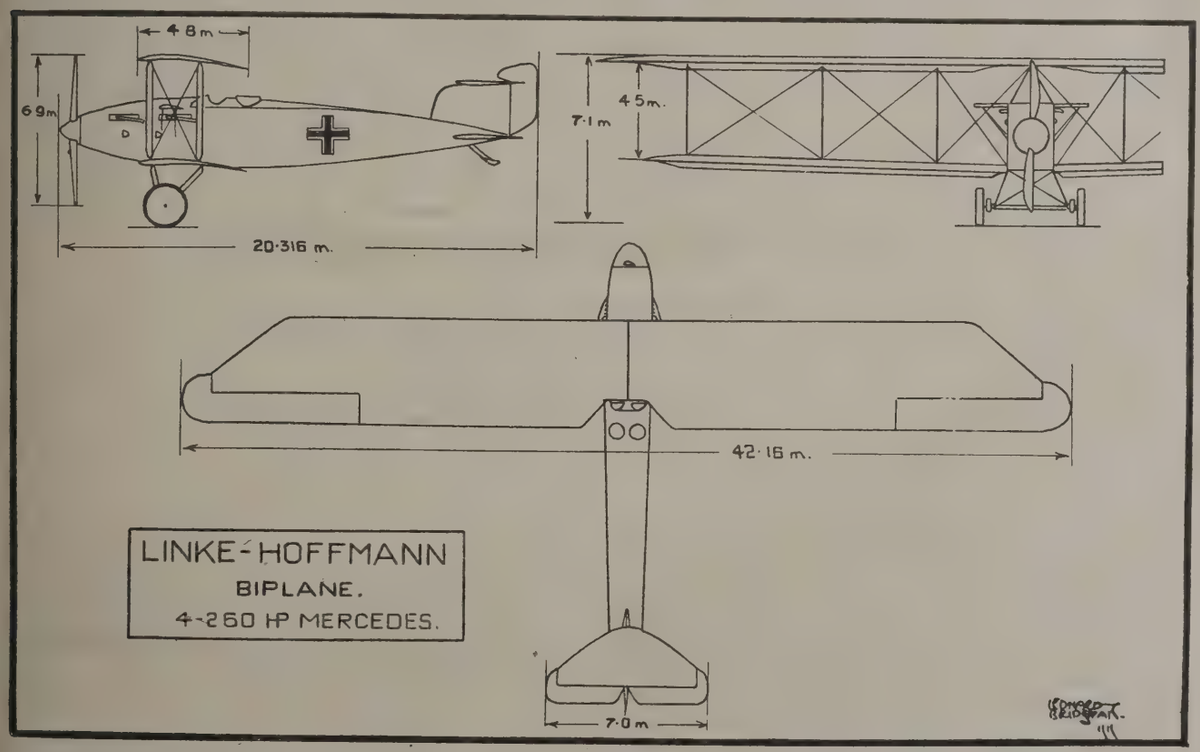
Span	33.2 metres
Length overall	15.6 metres
Height	6.7 metres
Total surface	265 sq. metres
Weight (empty)	8,000 kilos
Engines	Four 260-h.p. Mercédès
Useful load (including fuel)	3,200 kilos.
PERFORMANCE—	
Speed	130 km.p.h.
Climb—	
To 3,000 metres	2 hrs

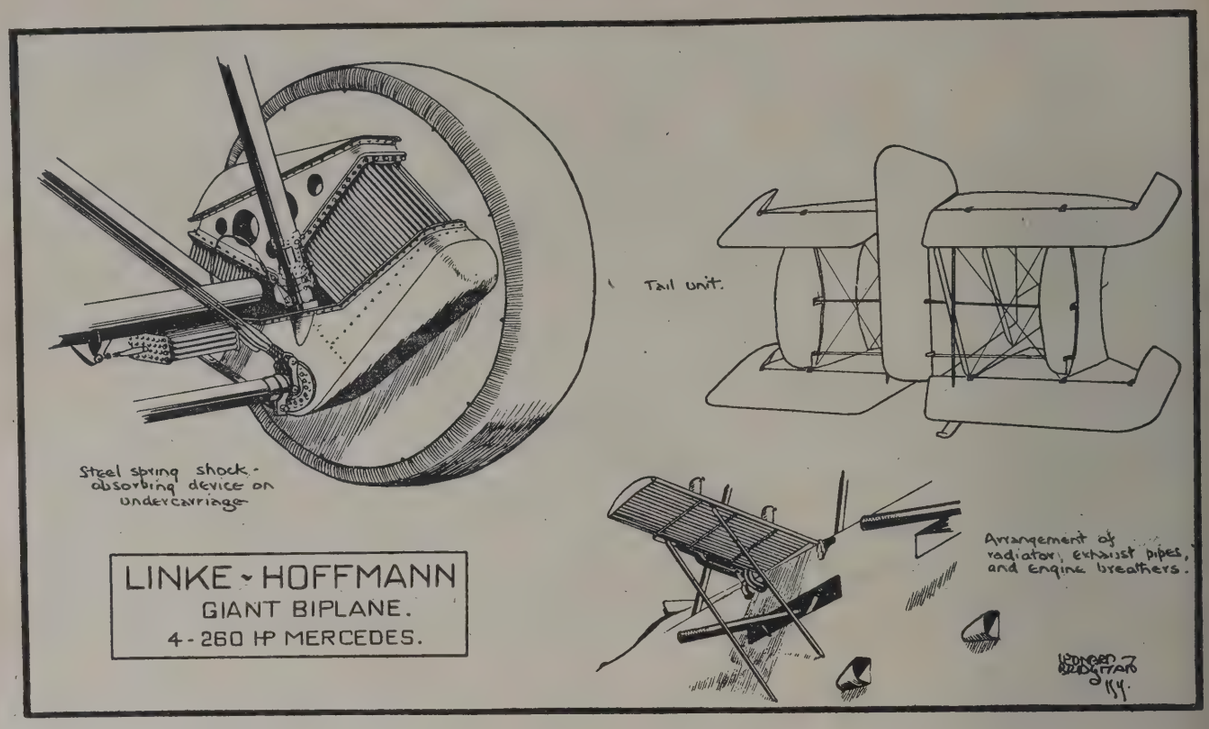
The later Linke-Hoffman — type L.H.W.R.2—was based upon the experience gained with the central multiple engine installation of the R.1.

One airscrew only was used, and the normal lines of the single screw tractor type of machine were adhered to. The power plant consisted of four 260-h.p. Mercédès engines geared together.

The general arrangement is shown in the attached drawings, and a photograph is reproduced showing the engine room interior.

The undercarriage of this machine is of interest. It is in general design of the conventional two-wheeled V type. The wheels themselves are of steel, apparently fitted with wooden tyres, and supported on a multi-spiral spring shock-absorbing device, which is shown in a sketch. It is claimed that this undercarriage has remarkable qualities and it is stated that during the winter, to avoid landing in heavy snow on the aerodrome, the machine landed in an adjacent marsh and rolled through two ditches before coming to rest. The wheels had then sunk 30-cms. (12 inches) into the marsh without the





machine overturning, and a steam tractor was needed to tow the machine out. The following are the general particulars of the L.H.W.R.2 :—

Span	42.1 metres
Length	20.3 metres
Height	7.1 metres
Total surface	320 sq. metres
Weight (empty)	8,000 kilos.
Tank capacity	7 hours
Useful load (including fuel)	4,000 kilos.
PERFORMANCE—	
Speed	130 km. p.h.
Climb—	
To 3,500 metres	2 hours

It is said that the machine can carry a maximum load of 7 tons, and that so loaded, with two pilots, two mechanics, two navigators, together with luggage and instruments, the machine can carry fuel for 30 hours at 120 km. per hour.

In its peace-time condition the machine is fitted to carry 12 passengers in an enclosed cabin behind the pilot's cockpit.

THE HANNOVER TRIPLANE.

One of the latest productions of the Hannover Waggon Works is a limousine triplane fitted with a 230 Benz engine. The machine resembles the well-known Hannover biplane in some respects, the fuselage and tail unit being almost identical with the exception that a comfortable passenger compartment is substituted for the rear observer's cockpit, and the radiator is placed in the nose instead of being carried in the centre-section. The tail plane is also adjustable so as to offset the varying weights carried in the passenger cabin.

The cabin, which is 1.9 metres long by 1.1 metres wide by 1.5 metres high, has two seats facing the direction of flight and two folding seats against the front bulkhead. This bulkhead is well padded as a protection, in the event of a crash, a further safeguard being the provision of a luggage apartment, capable of holding 200 kgs. between the pilot's cockpit and the cabin. Further stowage space for light luggage, etc., is provided for in rear of the main seats of the cabin.

Entrance is through a half-deck door in the upper part of the cabin, the opening and closing being effected by pressure from the inside. An adjustable heating apparatus is provided. The following are the principal dimensions, etc. :

Span	10 metres
Length	8.1 metres
Height	3.8 metres
Gap	2.8 metres
Area	45 sq. metres
Load per sq. metre	35 kilos.
Load per h.p.	6-7 kilos.
Engine	230 h.p. Benz

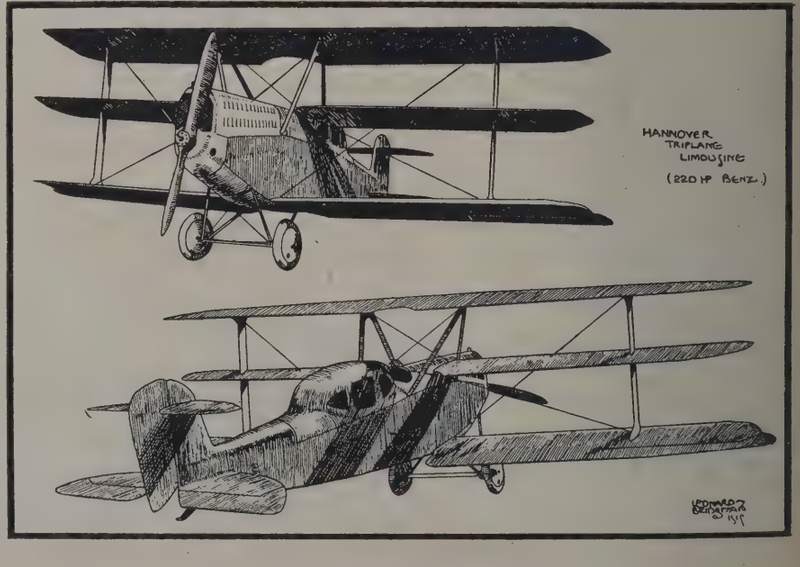
AN IMPORTANT AMALGAMATION.

It is announced that the British Westinghouse Electric and Manufacturing Company, Ltd., has changed its title to that of the Metropolitan-Vickers Electrical Company.

Originally, the British Westinghouse Company was largely controlled from America, but in 1917 the American holding in the company was taken over by the Metropolitan Carriage, Waggon and Finance Company.

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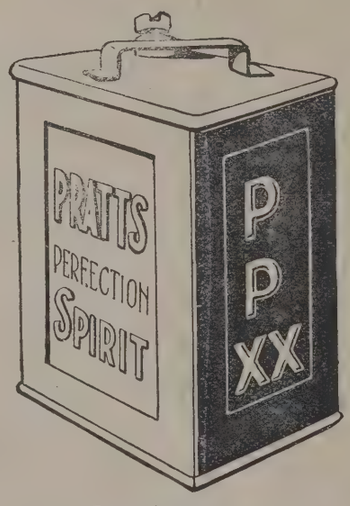
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SIR CHARLES PARSONS ON AIRCRAFT.

In his Presidential Address to the British Association for the Advancement of Science at Bournemouth, Sir C. Parsons said :—

In August, 1914, the British Air Services possessed a total of 272 machines, whereas in October, 1918, just prior to the armistice, the Royal Air Force possessed over 22,000 effective machines. During the first twelve months of the war the average monthly delivery of aeroplanes to our Flying Service was 50, while during the last twelve months of the war the average deliveries were 2,700 per month.

So far as aero engines are concerned, our position in 1914 was by no means satisfactory. We depended for a large proportion of our supplies on other countries. In the Aerial Derby of 1913, of the 11 machines that started, not one had a British engine. By the end of the war, however, British aero engines had gained the foremost place in design and manufacture, and were well up to the requirements as regards supply.

The total horse-power produced in the last 12 months of the war approximated to eight millions of brake horse-power, a figure quite comparable with the total horse-power of the marine engine output of the country.

THE COMMERCIAL AIRSHIP.

In view of the recent Transatlantic flights, I feel that it may be opportune to make the following observations on the comparative utility of aeroplanes and airships for commercial purposes. In the case of the aeroplane, the weight per horse-power increases with the size, other things being equal. This increase, however, is met to some extent by a multiplicity of engines, though in the fuselage the increase remains.

On the other hand, with the airship the advantage increases with the size, as in all ships. The tractive effort per ton of displacement diminishes in inverse proportion to the dimensions, other things, including the speed, being the same. Thus, an airship of 750 ft. length and 60 tons displacement may require a tractive force of 5 per cent., or three tons, at 60 miles per hour; and one of 1,500 ft. in length and $8 \times 60 = 480$ tons displacement would only require $2\frac{1}{2}$ per cent. $\times 480 = 12$ tons at the same speed, and would carry fuel for double the distance.

With the same proportion of weight of hull to displacement, the larger airship would stand double the wind pressure, and would weather storms of greater violence and hailstones of greater size. It would be more durable, the proportional upkeep would be less, and the proportional loss of gas considerably less. In other words, it would lose a less proportion of its buoyancy per day.

THE ONLY LIMITATION TO SIZE.

The airship appears to have a great future for special commerce where time is a dominant factor and the demand is sufficient to justify a large airship. It has also a great field in the opening up of new countries where other means of communication are difficult. The only limitation to size will be the cost of the airship and its sheds, just as in steam vessels it is the cost of the vessels and the cost of deepening the harbours that limit the size of Atlantic liners.

Such developments generally take place slowly, otherwise failures occur—as in the case of the Great Eastern—and it may be many years before the airship is increased from the present maximum of 750 ft. to 1,500 ft. with success, but it will assuredly come. If, however, the development is subsidised or assisted by Government, incidental failures may be faced with equanimity and very rapid development accomplished. In peace time the seaplane, aeroplane, and airship will most certainly have their uses. But, except for special services of high utility, it is questionable whether they will play more than a minor part as compared with the steamship, railway, and motor transport.

THE REDINI CARBURETTER.

This carburetter has been designed primarily for aero engines and is illustrated in horizontal and vertical sections in Figs. 1 and 2 respectively. The carburation chamber has three pipe necks A^1, A^1 and B. The air supply enters the pipe-necks A^1, A^1 whilst the explosive mixture is generated in the pipe neck B, which is provided with the throttle C and the two sprayers F. These two sprayers have a variable delivery which corresponds to the extent of the opening of the throttle.

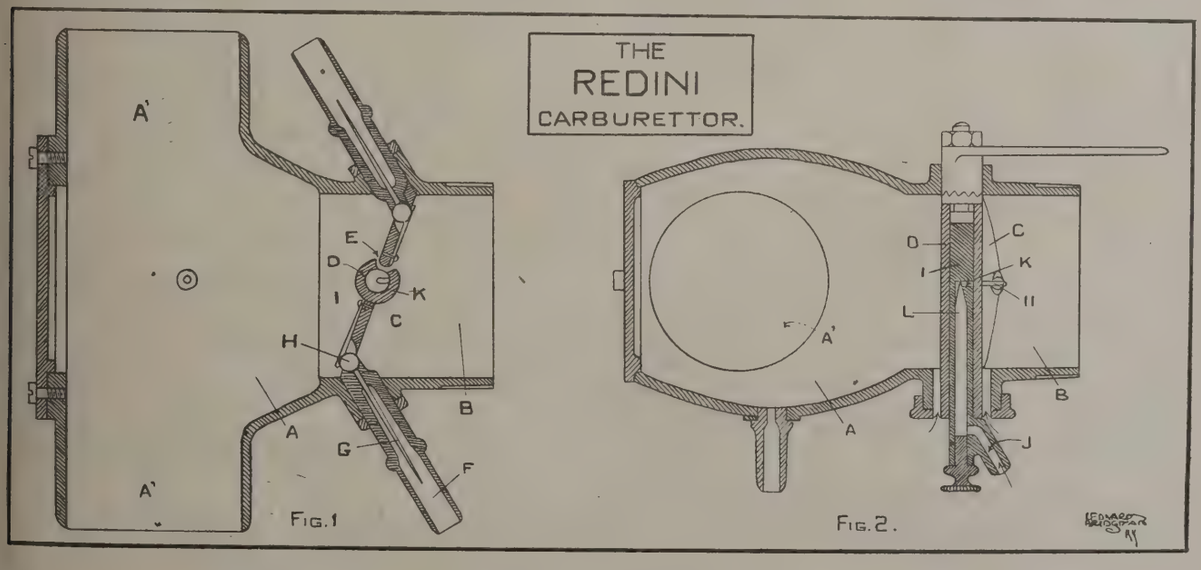
Each variable delivery sprayer consists of a nozzle for the entry of the liquid fuel extending obliquely into the carburation chamber close to the throttle and has an obturator in the form of a needle G of varying diameter mounted so as to slide in the exit hole of the nozzle. The needle G is provided with a ball-shaped end H by means of which it is jointed to the throttle, this ball-shaped end serving to close the exit orifice of the nozzle when the throttle is in the shut position.

The carburetter further comprises one or more jets of constant delivery that are capable of adjustment when tuning up the motor. In the drawings only one of these jets is shown. This is of the needle type and is mounted in the interior of the hollow spindle I of the butterfly throttle-valve. The cavity in G communicates with the outside of the carburetter for the entrance of the liquid fuel through J, and also with the mixing chamber through K, which is adjustable from without through L. The passage K into the mixing chamber is closed by the hub D of the throttle C when this latter is in any position from half closed to fully closed. Thus the jet only comes into action when the orifice E is open, that is, at about half throttle. By the use of this instrument, adapted to any type of engine, the most efficient carburation can be guaranteed.—T. S. H.

ALUMINIUM.

The uses to which aluminium and its alloys can be put are very extensive, and owing to its extreme lightness and the great ease with which certain complicated parts can be produced it is almost indispensable.

A very interesting publication—"Aluminium Sheet and Sections in Automobile and Aircraft Construction"—issued by the British Aluminium Co., Ltd., of 109, Queen Victoria Street, London, E.C.4, contains much useful information, together with sundry comparative tables, which should be of use to all connected with the aeronautical industry. This booklet, together with a similar one dealing with Aluminium Castings in Aircraft Construction, and numbered 159 and 157 respectively, should be in the hands of all those concerned with the design and construction of aircraft.



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AEROPLANES AIRSHIPS
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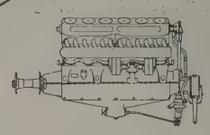
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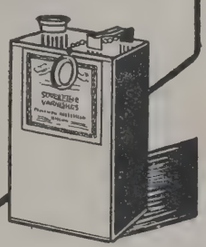
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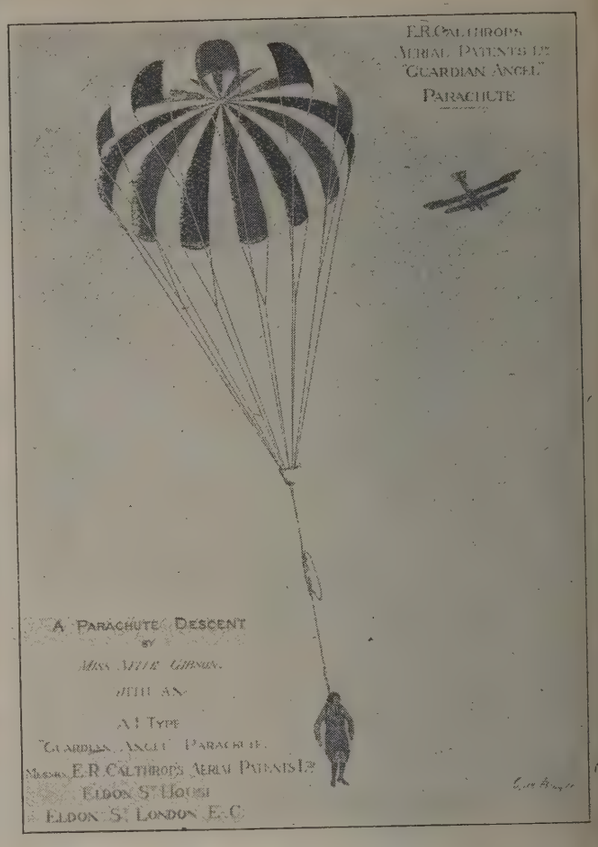
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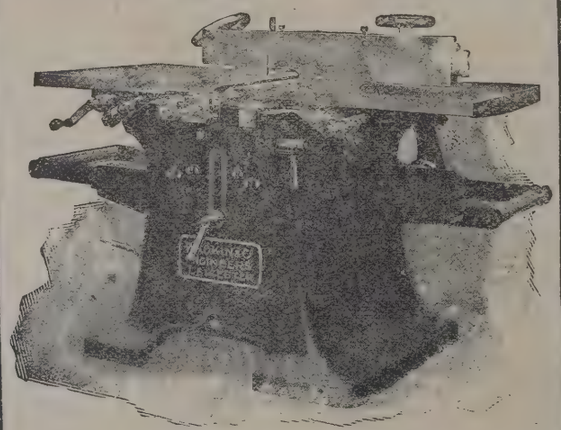
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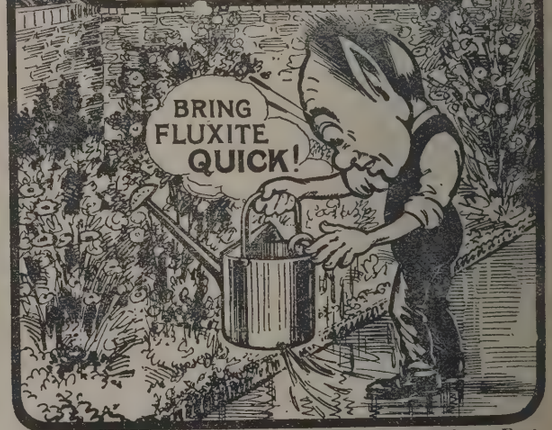
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THE TREATMENT OF KEY INDUSTRIES.

By "MEDWAY."

I have already remarked that the Government is going through an epileptic fit of economy. At the present moment the patient is very destructive. He is, so to speak, waving his arms about and breaking everything within reach. When he comes round a little, he may be got to realise that there is such a thing as constructive economy, which consists of expenditure or investment made with a view to subsequent profit.

Following upon the bright idea of stopping all work upon airships, we have the wholesale cessation of Government contracts for the supply of aeroplanes. It would, of course, be absurd for the Government to go on buying war machines at a war-time rate for an indefinite period. We cannot maintain a great industry permanently by inventing useless work for it to do and then deliberately breaking up its products as soon as they are complete. We must remember, however, that in this case we are dealing with what, though it is not officially admitted, is undoubtedly a key industry.

The War Is the Test.

What *is* a key industry? As the Prime Minister tells us, "The war is the test." We have here an industry essential for war, and so neglected before the war that its output was wholly inadequate for the essential task of war. It is an industry which the Government was obliged during the war to promote and foster. It is an industry which, when the Government support is withdrawn from it, cannot conceivably maintain itself for many years to come at the level shown to be necessary in the event of war. "The war," let us repeat, "is the test."

If, when he defined a key industry, the Prime Minister had, instead, been endeavouring to state the essential facts with regard to the Aircraft Industry, he could hardly have done it more accurately. He left it to the Board of Trade to publish a list of key industries. I do not know whether he dictated the list or allowed the President of the Board of Trade to prepare it. Anyhow, it is obvious that the person who compiled the list had never heard of the Aircraft Industry. Had he done so, it could not possibly be omitted.

Admittedly, its inclusion would have been of very little use at the moment. The Government, having talked for four years about its firm resolve to maintain key industries by whatever means might prove necessary, has finished up by deciding that the only form of maintenance consists in prohibiting competitive imports for a brief period.

Prohibition of Import.

Now it chances that we have here an industry in respect of which imports for some time to come will be negligible, even were they unrestricted. I speak from the point of view of the British Isles. A prohibition of import of aeroplanes and airships into any part of the British Empire would be a step in the right direction. Alternatively, I suggest an import duty of 100 per cent., coupled with absolute Imperial Preference, providing complete free trade in aircraft between all parts of the Empire.

My main point is, however, that there are other ways of fostering key industries, even if we forget all about tariffs and prohibitions. If the Government is not justified in buying aircraft of fighting types, may it not be justified in buying and using aircraft for the carriage of mails and for commercial and public services? A partial alternative to actual purchase appears to be a scheme of subvention on really generous lines.

Before the war all the great military Powers paid quite substantial annual subsidies to the owners of motor lorries more or less suitable for military use. In this country the subsidy was about £110 per lorry spread over three years. The amount was small because the estimated requirements of our Army were also small. In France the payment in respect of each lorry was £300 spread over a period of four years. In Germany it was no less than £450 spread over a period of five years. This was for a larger type of lorry.

Unlimited Requirements.

Roughly speaking, then, the subsidy necessary was generally estimated at about half the first cost of the vehicle. Now, as regards aircraft, we are under no delusions as to the extent of our war-time demand. It is practically unlimited. We can never have too many machines. In fact, we can never have enough. Would it, then, be unreasonable if the Government were to subsidise the owners of aircraft maintained in satisfactory condition on a scale which would amount in the aggregate to about half of the first cost of the machine in every case? Such a subsidy would not necessarily be paid in respect of every machine manufactured, but only in respect of those more or less adaptable for some class of military work.

Another form of subsidy would consist in the assistance of aerial operating concerns, the subsidy in this case making it possible for such concerns to show a reasonable but not an excessive profit. This latter type of subsidy would not be paid by the War Department, but by the Government as a whole. Its purpose would be in no sense military. The object would be the development of Empire resources by the opening up of improved communications, and the amount of the subsidy would be more or less dependent on the value of the proposed services from this particular point of view.

All this might suffice to keep in existence the nucleus of an Aircraft Industry. From this nucleus a great industry would gradually grow up. In the meanwhile, we must maintain in existence and in operation the factories and plant necessary to make rapid aircraft production possible in emergency. How can this be done?

A Suggestion.

There are many classes of goods in common use for the supply of which we are largely dependent upon import. They could be made in this country at a price, but the price would not be naturally competitive. Would it not be possible to make up a little list of useful articles not built here, but capable of being made in existing aircraft works? The articles on such a list could then be allocated to various aircraft firms who had found it possible, with-

out some assistance, to keep their machines and staff employed. In every case a subsidy would be paid such that, when the amount of the subsidy had been deducted from the carefully ascertained cost of efficient manufacture, the figure reached would be such that the goods could be sold at a competitive price and at the same time at a reasonable but limited profit.

During the war the Ministry of Reconstruction possessed what was called a New Industries Committee. I imagine that the report of that Committee would suggest quite a number of possible new industries, some of which have not been taken up for the simple reason that manufacturing costs in this country are at present too high to make the products competitive.

This scheme would, of course, mean the expenditure of money. Its cost would, however, decrease year by year, and, by the time all conditions again become quite normal, it might be found possible to withdraw the subsidies altogether. Meanwhile, we should be keeping a quantity of labour in useful employment. We should be creating new home industries, and we should be preserving, around every nucleus of aircraft production, premises and plant which could be diverted rapidly to the quantity production of aircraft in the event of a national emergency arising.

It seems to me that some such plan as this would enable us, at the lowest possible cost, to get over the serious difficulty occasioned by the fact that the peace-time demand for aircraft must for some time continue negligible when compared with the demand which would arise in the event of war.

SERVICEABILITY.

In an aerodrome near the E.L.T.A. (Amsterdam) is a Bristol Fighter delivered by the constructors in September, 1917. It was immediately put into commission under active service conditions, and after doing considerable work in this direction unfortunately landed in Holland. The pilot was naturally interned, and the machine was soon after bought by the Dutch Government. Though it has been continuously flown by Dutch officers, it has never been repaired or renovated in any way, and every unit is exactly as when it left the Bristol works. Even the "Cellon" dope has never been renewed. The machine is still in service and in great favour with the Dutch pilots.

E.L.T.A. APPRECIATION.

A member of the E.L.T.A. Committee sent the following letter, dated Sept. 4th, regarding the F.5 Flying-boat to Mr. Volk, the manager of the Gosport Aircraft Co. :—

Dear Sir,—The E.L.T.A. Committee received with pleasure your cable about your safe arrival in England. We are very glad to have heard you enjoyed your stay in Holland; we must acknowledge that your machine did splendid work when it arrived late in the evening in Schellingwoude. We admired your flights on the opening, and we were astonished that your boat was 26 days with rough weather on the water, and was always ready to start. We think it is a big advertisement for your firm, and that you are on the right way in building flying-boats that do not want hangars. I have the pleasure of expressing you all thanks and congratulations of the E.L.T.A. Committee, and I herewith do the compliments of all you met and specially kindest regards.—(Signed) FLEMMAN.

HOW THE WAR WAS WON.

Lord Montagu of Beaulieu, in a foreword to a book entitled, "The Shell that Hit Germany Hardest," issued by the "Shell" Marketing Co., Ltd., says : "The Germans were keener on sinking vessels conveying oil than on any other ships that sailed the ocean. They realised at the very beginning of the war that the liquid fuel supply was vital to our sea supremacy then and to our air supremacy later."

The book has been produced to show the work that was done by the Shell Co., and it contains much that will be of interest to those who were not behind the scenes. M. Bérenger, the Commissioner-General of Petroleum in France, paid a high tribute to the company in a speech on a certain occasion. He said : "May I be permitted to state here solemnly, gentlemen, in the name of the French Government, how much gratitude we owe in a special way to Mr. Deterding and to his associates, and to the Asiatic Petroleum Co., for the support which they gave since October, 1914, to the defence of our country by placing at our disposal their precious petrols from Borneo and Sumatra which contained the toluenes, the xylenes and the benzenes which were absolutely indispensable for the manufacture of our most powerful explosives, and of our most efficient extra-aviation petrols."

"Thanks to toluol, we were able to return blow for blow the 'cards' sent us by the Germans from their great cannon : *without this invaluable explosive*, given to us at a time when we most required it, *the war would have been lost*. It fired our great cannon, and, in a word SAVED VERDUN."

In 1917 it became apparent that stocks of petroleum products would fall to an alarming extent in Great Britain owing to the losses of tank steamers due to submarine warfare.

It was at this crisis that the Shell Co. put before the Admiralty the proposition of bringing liquid fuel from abroad in the "double-bottoms" or ballast tanks of ordinary merchant ships—a plan which years earlier the Company themselves had successfully employed—to supplement the alarmingly reduced tanker fleet in conveying fuel oil to this country.

This idea, the details of which were worked out on behalf of the Admiralty by Mr. C. Zulver, the company's marine superintendent, proved the one possible solution to perhaps the most baffling problem the Admiralty had to face throughout the war. During the most critical period, as much as 125,000 tons of oil was carried in this way in one month, and by the date of the signing of the armistice, 1,014,570 tons of liquid fuel had been safely brought over under this scheme. Stores of oil had reached a normal amount, and all danger of another shortage had long since passed.

There is much other information in the book, which is well produced and well illustrated. It does not err on the side of modesty and at times one is inclined to suggest that although "Shell" did win the war the fighting forces helped a little.

ON COMMERCIAL AVIATION.

A booklet entitled "Commercial Aviation and its Relation to the Community" has just been issued by the United Aircraft Engineering Corporation, of New York. It is the first of a series which will show the present status of commercial aviation and its future possibilities.

Considerable space is given to aerodrome construction, and illustrations of various types of landing fields are given. Other pages are devoted to types of aircraft, speed, endurance, landing, load, altitude, safety, cost, cost of operation, performance, etc.

While it was originally intended that the distribution of these booklets would be very limited, it is now possible for all those interested in commercial aviation to secure a copy until the present supply is exhausted. Requests should be made to the Engineering Department of the United Aircraft Engineering Corporation, 52, Vanderbilt Avenue, New York City.

A DENIAL.

The report that the works of Whitehead Aircraft have been taken over for the production of motor-cars is denied officially. The report was not published in THE AEROPLANE.

A SALE OF AIRSCREWS.

The Aircraft Disposal Department of the Ministry of Munitions are offering aircraft propellers for sale. They comprise new aircraft propellers made of the finest walnut and mahogany, and are offered for sale at the following rates : with four blades at 30s. and with two blades at 25s.

These propellers cost originally from £15 to £25, and were made for engines which are now obsolete. They can be adapted for many purposes, such as hat racks, and for appropriate hall uses, to which they add a note of distraction if fitted with a clock or barometer.

Sales can be made in a few minutes and the goods taken away or arrangements made for delivery.

Offers are invited for a limited number of propellers taken from captured enemy aeroplanes. Communications should be addressed to the Controller, Aircraft Disposal Department, York House, Kingsway, W.C.

TRIPLEX GLASS.

It is now announced that the Triplex Safety Glass Co., Ltd., of 1, Albemarle Street, Piccadilly, W.1, have two new models of goggles ready for the market, which have been specially designed for motorists. One is a model for women motorists, and both can be had at a reasonable price, namely, Model A, 10s. 6d., and Model C, 12s. 6d. (including case).

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THE AIRCO CONTINENTAL SERVICES.

Those who hold pessimistic views regarding commercial aviation would do well to pay a visit to the Airco headquarters at 27, Buckingham Gate, S.W.1, where an atmosphere of enthusiasm prevails.

The London-Paris Air Service is becoming more and more successful as the days pass and the reliability of the machines is proved to commercial men. Some of the leading banks of London and Paris are now using the service daily for the transmission of important documents.

Every day about 40 lb. weight of assorted British newspapers is sent over to Paris, where they are sold in the afternoon of the day of publication, whereas those that are sent by train do not arrive until the following day. Paris newspapers are also brought to London. News photographs and cinematograph films are also sent regularly by air between the two capitals, and some commercial firms have already adopted this means of rapid transit for sending samples of various manufactures abroad.

The fashion creators in Paris have been quick to realise the possibilities of the service, and a Manchester firm claims the credit of having Paris hats brought to England by air for the first time. A firm of furriers in Paris recently sent about 25 lb. weight of expensive furs from Paris to London, willingly paying the £9 freightage, and another firm sent a sample bottle of champagne which was wanted in London quickly so that an important order might be booked.

Passengers continue to travel by the route and are invariably enthusiastic. Major-Gen. the Right Hon. J. E. B. Seely, C.B., C.M.G., D.S.O., M.P., and Major-Gen. Sir F. H. Sykes, K.C.B., C.M.G., flew over recently to sign the Air Convention, and the return trip was made in the extremely good time of two hours.

A new machine, the Airco D.H.18, is shortly to be put on this air line especially for passenger service. This machine will be fitted with a 450 h.p. Napier "Lion" engine, and will carry eight passengers in addition to the pilot; each passenger will be allowed to carry a small suit-case, and it is claimed the seating accommodation is more comfortable than that in a first-class railway carriage.

An interesting test was made recently to prove that messages could be sent to Paris more quickly by air than by cable. A cablegram was sent from the London office at 12.15 p.m., and at the same time it was telephoned to the aerodrome and was given verbally to the pilot of one of the machines about to start. The verbal message reached the person for whom it was intended at 4 p.m., but the cablegram did not reach its destination until 10 a.m. the next morning.

With regard to the transmission of parcels, it is pointed out that the gain in time is far greater than it appears to be at first sight. One is apt to compare the 2½ hour flight with the eight or nine hour train and boat journey on the passenger service, but this is not a fair comparison. If a parcel is sent by air at mid-day it reaches Paris in the short time of 2½ hours and is then delivered very speedily to its destination, whereas if a parcel is sent by ordinary post, as things exist to-day, it is not likely to reach its destination till two or even three days have elapsed. It is for this reason that commercial houses are realising the enormous value of this service.

One of the most hopeful signs of the times is the fact that at the present moment three Continental Governments are negotiating with Airco, Ltd., for the inauguration of aerial mail services. These Governments wisely realise that the experience which the company have already gained makes them better judges than amateur officials of the manner in which such mail services should be run. Accordingly they are prepared to leave the entire arrangement of the services to Airco, Ltd., who are expected to send their representatives to choose aerodromes, plan the necessary buildings, repair shops, arrange the supply and storage of fuel and every other detail in the complicated organisation necessary for the efficient running of these services.

The view of Airco, Ltd., is that for a long time to come the most profitable commercial use of the aeroplane is that of carrying mails and parcels. Between London and Paris goods are carried at the rate of 7s. 6d. per pound normally, but firms that make regular contracts can have goods carried at a rate as low as 3s. 9d. per pound. Passengers are charged £21 for each journey. If passengers' fares were arranged according to weight, a 10-stone person would be called upon to pay 50 guineas at the rate of 7s. 6d. per pound, so that it is obvious for the present the carriage of goods is more profitable than that of passengers. Since the first week in which the service has been in operation, there has been a steady increase in the amount of goods sent to the aerodrome daily for transmission to Paris.

Most of the big London newspapers, including the "Times," the "Daily Telegraph," "Morning Post," "Daily Mail," "Daily Express," etc., have made regular contracts. The week of very bad weather through which the machines flew with only one interruption did much to inspire confidence in the service, and every week that goes by inspires greater faith.

The Airco, Ltd., are gathering statistics as to cost that will prove of inestimable value to commercial aviation. Although they are not yet in a position to make an actual statement regarding the financial side of the venture, they are finding out that the speculations of writers who have tried to estimate the cost of running a regular service without having actual experience on which to base their ideas, are very far from being accurate.

There is no doubt that Airco, Ltd., are at the present time doing pioneer work in all parts of the world that will eventually prove of enormous value to this country. In South America, Spain, India, Australia, South Africa, in fact in every part of the globe, they have representatives who are demonstrating the possibilities of commercial aviation; and while pessimistic people are still saying that the day of successful commercial use of aircraft is still far distant, the firm is quietly doing the work that is bringing that day nearer.

BARIMAR OVERSEAS DEVELOPMENTS.

"La Société Française Barimar" is the title of a company which has recently been formed in Paris, with a capital of £5,000, to exploit the Barimar scientific welding processes in France, Tunis, and Algeria. The factory, which is situate at 48, Rue d'Alsace, Clichy (Seine), is under the personal supervision of Mr. Cyril Rose. Mr. Rose, who has taken a leading part in the establishment of the new company, is constantly investigating the problems of metal fusion, with the object of obtaining the best results from modern scientific welding processes, and under his management the French branch should speedily thrive.

SHORT'S ATHLETIC SPORTS.

A sports meeting in connection with Short's Social and Athletic Club was held in the Paddock, Rochester, on Aug. 23rd, under the Amateur Athletic Association rules. There were 35 events (including heats) on the programme. The sports started promptly at 2.0 p.m.

Mr. V. O. Levick, the hon. sec. of the sports club, had many successes, and also had time to arrange the lengthy programme and attend to many secretarial duties.

The open events produced some excellent entries from the Army and Navy and athletes from the neighbouring places. A local band played during the afternoon, and tea was provided in a special marquee. The referees were: Mr. H. O. Short, Major Sippe, Major Gnosspelius, and Major Bell.

A WORKS OUTING.

The annual beanfeast at Brighton took place recently. It was arranged by the engineers of the welding firm, and a cordial invitation to the Directors to accompany the party was gladly accepted.

Mr. C. W. Brett, the Managing Director, said that since the incorporation of the company in 1906 there had never been a strike. The staff have worked hard all the time. During the war 70,000 breakdown jobs have been through the works, and there has never been a hitch even for an hour.

Barimar, Ltd., is establishing a chain of welding businesses around the world, and their engineers will soon be on the way to Australia, New Zealand, India, North, South, and East Africa, Italy, France, Denmark, Norway, Sweden, Canada, and South America. Some of these branches are already operating, and others are being formed as rapidly as possible.

Men of character and stability skilled at welding may register with Barimar's for duty at the new overseas branches. Applicants will be required to spend short periods with good pay in the London factory in order to thoroughly familiarise themselves with the methods of the firm.

THE SECOND ARRIVAL.

A. V. Roe and Co., Ltd., are constructing at their Hamble works another Avro "Baby" with 35 h.p. engine.

CIVIL AERIAL TRANSPORT NOTES.

GREAT BRITAIN.

The London-Paris Air Services.

During the past week two fresh companies announced that they were starting London-Paris services. Both are French, the Compagnie des Messageries Aeriennes and Farman Frères.

On Sept. 16th for the first time a Bréguet biplane owned by the first-named company travelled over the Paris-London air line. The machine was flown by a French pilot, M. Massot, and carried a mechanic only. On Friday, Sept. 19th, the Bréguet started from Hounslow soon after noon, and passenger accommodation was available.

The Bréguet service by the Compagnie des Messageries Aeriennes is run in connection with that of Handley Page, Ltd. On those days when the Handley Page machines do not fly—viz., Mondays, Wednesdays, and Fridays—the Bréguet machines will start from Hounslow at noon. Similarly, they will leave Le Bourget aerodrome at noon on Tuesdays, Thursdays, and Saturdays. They will carry light goods as well as passengers, and it is expected that the journey will be made in less than 2½ hours.

The machine is fitted with a 300 h.p. Renault engine of a new type, and has a limousine cabin seating two passengers. The pilot is placed above and behind the cabin. The Bréguet firm have been famed for steel aeroplane construction since 1912. It is interesting to recall that a Bréguet machine made the first Channel crossing with three passengers over six years ago. The pilot was the late Capt. W. B. Rhodes-Moorhouse, V.C.

The Compagnie des Messageries Aeriennes has been running a postal, passenger, and goods service between Paris, Brussels, and Lille since April, and it will now be possible to fly to Brussels from London *via* Paris.

The other service, using a Farman Goliath, will only operate once a week. Every Friday the machine will leave Hounslow at 10-30 a.m., taking passengers to Le Bourget, where a motor-car will meet them at 1 p.m. and convey them to the Ritz Hotel in Paris. The return journey will be made on Thursdays under similar conditions. The Goliath will carry twelve passengers, and the single fare is £15 15s.

During the week ending Sept. 19th the Handley Page machines conveyed between London and Paris 30 passengers and 1,014 lb. of freight and luggage.

The following are the Airco Services to and from Paris for the past week.

Date.	Type and Pilot.	Hounslow to Paris	Paris to Hounslow	Pass.	Weather.
Sept. 15th	D.H. 9 (Lt. Square) ... (special machine)	9 a.m. 11.45 a.m.	... ...	2 ...	
	D.H. 4a (Lt. Shaw) ...	12.39 p.m. 3.0 p.m.	... ...	1 ...	
	D.H. 4a (Lt. Lawford)...	...	12. 0 p.m. 3.27 p.m.	... ...	
Sept. 16th	D.H. 16 (Lt. McMullin)	12.34 p.m. 2.50 p.m.	... ...	2 ...	
	D.H. 9 (Capt. Riley) ...	...	12.50 p.m. 3.7 p m	... ...	
Sept. 17th	D.H. 4a (Lt. Powell) ..	12 30 p.m. 2 45 p.m.	... ...	2 ...	
	D H. 4a (Lt. Shaw) ...	...	12.30 p.m. 2.45 p.m.	1 ...	
Sept. 18th	D.H. 16 (Capt. Baylis)..	12.39 p.m. 2.45 p.m.	... ...	3 ..	
	D.H. 9 (Lt. Square) ...	...	12.30 p.m. 3.0 p.m.	2 ...	
Sept. 19th	D.H. 4a (Lt. Campbell Orde)	12.33 p.m. 2.30 p.m.	... ...	2 ...	
	D.H. 16 (Lt. M Mullin)	...	12 30 p.m. forced landing at Bahot	..	Very bad. Rain. Low Clouds. Strong wind.
Sept. 20th	D.H. 9 (Lt. Shaw) ...	12.33 p m. 2.45 p.m.	... ...	... ...	
	D.H. 4a (Capt. Baylis)...	...	12.30 p.m. 2.46 p m.	... ...	

The Airco D.H.16 machine, which left Paris on Sept. 19th and was forced to land at Bahot, near Marquise, owing to oil-pressure trouble, contrived to leave France on the morning of the 20th. Assistance having been obtained from Marquise Aerodrome, the machine left Bahot at 10.40 a.m. and arrived at Hounslow at 11.15 a.m. There were no passengers aboard.

The specially-chartered D.H.9, which flew to Paris on Sept. 15th, carried two Spanish noblemen, namely, the Marquis Pons and the Marquis del Rio.

A Month's Work.

The following letter from "Aircraft Transport and Travel, Ltd.," dated Sept. 20th, 1919, is of more than usual interest:—

Sir,—I am writing, on the completion of the first month of our aeroplane service between London and Paris, to thank you for the publicity you have given this the first daily commercial air service, and to express gratitude, specially, for the manner in which you have drawn attention to the fact that, in spite often of extremely bad weather, we have maintained our service, day in and day out, to scheduled time.

I started this service on Aug. 25th to demonstrate to the business world, by actual daily flying, that aeroplanes will not only transport passengers and goods at 100 miles an hour, but will do so commercially to a fixed time-table.

It should interest your readers, I think, to have before them a summary of our achievement during this first month, when we have demonstrated day by day the fact that, for the first time in the history of mankind, London and Paris are, by "air express," only 2¼ hours distant from each other.

Here, summarised, is the record of which, I think, we may be proud. Out of a possible 56 flights between London and Paris during this first four weeks, we have satisfactorily completed 54. On one occasion, when there was a 100-miles-an-hour hurricane, it was considered advisable to divert the load of a machine to an alternative route; and on another occasion, after starting a flight rather late owing to atrociously bad weather, a pilot had a forced landing through oil-pressure trouble, which so delayed him that he considered it unadvisable to proceed owing to the impending darkness.

As showing the dependability in operation which can be attained already with a suitable aeroplane, when handled with skill, I should like to emphasise the point that only twice, during 13,750 miles flying, has it been necessary for a pilot to make a compulsory descent; and in one of these two cases, after five minutes' delay, he was in the air again.

I have been asked why I chose London-Paris as a demonstration route, seeing that the weather encountered is probably the worst in the world. My reply is that we chose this route deliberately. We were confident of our pilots and machines. We knew the belief which is prevalent that commercial flying is only a fair-weather proposition. We said to ourselves, "If we can fly reliably on this route we can go with confidence anywhere else in the world."

In the month's weather we *have* just flown through, the official reports show that on only three days were conditions really favourable. On thirteen days they were distinctly unfavourable, while on eight days, though our machines actually got through, the official reports showed that the conditions were considered "unfit" for flying.

The credit for this month's really wonderful flying, which has done more than anything else has ever done to convince thinking people that the era of commercial flying has already dawned, is due entirely to the ex-Royal Air Force officers and pilots who, under my direction, have organised and flown this service.

In their capacity as indefatigable organisers, I pay sincere tribute to Brig.-General F. L. Festing, C.B., C.M.G., who resigned his post as Deputy Master-General of Personnel at the Air Ministry to join me as managing director of Aircraft Transport and Travel; also to Capt. D. M. Greig, O.B.E., late of the Department of Aircraft Production; and last, but far from least, I pay tribute to those pilots—the finest, I am convinced, in the world—who have flown through weather which even experts have considered impossible.

To these pioneers of commercial flying—to Capt. Baylis, Capt. Riley, Lieut. Shaw, Lieut. Lawford, and Lieut. McMullin—we owe a debt of gratitude it is hard to express in words. Their flying, their enthusiasm, their good judgment—these have been magnificent.

To the public, and particularly to the business community, I should like, if you will permit me, to say this. To use this 100-miles-an-hour service on urgent occasions when "time is money" is not only a sound business proposition—as those who are now using it daily would be the first to testify—but it is something far more than this. It is a definite encouragement to British aviation; which, first as it was in war, is now faced with the task of maintaining that proud position during the days of peace—a task which it can only hope to accomplish by the interest and support of the public.

(Signed) J. Holt Thomas, Chairman.

The London-Brussels Air Service.

Handley Page, Ltd., would have started their London-Brussels service on Monday, Sept. 22nd, but the weather

was unfavourable. The machine started at 8 a.m. on Sept. 23rd. The same type of twin-engined machine is used on the service as on the London-Paris route. There is accommodation for 10 passengers with 30 lb. each of personal luggage, and, in addition, for 500 lb. of freight.

The seats are all numbered, and can be booked at all the usual agents or at the Cricklewood aerodrome. Private motor-cars await the passengers at each aerodrome and convey them to the centres of the cities. The machines start from Hounslow at noon on Mondays, Wednesdays, and Fridays, and return on the alternate days.

LONDON.

AN M.P.'S AEROPLANE.—Sir Philip Sassoon, M.P. for Hythe, has bought an Avro biplane. He intends to use the machine for flying from London to his residence near Lympne. Three-quarters of an hour will be saved over the time taken by the fastest train on the journey.

HENDON.—A B.A.T. F.K.26 passenger-carrier, piloted by Major C. Draper, arrived at Hendon on Sept. 21st from the Amsterdam Exhibition. Later in the day another B.A.T. machine of the same type also arrived at Hendon from Belgium.

The former during its stay in Holland made many flights, one including a flight over the house at present occupied by the Crown Prince of Germany, who, it is stated, watched the machine from his garden.

HOUNSLOW.—The variable weather of the past week seems to have affected the number of Avro flights at Hounslow. In course of time Londoners will doubtless realise that autumn flying can be just as enjoyable as going aloft during an August heat-wave. In fact, a clear morning with a touch of frost may give a far finer view than one gets when a summer haze hangs over the earth, and few things can equal the delights of flying on a bright snowy morning. But the holiday spirit seems to wane with the passing of summer, and in consequence only 120 Londoners made flights during the week.

Two cross-country return journeys were made to Stow-on-Wold and to Cambridge, and three aeroplanes arrived by air from Manchester during the week.

One of these machines was taken by Capt. Bradley to Lausanne. He left Hounslow on Wednesday, Sept. 17th, at 2.15 p.m., and arrived safely on the shores of Lake Geneva on Saturday, Sept. 20th. No attempt was made to break records. The Alps were safely crossed, and the journey was uneventfully successful. The Avro will give demonstrations at Lausanne and take up passengers under an arrangement with M. Pethoud.

BLACKBURN.

The Blackburn flying week opened at Witton Park on the afternoon of Sept. 13th. The first flight was made by the Mayor, and since then a great number of people have been taken up. The flying is under the direction of Lieuts. C. B. Maddocks and Kingsford Smith, M.C., who are both Australian pilots. They have both entered for the £10,000 prize offered by the Australian Government.

Sixty-five passengers were taken up on Sept. 15th, and two flew to Blackpool, where they alighted on the sands.

BRIGHTON.

Flying was only possible on six days. One of the Avros at this place took some visitors to a garden party at Reigate on Saturday, Sept. 20th. The machine went over to Chichester on Thursday as usual and took up passengers there.

GLASGOW.

According to the "Daily Chronicle" of Sept. 17th a regular air service is in operation between Glasgow and Gleneagles, a new golf course recently opened by the Caledonian Railway Company. In a preliminary flight one of the pilots covered the distance of about fifty miles in 25 mins. It is questioned if flying to the course will improve the play of the golfer or put him right off his stroke.

LEICESTER.

The Leicestershire and Rutland Aero Club are making plans for developing aviation in the Midlands if they obtain the necessary financial support. They propose to purchase one machine at first, which will be placed at the service of business men who wish to make commercial journeys.

LLANELLY SANDS.

At an inquest on Sept. 20th it was stated that David Watts was driving a pony and trap giving pleasure rides to children on the beach when he got in the way of an aeroplane and was struck on the head by one of the wings and killed. Three children in the trap were also injured.

A verdict of "Accidental death" was returned, and the jury recommended that the course of the aeroplane in rising from the starting-point should be fenced off.

SHEFFIELD.

The tramway strike greatly interfered with the success of Sheffield's second flying week at the Coal Aston aerodrome, and necessitated a modification of the arrangements, but the facilities for flying were not removed. The exhibition flights did not take place, but the arrangements for public flights held good. There were four Avro machines on the ground. The difficulty in the way of making ascents was that of reaching the aerodrome.

On Sept. 15th there was no attendance of the general public, and no short flights were made. One passenger, however, showed interest in longer-distance flying by going to Scarborough.

WESTON-SUPER-MARE.

Drifting sand borne on a westerly gale which resembled a sand-storm, coupled with intense cold, kept visitors off the sands for three days and spoilt the flying. Two days were completely spoilt by the weather, and there were very few trippers on the sands after Tuesday. Thus a week which promised well at the outset was completely spoilt by the weather.

WINDERMERE.

This week has been a record for the number of passengers carried at Bowness. The Avro seaplanes have carried out 32 flights, totalling nine hours of flying.

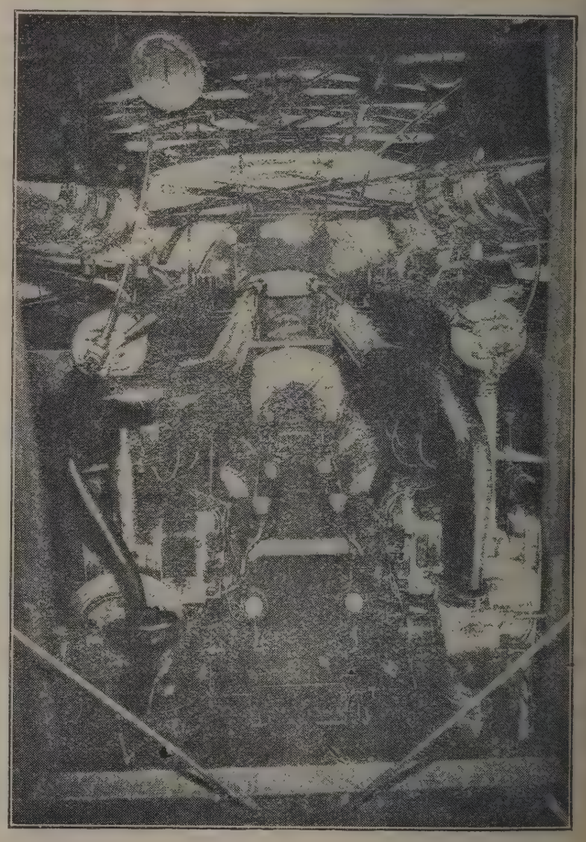
One sporting couple engaged a machine for a half-hour flight over Ulverston and Morecombe Bay, and from a height of between 3,000 and 4,000 ft. they enjoyed some especially splendid views of cloud effects.

AUSTRALIA.

THE PLANS FOR DAILY AIR SERVICES.

The first aerial transport company has been formed in Australia under the name of "Aerial Transport (Limited)." The company intends to start at once on the preliminary work necessary before an actual flying service can be put in operation.

Surveys will be made of routes over which the machines will fly, aerodrome sites will be established, meteorological information obtained and tabulated. The possibility of the local manufacture and repair of machines and engines will



The Engine-room of the Linke-Hofmann R.2 Machine described in "Aeronautical Engineering."

be investigated. The shares of the company are divided among all the States, and it is expected that actual flying services between the capital cities will be in operation by July, 1920.

It is expected that the service, which will not be confined to inter-capital routes, will open up the interior of the Continent now shunned on account of the lack of travelling facilities. It will provide quick transport for perishable goods, and the company eventually hopes to carry the inter-State mails.

It is proposed to establish aerodromes in Sydney, Melbourne, Brisbane, Perth, Adelaide, Launceston, and Hobart. The average passenger fare between capital cities will be less than £6 each way. The first daily services will all start from Melbourne and will be run to Sydney (6½ hours), Adelaide (5½ hours), and Hobart (7½ hours).

The other proposed daily services are between Sydney and Brisbane (6½ hours), Sydney and Adelaide (11 hours), Melbourne and Broken Hill (7 hours), and Adelaide to Kalgoorlie and Perth (18 hours). Other services will subsequently be developed in the various States between the capital cities and the larger country towns.

The machines which it is proposed to use will have a capacity of three tons and a quarter, and will be able to carry 30 passengers, with 25 lb. or 30 lb. of luggage each. In the alternative they will carry 12 passengers and two tons of freight or mail. Freight could be carried at the rate of 8d. per lb. It is suggested by the company that, with the co-operation of the Postal Department, it would be possible to carry the mails at an extra charge of ½d. per oz. for letters requiring urgent delivery.—W. J. A.

NEWS FROM AUSTRALIAN SOURCES.

Mr. Sydney Pickles, of Sydney, has arrived in New South Wales with a model of an aeroplane with which he intends to display the possibilities of commercial flying in Australia. He has arranged for the shipment of some machines to Sydney. One of them has a speed of 158 miles an hour.

According to the Exchange Telegraph Company Flt.-Lieut. McGinnes Fysh has been commissioned to survey an aerial route in the northern territory of Queensland in connection with the forthcoming Handley Page trial flight to England.

BRAZIL.

Handley Page, Ltd., have received the sole contract for carrying mail over all routes in Brazil, according to a telegram from Rio de Janeiro.

EGYPT.

THE INDIAN MAIL SERVICE.

It has been found necessary to postpone the inauguration of the Cairo-Karachi air-mail service. There are not sufficient commercial prospects to justify the expense of starting it.

Recently a survey party crossed the desert in cars from Damascus to Abu Kemal, on the Euphrates, and thence to Baghdad. Landing-grounds were marked out at intervals of 20 miles en route.

FRANCE.

The French Government has decided to give a series of annual premiums or subsidies in aid of civil aerial transport enterprises. Premiums of the following classes will be given: (A) Depreciation, (B) Equipment, (C) Transport, (D) Military.

The regulations can be summarised as follows:—

(A.) The Depreciation premium.

If P be the price of the aeroplane without motor, p the price of the motor, and assuming that the flying life of the aeroplane is 400 hours, the formula of hourly depreciation is as follows:—

$$\frac{P \times 1.5p}{400}$$

It is assumed in this formula that the life of the engine is about one and a half times more than that of the aeroplane.

The State will pay—

(1) To firms maintaining a regular transport service over a fixed itinerary between two points not less than 124 miles apart, half of the hourly depreciation, i.e., 0.00125 (P+1.5 p).

(2) To firms maintaining a regular transport service over a fixed itinerary between two points not less than 31 miles apart, or constituting a closed circuit of at least 62 miles without a landing, and to firms maintaining a regular service of less than 124 miles in length, a quarter of the depreciation costs, i.e., 0.000625 (P+1.5 p).

(B.) Equipment premium.

To firms of category 1 shown under Section A, the State will pay 0.10 a kilometre for the length of the mean stage flown without landing, and 0.05 a h.p., i.e.,

$$0.10 \times \text{length of mean stage} + 0.05 \text{ H.P.}$$

To firms of category 2 the State will pay 0.10 a kilometre and 0.025 a h.p.

(C.) Transport premium.

This premium is proportional to the customary speed V of the aeroplane shown at official trials, to a speed v.V.50, to its useful tonnage capacity expressed in tons (700 kilog. = 0.7) and a coefficient K, i.e.,

$$\frac{K}{100} \times V \times v \times T$$

The coefficient K varies according to the nature of the enterprise. For firms in No. 2 category, K equals zero, and for regular international services K equals 14. In such advanced efforts as services in Central Africa K can rise as high as 19.

[This is not very clear, but it is taken literally from "L'Auto."—ED.]

(D.) Military premium.

A supplementary depreciation premium is given in the case of all machines which have military value. This premium is equal to a quarter of the depreciation, i.e., 0.000625 (P+1.5 p).

Note.—The number of hours of flight is calculated on the distance covered on the fixed route at a fixed speed of 130 kilometres an hour

THE PARIS-MELBOURNE FLIGHT.

Some time during the present week M. Etienne Poulet hopes to begin his flight from Paris to Melbourne on a twin-engined Caudron biplane. The journey will be attempted via Rome, Salonica, Constantinople, Bagdad, Karachi, Bombay, Calcutta, Bangkok, Singapore, Batavia, Rotti (an island S.W. of Timor), Sydney, and Melbourne. Should he reach Melbourne safely he will attempt to return to France by way of the air. M. Poulet, who has been given but little encouragement by the French Government, states that the British Government have offered him any assistance which can be obtained from the British preparations for the England-Australia flight. He will be accompanied by his mechanic, Benoit.

MESSRS. FARMAN AND MOTOR-CAR CONSTRUCTION.

It is rumoured in Paris that the Farman Bros. intend to construct and sell six-cylinder motor-cars of the most modern and perfect type. The price will be between £1,500 and £1,700 for the chassis. Even in France man cannot live by aviation construction work alone.

THE RETURN OF THE GOLIATH.

Lieut. Boussotrot, his companions, and the remains of the Farman biplane Le Goliath reached Marseilles on Sept. 14th from Saint Louis, Senegal.

THE CIVIL USE OF MILITARY AERODROMES.

It is now possible for civil aircraft, both private and commercial, to make use of military aerodromes in the course of cross-country flights. The charges officially authorised are as follows:—

For a day, from sunrise to sunset, 0.02 centimes per unit of horse-power.

For a night, from sunset to sunrise, 20 francs.

Aeroplanes fitted with wireless installations pay one franc in the case of those having either a sending or receiving set, and two francs when a sending and receiving set is installed.

BIARRITZ-SAN SEBASTIAN.

The Compagnie des Transports Aeriens du Sud-Ouest has organised a daily aerial passenger service between Biarritz and San Sebastian. The aeroplanes used are Farman biplanes (type F.40).

AERODROME RESTRICTIONS REMOVED.

Issy-les-Moulineaux, the historic scene of many of the early tragedies and comedies of aviation, has now, under the orders of General Duval, the Director of Military Aeronautics, has been opened to the public, who may walk freely over its area. "L'Auto" is amused, and says that the innocent civilian may now permit himself to be killed by an alighting aeroplane without breaking any law. In truth the arrangements at Issy have always been unsatisfactory. When I was working there nine years ago, people walked freely over the ground while ambitious pupil-aviators gambolled lightly over the soil in their cumbrous machines. On one occasion public ardour was damped by the premature death of a woman, old in years, who was accidentally distributed by a descending aeroplane while she was dreamily crossing the landing-ground on her way home. But public recklessness soon returned.

EXPLOITATION ABROAD.

The celebrated French aviator Gaubert is leaving for the U.S. of America with a view to developing French interests in civilian aviation in that country. He is taking out with him a Farman four-seater limousine.

M. Tadhomme has left for South America with the same object. If the results are favourable a Farman "Goliath" will be sent out to attempt some long-distance flights in the States.

GERMANY.

Recent discussions between German and foreign firms are likely to lead to Germany's participation in the International Air Post Service in the near future. In a fortnight a regular air postal service between Berlin and Copenhagen is expected

to begin, and negotiations with the other Scandinavian countries are proceeding.

An important part of the service will be the conveyance of aerograms to relieve the telegraphic service. The air post service in Germany is at present restricted owing to the extreme shortage of petrol.

MORE ZEPPELIN AIRSHIPS.

According to a telegram from Romanshorn, Zeppelin airships are still being built, which is in contravention of the Versailles Treaty. The latest types will be able to travel from Berlin to Friedrichshafen (400 miles) in four hours, carrying thirty-eight passengers with light luggage.

HOLLAND.

A Farman "Goliath" left Utrecht for Paris on Sunday morning with passengers, piloted by Lieut. Krause Jensen. A landing was made in time for déjeuner in Paris.

ITALY.

THE ROME-TOKIO FLIGHT.

On Sept. 16th, in consequence of Maggiore d'Annunzio's abrupt entry into the political world by his capture of Fiume, the Italian Government cancelled the arrangements for the Rome-Tokio flight. The Government had proposed to give £160,000 as a grant in aid towards the expenses of the flight.

The Italian correspondent of THE AEROPLANE writes :—

Some two or three specially-constructed Caproni biplanes were to take part *on dit* in the Rome-Tokio flight. It seems probable that their part was the useful one of carrying spare motors and fuel supplies to inaccessible spots from the main bases. When one imagines what the cost of these large transports is—"Il Cielo" says half a million lire in war trim—it is easy to see how the flight is reported to have been subsidised to the extent of four millions by the far-seeing Italian Government.

THE CIRCUIT OF SICILY.

Lieut. Berardi, on Macchi 9, carried off the Targa Florio and most of the other awards in the Circuit of Sicily race by getting round that island in 5 hours 16 min., just beating Cattaneo—not he of Blériot acrobatic fame—on a Macchi 5 scout by 6 sec., and Lt. Berlingeri, also on a Macchi 5, by 9 min. The fourth man in flew an F.B.A. The only Macchi 8 did not finish the race, and only one of the G.Ls. (flown by the two French officer entrants) arrived at the goal, and that last but one of the 18 survivors of the 27 brave flying boats that started out in the fairest of weather. Only the Macchi 5's were single-seaters.

The affair seems to have been beautifully handicapped and organised most thoroughly, as one would have expected in anything done by the Sicilian Automobile Club cum Chev. Florio plus the Naval people. A number of the machines were piloted by A.B. seamen, and Manissero judged the finish. Quite a goodly number of money and other prizes were provided by firms, societies etc., as an act of gratitude to Sicily's coastal defence corps.

A NEW AIRSHIP.

A very large dirigible is about to begin its trials—in all senses probably—at Ciampino. Interviewed about it, Signor Usuelli stated that the new feature of the airship was its excess of h.p., which is something like four times that normally required for flight. A speed of 56 m.p.h. is expected, and it is hoped to make a voyage from Italy to the Argentine.

One presumes that Signor Usuelli's co-operation in the Government drawing offices portends some of his principles being adopted in the new vessel.

Another account states that the four-engined airship, the T.34 has a cubic capacity of 36,000 cms., a length of 100 metres, and a diameter of 30 metres, together with accommodation for 100 passengers, excluding the crew.

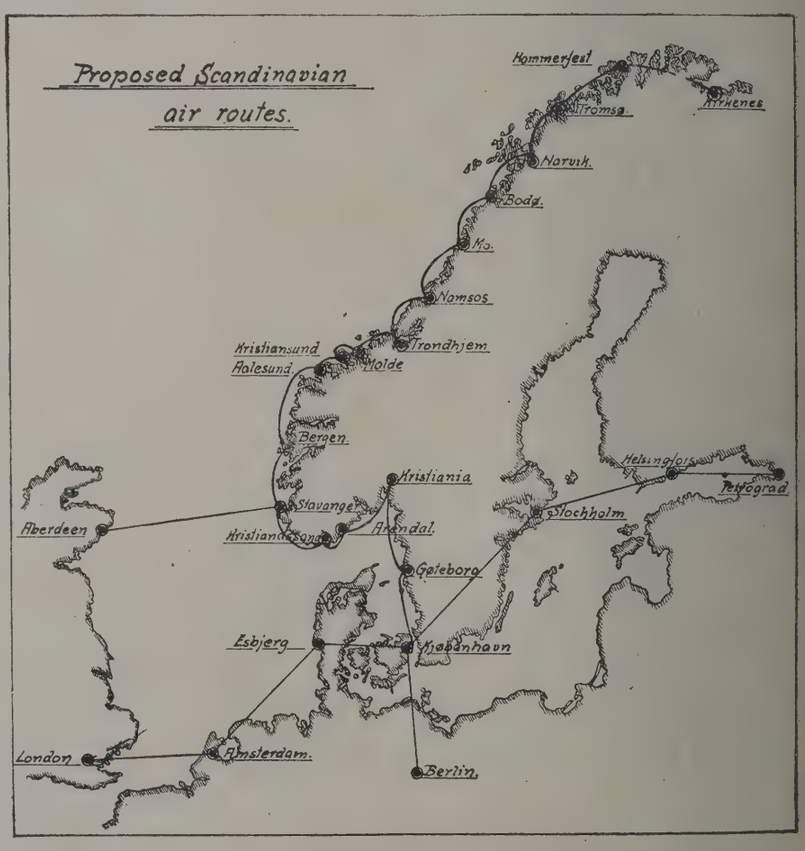
SCANDINAVIA.

THE PROPOSED AIR ROUTES.

The Danish correspondent of THE AEROPLANE writes :—

The accompanying map shows the principal Scandinavian air routes, to be run by the Norwegian, Danish, Swedish and Finnish aerial navigation companies. It will be seen that both Denmark and Norway will desire co-operation with Great Britain on their North Sea lines, and will enter probably into negotiations with such enterprises as Mr. Holt Thomas' Aerial Travel and Transport Co., and/or Mr. Stuart Hirst's The North Sea Aerial Navigation Co.

The routes indicated lend themselves to the following reflections. The line starting from London to Petrograd will have to await affairs being settled in Russia before its inauguration. Copenhagen is, from its position, likely to become the crossing centre of the various lines, including the one from Christiania over Gothenburg to Berlin. The local Norwegian aerial service along the coast is likely to be the first one to be established, as the flying times should compete favourably with the time-tables of the present steamer services. As a matter of fact, the aeroplane did step in last year, when the railway failed temporarily, owing to the washing-out of embankments by heavy rain, as the British-trained Norwegian, Lieut. Riiser-Lassen carried the mail to the city of Trondhjem on a Morane monoplane with a Thulin rotary motor.—HI.



UNITED STATES OF AMERICA.

A NEW YORK-SAN FRANCISCO AIR SERVICE.

The following is "communicated" from America :—

The Lawson Airline Transportation Co. of Milwaukee, Wisconsin, has just completed the first of its big passenger-carrying aeroplanes. This machine is fitted with two 12-cylinder 400 h.p. Liberty engines, which give it a speed of 90-100 m.p.h. If one engine stops the other has sufficient power to keep the biplane in the air. The gliding angle of the machine is so flat that it is claimed that it can glide 30-40 miles from a height of 15,000 ft., the ceiling.

Half the fuselage has been made into a large cabin to hold 26 passengers in comfortable armchairs. Recently the machine was taken to the Milwaukee aviation field, where it was tested. It was arranged that it should make a path-finding tour between Milwaukee, Chicago, New York, and San Francisco. Those cities en route which had the best landing-grounds and desired an air service would probably be selected as the first stations on the airline between the Atlantic and Pacific Oceans.

Mr. Alfred W. Lawson, the designer of the machine, is to be the captain in charge on the first flight. The two pilots who fly the machine will afterwards be put in charge of similar aeroplanes as captains. The crew to be carried in each machine consists of two mechanics. The Lawson Company intend to build one hundred aeroplanes of this type in the next few months which will be used on a regular daily service between New York and San Francisco.

AIRCRAFT FINANCE

THE MENACE OF ECONOMY.

When dealing a couple of weeks ago with the probable effect of the Government's "saving scheme" on the economic fabric of the Aircraft Industry, there was no attempt at exaggeration. The daily Press has now been howling, but, unlike Cæsar's wife, its intentions may not be altogether above suspicion.

He would indeed be an optimist who could discover the silver lining of the policy now adumbrated by the authorities. Perhaps it is no worse than was looked for. Financially, however, the consequences may prove very serious, unless, of course, something unexpected turns up.

Not being the plaything of amateurs, but a business proposition, the Aircraft Industry cannot exist or thrive on expectations. Hope is useful, but as an asset in a balance-sheet it would be refused by any competent auditor, and the auditor would be fully justified in his action. But in following on the lines of Oliver Twist and asking for more Government support the Industry is not gluttonous; on the contrary, it is demanding justice without any ulterior political motives.

AN ILLUSTRATION.

Not many months ago Aircraft Manufacturing Preference shares were commanding a price of 27s. in the case of the "B" Participating and practically 25s. in the case of the Cumulative "A" shares. Now they are worth about 13s. 6d. A sum in simple arithmetic illustrates very convincingly what this represents. The authorised capital is £402,500, of which £100,000 is in 7 per cent. Preference shares, £250,000 in "B" shares, £50,000 in Preferred Ordinary shares of £1 each, and £2,500 in 1s. Deferred shares. The depreciation in the case of the two shares specified approaches a quarter of a million, and, of course, the valuation of the other must have suffered just as much, if not more.

PLAIN ARGUMENTS.

Perhaps the illustration is somewhat crude and amateurish, but it serves the purpose. Perhaps the "B" shares were not intrinsically worth anything like the high price taken into the calculations. It is debatable, too, whether the present price is reasonable. But, of course, if one pursues this line of argument it is impossible to reach any but a negative conclusion. The fact is that the prices mentioned actually ruled at one time. Had it been suspected that the authorities would abandon their petted and useful foundling so soon as its utility ceased to be pressing, the chances are the higher prices would not have been established. All the propaganda of the Government at that time served to mislead the investor, who, not unnaturally, concluded that equitable treatment would be accorded to the Industry, not for an indefinite period, but until it had time to get on its feet. It is not a key industry, apparently. Unfortunately, the blame is not solely with the authorities in this connection; there were others who, either unreasonably optimistic of the immediate prospect of aviation, or unscrupulously exaggerating the position for their own profit, contributed towards the result.

REACTIONS PRODUCE REACTIONS.

It is plain that the immediate prospects of the Industry are vague, and this must be reflected seriously upon the financial position. The financing of newer plans—and the Industry still being in its infancy, newer plans must be reckoned with—is likely to prove difficult as well as costly. One thing, however, is certain, and that is, aviation having proved its capabilities to the advantage of the nation at war, the nation must be prepared to contribute something towards its sustenance, and the degree of help will be enlarged as soon as the panicky economy plan has spent its force and reason takes the reins.

No one denies that there is plenty of scope for genuine economies in the nation's bill; in the case of aircraft it has been not altogether misdirected, perhaps, but so ruthless as to produce a reaction in time.

Incidently Handley Page Participating Preference shares have been selling about 12s. 6d. It was only in April last that the public was offered these for subscription at 21s. What a change in such a short time! Yet it would be unwise to jettison shares in a fit of panic.

CURRENT TOPICS

THE BANKRUPTCY COURT.

In the case of Luc Marie Dartois, company director, Finchley, the statement of affairs shows liabilities £589 and assets £12. The debtor, a Belgian, was concerned with others in the promotion of the Aeroplane and Motor Bodies Co., Ltd. He was secretary and director at a salary of £3 a week, which was subsequently increased to £17 a week. At first the company was successful, but subsequently went into voluntary liquidation. The debtor guaranteed an overdraft to the extent of £1,400 and had also guaranteed a loan from a moneylender which was borrowed for the purpose of the business of the company, and it was in respect of that liability that bankruptcy proceedings had been taken. He ascribed his position to the failure of Aeroplane and Motor Bodies, Ltd., and states that he first became aware of his position when the company decided to go into liquidation, and since that time he has not contracted any debts. The creditors are Harris, B., £70; Denton, Hall and Burgin, £20; Tom, Mols, Oppenheimer and Kryn, Antwerp, £400.

WHITEHEAD TRUST.

The Whitehead Trust, Ltd., has been registered Sept. 15th with a capital of £2,000 in 1,000 "A" shares of £1 each and 10,000 "B" shares of 2s. each, to acquire from the Exchange Press, Ltd., of 222, Strand, W.C., for £500 in "B" shares, certain collated documents, being information regarding Whitehead Aircraft (1917), Ltd., and to carry on the business of financiers, promoters, etc. The vendors are also to receive £75 in "B" shares or cash in part payment of preliminary expenses. Minimum cash subscription, 7 shares. The first directors are: J. E. Brockelsby, 212, Northumberland Park, Tottenham, N., accountant; D. Hyman, 58 Vassall Road, Brixton, S.W., theatrical manager; J. N. Firth, Elm Cottage, Stoke Mandeville, Bucks. Registered office, 222, Strand.

NEW COMPANIES.

COMMERCIAL AEROPLANE WING SYNDICATE, LTD.—Private company. Registered Sept. 10th. Capital £30,000 in £1 shares. To take over from A. A. Holle, of 19, Half Moon Street, Piccadilly, W., an invention for improvements in aero-foils for aeroplanes and the like, and to enter into an agreement with A. A. Holle and the Varioplane Co., Ltd. (vendors). The subscribers (each with one share) are:—A. A. Holle, 19, Half Moon Street, Mayfair, W., gentleman; A. G. Morrish, 34-6, Gresham Street, E.C.2, C.A. The Varioplane Co., Ltd., may appoint three directors, and the Blackburn Aeroplane and Motor Co., Ltd., may appoint two. Secretary: A. S. Wigglesworth. Registered Office: 34-6, Gresham Street, E.C.

THE FIRST AIRCRAFT BROKERS.

The Lep Transport and Depository, Ltd., the proprietors of the Aerial Travel Office in Piccadilly Circus, have now opened a temporary office at the Hounslow aerodrome as the first aircraft brokers in the world. The functions of the office are similar to those of a shipbroker, i.e., the clearance of incoming and outgoing aircraft and their cargoes through Customs, for which a scale of inclusive charges has been compiled. Mr. R. A. Loader, who is in charge of the new department, will give every assistance to civil air transport firms and their pilots both in regard to customs formalities and the handling of freight as well as the booking of passengers.

ROYAL AERO CLUB NOTICES.

SPECIAL COMMITTEE MEETING.

A Special Meeting of the Committee was held on Friday, September 5th, 1919, when there were present:—Brig.-Gen. Sir Capel Holden, K.C.B., F.R.S. (in the Chair), Lieut.-Col. Spenser D. A. Grey, D.S.O., Mr. F. Handley Page and Mr. Harold E. Perrin (Secretary).

HONORARY MEMBERSHIP:—The following were elected Honorary Members of the Club:—Lieut.-Col. James E. Chaney (U.S Air Service), Capt. Harold M. McClelland (U.S. Air Service).

THE FLYING SERVICES FUND.

A meeting of the Flying Services Fund Committee was held on Friday, September 12th, 1919, when there were present:—Group Capt. C. R. Samson, C.M.G., D.S.O., R.A.F. (in the Chair), Mr. Chester Fox, Squadron Leader T. O'B. Hubbard, M.C., R.A.F., and Mr. Harold E. Perrin (Secretary).

GRANTS AND ALLOWANCES.—The following Grants and allowances were made:—

(32) A Grant of £5 to the widow of an Ex-1st Class Air Mechanic in the Royal Flying Corps who died as a result of exposure whilst on active service.

(40) An allowance of £2 a month for six months to the widow of a Sergeant in the Royal Flying Corps killed on active service.

(70) An allowance of £1 a month for six months to the mother of a 2nd Class Air Mechanic in the Royal Flying Corps who died on active service.

(91) An allowance of £4 a month for six months to the widow of a Sergeant in the Royal Flying Corps killed on active service.

(109) An allowance of £2 a month for six months to the widow of a Private in the Royal Flying Corps who died on active Service.

(118) An allowance of £4 a month for three months to the mother of a 3rd Class Air Mechanic in the Royal Air Force killed on active service.

(126) An allowance of £2 a month for six months to the widow of a 2nd Class Air Mechanic in the Royal Flying Corps who died on active service.

(128) An allowance of £2 a month for six months to the mother of a Sergeant in the Royal Flying Corps killed on active service.

(130) An allowance of £2 a month for six months to the mother of a Private in the Royal Flying Corps who died on active service.

(139) An allowance of £3 a month for six months to the widow of a 3rd Class Air Mechanic in the Royal Air Force who died on active service.

(146) An allowance of £2 a month for six months to the widow of a 1st Class Air Mechanic in the Royal Air Force who died on active service.

(150) A Grant of £5 to the widow of a Private in the Royal Flying Corps killed on active service.

(152) An allowance of £2 a month for three months to the widow of a 2nd Class Air Mechanic in the Royal Flying Corps killed on active service.

(155) An allowance of £2 a month for six months to the widow of a 1st Class Air Mechanic in the Royal Air Force killed on active service.

(160) An allowance of £2 a month for six months to the sister of a 3rd Class Air Mechanic in the Royal Naval Air Service killed on active service.

(176) An allowance of £2 a month for six months to the widow of a Driver in the Royal Air Force who died on active service.

(208) An allowance of £4 a month for six months to the mother of a Cadet in the Royal Air Force who died on active service.

(228) An allowance of £3 a month for six months to the widow of a 1st Class Air Mechanic in the Royal Naval Air Service who died on active service.

(244) A Grant of £10 and an allowance of £1 a month for six months to the widow of a Corporal in the Royal Air Force who died on active service.

(245) An allowance of £1 10s. a month for six months to the widow of a 1st Class Air Mechanic in the Royal Air Force who died on active service.

(246) An allowance of £2 a month for six months to the widow of a 1st Class Air Mechanic in the Royal Air Force who died on active service.

(247) An allowance of £2 a month for six months to the widow of a 2nd Class Air Mechanic in the Royal Air Force who died on active service.

(248) An allowance of £4 a month for six months to the widow of a 2nd Class Air Mechanic in the Royal Air Force who died on active service.

(249) An allowance of £2 a month for six months to the mother of a 2nd Class Air Mechanic in the Royal Air Force who died on active service.

(250) An allowance of £2 a month for six months to the widow of a Private in the Royal Air Force who died on active service.

(257) An allowance of £1 a month for six months to the widow of a 3rd Class Air Mechanic in the Royal Air Force who died on active service.

(260) An allowance of £2 a month for six months to the mother of a 1st Class Air Mechanic in the Royal Air Force who died on active service.

THE FLYING SERVICES FUND.

(Registered under the War Charities Act, 1916.)

ADMINISTERED BY THE ROYAL AERO CLUB.

For the benefit of Officers, Non-Commissioned Officers and Men of the Royal Air Force who are incapacitated while on duty, and for the widows and dependants of those who are killed or die from injuries or illness contracted while on duty.

HONORARY TREASURER.—The Right Hon. Lord Kinnaird.

COMMITTEE.—H.R.H. Prince Albert, K.G. (*Chairman*), Mr. Chester Fox, Squad. Leader T. O'B. Hubbard, M.C., R.A.F., Wing Commander C. E. Maude, R.A.F., Group Capt. C. R. Samson, C.M.G., D.S.O., R.A.F.

SECRETARY.—H. E. Perrin.

BANKERS.—Messrs. Barclays Bank, Ltd., 4, Pall Mall East, London, S.W.1.

SUBSCRIPTIONS:	£	s.	d.
Total Subscriptions received to Sept. 9th, 1919	15,119	19	1
Squadron Leader P. Litherland Teed, R.A.F.	1	10	0
Squadron Leader P. Litherland Teed (2nd contribution)	3	3	0
Total, Sept. 16th, 1919 ...—	£15,124	12	1

SPECIAL COMMITTEE MEETING.

A Special Meeting of the Committee was held on Wednesday, Sept. 17th, 1919, when there were present:—Brig.-Gen. Sir Capel Holden, K.C.B., F.R.S. (in the Chair), Mr. G. B. Cockburn, Lieut.-Col. Spenser D. A. Grey, D.S.O., Lieut.-Col. F. K. McClean, Lieut.-Col. Alec Ogilvie and the Secretary and Assistant Secretary.

JACQUES SCHNEIDER INTERNATIONAL SEAPLANE RACE.

The report of the Commissaires Sportifs was received and a telegram from Mr. Lorenzo Santoni, President, Societa Idrovolanti Alta Italia, lodging protest on behalf of the "Savoia."

The Secretary reported that Mr. Santoni had also requested the Aero Club of Italy to lodge formal protest with the Fédération Aéronautique Internationale, Paris.

ORGANISATION OF THE RACE.—A letter from Lieut.-Col. Spenser D. A. Grey, D.S.O., dated Sept. 15th, 1919, on the Club's organisation of the race was read. The organisation of the race was discussed at great length and the Committee considered that the arrangements were faulty. The Committee further considered the method of carrying out future competitions.

SPECIAL COMMITTEE MEETING.

A Special Meeting of the Committee was held on Monday, Sept. 22nd, 1919, when there were present:—Mr G. B. Cockburn (in the Chair), Lieut.-Col. Spenser D. A. Grey, D.S.O., Squadron Leader T. O'B. Hubbard, M.C., R.A.F., Lieut.-Col. F. K. McClean, Lieut.-Col. Alec Ogilvie and the Secretary and Assistant Secretary.

JACQUES SCHNEIDER TROPHY.

It was reported that the Aero Club of Italy had lodged a protest with the Fédération Aéronautique Internationale against the disqualification of Sr. Janello, the Italian representative, on the "Savoia," in the recent race at Bournemouth for the Jacques Schneider Trophy.

The Committee unanimously decided that although Sr. Janello did not actually complete the course as marked out for the race, the Royal Aero Club, as the holders of the Trophy, should recommend to the Fédération Aéronautique Internationale when the protest is heard, that the Trophy and Prize should be awarded to Sr. Janello, the Italian representative.

ROYAL AERO CLUB SEAPLANE COMPETITION.

It was further decided that the Royal Aero Club should offer a prize of £500 and Trophy, valued at £100 (kindly presented to the Club by Lieut.-Col. F. K. McClean) for an International Seaplane Competition to be held in the Solent and Southampton Water in the last week in October next. The conditions will be similar to those of the Schneider race, with the exception that the alightings on the water will be made after the course of 200 nautical miles has been completed.

The final regulations are now being drawn up and will be issued on October 1st, 1919.

Intending competitors are requested to communicate with the Royal Aero Club.

TECHNICAL AND COMPETITIONS COMMITTEE.

A meeting of the Technical and Competitions Committee was held on Monday, Sept. 22nd, 1919, when there were present:—Lieut.-Col. F. K. McClean (in the Chair), Squadron Leader T. O'B. Hubbard, M.C., R.A.F., Major R. H. Mayo, Lieut.-Col. Alec Ogilvie, Lieut.-Col. H. T. Tizard, Mr. Howard T. Wright and the Secretary and Assistant Secretary.

ROYAL AERO CLUB SEAPLANE COMPETITION.

The conditions for this competition were considered, and the Committee adjourned till Tuesday, the 30th inst.

PRESENTATION TO CLUB.

Mr. Hugh Lewis has presented to the Club a large framed coloured picture of Squadron 32 (D.H.2 Scouts), Royal Flying Corps, at Vert Galland Farm, France, Somme Battle, 1916.

AN AMBITIOUS PROJECT.

On Thursday Sept. 18th the Committee of the London Flying Club held a Press view of the club premises. At the concomitant lunch, Lord Louth, one of the vice-presidents, presided in the absence of Lord Lonsdale, and in a brief speech proposed success to the London Flying Club coupled with the names of Mr. and Mrs. Claude Grahame-White.

Mr. Grahame-White, who is the moving spirit of the club, set forth the general intentions of the committee. He related how in 1909, looking over the area which is now the London Aerodrome, he was struck by the idea of forming there a kind of super-Ranelagh-Hurlingham. The London Flying Club as it exists is, he explained, the beginning of the scheme.

In a general way the club is arranged on the lines of those American country clubs of which one has read so much in American fiction of late years. It is intended to be a social club at which the members can indulge in all forms of sport, including aviation. At present the aerodrome already exists and there are excellent hard tennis courts. It is the intention of the committee to add grass courts, a golf course, a polo ground, a swimming bath, squash-racket courts, and so forth and so on. Mr. Grahame-White added that his ambition is to have also a real ice skating rink, now that Princes' has become a motor garage. One trusts that the club will not become such a frost as to achieve this ambition automatically.

The Club House at present includes a large dining room, a lounge hall and over fifty bedrooms, and, as an annexe, a ballroom and concert hall in which well over 1,000 people could dance comfortably. This concert hall has a bandstand at one end and a stage at the other.

Interesting facts about the Club House are that it was built by Mr. J. S. Matthews, well known as a director of the Grahame-White Aviation Company, Limited; that all the woodwork in it (chairs, tables, balustrading, stairs, and so forth) was produced in the Grahame-White Aviation Company's works: and that the scheme of decoration was devised by Mrs. Grahame-White—possibly better known as Miss Ethel Levy. Undoubtedly Mrs. Grahame-White deserves to be highly complimented on her excellent taste in designing the scheme of decoration, which is striking without ever being disturbing. It gives an impression of cheerfulness and luxury, but never approaches a "jazz" effect. Similarly the Grahame-White works deserve to be congratulated on the excellence of their workmanship in the furniture and other woodwork. One is strongly under the impression that if the works turned out furniture of similarly high quality

as a standard product it would pay considerably better for the next year or two than making aeroplanes.

The building itself is very well designed and solidly built and has a pleasing rural outlook in every direction. The kitchen is in charge of a well-known *maître d'hotel*, formerly of Claridge's, and if the lunch given to the Press may be taken as a criterion of the catering for members in the future there will certainly be no cause for complaint in that direction.

It is the intention of the committee to hold occasional club dinners to which distinguished guests are to be entertained and club dances will be held frequently. In this connection for the first season a Hawaiian band has been engaged at considerable cost and one must confess that though it hardly accords with one's old-fashioned ideas of music, it is an immense improvement on the jazz-bands which have afflicted London of late.

Members who own aircraft can garage their machines in the club aerodrome and have them kept in running order. The club itself intends to keep certain passenger machines which members can hire at special terms either for pleasure flights or for real journeys. Sporting machines will also be available.

In the course of his speech Mr. Grahame-White said that he would be glad of constructive criticism. In this direction one would like to suggest that the colouring of the club motor-cars provided for the use of members be considerably modified. One can scarcely imagine a member of the best social set embarking at the Ritz in a vehicle which at once suggests an advertisement for somebody's famous blue.

It strikes one also that it is a mistake to offer membership of the club at half price to R.A.F. officers. One can scarcely imagine a London club of the better class offering a similar inducement to officers of H.M. Navy or Army, and still less can one imagine an officer of the better class accepting such an offer.

A still greater mistake is the idea of inviting officers who have had the honour to be awarded the Victoria Cross to free membership of the club. In the first place the winning of the Victoria Cross is not necessarily a guarantee of social standing, and in the second place an officer of the proper social status would scarcely relish the idea of becoming an honorary member because he had been decorated for valour.

Furthermore, public kinematograph pictures of the chief promoters of the Club performing antics in front of the Hawaiian band are scarcely likely to attract members of the most desirable class.

If the club is to be a social club of good class it will need no such adventitious aids to increase its membership. On the other hand, if it does not maintain a high social standing no amount of such temptation will attract people of the right class. As already said, the club has immense advantages as regards locality and surroundings and it may become precisely the kind of club which is extremely desirable in London to-day. The fact that Major G. B. Ollivant (late 12th Lancers) is the secretary gives one to hope that it will fulfil the functions for which it is intended. One wishes it precisely the success which it deserves.—C. G. G.

HULLO, BOLO!

To the Editor of THE AEROPLANE.

Sir,—So many people appear to be writing revues, which, according to the Press, can be done in five minutes, that I have attempted one myself, and send you herewith a typical scene. If your readers care for it (as I am sure they will), I can easily let you have the other 40 scenes, and a copy of the fees for acting, etc.

ACT I. SCENE I.

SCENE: Any room at the late Hotel Bolo.

TIME: Any time between 11 a.m. and 3 p.m., except the luncheon interval from 12 until 2.45 p.m. On second thoughts the time had better be 11.30 a.m.

(*Enter Chorus of O.B.Es.*)

CHORUS (singing in unison):

In us the representatives you see
Of beauty, splendour, power, and energy;
We none of us can fly,
And that's the reason why
We're Majors, R.A.F., plus O.B.E.

In beauteous Bolo blue we're not a shy lot;
In fact, we *have* been called a very "fly lot":
Our duty is quite clear,
We have to put the fear
Of God into the heart of every Pilot!

If left alone, we cannot fail to shine,
But sometimes some unmitigated swine
Says we've got to go o'ersea:
Then we take our remedy,
A new C.O.—and dose of chlorodyne!

Though *you* may think that over us are none
Who can be more exalted—"in the sun"—
E'en we must bow to rules
Laid down, 'tis true, by fools.
Hush, hush! Keep quiet! Here comes an S.O.1.!

(*Enter a Lieut.-Colonel, C.B.E., S.O.1.*)

All the O.B.Es. salute and stand to attention.

S.O.1: Methought I spied a fellow here with wings?

CHORUS (shocked): Oh, no, sir! No! How could you think such things?

1ST O.B.E. (picking up ruler and looking fierce):

If a Pilot I should spy,
He'd very quickly die
Of fright, before my eye!

(*Loud applause from Chorus.*)

S.O.1:

You're a bold man, I can see,
And when my time is free,
'Struth! I'll recommend you for the C.B.E.!

(*Terrific and prolonged applause. Telephone bell rings.*)

Ha, ha! There goes the bell!
Perchance 'tis Driver Nell,
With whom I hope to dwell
When (*picks up receiver and listens*)—
Flight Commander Blank? Oh, go to hell!

(*Throws telephone on floor.*)

2ND O.B.E.:

Perhaps, sir, you, being such a splendid specimen of Air Force beauty,
Could tell us how, much better than all other men, you do your duty?

(*Applause from all but the 1st O.B.E., who looks annoyed because he didn't think of this.*)

S.O.1 takes cigarette, lights it, and sits back on chair, with feet on mantelpiece. The O.B.Es. group themselves round in attitude of reverence.

S.O.1 (*after the "Vicar of Bray"*):

When I was a boy and wore long curls,
And velvet suits all braided,
I went to school with little girls,
And played with dolls as they did;
But when in 'fourteen came the war,
Though feeling such a draught, sir,
I joined the Royal Flying Corps,
Attached unto the Staff, sir!

CHORUS:

And this is a fact that I'll maintain
Whichever side has won, sir,
If we should have a war again,
I'll still be an S.O.1, sir!

At ten o'clock on every morn
I start my daily wrestle,
And exercise that brain and brawn
That brought me to the Cecil!
To every General I bow
In abject veneration,
With every Subaltern I row
And write for "explanation."

(Chorus.)

Soon doth the hour of noon arrive
To end the morning's duty;
Round to the Club for lunch I drive.
(My driver is a beauty!)
In this fine way the day's work's done
By brains there's no denying:
I earn my pay as S.O.1—
Let others do the dying!

(*Chorus, during which a bevy of W.R.A.Fs. enter and dance.*)

Enter a Messenger.

MESSENGER: Twelve o'clock, gentlemen!

Exeunt hurriedly.

And so on, ad infinitum.

K.

THE RETURN.

For the following story one has to thank the Johannesburg "Star":—

The aviator's wife was in tears. "What's the matter, my dear?" asked her friend.

"I'm worrying about George," she said. "He has been trying for a week to kill our cat, and as a last resource he took pussy up in his 'plane. He said he would take him up 2,000 feet and drop him over."

"Well, there's nothing to worry about," said her friend.

"Oh, yes there is," said the frantic woman. "George isn't home yet, and pussy is!"

CONGRATULATIONS.

ROE.—On Sept. 9th, at High Firs, Bursledon, Hants, the wife of A. V. Roe—a daughter.

AVIATION IN EGYPT IN 1915.

BY AN OBSERVER IN THE FRENCH SEAPLANE SQUADRON, PORT SAID.

In these days of cross-Atlantic flights and 160 m.p.h. machines it is very interesting to look back at our machines and equipment in the pre-historic days of 1915.

I have taken an interest in aviation since the early efforts of H. Farman and the Wright brothers; but, being in the East at the outbreak of war, I enlisted, and was not able to join the R.F.C. until January, 1915. At that time I was serving with an Indian regiment on the Suez Canal, and managed to get transferred as an observer to the only squadron then in Egypt, afterwards No. 30.

This squadron consisted of the machines which were to have joined the nucleus of the Indian C.F.S. at, I think, Sitapur, and was composed of 70 h.p. Renault Longhorns and Shorthorns, 80 h.p. Gnôme H. Farmans, and one B.E.2a, which was the pride of the squadron. This B.E. was no joke to fly in the bumpy Egyptian air, as being a warping wing machine, knuckledusters were imperative to prevent the stick from cutting one's hands to ribbons against the longerons.

I only remained a short time with No. 30, and was then lent to a French seaplane squadron, based at Port Said, which was short of observers.

JOY SOMEWHAT DASHED.

I went down to Port Said full of joy, but when I heard that most of the work done by these machines—80 h.p. Gnôme Nieuport monoplane seaplanes—was 30-40 miles inland, my joy was somewhat dashed.

I shall always have the very greatest admiration for those French pilots and mechanics on account of the really wonderful work that they got out of their machines.

In 1915 these machines were identical with those designed, I believe, in 1912, being the ordinary Nieuport monoplanes less the wheels, and with the addition of outer struts to the undercarriage. They could, however, be quickly transformed into land machines, by the removal of the floats and these extra struts, and by fitting the leaf spring and wheels through a socket provided in the central skid.

The system of control was unusual, as the stick controlled the elevator and rudder, and the wings were warped by an upward and downward motion of what is usually the rudder-bar. I understand that this system was altered to the more usual one in the machines supplied to the R.N.A.S. and used at Calshot.

A revolution counter and altimeter were the only instruments fitted.

OF UNUSUAL DESIGN.

The floats themselves were of unusual design, having a stepped keel, and a metal plane on each side of the nose to prevent the float from "ducking." They were not provided with bulkheads, but were canvas-covered, and filled with inflated pigs' bladders. In the case of a crashed float, which occasionally occurred, the whole sea for hundreds of yards around was covered with these bladders, which emitted a most offensive odour.

Most of our work was done along the coasts of Palestine, Syria, and Asia Minor, which was out of the reach of the R.F.C., and for that purpose two seaplane-carriers were attached to the base, each capable of carrying two seaplanes under canvas awnings on the after well-deck.

These ships had each two English officers and Greek crews, and in them we went to sea, armed with two Lewis or Colt machine-guns on the bridge, and flying the blue ensign.

In the early part of 1915 submarine warfare had not yet begun seriously, in the Eastern Levant anyhow, and so we often lay with all lights showing two or three miles from the enemy coast waiting for favourable weather.

A PANIC AMONG THE CREW.

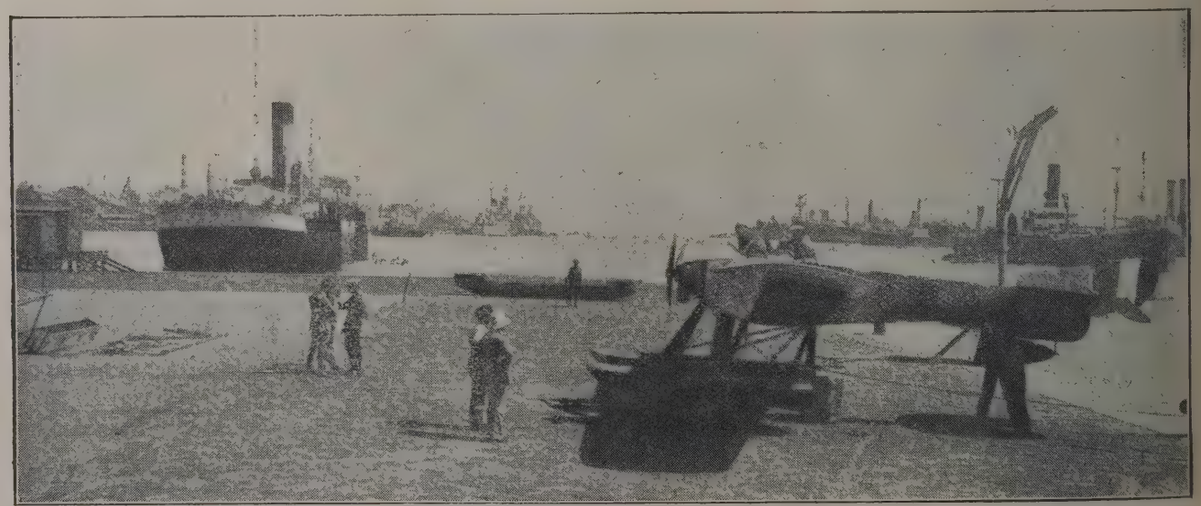
In March, 1915, during the first bombardment of Smyrna, one of these seaplane-carriers—the "Aenne Rickmers"—was torpedoed by a Turkish destroyer while at anchor under a flag of truce, but we never managed to discover whether the destroyer really meant to hit us, or whether it was a bad shot for H.M.S. "Euryalus," which was lying near by. This took place at 2 a.m., and a panic immediately took place amongst the Greek crew. The captain and chief engineer were English, whilst the other officers and crew were Greek, but we luckily also had a steamboat's crew of naval ratings, and a detachment of Royal Marines as a guard. The Greeks deserted, and took all the boats, and the Marines turned out just too late to stop them; but as they went over the side, one of the Marines gave a Greek sailor a nice jab in the pit of the stomach with his bayonet, to discover that in his haste in turning out, he had, unfortunately, forgotten to remove the scabbard. The only Greek who did not desert was the second engineer, who was on watch at the time, and who was locked, howling and shrieking, in the engine-room, by the chief engineer, and ordered to keep the pumps going.

CONSIDERED HIMSELF A HERO.

Luckily for us the bulkheads held, and although we had a hole 26 ft. by 16 ft. in the starboard side near the bow, the ship did not sink, and, on the next day, this gentleman had quite recovered from his fright, and looked on himself as a hero, so much so that a month or two later, when the Greek crew were paid off, and replaced by Navy men, he asked for a testimonial to show that he had bravely stuck to his ship when all the others had deserted.

The "Aenne Rickmers," or H.M.S. "Anne," as she was afterwards christened, belonged before the war to the "Rickmers" line, and in the wardroom hung a large photograph of Fraulein Rickmers, after whom the ship had been named. Every officer who served in the ship wrote his name on this photograph, and it was proposed to send this to the lady at the end of the war; but whether this has been carried out, or whether it has been "pinched" by some souvenir-hunter, I do not know, as the "Anne" is no longer a seaplane-carrier.

The machines had by no means a good performance even in those days. Speed about 52 m.p.h. at sea level, with a ceiling of about 5,000 ft., and the climb to 1,000 metres (about



The Seaplane Station at Port Said in 1915.

3,300 ft.), with three hours' fuel, pilot, observer, a rifle, and forty rounds of ammunition, and one 10 kg. bomb, or a camera, took 30-35 minutes.

We were not allowed to fly inland under 1,000 metres, and so our radius of action was a good deal handicapped by this slow climb.

Primitive Bomb-Dropping.

We did a little bombing, but not very much, as we could only carry one 10 kg. bomb, and in that case could not carry a camera as well.

The bomb-dropping apparatus was very primitive indeed.

In the first place, as the observer was placed in front of the pilot, a tube had to be arranged through the floor of the observer's cockpit to carry the bomb clear of the undercarriage and floats.

The bomb itself—a 20-lb. H.E. shell, with a tinplate fin attached—was carried strapped to the top of the port wing.

The bomb-sight was a prehistoric edition of the equal distance sight, and consisted of a piece of three-ply wood attached to the starboard side of the machine, into which three nails had been driven in the form of a triangle. A sand-glass was used in conjunction with the sight, in place of the reversible watch at present used.

Before starting off on a bombing stunt the observer was supplied with the sand-glass, on which the height in metres was marked on the stem—the striker of the bomb—a piece of string—and a knife.

Before dropping, the bomb had to be prepared—quite a long and complicated business. First of all, the bomb had to be unstrapped from the wing, and placed on the observer's knees. A cork was then drawn from the nose, and the striker screwed in in its place. One end of the string was then attached to a ring at the tail of the bomb, and the other end to a cross-strut in the fuselage. One had then to remove the safety-pin from the striker and manœuvre the bomb into the bomb-tube, a dangerous proceeding, as the bomb with the striker in it was almost the same width as the fuselage.



A Nieuport Sea-Monoplane (80 h.p. Clerget Engine).

O.Ks. not Common.

Presuming that all this has been safely accomplished, and that we are now approaching our target, we stand up, and, holding the sand-glass in one hand, and the knife in the other, we take our sights. The sand-glass is started when the top and forward pins come in line with the target, and is reversed when the top and rear pins are in line with it. We can now leave our sight, and trusting to our pilot to keep on the line, which, incidentally, he cannot see from his seat at this point, we note our height on the altimeter. When the sand has risen to the correct height in the stem of the sand-glass we cut the string, and the bomb falls. O.Ks. by this method are not very common!

In the early part of 1915 we were not equipped with wireless apparatus, and so for co-operation with artillery the squadron was provided with an infernal type of firework, called a "smoke-bomb." These were issued in four forms—"Trainit," which made a long trail of smoke, and three other kinds forming one, two, and three balls of smoke respectively. All these four types were bottle-shaped, fitted with a ring at the top, and in order to ignite them, this ring, and about a yard of string attached to it, had to be pulled slowly out. The time between the beginning of the pull and the burst being only four seconds, one had to be pretty quick getting them down the bomb-tube.



The S.S. "Aenne Rickmers" (later H.M.S. "Anne") after her encounter with a Torpedo.

Later on in the year the squadron received several sets of W/T apparatus, but the earlier forms were dangerous, and on account of an open spark had a nasty habit of igniting any petrol vapour about the machine.

FIRED ONCE AND BACKFIRED TWICE.

When at sea, after the machine had been hoisted out of the ship, itself a slow and difficult job with the rough winches, booms and tackle used for cargo-shifting, began the business of getting the engine started. The starting-handle was carried in the observer's cockpit, which, being very small, made it very difficult for anybody larger than a small boy to swing it from anywhere inside the machine. One usually wound violently for about five minutes, at the end of which the engine would fire once, backfire twice, and catch fire, which meant hurling oneself out of the machine on to the undercarriage, and plugging the air intake pipe with the nearest thing at hand, usually one's own flying cap.

Having at last got the engine started, we commenced a game of ping-pong with the ocean, and on each bump the observer's head came in contact with the forward part of the cabane. An 80 h.p. machine has not much power with which to get "unstuck," and so, if there were no waves, we sometimes got off, but usually did not, and if there were any waves, we certainly never did, but buzzed about like a million infuriated bees, covered in spray

Not a few forced landings were made on the desert in enemy country, and in no case did the crew get off unscathed in the crash. In December, 1915, a machine returning from a reconnaissance of Beer Sheba, had its petrol-pipe severed by a bullet, and a landing had to be made on the desert near Gaza. Unfortunately, there happened to be some Bedouins near by, and the observer, Lieut. H. M. C. Ledger, I.A.R.O., met his death trying to keep these Bedouins off with his rifle, while his pilot set light to the machine. Lieut. Ledger was awarded a posthumous Légion d'Honneur for his act.

AN UNPLEASANT FLIGHT.

One of the first jobs given to the squadron after its arrival in Egypt was a reconnaissance of Maan, a station on the Hedjaz railway, some 40 miles from the Gulf of Akaba. This flight meant crossing a range of mountains some 6,000 ft. high behind Akaba, which was more than the ceiling of the machines with full load. Several attempts to find a pass were made, but after butting into the various valleys, and finding no way over, the flight had to be abandoned. On one attempt a forced landing was made some 8-10 miles up the Wadi Akaba, and the pilot and observer walked back to the shore through Turks with dogs, and were picked up by a boat from the ship.

Only one of the machines that landed in enemy territory was rebuilt by the Turks, as far as we know.

The Bedouins cut the first two that landed to pieces with their swords, as they had never seen an aeroplane before, and believed them to be alive. However, the Turks did rebuild one of them, and it crashed on its first flight, and both pilot and passenger were killed. This rather amused us when we heard of it, as the machine was one of a batch which had been built for the Turkish Navy, but had not been delivered on account of the war.

At the base at Port Said were two very ancient three-seaters with 100 h.p. 14-cylinder Gnômes, one of which dated back to a Paris Show some time before the Flood, and on these machines the observers obtained permission to learn to fly. Unfortunately, this permission was withdrawn a little later, as one of the observers, who had been strictly told not to try to take off, but to learn to taxi, managed to get his machine off tail to wind, stalled, and crashed her to splinters, fortunately, without more than a ducking to himself.

On being rescued by a boat, and brought back to the hangars, he left a note to the C.O., who was not there at the time, explaining that he had, unfortunately, broken a float. The C.O., on receipt of this, was heard to remark that he was glad that both floats had not been smashed, as, in that case, he might not even have got the engine back!

During the Naval attack on the Dardanelles two of the machines were attached to Commander Samson's squadron at Tenedos, but being so far from the base, and there being very few spare parts, and practically no facilities for engine overhaul, they soon became very soggy. The floats and extra struts were then removed, and they were used for some time as land machines.

Towards the end of 1915 a welcome addition to the squadron came in the form of some new machines with 100 h.p. Clerget engines. The 100 h.p. Clerget being practically the same as the present 130 h.p. motor, the performance of these machines was a good deal better than that of the old 80 h.p. machines, but the comfort from the observer's point of view was completely spoiled by the fact that his seat was placed sideways, and he faced the port side of the machine—not a very comfortable position in a machine with a gliding angle comparable with that of a brick, and it also meant a standing position to get any view at all.

The politeness of the Frenchman is proverbial, but, on one occasion, when a machine side-slipped and crashed into Port Said harbour in trying to avoid a ship in the fairway, the English observer was not to be outdone, and it was quite five minutes before it could be decided as to which was to be rescued first by the boat that dashed up to the scene of the accident.

On looking back one regrets the old 'buses and the fun that we used to get out of them; but when one remembers the frequent occasions on which the engine tried to cut out 20 or 30 miles inland, I think that we should have preferred the modern machine and engine, if we had had our choice.

AN AERODROME FOR SALE.

The Bembridge Seaplane Station, Isle of Wight, with a frontage on the Solent, and the Redcar Aerodrome, which has an area of about 120 acres, are to be sold by the Disposal Board of the Ministry of Munitions, to whom inquiries should be addressed at Charing Cross Buildings, London, W.C.2.

IS IT THE TRUTH?

A writer in "Truth" says:—

"The up-to-date 'Baby' Handley Page aeroplane, which flew to India to lend a hand in the Afghan war, was wrecked at Risalpur by one of the storms which prevail on the Indian frontier during the summer months. I am told that on arrival at Risalpur the machine was picketed out in the open with its wings extended, whereas it ought to have been picketed between two sheds with its wings folded. As it was, when the storm burst, for want of protection the machine was blown over like a piece of paper and become a complete wreck. What were those in authority doing to allow a valuable machine to be destroyed when a little trouble would have given it adequate protection?

"From other sources of information I gather that since the termination of the war there has been a want of supervising activity at R.A.F. headquarters at Simla, members of the Air Staff being chiefly occupied in organising a polo club. Polo is a good thing in its way, but work comes before play, and, judging from letters which reach me, the Air Staff at Simla do not realise this as completely as they should do. Among other things, I am informed that the G.O.C. pays flying visits to the squadrons in different areas, but never stays long enough for the purpose of effective inspection and for hearing complaints. The latter duty is one of the most important of a general's functions, and if they would bear this in mind my correspondence would be greatly reduced."

AN INTERESTING PUBLICATION.

Mr. G. Holt Thomas, one of the great pioneers of British Aviation, who established the first express air service between London and Paris a month ago, has been asked many times to produce a book on the subject. The result is the forthcoming issue, by Messrs. Hodder and Stoughton, of "Aerial Transport," by Mr. Holt Thomas, with an introduction written by Lord Northcliffe.

"What I desire particularly," says Mr. Holt Thomas, in describing his aim in this book, "is not to appear a fanatic. I have studied flying for thirteen years. Long before the war I urged the development of aircraft as weapons; and I can say without boasting that, when war came, my predictions were more than fulfilled. To-day I am just as keen an advocate of the aeroplane in commerce, and just as certain—even, in fact, more so—that my contentions are right. But I am quite as aware of the limitations of a commercial aircraft as I am of its powers. What I seek, in this book, is to show the actual place of the aeroplane in our general scheme of transport; the precise work it can do usefully, with its speed of 100 miles an hour, and the sort of thing it would be foolish to ask it to do. Specially, too, I emphasise the point, which is fundamental, that the aeroplane does not compete with existing forms of transport. It does something they cannot do; it supplements, not supplants, them."

A feature of Mr. Holt Thomas's book will be nearly a hundred full-page reproductions of specially selected photographs, each illustrating some phase of aerial transport.

BOOKS REVIEWED.

AERONAUTICS MADE EASY.

We were needing a pendant to "The Aeroplane Speaks," something that would explain in detail *how* an aeroplane flies, the *why* of it having been covered by Captain Barber's well-known volume. And "Aeronautics Made Easy," by Captain W G. Aston (a one-time colleague of Mr. C. G. Grey's on the "Aero") (Iliffe and Sons, Ltd.; 4s. 6d. net), is the very thing that was wanted—a book of exceeding amplitude, considering its handy size—thorough in its treatment, and with it all readable and clear.

The author has attained a happy mean between the ineffable boredom of the primer method of inculcating aeronautics on the one hand, and over-complexity on the other. He presupposes in his reader a considerable interest in and a slight knowledge of mechanics, a smattering of physics, and no more mathematical knowledge than is required to count one's change correctly after two shots. In short, a public-school educational equipment!

If the clear, easy exposition did not attract the casual buyer, he would certainly be wooed by the alluring little illustrations with which the book is dotted. These cannot fail to make all plain to the veriest of muffs. There is no more of science to be encountered within its covers than may be discovered in the average fifth-form physics class, yet the reasonably careful reader cannot fail to glean from it a really useful working knowledge of the application in practice of the knowledge of theoreticians. Accessible as a popular newspaper in its form (though written in infinitely better English), it imparts its information with an artful insidiousness. It might have been called "Aviation Without Tears."

Beginning *piano*, the writer works up from the motion of bodies in the air to a pellucidly clear exposition of the streamline form, with notes on power and resistance. For a while he discourses on planes moving in fluids, discants on the parallelogram of forces, lift and drag, the centre of pressure, and before you know where you are you are studying wing sections with an intelligence gratifying to yourself.

His examples are very pat, and the point of view often refreshingly original. As an instance of this let me quote a paragraph which exemplifies both qualities:—

"It is almost obvious that if a plane section be set at a small angle of incidence at which the normally continuous flow is present, and if this angle is gradually increased, there will come a point at which continuous flow ceases, and discontinuous flow sets in. This, in practice, is found to be so, but careful investigations have shown that a rather strange state of affairs occurs. Let us suppose, for the sake of argument, that at an angle of incidence of 20 degrees the flow over a certain plane section 'goes all to pieces,' but that at 15 degrees it is quite continuous, provided that this angle has been attained very gradually by slowly increasing the setting of the plane from a very small angle at the start.

"One would be inclined to conclude from this that the flow at a 15-degree angle would always be continuous, but such is not the case; for if, say, the plane be suddenly turned from 5 degrees to 15 degrees, it will at the latter angle be found to be suffering from discontinuous flow (and this may occur at 12 degrees or earlier, according to the type of section employed).

"In short, by careful coaxing the air can be made to take a course that it would refuse if such were demanded of it with more abruptness. The plane has, as it were, to be courteous to the air with which it comes in contact, and provided it ingratiates itself sufficiently can take considerable liberties with what is otherwise a very uncompromising medium.

"An experiment which is often performed in physics lecture theatres consists in cooling a test-tube full of water below freezing point by the simple expedient of keeping it perfectly still and undisturbed whilst in the freezing mixture. In this way the water can be kept in a liquid state although its temperature is much below 32 degrees. The moment, however, a single particle of ice is dropped into the water it instantly solidifies into a congealed mass, as though it had simply been waiting for something to set it off."

To tear matter from its text is always to do violence to a writer, but I think that the above constitutes a better testimony to the special attributes of this book than I could convey by description or analysis. The shape and loading of planes and subsidiary surfaces, the position and functions of elevator, rudder, and ailerons, and such matters as directional stability, are given appropriate place. The chapter on the airscrew is brief, but quite sufficiently informative for the type of reader for whom the book is intended. Even a lethargic layman, I think, would not have time to get bored with any of these succinct little expositions.

Following a chapter on the general arrangement of forces, the author treats in detail of the construction and control of the accepted types of planes, and nowhere are his excellent illustrations more commendable than in this particular section. They could give the Rag-Books of the amiable Mister Dean points for clearness. In treating of stability the writer is on slippery ground, but he escorts his reader patiently and slowly, setting his metaphorical steps on one solid boulder of fact after another. Occasionally he has recourse to easily comprehended tables.

The chapter on aero-engines is perhaps a little scant; I should have liked to have seen Captain Aston's felicitous methods of elucidation applied at greater length herein.

Towards his conclusion he deals with aeronautical manœuvres and "stunts," passing on to a *resumé* covering atmospheric density, wing resistance, body resistance, density of air at different levels, and its effects upon engine efficiency and carburation; variable airscrew pitch, and high altitude work.

A few notes on models are inserted, the author has evidently given some consideration to this subject in his time, and he also touches on varying types of seaplanes and the flying boat.

There is a useful glossary, and a practicable index; and alike for its clarity, its concision, and its adequacy, the book is what we should have expected from the writer—the best in its field. —K. H. B.

"V.Cs. OF THE AIR."

If you happen to win the V.C. with your two feet planted firmly on the ground, the worst that can happen to you is that you may be haled on to a platform in front of an assortment of huzzaing locals. The mayor of those parts, complete with chain of office as fitted, will emit a few rasping platitudes in your direction, and the M.P. for the district, with an expression of unnatural benevolence upon his face, will invest you with a life ticket of admission to the local picture palace, with a can of Keating's thoughtfully included.

If, on the other hand, you happen to be one of our "intrepid, etc.," a worse thing may befall you. You may find yourself perpetuated past all undoing in some such horrific publication as "V.Cs. of the Air," by Lt. Gilbert Barnett (Messrs. E. J. Burrow and Co., Ltd., 5s.). And if the deed for which you were awarded that little bit of bronze is portrayed by Mister Dudley Tennant in one of his unique paintings, you will assuredly never live it down.

The textual matter is bald, soldierly, and sufficient; but the illustrations are decidedly *impasto* in treatment, the colour in the originals evidently having been thumped on in generous gobs. As reproduced, all atmosphere is lacking, and the amazing tattered aeroplanes depicted are one and all "as idle as a painted ship upon a painted ocean."

Those aeroplanes compel my admiration. So torn are they that they resemble fourpenny umbrellas at a railway lost property auction sale, and yet they serenely defy the elements and hover blandly, like so many helicopters. In some cases there is that about them which suggests that they were fabricated by the gentlemen who were responsible for those charming Noah's arks which delighted our childhood. Their ruggedness, and a certain *je-ne-sais-quoi* about their under-carriages, heightens this impression.

As for the Zeppelins, you expect to see them footed by a highly ornate inscription to the effect that this is entirely the artist's own work, done with common chalk, and his only means of subsistence. You fumble for a penny as you look at them. The one which Warneford is destroying approximates most closely to the 1908 type. The publisher has not erred in describing these as "Dudley Tennant's wonderful drawings!"

The descriptions of the epic scraps depicted are studded here and there with such expressions as "death grapple in the heavens," "murk of the battlefield," "hungry tongues of flame," "ghastly chariot of fire," etc., etc., and, moreover, the writer will persist in describing fighting pilots as "airmen," a term which necessarily implies an enlisted man, and not an officer, from which it follows that nearly all his subjects are incorrectly described.

Have I said enough? I think so.—REX. H. BRITTAIN.

SCRAPS FROM LIFE.

None knows my weaknesses better than my bookseller. "I've got something here that, I think, will please you, sir," said he, and led me to two plump tomes of Molière, sumptuously bound in red morocco, tooled as to the edges, opening and closing perfectly; also a tiny set of six Oliver Wendell Holmes (charming, gentle pedant), less than ten shillings the lot. The man who would not have delved in his pocket for them would have been less than human.

And my new acquisitions have provided me with a comment which is wondrously apposite to a queer little volume, "Scraps from Life," by Charles Menten, R.A.F. (McAra and Whiteman, Ltd.; price—I know not what). This is what the Poet at the Breakfast Table says:—

"Oh, little man, that has published a little book full of little poems or other sputtering tokens of an uneasy condition, how I love you for . . . the one phosphorescent particle in your unilluminated intelligence! But if you don't leave your spun-sugar

confectionery business once in a while, and come out among lusty men—the bristly, pachydermatous fellows, . . . the out-of-door men that fight for the great prizes of life—you will come to think that the spun-sugar business is the chief end of man, and begin to feel and look as if you believed yourself as much above common people as that personage of whom Tourgueneff says that 'he had the air of his own statue erected by national subscription.'"

This book consists of jejune essays and trite maxims, quaint introspections, and such absurd little cynicisms as this:—

"No man's life is wholly devoid of good; except in the eyes of his wife." That is cheap and silly, and I expect Mr. Menten knows it.

The book really is nothing more than a semi-articulate expression of the keen emotions that come to one-and-twenty on the threshold of things, before we "see life steadily, and see it whole." It is boy's work, having the awful seriousness of youth, its defects are calculated to surprise the most case-hardened reviewer; but if it betrays young follies, to be sloughed off later—there is also to be detected running through it a thread of something fine—a kind of clamant idealism. The writer is discovering the world, the old truths of Socrates and Epictetus are fire-new to him, and as such he shows them proudly to us, expressed in smoking-room phrasing.

There was no need to write:

"A true friend is one who should know all about you, but who loves you in spite of this."

It is an eternal verity, and therefore a platitude. Has not Mr. Menten read "The Thousandth Man," that he must give us this Claudius Clear version? And he must not tell fibs: "in life . . . false feelings and hypocrisy are the ruling factors." And Mr. Menten is by profession, I believe, an "observer"! Moreover, such phrases as "What is Superstition? Surely it is a survival of the olden days," would indicate that this author would be better employed in reading books than writing them. Throughout the little volume he is asking, "Why, why?" Let him be still, and life will teach him. There is nothing new in his growing pains, that he should describe them, they are common to all of us. Let him read nothing but the best stuff, shun all writing, and take plenteous exercise.

The morbidly introspective farrago he has produced is but the product of a painful phase of his development. He is struggling to find his soul. May the best of luck attend him.—R. H. B.

THE KINGDOM OF THE AIR.

[By EDGAR C. MIDDLETON. (Simpkin, Marshall, Hamilton, Kent and Co., Ltd. Price 6s.)]

One has in the past read many books dealing with aviation and aircraft, and one has been struck by the similarity between them all. Here and there one book, such as "Contact's" "Airmen's Outings," or "Spin's" "Short Flights," or McCudden's great autobiography, has undoubtedly achieved a real success. But, speaking broadly, the majority of them have been, to say the least of it, unnecessary.

When once a thing has been said moderately well, and explained moderately clearly, what need to say or explain it badly all over again?

One still awaits the Kipling of aeronautical literature. What a relief it would be to read a well-informed, well-written story which concerns itself with aviation. For when one wants such an article one naturally turns to the aeronautical Press, or to the few—and remarkably few— reliable standard works, knowing that such matter published in book form is utterly unreliable and generally unreadable.

Enclosed in a pretty slip-cover designed by Mr. Dudley Tennant, one has Mr. Edgar Middleton's latest attempt. The introduction is a poem written by the Lord Montagu of Beaulieu in the dark ages of aviation, and it is far too good for the rest of the book. The book itself contains 252 pages, and some illustrations. Its one great advantage is that the type is large and therefore quickly read.

Mr. Middleton begins by telling one that as the sailor is a different being from other men, the "Airman" must needs be also. One was quite aware that this was the case, as the war and R.A.F. have proved, but one must congratulate the Royal Navy on producing quite a different specimen of mankind from that produced by the R.A.F. The Navy is civilised, at any rate.

One of his obiter dicta is: "The flying man, even at this early stage of his career, has learnt the golden muteness that the R.A.F. already has borrowed from the 'Silent Service' (p. 24). Would that Mr. Middleton had learned as much during his brief Service career.

On page 39 occurs the following: "But still these 'feather-brained' young men persisted. Numbered amongst that splendid band were such names as Cody, Sykes, Hawker, Maitland, Roils, Henderson, and Hamel." Mr. Cody was fifty years of age and Major Sykes was over thirty, General Henderson was somewhere about fifty—but let that pass.

As to matters of fact, without referring back to the communiqués of the period one cannot be certain, naturally, but one was under the impression that on Dec. 25th, 1914, "Engadine" was accompanied to the neighbourhood of Cuxhaven by two other seaplane-carriers, and one certainly recollects the fact that the escort included other ships beside "Arethusa." Mr. Middleton would lead one to think differently.

Surely, in the light of recent events, Chapter 12 is in rather bad taste, consisting, as it does, of the story of Lieut. E. C. Chamberlain, U.S., M.C., and a portion of his report.

There is nothing more to write concerning this book, except that, throughout, it is written in the best journalese.—S. F. B.

FOR W.R.A.Fs.

HANDBOOK FOR THE WOMEN'S ROYAL AIR FORCE. (Gale and Polden, Ltd. Price 2s. 6d.)

This book, which has recently been published, is printed on very good thick paper. There are 152 pages, 12 chapters, and an index. The book follows the good old conventional rules for handbooks, beginning with a chapter dealing with the formation and organisation of the R.A.F. and ending with a glossary of technical terms.

Doubtless W.R.A.Fs. will find it very useful, particularly the chapters on discipline and official correspondence.

One is perfectly certain that all domestically inclined W.R.A.Fs. will be glad of the recipes contained in chapter 9; but one quite fails to see the reason for the songs contained in chapter 11.—S.F.B.

"AIRCRAFT IDENTIFICATION."

Mr. R. Borlase Matthews has produced a very useful little book called "The Aircraft Identification Book," which is published by Crosby, Lockwood and Son, at the price of 3s. 6d. There was a time when anybody with any experience of aeroplanes could tell at a glance the make of an aeroplane in the air even at a distance of some miles, but in these days aeroplanes of different makes so closely resemble one another that only the very experienced eye can identify the particular make.

Mr. Matthews has, therefore, produced this book so that even the fairly experienced person can have in handy pocket form a reference book which will help him to identify the various makes almost at a glance. Something like 200 aeroplanes are shown, each in three-line drawings, one giving the machine in side view, one dead-on, and one showing the tail in plan view, these being the particular views from which one is best able to identify any specific machine. Alongside each machine is a brief paragraph pointing out the noticeable points in the outline of the machine.

Some of these notes might have been a shade more explicit, but, on the whole, the work is very well done.

Possibly the reader might have been saved some confusion, or, at any rate, unnecessary effort of memorising, if certain utterly obsolete machines, such as the Russian "Sikorski," the original "Wright," and a few others had been omitted.

The only section of the book which appears to be really defective is that dealing with flying-boats, of which only two examples are shown, though there are many other types in use.

A useful idea is the leaving of a space at the end of each section for notes by the owner of the book so that he can bring the pages up-to-date as new types develop.

The book can be obtained, post free, 3s. 9d., from The Aeroplane and General Publishing Co., Ltd., 61, Carey Street, W.C.2

CLASS NAMES FOR MACHINES.

The following letter has been received:—

Sir,—In a recent number of your paper a letter from "Penguin" appeared, asking if a simple scheme could be formulated for the nomenclature of present-day aircraft, which will allow for future types.

In the "Aircraft Identification Book," by R. Borlase Matthews and C. T. Clarkson (Crosby Lockwood and Son), the Brussels Decimal Classification has been developed and extended by the first author and myself to the classification of aircraft, for the future as well as for the present. This classification, which is an analytical one, is numerical and therefore international. It expresses in numbers in the shortest manner possible the most complete analytical description.

Thus P.21.034.53 indicates a biplane, with single airscrew, tractor type, having a single pair of struts on each side of the fuselage; the planes with forward stagger set with a dihedral angle, and the engine of the vertical type.

As it is a decimal classification, it automatically sorts out and collects together aircraft with the same features, and is in consequence invaluable to the orderly arrangement of bibliographical information.

If it is desired that names instead of figures should be used, it is a simple matter to translate the figures into words by means of the figure alphabet, universally known to all students of memory training, and its use for this purpose is fully explained in the little book referred to.

It is highly desirable that this classification should be adopted, as it is part of the great Brussels International Decimal Classification of all human knowledge, used at the Institut de Bibliographie, the Bureau Bibliographique of Paris, the Concilium Bibliographicum of Zurich, and many other institutions. It can be applied with great simplicity, in an analytical manner, to the classification of anything, and gives to that thing a rigid and definite position in the number complex representing the whole of human knowledge.—ALAN POLLARD, Captain, R.A.F.

EXTRACTS FROM "THE LONDON GAZETTE."

GREAT BRITAIN.

NAVAL.

ADMIRALTY, Sept. 4th.

Payr. Lt. to be Payr. Lt.-Comdr. :—C. R. F. Noyes, D.S.O., May 25th, 1917.

ADMIRALTY, Sept. 17th.

The following decoration has been conferred by the King of the Belgians for distinguished service rendered during the war :—

ORDER OF LEOPOLD.—CHEVALIER.

Maj (temp. Brig.-Gen.) E. L. Gerrard, R.M. (late Sqdn Commdr., R.N.A.S.).

The King has given unrestricted permission to the officer concerned to wear the decoration in question.

MILITARY.

WAR OFFICE, September 15th.

REGULAR FORCES.—ESTABLISHMENTS.—R.F.C.—Mil. Wing.—Adjt.—Lt. H. Tillev (Durh. L.I.), and to be temp. Capt. (without pay or allowances of that rank) whilst so empld., and to be secd., Jan. 17th, 1918.

WAR OFFICE, Sept. 16th.

REGULAR FORCES.—INFANTRY—SERVICE BATTS.—YORKS AND LANCS R.—Temp. Lt. C. H. Scadden resigns his commission on appointment to R.A.F., Nov. 15th, 1918.

MEMORANDUM.—Sec. Lt. J. D. Payne, M.C., Gen List (attd. R.A.F.), retires, receiving a gratuity, Sept. 17th.

OVERSEAS FORCES.—CANADA.—NOVA SCOTIA R.—Temp. Lt.-Col. G. C. St. P. de Dombasle, O.B.E., relinquishes his commn. on the O.M.F. of C. on appointment to a commission in the R.A.F., Aug. 31st.

QUEBEC R.—The following officer retires in the British Isles :—Temp. Lt. H. H. Heal ceases to be secd. for duty with the R.A.F., Sept. 1st.

EASTERN ONTARIO R.—Temp. Lt. A. C. Lobley relinquishes his commission in the O.M.F of C. on appointment to a commission in the R.A.F., Aug. 1st.

1ST CENTRAL ONTARIO R.—Temp. Lt.-Col. R. Leckie, D.S.O., D.S.C., D.F.C., relinquishes his commission in O.M.F. of C. on appointment to a commission in R.A.F., Aug. 31st.

SASKATCHEWAN R.—Temp. Lt. W. L. Rutledge, A.F.C., M.M., relinquishes his commission in O.M.F. of C. on appointment to a commission in R.A.F., Aug. 15th

BRITISH COLUMBIA R.—Temp. Capt. D. R. MacLaren, D.S.O., M.C., D.F.C., relinquishes his commission and acting rank of Maj. in O.M.F. of C. on appointment to a commission in R.A.F., Aug. 31st

AIR FORCE.

AIR MINISTRY, Sept. 16th.

R.A.F.—The following officers have been granted short-service commns. in the ranks stated, with effect from September 16th. They will retain their seniority in the substantive rank last held by them prior to the grant of the short-service commn :—

Sqdn. Ldrs.—J. S. T. Bradley, O.B.E. (S.O.); H. E. J. Hewitt (Ad.).

Flt. Lts.—C. W. Bailey (A. and S.); L. P. F. Bawn (T.); A. M. Blake, A.F.C. (A.); L. O. Brown, D.S.C., A.F.C. (A. and S.); J. M. Burke (T.); D. K. Cameron (T.); B. R. Catchpole, M.C., D.F.C. (A.); H. L. Crichton, M.B.E. (S.O.); F. R. P. Dexter (Ad.); W. M. Fry, M.C. (A.); H. H James (A.); C. W. McCann (T.); P. H. Mackworth, D.F.C. (A. and S.); D. O. Mulholland, A.F.C. (A.); G. C. Rhodes (T.); P. D. Robertson (T.); W. G. Stephenson-Peach (T.); G. Stevens, O.B.E. (T.); C. A. Taylor (A.); B. C. Tooke (S.); C. J Truran, A.F.C. (A.); S. R. Watkins, A.F.C. (A.); D. W. Wilson (S.O.); P. Worthington, M.C. (T.); T. K. Young (T.).

Flying Offrs.—C. D. Adams (A.), J. M. Adams (Ad.), H. C. Atkin (T.), H. Auliff (Ad.), V. G. Austen (A.), H. B. S. Ballantyne (Ad.), J. F. T. Barrett (A.), H. F. V. Battle (A.), L. N. J. Bennett-Baggs (A.), W. Best (T.), A. T. Cooper (S.O.), E. D. H. Davies (S.), P. H. Davy (A.), D. W. Dean (S.O.), T. H. Evans (S.O.), A. L. Fiddament (A.), W. C. Green, M.C. (T.), J. D. Hewett (A.), R. V. J. S. Hogan (S.O.), A. Holmes (S.O.), W. E. Lunnon (A.), C. H. Masters (S.O.), J. V. Medcalf (A.), W. D. Miller (S.O.), F. J. Moule (A.), H. W. Prockter (T.), C. Rapley, M.S.M. (T.), D. B. Robertson (A.), W. A. Rochelle (A.), L. T. Sanderson, D.S.M. (S.O.), P. L. Sant (A.), J. T. Vernon (S.O.), W. W Whitehead (T.), R. F. Wilson (T.), W. K. Yarnold (T.), R. W. G. West (A.).

Observer Offrs.—R. B. Gordon, D.F.C., R. B. Hunter.

It is intended that officers employed as Stores Officers or on "Q" duties shall belong to the new Stores Branch when formed. Officers appearing in this "Gazette" who are at present so employed will be transferred to this Branch on its formation, and will accept these short-service commissions on that condition. They will then come onto the rates of pay of that Branch, but will meantime be permitted to draw the higher rates laid down in the new scheme for officers on the General List. Any officer posted to the Stores Branch on its formation will then have the option of declining his short-service commission.

ROYAL AIR FORCE.—PERMANENT COMMISSIONS.—The notification appearing in the "London Gazette," Aug. 1st, appointing the following officers to permanent commissions is cancelled :—Lt.-Col. R. A. Bradley (A.), C.M.G., Maj. F. B. Binney (A.), Maj A. Cleghorn (T.), Maj. E. J. Roberts (A.), Capt. L. I. Barker (A.), Capt. T. G. Bowler (Ad.), Capt. C. H. Dixon (A.) (D.F.C.), Capt. G. Donald (D.F.C.) (A. and S.), Capt. J. R. Howett (A.), Capt. H. L. H. Owen (A.) (A.F.C.), Capt. G. W. Robarts (A.) (M.C.), Lt. C. R. Robins (A.) (M.C.) (D.F.C.), Lt. F. N. S. Creek (O.) (M.C.), Lt. W. H. Date (S.O.), Lt. H. G. W. Debenham (A.), Lt. F. H. Eberli (A.), Lt. C. F. Falkenberg (A.) (D.F.C.), Lt. W. W. Glenn (Ad.) (M.C.), Lt. C. Harrison (A.) (deceased), Lt. S. Jones (A.) (D.F.C.), Lt. C. S. T. Lavers (A.) (D.F.C.), Lt. D. F. Lawson (A.), Lt. H. B. Maund (A.), Lt. P. N. Melitus (O.), Lt. F. G. Prince (A.) (deceased), Lt. C. F. Smith (A.), Lt. R. H. Somerset (A.), Lt. C. A. Spence (A.), Lt. A. G. Stradling (S.O.), Lt. E. B. Wilson (A.), Lt. D. Wood (A.).

The notification in "Gazette," Aug. 5th, concerning Capt. H. W. G. Jones is cancelled. The notification in "Gazette," Aug. 1st, is to stand.

The surname of Capt. R. T. Nevill (T.) is as now described, and not Neville as in "Gazette," Aug. 1st.

The surname of Lt. D. N. Thomson (M.C.) (S.O.) is as now described, and not Thompson as in "Gazette," Aug. 1st.

The following temp. appts. are made at the Air Ministry :—Director of Operations and Intelligence.—Air-Commodore J. M. Steel, C.M.G., C.B.E., Sept. 8th, vice Air Commodore R. M. Groves, C.B., D.S.O., A.F.C.

Staff Officer, 3rd Class.—Air.—Flt. Lt. G. W. Robarts, M.C., Sept. 3rd, vice Sqdn. Ldr. A. J. Currie.

Staff.—Lt.-Col. A. E. Borton, C.M.G., D.S.O., A.F.C., is graded for purposes of pay and allowances as Brig.-Gen., Staff, May 1st to July 31st.

The following temp. appointments are made :—Staff Officers, 2nd Class.—Air.—Sqdn. Ldr. D. L. Allen, A.F.C., from S.O.1 (Air), Sept. 15th. Q.—Capt. F. P. Don, July 18th, vice Maj. A. E. Loder.

FLYING BRANCH.—Maj. (Hon. Lt.-Col.) A. W. H. James, M.C., to be actg. Lt.-Col. whilst empld. as Lt.-Col. (A.), July 19th, 1918, to March 20th.

Maj. W. B. Hargrave, O.B.E., is graded for purposes of pay and allowances as Lt.-Col. whilst empld. as Lt.-Col. (A.), May 1st to June 30th.

Capts. to be actg. Majs. whilst empld. as Majs. (A.) :—C. M. Leman, M.C., D.F.C., June 10th; R. M. Drummond, D.S.O., M.C., from May 1st to July 31st.

The following Capts. are graded for purposes of pay and allowances as Majs. whilst empld. as Majs. (A.) :—C. J. O. Brand, D.S.O., M.C., A.F.C., to June 30th; H. S. Lees-Smith, L. G. S. Payne, M.C., A.F.C., to May 30th; C. A. Ridley, D.S.O., M.C., to June 30th; E. Selby, O.B.E., to June 30th; G. A. Turton, to May 28th, May 1st.

Lts. to be actg. Capts. whilst empld. as Capts. (A.) :—J. A. Craig, D.F.C., D. F. Lapraik, D.F.C., M. M. Freehill, D.F.C., (June 10th to July 31st), May 1st.

The following Lts. are graded for purposes of pay and allowances as Capts. whilst empld. as Capts. (A.) :—F. J. Cunninghame, A. F. Horden, H. J. Hunter, A. W. Vigers, M.C., D.F.C., to May 11th; (Hon. Capt.) L. W. Jarvis, to July 31st; K. B. Lloyd, A.F.C., to July 31st; J. J. Williamson, A.F.C., to July 31st; May 1st.

Lt. P. L. Stephens to be Lt. (A.) from (Ad.), April 19th, 1918.

Lt. (Hon. Capt.) G. M. Smyth to be Lt. (Hon. Capt.) (A.) from (S.O.), May 18th (substituted for the notification in the "Gazette" of July 15th).

Sec. Lts. to be Lts. :—I. B. Hislop, July 18th, 1918; R. Clark, March 26th; E. Colvill, May 1st; A. Russell, July 10th; L. F. Homer, July 30th.

P.F.O. J. B. Lynch (late R.N.A.S.) is granted a temp. commn. as Sec. Lt. (A.), June 10th, 1918.

D. J. Lewis is granted a temp. commn. as Sec. Lt. (A.), June 27th, 1918.

P.F.O. L. H. Kemp (late R.N.A.S.) is granted a temp. commn. as Sec. Lt. (O.), Sept. 14th, 1918.

Sec. Lt. W. D. F. Liston (Lt., I.A.R.O.) relinquishes his commn. on reversion to I.A.R.O., Sept. 9th.

The following relinquish their commns. on ceasing to be empld. :—Lt. G. C. Stemp (Lt., E. Kent R.), May 30th; Lt. H. L. H. Bousted (Lt., Essex R.), June 11th; Lt. F. H. Prichard (Capt., R.G.A.), July 7th; Lt. C. T. Travers, A.F.C. (Sec. Lt., Wilts R.), July 11th; Lt. (Hon. Capt.) E. R. Williams (Capt., Manitoba R.), Sept. 8th.

Transferred to the unempld. list :—Lt. A. B. Hopper, Jan. 31st; Sec. Lt. J. W. Aikenhead, Sec. Lt. G. F. Anderson, Sec. Lt. R. G. Bessey, Sec. Lt. S. H. Bremner, Sec. Lt. W. N. Cunningham, Feb. 1st; Sec. Lt. (Hon. Lt.) R. P. Sorge, March 3rd; Sec. Lt. W. Davies, March 6th; Capt. C. J. Campbell, March 25th; Sec. Lt. J. Ditchfield, March 26th (substituted for the notification in the "Gazette" of April 25th, wherein this officer's rank was shown as "Lt."); Lt. T. F. X. Smallwood, April 11th; Sec. Lt. W. A Scott, April 13th; Capt. R. H. Cronyn, Sec. Lt. F. Donnelly, Lt. D. M. MacDonald, April 19th; Sec. Lt. H. S. Hatton, Sec. Lt. C. H. Stephens, April 25th; Lt. A. B. Ferguson, May 4th; Sec. Lt. E. J. Stevenson, May 17th; Lt. C. G. Durham, May 23rd; Lt. W. E. C. Coombs, May 27th; Lt. H. N. Jennings, May 31st; Sec. Lt. A. T. Jeffrey, June 3rd; Sec. Lt. W. E. McDermott, June 26th; Lt. A. McD. Dunlop, July 2nd; Lt. C. E. Forman, Lt. V. S. Rowbotham, July 10th; Sec. Lt. J. A. O. Fenton, July 12th; Sec. Lt. J. Craig, July 14th; Lt. K. J. Gould, Lt. R. O. Smart, Sec. Lt. A. J. Stewart, July 17th; Lt. D'A. F. Hilton, M.C., A.F.C., July 23rd (substituted for the notification in the "Gazette" of Aug. 5th); Lt. A. E. N. Ashford (substituted for the notification in the "Gazette" of Aug. 12th); Lt. F. W. Day, July 24th; Sec. Lt. T. G. C. De Vall, July 25th; Lt. D. G. Cooke, M.C., July 26th; Lt. G. Davis, D.F.C., July 27th; Lt. V. H. Collins, July 28th; Lt. H. A. D. Currie, July 29th; Sec. Lt. (Hon. Lt.) J. D. McEwen, Lt. J. H. Mitchell, July 31st; Flying Officer O. W. A. Manning, Aug. 3rd; Flying Officer R. G. Dobeson, Aug. 5th; Flying Officer W. F. Hanna, Aug. 14th; Flying Officer D. C. Rowlett, Flying Officer J. McF. Stewart, Aug. 16th; Pilot Officer A. Laver, Pilot Officer A. E. Mercer, Pilot Officer E. H. J. Miller, Aug. 18th; Pilot Officer L. A. Green, Flying Officer H. F. Lambert, Flying Officer D. F. Murray, D.F.C., Pilot Officer G. H. Pittam, Aug. 22nd; Pilot Officer C. O. Lockey, Aug. 23rd; Pilot Officer J. H. Jones, Pilot Officer W. N. A. Roberts, Aug. 27th; Flying Officer L. J. Collier, D.F.C., Pilot Officer T. N. Leithead, Pilot Officer T. W. Lewis, Flying Officer K. E. Wright, Aug. 28th; Pilot Officer S. A. Forberger, Pilot Officer W. J. Heyland, Flying Officer A. H. Munday, Pilot Officer G. C. Page, Aug. 29th; Pilot Officer J. D. Allen, Pilot Officer A. J. M. Medcalf, Sept 3rd; Pilot Officer J. McRobert, Sept. 6th; Pilot Officer S. F. Dudley-Smith, Flying Officer T. C. Moore, Sept. 9th; Flying Officer A. K. Lomax, Sept. 10th; Flying Officer H. J. Gibson, Sept. 11th; Flying Officer O. P. S. W. Green, M.C., Sept. 12th; Flying Officer A. R. Carbis, Sept. 13th.

Maj. L. F. Richard (Capt., R.G.A.) relinquishes his commn. on account of ill-health caused by wounds, Sept 30th.

Capt. C. P. O. Bartlett, D.S.C., relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Sept. 3rd.

Capt. J. D. Payne, M.C. (Sec. Lt., Extra Regimentally Empld. List), resigns his commn., Sept. 17th.

Lt. G. P. Blake relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain his rank, Aug. 16th.

Lt. P. Goodbehere (Man. R., T.F.) relinquishes his commn. on account of ill-health contracted on active service, Aug. 22nd.

Sec. Lt. D. F. Dempster relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Sept. 4th.

Sec. Lt. (Hon. Lt.) W. J. Bethune (Lt., Cameron Highrs.) relinquishes his commn. on account of ill-health contracted on active service, Aug. 18th.

Sec. Lt. W. G. Edwards resigns his commn., Sept. 17th.

Sec. Lt. H. T. Kempton is antedated in his appointment as Sec Lt. (A and S.), May 10th, 1918.

The initials of Sec. Lt. L. G. Crossley are as now described, and not "J. G.," as stated in the "Gazette" of July 15th.

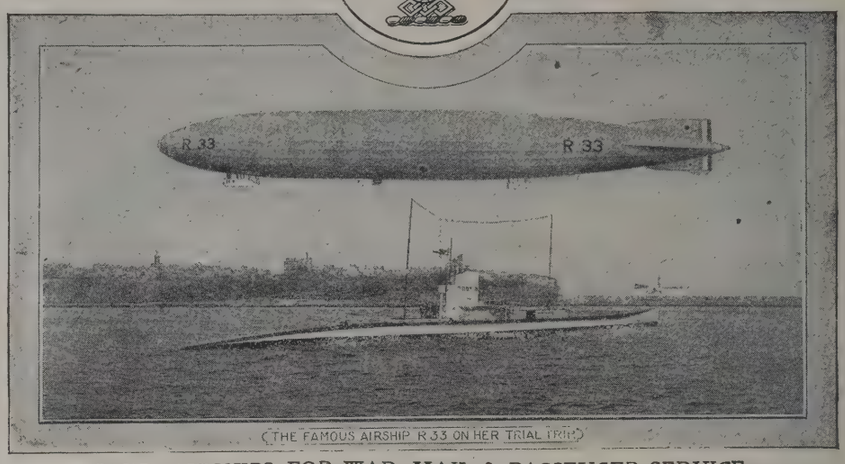
The initials of Sec. Lt. C. A. Farquharson are as now described, and not "C. D.," as stated in the "Gazette" of July 20th.

The initials of Lt. G. H. Windsor are as now described, and not "G. J.," as stated in the "Gazette" of July 29th.

The surname of Lt. J. Tomkins is as now described, and not "Tompkins," as stated in the "Gazette" of July 20th.

The surname of Lt. T. M. Johns is as now described, and not "Jones," as stated in the "Gazette" of Aug. 8th.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

The notification in the "Gazette" of June 17th concerning Sec. Lt. (Hon. Lt.) S. J. R. Simmons is cancelled.

The notification in the "Gazette" of July 4th concerning Capt. A. E. Godfrey, M.C., A.F.C., is cancelled.

The notification in the "Gazette" of July 22nd concerning Lt. C. Gilham is cancelled.

The notification in the "Gazette" of July 29th concerning Lt. J. Coates is cancelled.

ADMINISTRATIVE BRANCH.—The following Majs. are graded for purposes of pay and allowances as Lt.-Cols. while empld. as Lt.-Cols.:—A. C. E. S. Bowlby, A. R. Woodland, May 1st.

Capt. P. Gadsby, O.B.E., is graded for purposes of pay and allowances as Lt.-Col. while empld. as Lt.-Col., May 1st.

Capt. H. C. Jones to be actg. Maj while empld. as Maj., from Sept. 28th, 1918, to Dec. 5th, 1918.

Lt. (actg. Capt.) J. P. P. L. Biggs, M.B.E., to be actg. Maj. while empld. as Maj., from Oct. 6th, 1918, to April 30th.

The following Capts. are graded for purposes of pay and allowances as Majs. while empld. as Majs.:—G. B. Chainey, O.B.E., M. B. O'Brien, May 1st; C. P. Cowper, to May 9th; (Hon. Maj.) A. F. Morris, to May 31st; T. L. Stevens, to July 31st.

The following Lts. are graded for purposes of pay and allowances as Majs. while empld. as Majs.:—(Actg. Capt.) J. P. P. L. Biggs, M.B.E., A. E. Worrall, M.C., to Aug. 6th, May 1st.

Capt. F. P. Don to be Capt., from (S.O.), May 31st.

Lt. S. Saunders, M.C., to be actg. Capt. whilst empld. as Capt., from Dec. 14th, 1918, to April 30th.

Sec. Lt. G. L. Grey to be actg. Capt. while empld. as Capt., May 1st.

The following Lts. are graded for purposes of pay and allowances as Capts. while empld. as Capts.:—H. Gwynne-Smith, C. A. Howe, (Hon. Capt.) A. E. Miller, M.C., J. R. Nicholls, S. G. K. Rapley, A. W. Turner, to May 31st; J. G. C. Williams, to June 30th; (Hon. Capt.) A. D. F. Mackenzie, to Aug. 5th; J. Mitchell, to Aug. 9th; W. Pilkington, M.C., to Aug. 9th; R. H. Rook, M.C., to Aug. 9th; D. G. Sharp, to Aug. 9th, May 1st; W. Clay, July 1st.

Lt. H. H. Harman is graded for purposes of pay and allowances as Capt. while empld. as Capt., from (O.), from May 1st to June 30th.

Sec. Lt. S. Tew is graded for purposes of pay and allowances as Capt. while empld. as Capt., May 1st.

Lt. L. J. N. Mackay relinquishes the grading for purposes of pay and allowances as Capt. on ceasing to be empld. as Capt., June 26th.

Sec. Lts. to be Lts.:—(Hon. Lt.) H. S. Gargett, Aug. 23rd; R. Craig, March 21st.

Sec. Lt. E. V. Evans to be actg. Lt. while empld. as Lt., from March 21st to April 30th.

Sec. Lt. E. G. Stott (late Gen. List, R.F.C.), on prob., is confirmed in rank of Sec. Lt., May 7th, 1918 substituted for the notification in "Gazette" of Aug. 20th, 1918).

The following relinquish their commns. on ceasing to be empld.:—Sec. Lt. J. W. Shaw (Lt., Oxf. and Bucks L.I.), July 23rd; Lt. H. E. R. Twamley (Lt., Notts and Derby R.), Aug. 12th.

Transferred to the unempld. list:—Sec. Lt. R. W. Davis, April 17th (substituted for notification in "Gazette" of June 20th, wherein this officer was described as R. D. Davis); Lt. H. W. Denton, May 10th; Sec. Lt. J. Mellor, July 10th; Lt. R. C. St. J. Dix, M.C., July 22nd; Sec. Lt. (Hon. Lt.) S. U. Dent, July 29th; Sec. Lt. C. Stelfox, July 31st; Flt. Lt. J. B. Cussen, Aug. 1st; Flying Officer W. G. Dunn, Aug. 6th; Flt. Lt. W. S. Newton-Clare, M.B.E., Aug. 16th; Pilot Officer T. N. Drake, Aug. 18th; Flying Officer S. H. H. Heaver, Aug. 20th; Pilot Officer N. A. Meinjzes, Aug. 23rd; Pilot Officer W. J. McCleland, Sept. 9th; Pilot Officer S. C. Leith, Pilot Officer (Hon. Flying Officer) G. R. A. Syfret, Sept. 10th.

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—C. McI. French, July 12th (substituted for the notification in the "Gazette" of Jan. 21st); A. F. G. Ovenden (contracted on active service), Aug. 19th.

Sec. Lt. R. Parker (Sec. Lt., K.R.R.C.) is removed the Service, Sept. 15th.

The notification in the "Gazette" of May 23rd concerning Sec. Lt. (Hon. Lt.) J. W. Gardner is cancelled

TECHNICAL BRANCH.—Maj. W. J. D. Pryce is graded for purposes of pay and allowances as Lt.-Col. whilst empld. as Lt.-Col., Grade (B), May 1st.

Capt. W. J. Waddington, O.B.E., is graded for purposes of pay and allowances as Maj. whilst empld as Maj., Grade (A), May 1st.

Lt. H. G. Gibbs is graded for purposes of pay and allowances as Maj. whilst empld. as Maj., Grade (A), May 1st.

The following appointments are graded for purposes of pay and allowances as Majs. whilst empld. as Majs., Grade (B):—R. G. L. Candy, W. Millett, W. Wade, O.B.E., H. E. F. Wyncoll, O.B.E., M.C., to June 30th, May 1st.

The following Lts. are graded for purposes of pay and allowances as Capts. whilst empld. as Capts., Grade (A):—B. C. Adamson, T. G. S. Babb, E. McR. Cockell, S. S. Dixon, A. R. Langton, F. D. Lugard, F. A. Omerod, E. Plimley, L. H. Straker, R. G. Whitcombe, W. Scott, to July 31st, May 1st; S. Empsall, June 1st.

The following Lts. are graded for purposes of pay and allowances as Capts. whilst empld. as Capts., Grade (B):—T. Bell, M.M., G. Bowen, F. Briggs, L. E. Carter, R. J. Copley, T. D. Jones, W. R. Lewis, F. G. Murray, (Hon. Capt.) J. Ramsay, M.C., H. J. Skingle, V. F. Sourgeon, to June 30th, May 1st.

The following Lts. are graded for purposes of pay and allowances as Capts. whilst empld. as Capts., Grade (B), from (Ad.):—J. W. Gardner (substituted for notification in the "Gazette" of Aug. 5th), H. L. Woolveridge, to June 30th, May 1st.

Lts. to be Lts., from (Ad.):—C. D. Daly, Grade (A), July 12th; C. R. Pilcher, Grade (B), Nov. 28th, 1918.

Lt. W. W. Bull is graded for purposes of pay and allowances as Lt. while empld. as Lt., Grade (A), May 1st.

Sec. Lt. H. B. Brown to be Lt., without the pay and allowances of that rank, Nov. 24th, 1918 (substituted for "Gazette" of Sept. 5th).

Sec. Lt. (Hon. Capt.) J. R. Cassidy to be actg. Lt. while empld. as Lt., Grade (A), from Aug. 22nd, 1918, to Jan. 10th.

The following Sec. Lts. are graded for purposes of pay and allowances as Lts. while empld. as Lts., Grade (A):—A. Bolton, F. C. North, R. L. Hartley, May 1st.

The following relinquish their commns. on ceasing to be empld.:—Sec. Lt. R. Burn (Lt., N.Z. A.S.C.), June 2nd; Sec. Lt. (Hon. Capt.) G. E. Allen (Capt., Manch. R., T.F.), Aug. 25th; Lt.-Col. G. B. Stopford (Maj., R.H. and R.F.A.), Sept 1st.

Transferred to the unempld. list:—Lt. H. W. Sharman, March 17th; Capt. H. S. V. Thompson, June 3rd (substituted for notification in "Gazette," July 15th); Sec. Lt. A. J. Morris, June 17th (substituted for notification in "Gazette," Aug. 22nd, wherein this officer was described as A. T. Morris); Lt. C. F. Soans, June 23rd; Sec. Lt. A. B. Dove, July 18th; Capt. B. C. Clayton, A.F.C., July 19th; Lt. (actg. Capt.) E. Brown (substituted for notification in "Gazette," Aug. 22nd, wherein this officer's rank was stated to be "Capt."), Sec. Lt. E. J. Cook, July 22nd (substituted for notification in "Gazette," Aug. 22nd, wherein this officer was described as E. J. Coor), July 22nd; Lt. A. S. White, July 23rd; Capt. C. A. Cuthbert, July 24th; Lt. A. M. Cott, July 26th; Flying Officer W. T. H. Hocking, Aug. 8th; Flt. Lt. (actg. Wing Commodore) O. Lindquist, O.B.E., Flying Officer A. H. S. Synge, Aug. 22nd; Pilot Officer D. A. A. Christie, Aug. 29th; Flt. Lt. F. N. N. Roberts, Aug. 30th; Flying Officer C. Liver, Flying Officer J. B. Mendham, Sept. 2nd.

The following relinquish their commns. on account of ill-health, and are permitted to retain their rank:—Capt. H. G. Thomas (contracted on active service), Aug. 21st; Lt. P. H. S. Gwilliam, Sept. 5th; Sec. Lt. I. G. Bethwaite, Sept. 3rd; Sec. Lt. A. W. Clare, Sept. 8th.

The notification in "Gazette" of May 23rd concerning Sec. Lt. R. Donald is cancelled.

MEDICAL BRANCH.—Flying Officers to be Flt. Lts.:—J. Ferguson, Aug. 26th; T. M. Davies, Sept. 5th.

Capt. W. H. H. H. Bennett, M.B. (Capt., R.A.M.C., T.F.), relinquishes his commn. on ceasing to be empld., Dec 10th, 1918.

Transferred to the unempld. list:—Lt. O. P. Turner, Feb. 22nd; Capt. J. Duffin, July 4th; Capt. G. W. Clark, July 9th; Flt. Lt. J. E. Cox, Aug. 2nd; Flying Officer P. A. Dormer, Aug. 11th; Flying Officer C. Lambrinudi, Aug. 21st; Flt. Lt. P. T. J. O'Farrell, Aug. 27th; Flt. Lt. I. de B. Daly, Sept. 2nd.

DENTAL BRANCH.—Flying Officers to be Flt. Lts.:—S. C. Turner, Aug. 26th; A. Williams, Sept. 2nd

MEMORANDA.—Lt. S. E. Mailer, A.F.C., to be Hon. Capt., April 1st, 1918.

Sec. Lt. S. J. Dodson to be Lt., Jan. 30th.

The following Cadets are granted hon. commns. as Sec. Lts.:—463046 J. B. Watt, Jan. 4th; 181410 T. P. G. E. Chasemore, 175841 G. L. B. Wilkinson, Jan. 6th; 179991 H. V. Waite, Jan. 10th; 128001 A. C. Doyle, Jan. 15th, 179622 W. Gilbertson, Jan. 19th; 29777 S. G. Wallis, Jan. 23rd; 545275 W. J. E. Bates, 184752 J. R. Harper, Jan. 25th; 183154 C. R. Elgie, Jan. 27th; 180838 W. J. C. Murray, Jan. 28th; 97257 E. J. Appleby, 180078 R. T. Williams, Feb. 4th; 128085 R. Page, Feb. 8th; 176828 J. R. Stonier, Feb. 19th, 179343 C. W. Howie, March 2nd; 37692 W. R. B. Ball, March 12th; 137956 B. L. Wells, March 21st; 235072 C. I. H. Davies, March 28th; 70699 T. D. Jenkins, April 5th; 175812 J. D. Fenton, April 6th; 317378 J. Goulding, April 9th; 113357 G. H. Laking, April 10th; 205453 D. A. West, April 28th; 30425 H. S. Senior, May 25th.

The following relinquish their commns. on ceasing to be empld.:—Temp. Hon. Lt. H. S. Porter, Aug. 16th; Maj.-Gen. E. B. Ashmore, C.B., C.M.G., M.V.O. (Brevet Col., R.A.), Sept. 1st; Temp. Hon. Capt. A. B. Rogers, Sept. 13th; Temp. Hon. Capt. E. W. Birch, Temp. Hon. Lt. C. E. Marshall, Temp. Hon. Capt. R. S. Owen, Temp. Hon. Lt. T. G. Rawson, Temp. Hon. Lt. F. E. Woodward, Temp. Hon. Lt. E. A. York, Sept. 16th.

Transferred to unempld. list:—Lt. H. D. A. Dart, from (S.O.), June 11th; Flying Officer (actg. Flt. Lt.) A. Eggar, from (S.O.), Sept. 11th.

Lt.-Col. C. F. de S. Murphy, D.S.O., M.C. (Maj., R. Berks R.), resigns his commn., Sept. 17th

AIR MINISTRY, Sept. 10th.

R.A.F.—The following temp. appointment is made:—Staff Officer, 3rd Class.—(Tng.) Flight Lt. I. G. S. Payne, M.C., A.F.C., Sept. 15th.

FLYING BRANCH.—Sec. Lts. to be Lts.:—J. Douglas, April 23rd, 1918; J. H. W. Goodall, Sept. 28th, 1918; W. W. Smith, May 9th; L. H. Ridley, June 20th; J. M. Dandy, June 24th.

The following Sec. Lts. (late Gen. List, R.F.C., on prob.) are confirmed in their rank as Sec. Lts.:—D. P. Fulton (A.), July 26th, 1918; T. L. J. Jackson (A.), April 22nd; T. G. Brooke (A. and S.), Aug. 23rd, 1918.

The following relinquish their commns. on ceasing to be empld.:—Sec. Lt. A. C. Gill, Jan. 13th (substituted for the notification in the "Gazette" of Jan. 28th); Capt. D. B. M. Hume, Jan. 15th (substituted for the notification in the "Gazette" of Feb. 25th); Sec. Lt. S. W. Gee (Lt., Can. Supply Col.), Feb. 15th; Lt. L. de S. Duke (Lt., actg. Capt., Brit. Col. R.), June 21st; Sec. Lt. (Hon. Lt.) H. H. Heal (Lt., Quebec R.), Sept. 1st; Sec. Lt. J. S. Blanford, D.F.C. (Sec. Lt., E. Kent R.), Sept. 4th; Lt. D. A. A. Shepperson (Lt., Som. L.I.), Sept. 10th.

Transferred to the unempld. list:—Sec. Lt. I. T. Atwood, Sec. Lt. R. E. Brown, Sec. Lt. O. H. Clearwater, Sec. Lt. A. B. Cleveland, Sec. Lt. F. V. Collins, Sec. Lt. J. C. Dandurand, Sec. Lt. J. P. Davey, Sec. Lt. C. E. Delaney, Sec. Lt. A. J. Doiron, Sec. Lt. L. Driscoll, Sec. Lt. J. S. Finch, Sec. Lt. H. G. Hanneman, Sec. Lt. D. D. How, Sec. Lt. H. B. Hunter, Sec. Lt. A. G. McLerie, Sec. Lt. C. A. Pieper, Feb. 1st; Lt. J. J. Ambler, Lt. E. G. C. Quilter, Feb. 14th; Lt. A. H. P. Pehrson, March 9th; Lt. (Hon. Capt.) A. J. Lazarus-Barlow, March 14th; Lt. W. J. Garrity, March 15th; Capt. O. Hughes, March 25th; Lt. G. H. Olney, April 1st; Sec. Lt. F. P. Hodgson, April 11th; Lt. (actg. Capt.) A. Beck, D.F.C., April 19th, Lt. F. S. Smith, April 20th (substituted for the "Gazette" of July 11th, in which this officer was described as Sec. Lt. F. S. Smith); Sec. Lt. D. H. P. Johnson, April 22nd; Lt. W. C. O'Venden, April 23rd; Lt. J. T. G. Murison, April 26th; Sec. Lt. R. W. Hopper, May 10th; Lt. C. C. Paul, May 18th; Sec. Lt. S. G. Neal, May 23rd; Sec. Lt. T. Sydenham, June 3rd; Capt. W. B. Foster, June 10th; Sec. Lt. R. J. M. Jeffrey, June 13th; Lt. R. Fitton, M.C., July 24th (substituted for the notification in the "Gazette" of July 18th); Sec. Lt. J. Nicole, July 30th; Flying Officer R. Nisbet, Aug. 1st; Pilot Officer J. Murphy, Aug. 9th; Pilot Officer W. J. Large, Aug. 26th; Flight Lt. K. Ogden, Aug. 28th; Pilot Officer R. E. Norrish, Aug. 29th; Pilot Officer L. C. Atkins, Pilot Officer A. Champ, Pilot Officer J. W. Gardner, Flying Officer C. J. Kennedy, Sept. 1st; Flying Officer P. B. Clews, Sept. 6th; Flying Officer J. W. Jones, Pilot Officer W. C. Staunard, Sept. 7th; Pilot Officer N. V. Moreton, Pilot Officer J. S. Newman, Pilot Officer T. Rennie, Pilot Officer T. A. Thomas, Sept. 9th; Flying Officer O. W. Frayne, Pilot Officer J. C. Ivens, Pilot Officer L. G. Warren, Flying Officer F. C. B. Wedgwood, Sept. 10th; Flying Officer C. Hallawell, Sept. 11th; Flying Officer F. N. S. Creek, M.C., Sept. 12th; Sqdrn. Ldr. H. A. Petre, D.S.O., M.C., Sept. 15th, Pilot Officer H. Lovelady, Sept. 16th; Flying Officer G. V. Stewart, Sept. 18th.

The following relinquish their commns. on account of ill-health, and are permitted to retain their rank:—Capt. J. A. Hutchinson, May 20th (substituted for notifications in "Gazettes" of Jan. 24th and Aug. 8th); Sec. Lt. T. R. Adair (caused by wounds), July 10th; Sec. Lt. E. L. Goold, Sept. 5th.

Sec. Lt. J. A. Griffin relinquishes his commn., being physically unsuited for the duties of Pilot or Observer, Feb. 14th (substituted for notification in "Gazette" of Dec. 3rd, 1918).

Sec. Lt. O. F. G. Crosby is antedated in his appt. as Sec. Lt. (A.), May 10th, 1918.

The surname of Sec. Lt. A. E. Amey is as now described, and not "A. E. Amy," as stated in "Gazette" of Sept 3rd, 1918.

The notification in the "Gazette" of April 1st concerning Lt. B. N. Wills is cancelled.

The notification in the "Gazette" of April 4th concerning Lt. C. M. Shilcock is cancelled.

G. R.

MINISTRY OF MUNITIONS.

By Direction of the Disposal Board.

(Lands and Factories Section).

Bembridge Seaplane Station

ISLE OF WIGHT.

Area : About 3¾ Acres.

FOR DISPOSAL AS A WHOLE.

The Buildings are mainly Brick and Corrugated Iron with Timber Frames.

There is a Water Supply and Electric Light Plant. Drainage. Railway Station adjoining. Frontage to the Solent. In addition to its use as a

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the buildings are suitable for

MOTOR BOAT OR BOAT BUILDING,
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and many other purposes.

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(Lands and Factories Section).

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For further particulars, apply to the **Disposal Board, Room 135, Charing Cross Buildings, Villiers Street, London, W.C.2.**

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The notification in the "Gazette" of July 15th concerning Sec. Lt. J. A. Tomson is cancelled.

The notification in the "Gazette" of July 29th concerning Sec. Lt. J. P. Jones is cancelled.

ADMINISTRATIVE BRANCH.—Lt. E. L. Ridley to be Lt., from (A. and S.), Dec. 12th, 1918 (substituted for notification in "Gazette" of March 7th).

Sec. Lts. to be Lts.:—H. V. Hall, Aug. 27th, 1918 (substituted for notifications in "Gazettes" of March 7th and Aug. 15th); D. J. Fryer, March 13th; H. C. Bird, April 19th.

Sec. Lt. H. J. Payne to be actg. Lt. whilst empld. as Lt., from Nov. 23rd, 1918, to April 30th

Sec. Lt. H. J. Payne is graded for purposes of pay and allowances of Lt. whilst empld. as Lt., May 1st.

Transferred to unempld. list:—Lt. B. N. Wills, Jan. 17th; Lt. C. M. Shilcock, Feb. 27th; Sec. Lt. J. A. Tomson, March 7th; Lt. D. W. Orr, March 30th; Sec. Lt. C. H. S. Pain, May 3rd; Sec. Lt. W. Paterson, May 5th; Lt. J. M. Johnson, May 9th; Lt. C. I. Fletcher, July 8th; Lt. H. C. House, July 25th; Flt. Lt. M. Lewis, Aug. 14th; Pilot Officer S. McK. Pullen, Aug. 21st; Pilot Officer W. R. Taylor, Aug. 27th; Pilot Officer M. A. Jordan, Flying Officer C. T. H. Page, Aug. 29th; Pilot Officer E. H. Bacon, Sept. 1st; Pilot Officer B. Ninness, Sept. 6th; Pilot Officer C. Jackson, Pilot Officer R. H. Owen, Sept. 9th; Pilot Officer A. H. Bradley, Flying Officer F. A. Payne, Flying Officer W. R. Wood, Sept. 11th

Sec. Lt. G. R. Blake relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Aug. 14th.

TECHNICAL BRANCH.—Lt. A. C. Blackmore is graded for purposes of pay and allowances as Capt. whilst empld. as Capt., Grade (A.), from May 1st to July 2nd.

Lt. J. D. Robinson to be Lt., Grade (B.), from (A.), Nov. 21st, 1918.

Sec. Lts. to be Lts.:—(Hon. Lt.) J. E. Spickernell, April 2nd, 1918 (without pay and allowances of that rank prior to Sept. 14th, 1918); (Hon. Lt.) G. A. Tilly, April 2nd, 1918 ((without pay and allowances of that rank prior to Feb. 9th).

Sec. Lts. to be Lts., without pay and allowances of that rank:—F. Denham, March 13th; A. R. Conder, April 19th.

Lt. W. Barber (R.N.) relinquishes his commn. on ceasing to be empld., Aug. 21st.

Transferred to unempld list:—Lt. H. T. Thompson, April 11th; Sec. Lt. J. W. Smith, May 12th (substituted for notification in the "Gazette," July 18th); Lt. L. B. Jones, M.C., July 31st; Pilot Officer C. C. A. Poole, Aug. 2nd; Pilot Officer (Hon. Flying Officer) E. F. Boultbee, Aug. 23rd; Flying Officer J. R. Coulthard, Flt. Lt. R. Neilson, Aug. 30th; Pilot Officer G. Bowden, Flt. Lt. L. P. Hoult, Flt. Lt. E. Whitwell, Sept. 1st; Flying Officer C. H. Boyle, Flt. Lt. C. E. Shackle, Sept. 7th; Pilot Officer S. C. Addison, Pilot Officer W. E. Burden, Pilot Officer A. J. Gregson, Sept. 8th; Pilot Officer (Hon. Flying Officer) C. B. Harris, Flying Officer C. H. Higson, Pilot Officer R. Lyne, Pilot Officer W. M. Sercombe, Pilot Officer (Hon. Flying Officer) L. Stockton-Smith, Sept. 10th; Flt. Lt. D. Thomson, M.B.E., Sept. 12th

Lt. B. A. Hill relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Sept. 11th.

Sec. Lt. T. E. Lomas relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Sept. 8th.

The notification in the "Gazette" of July 22nd concerning Capt. F. Reynolds is cancelled.

MEDICAL BRANCH.—Wing. Comdr. (actg. Group Capt.) T. D. C. Barry is transferred to unempld. list, Aug. 31st.

The following temp. appts., "Women's Royal Air Force," are made at the Air Ministry:—To be Actg. Assist. Comdrs., 2nd Class:—Administrator P. E. Stapleton-Cotton, Administrator Mrs. W. M. Corbett (graded for pay as dep. asst. commandant), July 15th.

ADMINISTRATIVE BRANCH.—To be Actg. Administrators:—Dep. Administrators M. A. Mackay, July 1st; M. E. Clarke, July 13th; E. I. David, July 15th.

To be Actg. Dep. Administrators:—Asst. Administrators E. A. Rurbridge, May 6th; K. Hargreaves, June 15th; D. G. James, I. Huleatt (graded for pay as Asst. Administrator), July 1st; K. J. Wright, V. M. Orrock, July 6th; Mrs. M. M. Shields, July 10th; M. C. Whidborne, July 12th; N. Campbell, July 15th.

The date of relinquishment of appt. as Administrator of Mrs. N. C. Habrow (née Pasmore) is July 14th, and not as stated in "Gazette," July 22nd.

The following officer relinquishes her appt. on account of ill-health: Dep. Administrator Mrs. M. K. Unwin, July 25th.

The following officers relinquish their appts. at their own request:—Asst. Comdt., 2nd Class, Mrs. C. S. French, July 9th. Administrators.—R. V. Spinks, May 6th; Mrs. O. E. Tibbits (D.A.C.), July 18th; Mrs. K. Avison, July 22nd; O. Cayley, Aug. 1st; H. B. Womack, Aug. 5th. Dep. Administrators:—G. M. Ghubb, July 1st; G. Tighe, July 2nd; D. G. James, July 12th; Mrs. M. Savage, Aug. 13th; L. M. Mackay, Aug. 23rd; Mrs. F. F. Pelly, M. C. Ralston, Aug. 31st; M. Hallowell-Carew, Sept. 1st. Asst. Administrators.—B. W. Gilbert, June 10th; E. Watt, June 12th; Mrs. B. E. Thompson, June 27th; Mrs. K. A. D. Rolfe-Rogers, July 3rd; M. Wade, K. R. Bear, July 9th; M. L. Cumming, July 12th, M. C. Blackwell, July 16th; D. M. M. Allen, July 24th; M. C. Green, July 25th; M. Woodward, G. C. Gibson, July 26th; Mrs. P. M. C. Tyacke, July 30th; G. Green, Mrs. L. Swafield, July 31st; Mrs. M. Hessler, Aug. 1st; Mrs. J. I. Stubbs, Aug. 12th; E. E. Sharp, Aug. 16th; Mrs. M. B. Sersale, Aug. 19th; Mrs. I. M. Banks, Aug. 23rd; E. Middleton, Aug. 30th; Mrs. C. S. Swann, Sept. 1st.

The following officers relinquish their appts. on completion of service:—Asst. Comdts., 1st Class.—Mrs. W. M. Powell, Aug. 26th; E. M. Hamilton, Sept. 5th. Asst. Comdt., 2nd Class.—E. O'Sullivan, Aug. 26th. Administrators.—S. A. Grady, Aug. 11th; V. Thurstan (D.A.C.), Sept. 2nd. Dep. Administrator.—K. McDermott, June 30th. Asst. Administrators.—D. B. Gordon, Aug. 22nd; M. M. Hugh-Smith, Aug. 26th.

MEMORANDA.—90984 Cdt. H. T. Collins is granted an hon. commn. as Sec. Lt., April 2nd.

The following temp. Hon. Lts. relinquish their commns. on ceasing to be empld.:—T. Leopard, June 16th; H. S. Burdett, Sept. 16th.

Transferred to unempld. list:—Flying Officer R. H. H. Watson, from (S.O.), Aug. 1st; Pilot Officer S. G. Nash, Sept. 9th.

The notification in "Gazette," Sept. 5th, concerning Sec. Lt. T. A. Bayly is cancelled.

The notifications in "Gazette," Sept. 5th, concerning the following Pilot Officers are cancelled:—J. A. S. Cooke, J. M. Fraser, T. E. Fisher, E. Fortin, E. Hanley, T. S. Laird.

WAR OFFICE, September 20th.

REGULAR FORCES.—ESTABLISHMENTS.—R.F.C.—Mil. Wing.—The following appointment is made:—Equipment Officer, 3rd Class.—Temp. Sec. Lt. (on prob.) D. J. Fryer, Gen. List, and to be confirmed in his rank, Feb. 20th, 1918.

PERSONAL NOTICES.

NAVAL.

ENGAGEMENT.

SPARLING—THORN-DRURY.—An engagement is announced between Wing Cmdr. Evelyn Hayley Sparling, R.A.F. (Lt.-Cmdr., R.N.), younger son of William Sparling, of 10, Upper Maze Hill, St. Leonards, late Bogawantalawa, Ceylon, and Silvia Maud, only daughter of G. Thorn-Drury, K.C., of 42, Roland Gardens, S.W.7.

BIRTH.

NORTON.—On Sept. 9th, at Nocton Heath, Lincoln, the wife of Major E. W. Norton, D.S.C., R.A.F., of a daughter.

MILITARY.

DEATHS.

MOCATTA.—Captain Frederick E. Mocatta, A.M.I.C.E., B.Sc., R.A.F., died on Aug. 26th after an operation for septic meningitis. Born in 1890, he served with the Royal Artillery in the 29th Division in the Gallipoli Expedition and took part in the first landing on April 25th, 1915. After the evacuation he saw service in Egypt and France, whence he was invalided home. He was then seconded to the R.A.F. and did excellent work in the Aircraft Production Department at York House.

WALTHEW.—Sec. Lt. John Syers Walthew, R.F.C., the second son of Mr. and Mrs. Walthew, of Harpenden, who was previously reported missing on Sept. 19th, 1917, is now officially presumed to have been killed on that date.

ENGAGEMENT.

BEALE—BROCK.—The engagement is announced between Norman Sydney Beale, M.C., Légion d'Honneur, late Lt., East Surrey Reg. and R.A.F., eldest son of Mr. and Mrs. S. B. Beale, of Sutton House, Sutton, and Margaret Eleanor St. Hill (Nora), youngest daughter of Mr. and Mrs. Arthur Brock, of Haredon, North Cheam.

MARRIAGE.

HAMBLY—STRANGE.—On Sept. 3rd, at St. Matthew's Church, Ealing, Capt. Arthur Francis Hambly, late 2nd Essex and R.A.F., of Bodmin, Cornwall, was married to Vera Mary, eldest daughter of Mrs. John Strange, 5, Tring Avenue, Ealing, by the Rev. Sadler Phillips.

BIRTH.

RUSSELL.—On Sept. 19th, 1919, at 17, Park Lane, to the wife of Wing Commander R. E. M. Russell, C.B.E., D.S.O., R.A.F. (late Lt.-Col., R.E.)—a daughter.

AIR FORCE.

DEATH.

RUDGE.—Lieut. Arthur E. Rudge, 203rd Squadron, R.A.F., who was reported missing after an aerial combat on July 22nd, 1918, is now presumed to have been killed on that date. He was the younger son of J. E. and Julia Rudge, of Paris, and 9, Belsize Park, N.W., and was 19 years of age.

ENGAGEMENT.

FOSTER-STENNING.—The engagement is announced of Capt. William Barham Foster, late R.A.F., son of Mr. and Mrs. Frank Foster, of Buenos Aires, and Alice Margaret, daughter of the late Oswald Francis Stenning and Mrs. Stenning and granddaughter of Sir Alexander Stenning, of West Hoathly, Sussex.

MARRIAGE.

ALBROW—SMALL.—On Sept. 17th, at St. Columba's Church of Scotland, London, W., Lieut. Herbert Victor Albrow, R.A.F., eldest son of Mr. Albrow, Epsom, was married to Margaret Maxwell, younger daughter of the late Mr. John Small, of Wentworth, Jamaica, and Broughty Ferry, and sister of the late Lieut. John Small, B.W., M.A., LL.B., Advocate, Edinburgh, by the Rev. Archibald Fleming, D.D.

AIRCRAFT CONTRACTS.

It is stated that the committee of business men engaged in liquidating contracts for aircraft outstanding at the date of the armistice has cut liabilities of £150,000,000 in half and left the Ministry of Munitions with about 12,000 engines and 3,000 machines for disposal after the R.A.F. has provided for its own needs.

A WORKS CLOSING DOWN.

Owing to the Government cancelling orders for aeroplane construction, the works of the Cambrian Aircraft Constructors (Limited), Cardiff, employing 500 hands, are closing down next week. A proposal to utilise the works for making windows and doors for housing was not adopted.

SOUVENIRS

By "VESTERSYL."

"Is Snooks about?"

The Technical Serjeant-Major turned round smartly and faced the young Flight Lieutenant.

"He is in the repair shop, sir."

"Tell him I want him, please."

"Very good, sir," and the Technical Serjeant-Major, after looking very knowingly at the "prop" tip in the hand of the young officer, trotted off towards the repair shop.

Presently Snooks came out of the shop, approached the officer, and saluted.

"You sent for me, sir."

"Yes, Snooks, I want you to make me a brevet of this," and he proffered the propeller tip to the expert wood worker. "When can I have it?"

"To-morrow, sir," replied Snooks.

"To-morrow?" said the officer. "But I want it to-day. It is a souvenir."

"Very good, sir; you shall have it in two hours," and Snooks went away with a smile upon his face, produced in all probability by the thought of the half-crown tip he was sure to get.

Snooks no doubt was the "brevet" expert. Others in the same squadron, however, had their own specialities so far as the production of souvenirs was concerned. For instance, Snooks, although the "brevet" expert, could not hold the candle to Jones, who guaranteed to produce a perfect biscuit barrel from the "prop boss" of any propeller. And so the souvenir game went merrily on.

PETROL LIGHTERS.

There are very few persons in the Royal Air Force who have not made or procured, at some time or other, a souvenir of the great war. The writer, for instance, has in his possession a neat little petrol cigarette lighter made from the oil pressure regulating cap of a B.H.P. engine. This cap, in addition to an aluminium plug, surmounted by a fantastic copper stud, pronged to receive the steel wheel, makes a very nice little job. A certain amount of curiosity as to how I obtained the material may be aroused. To allay this, I may say that they were "scrap" and were given to me in a quite honest and legitimate manner. If you inquire of anyone who possesses a souvenir, you will be told the same tale.

Regarding the types of souvenirs I have seen, I can truly say that these are varied. As a matter of fact, "varied" is not the word to use; there are hardly two alike. I have seen souvenirs discarded merely because their owner has seen another "something like it."

Cigarette lighters I have seen have taken various shapes and sizes. Some are really works of art. Some are of aluminium, others of copper, a few of brass, and some a combination of the three materials. As a matter of fact, they are excellent articles, such as could have been made on a "night shift" where the craftsman has had quite an abundance of "his own time."

One of them in particular that I can remember is a massive article capable of holding quite half a pint of petrol. It is made of copper, topped with a brass fuse cap from a 3in. shell. Its owner is very proud of it, and he delights to place it on the table with the remark, "Help yourself to a light," when he has visitors for the proverbial hand at cards.

I once saw a unique souvenir made by someone in a certain squadron. It was a pair of connecting rods from a Gnôme engine, crossed, and surmounted by a piston. A small clock in the centre of the piston indicated the purpose for which the souvenir was made. The whole was mounted upon a mahogany board, and it made quite a good job.

It is true that the souvenir has something of the "death's head" look about it, and that it cost its owner 28s. to have it electro-plated. But what matters that so long as he can point with pride to it in years to come and say, "That is part of a Gnôme, you know—one of those engines we used in the Great War."

A PISTON AS A ROSE BOWL.

I was talking to my old friend "Mac" one day in the machine shop where he supervised the manufacture of certain component parts of aero-engines, when he was approached by a lady employee. She had a piston in her hand.

"Will you please have a hole drilled in the centre of this?" she inquired, indicating the crown of the piston. The job was accordingly done.

I had the pleasure of seeing this souvenir some little time afterwards. It was mounted upon an inlet valve stem, and with specially cut pieces of streamline, made, I must confess, an excellent rose bowl. It is a little bit weighty perhaps, but, then, one will not object to lifting a little extra weight when exhibiting a souvenir to a host of admiring, and a little bit jealous, friends in the year 1930.

Cylinder liners are, or were, a favourite souvenir among the workers of one firm which manufactured aeroplanes and aero engines. This was, no doubt, due to the fact that the firm referred to was prepared to sell scrap liners to employees for the small sum of one shilling each.

These liners, mounted upon a wooden base, made excellent flower-pot stands. In some cases they were enamelled and artistically painted. I had the pleasure of seeing a pair beautifully decorated with landscape oil paintings. The owner proudly points to them and refers to them as the liners of the engine that did a lot of bombing in the Great War.

I have heard it said that there are more copper rings fitted on the wrists of R.A.F. airmen and their sweethearts than were ever fitted in the engines. I do not believe this, although I do know that many of them do act as an adornment for the wrist. I have one in my possession. It was sent to me after being made from a scrap ring. They really look like gold, and, neatly engraved, are regarded as excellent souvenirs.

THE CONNECTING-ROD CLOCK.

An excellent souvenir is the connecting-rod clock. This takes the form of a connecting-rod with a round clock securely fitted in the large end. The end is hung upon the wall by placing the small end over a nail. Nicely electro-plated, this makes a neat job.

In an office the other day I came across a very interesting souvenir. This was nothing more or less than a gudgeon-pin bush taken from a captured German Mercédès engine. This bush is made of phosphor bronze, and has a number of ¼ in. holes drilled in it. The function of these holes, when fitted in the small end of the connecting-rod, is to allow a free passage for oil between the gudgeon pin and the small end of the connecting rod. As a souvenir, its function is a pen rack. Two aluminium knobs were turned and fitted in each end of the bush, these being mounted upon two brass pillars. It meets its requirements adequately, and, owing to its curious appearance, it seldom fails to give its owner an opportunity of explaining its origin to his visitors when he is asked, "What have you got there?"

One young woman I know was married in a dress made from some of the fabric with which the wings of aeroplanes are covered. She takes a great pride in this, and no doubt it will be placed in the proverbial "glass case" pending the arrival of the next generations, who, no doubt, will look upon grandma's dress as the finest of all souvenirs of the war.

The most interesting souvenir I have seen is in the house of a friend of mine at Leicester. This is nothing more or less than a complete Gnôme engine. It is suspended from the centre of the drawing-room ceiling by its shaft and a strong chain. The sparking plugs have been removed and electric light holders are fitted in the sparking-plug holes. With opalescent shades this engine not only forms one of the most remarkable souvenirs of the war, but it is extremely useful as an electrolier. Quite a contrast to my humble cigarette lighter, isn't it?

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ON THE PROJECTED SEAPLANE RACE AND ITS PROMOTERS.

Undoubtedly the Committee of the Royal Aero Club has done well in promoting a seaplane race at the end of this month, by way of wiping out the disgrace of the Schneider Cup fiasco. It is earnestly to be hoped that the race will receive adequate support in the way of entries, and that it will not be killed by the Railway Strike.

The four British machines which were entered for the Schneider Cup are presumably available in any case, and it ought to be within the capabilities of the diplomatists of the Royal Aero Club to induce the French Aircraft Industry to enter a few machines. One fears that Italy is rather too far away to send machines to compete for so small a prize unless some special inducement is offered. And there does not seem to be any prospect of entries from other countries, seeing that Germany is still outside the International Convention.

It seems worth while to discuss one or two matters affecting this race, in the hopes that the points raised may cause the minds of the Committeemen of the Royal Aero Club to operate in a manner profitable to the Club and to the future of the Sport of Flying—which, rather than the Art of Hotel-Keeping, is the proper function of the Club.

The Question of Entries.

In the first place, so far as at present announced, the scheme of the race does not appear to offer any attractions to entrants other than the four Schneider Cup machines. The £100 trophy generously presented by Lieut.-Col. McClean is, it seems, to go to the winner along with the £500 prize. There are no second and third prizes, which would induce other owners of seaplanes to enter machines which are obviously too slow to win, but which would stand a sporting chance for a "place" if two or three of the Schneider machines failed to start or to finish.

There are in fact seaplanes in half-dozens if not in dozens round the coast which could be induced to enter for the race if there were a prospect of picking up some sort of prize and a certain amount of advertisement. The Avro people have several of their standard machines fitted with floats, which put up quite a good speed. The Supermarine Co. has the flying-boats with which its pilots have been taking up passengers at Bournemouth. The Eastbourne Aviation Co. has several Shorts and Avros which have also been used for passenger-carrying. The Fairey Aviation Co. has sundry experimental seaplanes, large and small, which would also be available. Probably Short Bros. have a few undelivered machines, originally built to Government order, which could be entered. And there would be no lack of pilots for such machines. Mr. Dick Fairey remarked a few days ago, "There is our machine ready to fly, and we'll race anybody for half-a-crown or a plated crumb-scoop!" That is the spirit of a good many more constructors and pilots.

The Committee's Last Chance.

To use an Americanism, it is up to the Committee of the Royal Aero Club to make as good a show as possible, not merely for the honour of British Sport, but for the Club's existence in the future, or, at any rate, for the continued existence of the present members of the Committee on the Committee.

Those who read the Civil Aerial Transport Notes last week (a section of this paper which one personally considers the most interesting of all) will have noticed the brilliant success of the Italian Seaplane Race round the Island of Sicily for a trophy presented by that great sportsman, the Cavaliere Florio. Twenty-seven starters and eighteen finishers in a race in which the winner's time was five hours and sixteen minutes is pretty good showing for a starving and bankrupt country, torn by internal dissention—as Italy is supposed to be.

If the Royal Aero Club of Great Britain cannot make as good a show as that, then it speaks badly for our position as the leading sporting nation in general, and for the ability of the Committee of the R.Ae.C. in particular. The Committee has this chance and this chance only of justifying its existence before the next Club election comes on in March or thereabouts.

A Painful Parable.

There seems to be, and there has seemed to be for many years, a tendency on the part of the Committee to regard itself as having been appointed by Providence rather than as having been elected by the Members. And as a corrective to that point of view perhaps a small true story which is also a parable may serve a useful purpose.

A certain Town Council in Ireland desired to instal itself in new and important Council Offices—which it could well afford, seeing that Ireland is now one of the richest countries in Europe, thanks to the war. Unfortunately, the particular block of buildings which the Council coveted for its new offices belonged to an old lady who was distinctly hostile to the Council, so that a kind of modern democratic Naboth's vineyard was created. As the result, the Council sought statutory powers to purchase and asked for a Local Government Board Inquiry to investigate and adjudicate on the case.

A particularly affable and ingenious official was sent down to look into the matter, and, by way of helping towards an amicable settlement, he called upon the owner of the buildings, accompanied by one of the notables of the town. The lady was not amenable to persuasion, and after refusing negotiation concluded by saying: "And the Good God will see that I'm not evicted from me property!" To which her fellow-townsman replied promptly: "Well then, now, Ma'am. I wouldn't trust in Him *too* much. Don't forget that He evicted the first two tenants that ever He had!"

One may believe in the Divine Right of Kings, but one has no belief in the Divine Right of Committees. *Vox Populi Vox Dei* is the most outrageous nonsense that was ever put on paper. *Vox populi vox stulti* would be much nearer the truth, for where an incompetent Committee or Parliament remains in power too long it is because it is re-elected by the voice of the fool. Nevertheless, on occasion the fool becomes wise, and unless the Committee of the Royal Aero Club justifies its existence now that it has the chance, it may well find itself evicted as effectually at the next election as were Adam and Eve. Therefore one counsels it to make the best of its opportunities during the next three weeks so that the Seaplane Race may be a success.

The Issue at Stake.

All this may seem much of a pother to raise over a mere £500 prize and a £100 pot, but the issue is far greater than this one race. The real issue is whether the Royal Aero Club and its Committee as at present constituted is fit to have any voice in the future of Flying not only in this country but in the rest of the World. The Schneider Cup fiasco would seem to prove conclusively that it is not. The coming race is its only chance of proving that it is.

The Committee will be well advised to call into its councils men of experience: men who have organised successful competitions in flying, yachting, motoring, and athletic events: men with practical (and recent) experience in flying high-speed aeroplanes and seaplanes: men with knowledge of practical aeroplane design: men with business knowledge. At present the main Committee of the Club, the Technical Committee and the Competitions Committee are far too academic, or include too many back numbers. There is no need to increase the size of these Committees, for "Too many cooks spoil the broth" is truer than "In a multitude of councillors there is wisdom." It will suffice if the knowledgable people are asked to call on the Committee and to state their views—as a favour to the Club. The Committees themselves should be benches of judges, not debating societies.

Such men as one has suggested are readily available, and one knows some who are very willing to help. One writes without any personal interest, for one has no experience of the subjects mentioned, and, anyhow, one's position as editor of this paper debars one from taking part in the work of Committees, for it is necessary as an editor to be impartial and to view all matters from the outside. But there are many men available who have vastly greater knowledge than any members of any of the Club's Committees.

Unwarranted Criticism.

It has been suggested by mere members of the Royal Aero Club that the Committee has no right to spend £500 of the Club's money—besides the expenses of running the race—in an attempt to cover up its own mistakes, and that if the Committee wants to put itself right in the eyes of the world it should do so out of its own pocket.

With this view one disagrees most cordially. The acts of the Committee are the acts of the Club, for the Committee was elected by the Club. If the Committee makes an ass of itself, the Club has also made an ass of itself by electing the Committee. If the Committee—as is alleged—takes but little interest in and pays little attention to the opinions of the members of the Club, that is because the members of the Club pay so little attention to the opinions and views of the people whom they elect to the Committee.

Therefore one is all in favour of the Committee's spending as much as it likes of the Club's money in the effort not merely to rehabilitate itself in the eyes of the members, but in the still greater effort to rehabilitate the Club in the eyes of the World in general and the sporting community in particular.

A Bigger Proposition.

Personally one is of the opinion that the Committee has not gone far enough. Besides the £500 prize and the McClean Cup for the fastest time, one would like to see another £200 or so put up for second and third fastest time.

Still better one would like to see a further £500 put up (in prizes of £250, £150, and £100) for the first three machines home in a Sealed Handicap Race to be run concurrently with the speed race, as has been done so successfully for several years in the Aerial Derby. This would ensure a decent entry, and we should then be certain of having something of a success to put up against the brilliant showing of poor little Italy.

Objections and Answers.

It may be objected that the Club's Committee (Sporting or Technical) does not feel competent to tackle the task of working out the handicaps. If it does not, there are others who can do the job, for there has never been any trouble over the handicapping in the Aerial Derby. And, if the principle, which was so successful in motor-racing at Brooklands, of disqualifying competitors who exceeded their "declared speed" by too great a percentage were adopted, there would be no fear of run-away wins, for competitors would be more likely to over-state than under-state their speeds.

It may also be objected that it is too late in the year for such an undertaking as a big race of this sort. The answer is, firstly, that if the Club does not do something big it can make up its mind to take a back seat as a sporting body in future; and, secondly, that if due attention is paid to meteorological warnings, it is just as possible to find three fine hours at the end of October as it is to find them in the middle of the Summer. The Schneider Cup race was ruined by a perfect Summer day, which produced a perfect sea-fog. Late October may produce a clear day with a big wind which will test the value of seaplanes even in Southampton Water.

Further it may be objected that there is no time in which to organise such a race. That depends entirely on whether the Committee of the Club is willing to work for its future existence or whether it insists on holding amiable debates over a tea-pot.

There is nothing whatever about the scheme which is not perfectly workable if the Committee is willing to work. But if the Committee of the Royal Aero Club chooses to ally itself in principle and practice with the wood-workers, coal-getters, iron-founders, and railway-transporters of this country, who neither work, get, found, nor transport, then there is nothing more to be said on the subject.—C. G. G.

Those who, owing to the Railway Strike, fail to obtain THE AEROPLANE from newsagents can have the missing numbers sent to them by post for sixpence—post free—from the Publishers:—The Aeroplane and General Publishing Co., Ltd., 61, Carey Street, W.C.2.

THE STRIKE AND THE OPPORTUNITY OF AVIATION.

It would appear that the old proverb to the effect that "It is an ill wind which blows nobody any good," is justifying itself to-day as well as ever. The railway strike which is causing everybody so much inconvenience is undoubtedly affording the finest possible opportunity to those concerned with and for Civil Aviation. The records of flying during the past three or four days, as recorded in their proper place in the Civil Aerial Transport Notes, are naturally incomplete, because reports from the Provincial centres have not yet been received, and even those from the London aerodromes are far from complete, owing to the pressure of work on the organisers of Civil Aerial Transport ventures. It is, however, recorded that quite a number of people have chartered special aeroplanes to carry them on urgent business, and, undoubtedly, if more aeroplanes had been available, more of these special journeys would have been made. Also, if the organisation of Civil Aviation ventures had been more fully developed, prices would have been lower, and, probably, still more people would have travelled by air.

Even as it is, enough has been done to show that it is worth while to do still more, but this moderate success of the various air lines as passenger-carriers is as nothing to one really great triumph which has been scored by Civil Aviation over officialdom. For the first time His Majesty's Post Office has permitted aeroplanes to carry His Majesty's mails.

An Official Dictum.

It will be remembered that not many months ago, Mr. Illingworth, the Postmaster-General, treated a proposal to carry mails by aeroplane with scorn, alleging, apparently without any particular proof, that an aerial mail service was only about 60 per cent. efficient. Probably, Mr. Illingworth was basing his figures on the very primitive attempts made by the R.A.F. to run a mail service between London and Cologne not very long after the Armistice.

Everything was against the success of such a service. The best mechanics in the R.A.F. were being rapidly demobilised, the whole thing was run in the slipshod manner which unfortunately came to be associated with the R.A.F. before the process of demobilisation began to weed out the worst of the personnel, as well as some of the best, and the weather at that particular period was such as to make the worst of a bad job.

A Transatlantic Success.

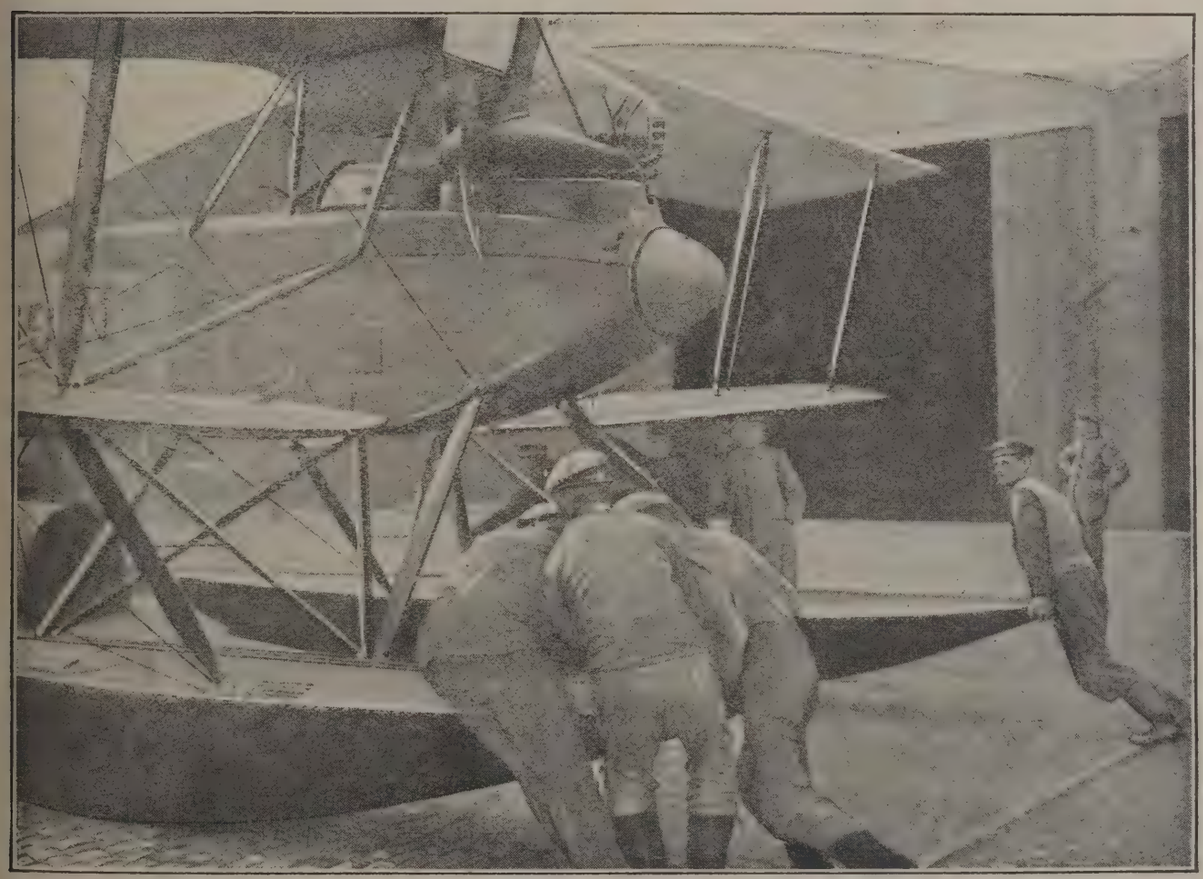
If Mr. Illingworth had taken the trouble to study the figures of the American mail services he would probably have held very different views. The first American experiment between New York and Washington was run with machines of a kind which even in America were called "elementary training machines," a type which, in fact, had been turned down in this country a year or two before as unsuitable for any kind of use. Yet, in spite of this, the percentage of successes was so good as to encourage the U.S. Post Office to extend the service.

After the Armistice quite reasonably effective aeroplanes were put into use, machines of a type which might possibly have been fit to use on active service. With these machines the percentage of efficiency became enormously high, so that when a few weeks ago the U.S. Postal Department published their figures for the first year of working, the efficiency was shown to be something over 95 per cent., and it was stated officially that the aeroplane service actually saved the nation 170,000 dollars (roughly, £34,000), as against the sum which would have been paid to the railways for carrying the same amount of mail matter.

Conditions of Competition.

This point is particularly worth noticing, because in America the aeroplane services between Washington, New York, Chicago, and Cleveland were competing with highly efficient railways running such crack trains as the "Empire State Express" and the "20th Century, Limited," and were not—as would be the case in England—competing with railways debilitated by Government control and manned by a personnel seething with discontent. Moreover, in America, the aeroplanes were competing with a straight-away railway run, whereas in this country the proposed mail services were to the Continent and to Ireland, so that the aeroplanes would have had the additional advantage of competing against slow steamboats and the delays of transhipment at each end of the sea journey.

If such successes could be achieved in America, how much more possible would it have been to achieve success in the mail services proposed in this country? Still, no amount of argument or proof is ever enough to move a British Govern-



Testing the Engine of a Seaplane at a German Station.

ment Department. Something in the nature of a social upheaval or a surgical operation is necessary to compel progress.

The Uses of Pressure.

The necessary pressure has now been applied, and Mr. Illingworth—doubtless very much against his will—has been compelled to commit his precious mails to the despised aeroplane. It is only to be hoped that those responsible for the aeroplane mail service will make it a success, and that fortune will favour them with fine weather for the duration of the strike. Naturally, for one's own personal convenience, one would like to see the strike over at once, but from the point of view of the future of civil aviation it might be a good thing if the strike lasted for a few weeks, and at the moment of writing it appears quite probable that it will do so.

The railwaymen seem very determined to see the thing through, and those to whom one has spoken seem to feel that they have a very real grievance. Naturally the daily Press does not give the men's point of view. As one has remarked on several occasions, the daily Press of this country is either directly under the thumb of the Government or is under the thumb of somebody who does not want to fall out with the Government. Consequently practically every daily paper in existence reflects the Government point of view.

The Alleged Grievance.

The real trouble with the railwaymen appears to be very simply and plainly that they do not trust the word of the Government. Nobody can particularly blame them for that attitude because practically everybody has at one time or another had cause to complain that the Government has not kept its word on some subject or another with which he or she is immediately concerned. The men say that the Government made certain definite promises that the whole matter of the pay of the different grades should be fixed by mutual agreement before the end of the year. On that understanding they returned to work after the last railway strike.

The men say that since they returned to work on that occasion the Government has done nothing, and that if they go on working the Government will go on doing nothing. Therefore, they allege that their only hope of getting a definite decision before the end of the year, when the war bonuses are removed, is to strike now. On the face of it this appears a reasonable argument, and if the men are wrong the Government ought to take proper steps to inform the men individually just where they are wrong and just what the Government has done in order to settle matters before the end of the year.

One cannot recall having seen anything in the Press since the last railway strike to indicate that the Government has done anything to settle matters, and presumably the average railwayman is in the same position as one is oneself. Therefore it appears that the Government is somewhat to blame for not keeping the men informed about the possibly excellent work which it has done in the direction of settling affairs by amicable arrangement.

Mr. J. H. Thomas, the great leader of the railwaymen, gave to the Press the other day a list of some of the anomalies which existed. He pointed out, for example, that a railway-shunter—a job which is one of the most dangerous in all our industries—gets 60s. a week, whereas a colliery-shunter working alongside him gets 70s. to 75s. a week. Also he pointed out that a railway guard, after years of service, gets 60s. a week, whereas a 'bus conductor after six months' work gets 73s. When one compares the responsibility of a railway-guard and the honesty of character necessary to handle the goods entrusted to his care, one begins to see that there are certain grievances which obviously must be redressed if the railwaymen are to give good and honest service. The fact that those anomalies have not been redressed ten months after the Armistice is certainly not to the credit of the Government.

When it comes to a plain statement of the facts on one side or the other we have the word of one Welshman, Mr. Lloyd George, against the word of another Welshman, Mr. J. H. Thomas, and one sees no reason to believe or disbelieve one any more than the other.

At any rate there is the strike and there are the aeroplanes. The various Civil Aerial Transport firms seem to be making the best of their opportunities, and whatever may be the result of the strike it is to be hoped that the work done by the aeroplanes in carrying mails, and those passengers whose business has made it worth their while to pay the high price at present necessary for aerial transport, will establish firmly in the minds of the business community and of Government Departments that the aeroplane is a vehicle which is worth using in ordinary times, and is not merely one upon which they may be compelled to rely in times of stress.—C. G. G.

AN R.A.F. MYSTERY.

There seems to be room in the Royal Air Force at the moment for a Sherlock Holmes of the very first class, and if any officer or man feels inclined to play the part of a private detective in his spare time one can suggest a line of search which is likely to keep him busy and amused at any rate during the period of a temporary commission.

It will be remembered that some time ago there appeared in this paper and others a short paragraph respecting the loss of early Squadron Record Books of the Royal Flying Corps. These books contained all the records of flying and other work done by the four aeroplane squadrons and one airship squadron of the Royal Flying Corps which existed before the outbreak of war, and naturally they are of immense historical value, as they date from the formation of the Royal Flying Corps in April, 1912, and contain all records up to the outbreak of war.

These Record Books disappeared in a most mysterious manner not very long ago, and anybody who can find any trace of them will be conferring a benefit not only on the Royal Air Force, but on aviation in general, for they are urgently needed by those who are at present engaged in writing the Official Air History of the War.

The story of the disappearance of these records is distinctly quaint. On the declaration of war orders were sent to the four officers commanding the four aeroplane squadrons then in being to forward all their records to R.F.C. Headquarters at South Farnborough. A Board of Inquiry which was held recently has obtained positive proof that these orders were faithfully fulfilled. The records were dispatched packed in wooden cases—generally Renault or Gnôme engine boxes—from No. 2 Squadron at Montrose and from Nos. 3 and 4 Squadrons at Netheravon. No. 5 Squadron was at Farnborough and the records had only to be sent to the Headquarters Office from the Squadron Office.

Naturally in the process of building up the R.F.C. a number of different officers were in command at H.Q., Farnborough, and nobody had any particular time to pay attention to the Squadron Records. These appear to have been housed in various places, owing to their original dumping-ground being needed for other purposes, but it is fairly well proved that they all existed at Farnborough so long as Farnborough remained H.Q., R.F.C.

Then when the Royal Air Force was formed and the great depot at Blandford came into being, the cases were sent off from Farnborough for the new Record Office. From that day to this no definite trace of them has been discovered, and there is no reliable evidence to show what became of them, except that a few isolated pages—evidently torn out of the Record Books—have come into the hands of the Historical Branch, R.A.F., which is engaged in writing the aforesaid official air history.

Everything points to these odd pages having come out of the books which were in the missing cases. It is quite possible that the cases may have been opened by some person or other who, not realising that the bundles of old books inside were of real historical value, merely threw them out onto the scrap heap. In that case possibly some of the men of the R.A.F. may have picked up odd volumes of the records and have kept them as souvenirs, not realising their value for historical purposes. Equally possibly the people who opened the cases may have thought that these early records of the R.F.C. would be interesting souvenirs of the Great War, but may not have appreciated their still greater value to the Officer in Charge of Records.

If any reader of this paper, whether officer or airman, can throw any light on the disappearance of these records he will be doing a service to everybody concerned with aviation if he will pass on any information which he may have on the subject to the Officer in Charge, Historical Branch, R.A.F., 2, Cavendish Square, W.1; and naturally, if anybody happens to have any of the books in his possession, he equally will be doing a service if he will send them along forthwith to the aforesaid officer.—C. G. G.

AN AIRCRAFT BED.

The promoters of the exhibition of models and pictures of aircraft which was opened at the Princes Galleries, Piccadilly, on Sept. 15th, hope that it will be the means of providing 10,000 shillings, clear of all expenses, to provide an airship bed at St. Dunstan's. The sum represents the total number of in-patients and out-patients treated at Lady Sybil Grant's Hospital at Roehampton during the war. It is hoped that all interested will send to their late Hospital Commandant something to be sold at the gift stall in the exhibition, or 1s. direct to Lady Sybil Grant, Primrose House, Roehampton, London, S.W.15.

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The WORLD of AERONAUTICS

NEWS OF THE WEEK FROM ALL QUARTERS

A Professor of Aeronautics.

It is announced that Mr. Bennet Melville Jones, of Emmanuel College, Cambridge, has been elected to the "Francis Mond" Professorship of Aeronautical Engineering in Cambridge University.

It may be remembered that prior to 1913 Mr. Melville Jones was a member of the staff of the National Physical Laboratory engaged upon Aeronautical Research work, and that in that year he joined the staff of Sir W. G. Armstrong, Whitworth and Co. in connection with their Airship Department.

In September, 1914, Mr. Jones joined the Royal Aircraft Factory, remaining there till 1916, when he was transferred to Orfordness Armament Experimental Station, with the rank of Captain, R.F.C.

He later became Assistant Controller of Experiment and Research, with the rank of Lieut.-Colonel, R.A.F., having, in the meantime, served as a pilot with No. 48 Squadron in France.

The Case of Miss Douglas-Pennant.

Messrs. Simmons and Simmons, on behalf of Mr. W. C. Bersey, have lodged certain statements with regard to the case of Miss Douglas-Pennant before the House of Lords Committee in readiness for the hearing on Oct. 14th. Mr. Patrick Hastings, K.C., and Mr. Thomas Carthew have been retained on behalf of Mr. Bersey.

An American Competition.

The Aero Club of America has decided to offer prizes totalling one million dollars for an aerial race round the world.

Competitors will be permitted to use as many machines as they like in the race, and may use airships for all or any part of the course. In addition, they will be allowed to use any other means of transport for making connections between aircraft to the extent of 10 per cent. of the total distance to be covered. Alternative routes will be given to competitors for crossing the Atlantic and Pacific.

A special commission has been appointed to arrange the route and appoint referees in every country through which the competitors will pass. This commission will start during October.

The same scheme was mooted before the war, and this new edition is just as likely to be a success—or otherwise.

Another £10,000 Prize.

In order to commemorate the visit of the Prince of Wales to the capital of British Columbia and to encourage in Canada the development of aeronautics, Mr. Norman Yarrow, of Victoria, the head of Yarrows, Ltd., has offered a prize of £10,000 for the first non-stop flight across the Pacific Ocean from Vancouver Island to Japan.

The flight is to be made by a lighter-than-air machine which must be manufactured in Canada.

The airship is to be navigated and manned by Canadians. The flight must be a non-stop one and must be performed before December 31st, 1921.

Aeroplanes in the Antarctic.

Mr. John L. Cope, the leader and organiser of the British Imperial Antarctic Expedition, states that preparations are well advanced for the projected flight to the South Pole. He says that the death of Brig.-Gen. Lee had been a terrible blow. He had signed on with the expedition as chief of the aeronautical staff and would have piloted the aeroplane to the South Pole. Negotiations are now in progress with a famous aviator to take the place of General Lee.

Mr. Cope states that he is not merely going to fly to the Pole, but he intends to use the aeroplane throughout the six or seven years that the expedition will be on the ice. The Antarctic has never been charted properly, largely owing to the fact that many parts were quite inaccessible on foot.

It is his intention to chart the whole Antarctic from the air. He is glad to see that his old leader, Commander Shackleton, had expressed his views upon the prospects, and that he is in agreement with him regarding the practical use of the aeroplane. Of course, the machine itself would have to be of a very special type. In the first place, it would have to carry a very heavy load, four men and provisions for at least one month.

On the journey to the Pole they will have to cross a range of mountains which rises to 10,000 ft. Instead of wheels on the undercarriage there will be skids so that they can land on or rise from snow and ice

Amongst the personnel of the expedition is Mr. Ernest Joyce, who accompanied the first Scott expedition to the South Pole, and was a member of both Shackleton expeditions. Mr. Joyce is now on his way to England from Sydney, and he has agreed to serve as second in command to Mr. Cope.

An Airship Enterprise.

According to reports in the daily Press, Vickers, Ltd., have decided to complete the R.80.

It may be remembered that this rigid airship was designed by Vickers, Ltd., for the Admiralty, under the limitations imposed by the fact that the new airship shed at Walney Island had to be abandoned owing to the shortage of steel.

The ship was therefore limited in overall dimensions by the capacity of their existing sheds, and thus R.80—although of later design—is consequently smaller than the R.33 and R.34 class.

Every effort has been made to overcome the handicap of size by careful design, and R.80 is expected to show a very great advance in the ratio of structure weight to total weight over all previous designs.

It is not clear from present information whether the completion of R.80 is to be carried out by Vickers as a private undertaking or whether the Air Ministry has been persuaded to assist in the process. It is in any case fairly certain that the impulse did not originate in the Air Ministry, and Vickers, Ltd., are to be congratulated on their enterprise.

Beware!

The following advertisement recently appeared in the daily Press :—

PILOT WANTED for passenger flying; CAPITAL REQUIRED not less than £1,000; wage £5 p.w. and 3½ per cent. commission; should earn £8 to £10 p.w. Confidential.

Officers are warned to avoid investing their gratuities in concerns in which their salaries are liable to be paid from that same gratuity. One has no knowledge of the advertiser quoted, and the scheme may be unimpeachable, but the advertisement is of a type which has been used many times by flat-catchers.

Detectives in Aeroplanes.

According to the "Observer," the peaceful island of Capri, the delightful resort dear to so many English people, has had a little sensation all to itself. Apparently the Ministry of the Interior, from which depend the police, has not disdained to interest itself in the doings of the Siren Isle. As a result of some information, it instructed the Naples police to make inquiries about the existence of a gaming-house on Capri, where some of the visitors were in the habit of passing their evenings.

A Neapolitan detective, disguised as a tourist, crossed over to the island and began to make discreet inquiries in the public resorts, and in that world of free camaraderie which the morning bathing beach at Capri presents. He was not long in tracing the whereabouts of the gaming-house. But, fearing to alarm his prey by ordering a posse of police to come over in the daily boat from Naples, where they would have been too easily distinguishable, he telephoned to the mainland that a group of detectives should cross at night by aeroplane and land on some unfrequented part of the island.

The aeroplane duly arrived with its complement of detectives. They marched to the gaming-house and effected the surprise, arresting a number of gamblers and closing the house, which—for the sake of truth—it must be admitted was being kept by an Englishman long resident in Capri. This is perhaps the first time that the police have arrived on the scene in an aeroplane.

Some Coming Dinners.

It is proposed to give a dinner on Oct. 3rd to all past and present officers of No. 1 Stores Depot, Royal Air Force, Kidbrooke, S.E.3. The dinner will be held in the Officers' Mess. Will any Officer who has not received an invitation, please communicate with P. M. C.?

A reunion dinner of the Officers of D Squadron, No. 2 Wing, R.N.A.S., will be held on Friday, Oct. 3rd, at the Restaurant Frascati. Applications for further particulars should be sent to Capt. J. A. Yonge, D.F.C., c/o The Eastbourne Aviation Co., Eastbourne.

It is proposed to hold a dinner at Princes Restaurant, Piccadilly, on October 10th, for the members of 208 Squadron. Will those wishing to attend please communicate with Lieut. H. A. Zinn, No. 208 Squadron, Netheravon, Wilts, as soon as possible, enclosing £2 10s.?



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The WORLD of AERONAUTICS (continued)

More Scandals.

R.A.F. scandals have—naturally enough—to move to the rear in the presence of a national railway strike.

This is a matter for some regret. One cannot, under the present circumstances, adequately deal with the overwhelming scandal of the effective suppression of the country's air forces just in time to prevent their taking a proper share in the reconstitution of national transport during the railway crisis.

There was one sage who remarked that a people obtained the Government they deserved, and one who remarked that the British Isles was inhabited by forty million people, "mostly fools." The writer fails to remember accurately whether these two sages were or were not one, but himself living somewhere in the vicinity of the Chelsea football ground he is firmly convinced that one was the yclept of Chelsea.

Whether the question be one of equation or identity matters little—Britain is certainly inhabited by several fools and governed by fewer but more foolish fools.

It is a little difficult to discover whether Britain at this moment is governed by Mr. Lloyd George in fear of the Northcliffe Press, or by Lord Northcliffe in fear of Mr. Lloyd George. Which, however, seems to matter little. Government of fools for fools by THE fools undoubtedly sums up the present state of affairs with reasonable accuracy.

The "Times" and Mr. Lloyd George may be left to discuss the identity of the last-named party to the affair.

In the meantime an article which appeared in the "Times" of Sept. 27th may be adduced as evidence—circumstantial perhaps, but at least illuminative—to any who wish to inquire further into the question.

After a little wail—it certainly cannot be dignified by the Timely epithet of "thunder"—about thousands of young W.R.A.F. women—and others—who were daily conveyed from Reading to the Didcot stores of the R.A.F. by special train, it proceeds to an equally anæmic squeak on the subject of the tons of stores rotting at the Army Ordnance Stores at the latter place.

It is even stated that "a gentleman . . . was shocked" to see the waste going on.

It is, of course, unfortunate that gentlemen should be so easily shocked—it is more unfortunate that in all probability quite a large number of them will be even more shocked within the next few weeks—but it is even more regrettable that a paper with a world-wide reputation such as that once enjoyed by the "Times" should be able to combine in one and the same article an hysterical plea for the instant dismissal of Government servants employed upon the necessarily complex work of winding-up the war and a shriek about the waste resultant from a premature dispersal of an exactly similar staff, without any visible loss of prestige.

The article in question begins with a description of the arrival at Reading at 6.10 p.m. on Sept. 26th of a special train of fourteen or fifteen coaches laden with W.R.A.F.s from the R.A.F. Stores Depot at Didcot.

It moves on to state that "There are those, however, who feel that . . . the presence of so many girls in khaki and blue ten months after the signing of the Armistice is unwelcome to the local branch of the Comrades of the Great War—many of whom are still unemployed . . .

"From what can be gathered in Reading the women are not at all anxious to be demobilised. The majority of them belong to the factory working-class and apparently they can earn more in uniform then they can do as civilians."

Thus it would appear that the real complaint is the not unusual one that the women had rather more horse-sense than the male members of the Comrades of the Great War, who failed to recognise this great truth. This in itself is a quite legitimate cause of complaint—no self-respecting man can properly tolerate such evidence of his incapacity.

However, it seems rather unwise on the part of the "Times" to publish in the same article the fact that valuable stores are rotting in the adjacent Ordnance Depot, particularly when it proceeds to state that at that depot hundreds of men—mainly discharged soldiers—are employed at the latter establishment, together with a comparatively small staff of men of the Army Ordnance Stores.

It may be safely assumed that there is no such obvious evidence of waste at the R.A.F. Depot or the scandal-monger of the "Times" would have mentioned it. It must therefore be assumed that the "Times" desires the R.A.F. Stores to assume the aspect of the Ordnance Stores. It may thus secure both the goodwill of the Comrades of the Great War and a further Didcot scandal about which to yowl.

But, speaking purely from an editorial point of view, one would certainly advise the "Times" to sack whoever was responsible for combining the two stories. Had they been well separated they might have passed—but, really, it is too easy. After all, a bad editor is a more serious matter than a weak policy—and this looks like a combine.

A Rumour.

It is rumoured that Vickers Ltd. have received orders for a semi-rigid airship for Japan and a rigid airship for the United States of America. It is extremely comforting to hear that at least somebody realises the importance of lighter-than-air craft, but it would certainly sound more comforting if these orders had been given by the British Government. Anyway, these present orders will certainly keep in employment a large amount of skilled British labour for such a time when our authorities recover from their orgy of false economy.

The Aeroplane of the Future.

In an interview given to a representative of the "Evening News" Mr. Handley Page is reported to have said that there are many problems to be solved before anything is to be gained by building really gigantic machines.

"One has only to look at the history of the motor-car," he said. "We started with a 6 h.p. car carrying four and five passengers, and running the engine to its utmost capacity, and by stages we got on to the 100 h.p. racer.

"But time has proved that for efficient working the car of about 20 h.p. is the most practicable. It will be exactly the same with aeroplanes.

"We shall get the freak machines, but I feel convinced that the moderate-sized craft for about eight or ten passengers is what is wanted for commercial work.

"Mr. Fokker's fighting aeroplane of the future is far more feasible."

"The only speed limit to an aeroplane is your pocket-book, and the increasing development of wireless makes it highly probable that the big bombers will be controlled from the ground.

"The vision of aeroplanes screeching through the air at anything up to 300 miles an hour, big guns as old-fashioned as spears, and infantry as mere passive armies of occupation, is something for the League of Nations to see about."

A National Effort.

Were the British Industries Fair, which is to be held from Feb. 23rd to March 5th, 1920, a private enterprise, it would still be entirely worthy of support; but being, as it is, a National effort, it is, undoubtedly, the duty of both manufacturers and Press, to leave no stone unturned to help forward its success. It is understood that the Board of Trade are sending out over 100,000 invitations to buyers at home and abroad, which, of course, is all to the good; but, if we, as a nation—for that is what it amounts to—invite such a congregation of buyers to attend a Trade Fair, it is up to us, also as a nation, and individually, too, to see that the exhibits we are calling them to view and, in every trade effected, fully represented.

Speaking for a moment of one section of the Fair—that of Birmingham—it is stated that the management are making strenuous efforts to avoid any weakness in this direction, and that one of their greatest handicaps is the apparent inability among potential exhibitors to realise the actual position. In Birmingham, the Chamber of Commerce and Municipality are jointly responsible for the organisation of this section of the Fair, and one willingly supports their efforts to spread, far and wide, the knowledge that this is a national affair, which knowledge alone will prevent that unrepresentativeness of the various grouped exhibits which will eventuate if all the leading concerns in each Industry do not place their products on view in either one or other of the three centres over which the Fair is divided—London, Birmingham, and Glasgow.

In short, if the British Industries Fair is to impress the buyers of the world with the wide range of our manufacturers' activities and the high standard of their products—if, in fact, it is to serve its purpose fully—there must be no hesitation among possible exhibitors, and there truly should be none among those who think nationally and not parochially.

Foolish Questions.

The booking agent of a well-known passenger air line has sent to the American "Aircraft Journal" the following samples of questions asked by prospective passengers:

"If I take my dog with me, do you think he will get sick?"

"Must I take Motherill's seasick remedy before I go up?"

"Can I step off to see a friend on the way down?"

"If I get killed do you have to go to prison?"

"Are your pilots blonde or brunette? I read in an article that only blonde pilots made good overseas."

"What happens if your engine stalls while we are in the air?"

"Will you promise not to fly too high?"

"How often have you been hurt?"

"Supposing I change my mind at the last moment, do I have to pay?"

The First Milestone in Post War Lamp Production

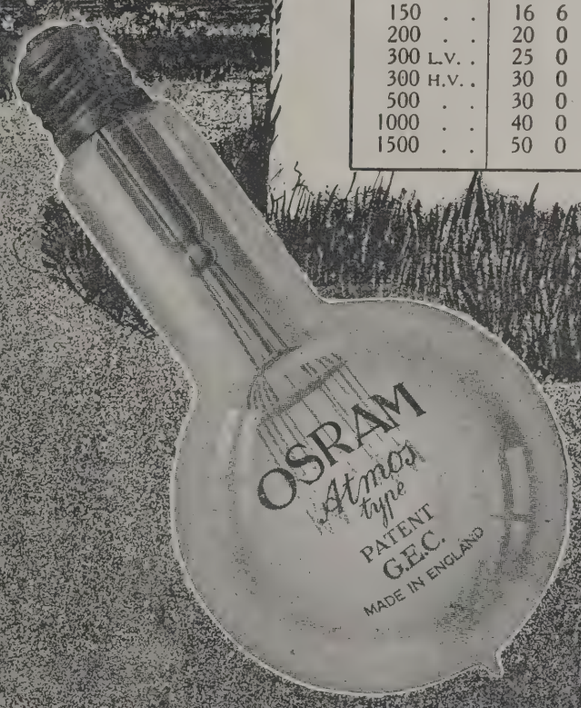
IMPORTANT REDUCTION IN PRICES

On and after October 1st, 1919, the prices of

Osram G.E.C. Lamps
Atmos type

will be reduced as follows:—

Rating in Watts.	REDUCED	
	From	To
15 . .	4 6	4 3
30 . .	5 6	5 0
60 . .	6 6	5 6
100 . .	12 6	10 6
150 . .	16 6	13 6
200 . .	20 0	16 0
300 L.V. .	25 0	20 0
300 H.V. .	30 0	20 0
500 . .	30 0	24 0
1000 . .	40 0	30 0
1500 . .	50 0	37 6



The above substantial reductions have been rendered possible through further technical progress resulting in improved manufacturing methods, combined with considerably increased output.
In pursuance of a pre-war policy the benefit thereof is at once offered to the user.

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BRANCHES THROUGHOUT THE UNITED KINGDOM.

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GREAT BRITAIN.

NAVAL.

ADMIRALTY APPOINTMENTS.

The following appointment has been made :—
SEPT. 25th.—Payt. Mid.—H. C. Hobson, to "Argus," Sept. 24th.

MILITARY.

OFFICIAL COMMUNIQUÉS.

The following official communiqué was issued at Simla on Sept. 22nd : Raiders on the 19th inst. attacked the Zarkani post. An aerial reconnaissance was made on the 20th, but nothing was seen of the enemy.

* * *

THE CASUALTY LIST.

... ... —*Reported Sept. 30th.*

PREVIOUSLY REPORTED MISSING, NOW REPORTED KILLED.—Muir, Sec. Lt. J. W., R.F.C.

A PROMOTION.

Lieut.-General Sir David Henderson has been promoted by M. Poincaré to the rank of Grand Officer of the Legion of Honour.

AIR FORCE.

THE BOMBING OF KRONSTADT.

British aviators are still bombing Kronstadt. It is now reported that from 140,000 lb. to 180,000 lb. of bombs have been dropped on the fortress.

A FATAL ACCIDENT.

On Sept. 28th a British aeroplane, while taking off in the neighbourhood of Lake Bracciano collided with a tree and caught fire. The pilot, Capt. C. H. Darley, D.S.C., D.F.C., R.A.F., was killed, and the observer, Lieut. Curtis, R.A.F., was injured; a mechanic who formed part of the crew was unhurt. The machine was on its way from London to Cairo.

AN ACCIDENT IN ITALY.

On Sept. 23rd the petrol tank of an R.A.F. motor launch lying off Poole exploded and the vessel caught fire In spite of the efforts of the crew, the launch was burned to the water's edge, and four men were badly injured.

The names of the airmen are :—Serjeant Thomas Bunting, and Leslie Boorman, David Spence, and William Rumbler.

BRITISH AIRCRAFT AT ST. RAPHAEL.

Three British aeroplanes said to be of the Vickers "Vimy" type left St. Raphael recently. One of these machines is stated to have made the journey from Lyon to St Raphael in 2 hours 30 minutes.

THE OLYMPIC GAMES.

A meeting of the British Olympic Council was held on Sept. 23rd in connection with the revival of the Olympic Games at Antwerp next year. The R.A.F. was represented by Major Clarke, Chief Inspector of Gymnasia, R.A.F.

THE W.R.A.F.

It is, more or less officially, stated that the strength of the W.R.A.F. has fallen to 13,345 since the Armistice. Before that date the strength was 25,600. The Force is to be still further reduced, namely, to 3,298, immediately, and it is hoped that the remainder will be demobilised by April 1st, 1920. The entire disbandment is necessitated by the reduction of the Air Estimates from £66,500,000 to £25,000,000.

R.A.F. PAY.

The following letter has been received :—

Sir,—In your issue of July 23rd, you publish with little or no comment the long-awaited and eagerly expected new rates of pay for Officers of the Royal Air Force. It appears to me that there are two points about these new rates which are open to some criticism, and to which more attention might be drawn.

The first is that no additional Flying Pay of any sort (whether in the form of "risk pay" or otherwise) is allowed.

The second (and it really arises from the first) is that from a comparative point of view the rates of pay are unexpectedly low as far as Officers—and particularly Officers of higher ranks—of the late flying branch are concerned.

As regards the first point, we know that in the ideal Air Service all Officers of all ranks, and whatever their other specific duties, will all fly equally; and there is no doubt that it is the desire and intention of the present Air Council to form such a Service.

I am inclined to think, however, that in this imperfect world such an ideal Service will never be realised, and that it will be found again (as it has been in the past) that office work and flying will not go hand-in-hand.

A pilot who is employed for any length of time on an administrative job either hates his job or loses interest in his flying. As there will always be so many administrative jobs to be filled, and probably also so many ex-pilots ready and willing to fill them, why try to adopt the most difficult course of expecting all Officers to fly, whatever their work?

Another reason against the scheme is that it closes one of the few possible openings for the continued employment in the Service of ex-pilots, and brings these Officers even more up against a blank wall should their nerve give out, or they have to discontinue flying for any other reason.

All things considered, I think that if Officers are to be attracted to fly and to continue flying, it will again be found necessary before very long to make some differentiation between flying and non-flying jobs, and either to reduce the pay of non-flying jobs (which would probably not be possible), or to re-introduce in some form or other a system of "flying pay for flying risks."

As regards my second point, comparison of the new rates of pay with the old will show that the new pay has been fixed at a rate very little higher in the junior ranks and not at all higher in the senior than the old scale of flying pay.

Thus, a Captain "flying" gets a rise of 4s. a day, a Major 2s. (or only one shilling if he is an ex-R.F.C. or R.N.A.S. Squadron Commander), and a Lieut.-Colonel no rise at all. In all cases, of course, the bonus which has been paid since Feb. 1st this year is dropped altogether.

Many people will say, and most others will, no doubt, agree, that a Lieut.-Colonel, R.A.F., or Wing Commander, R.F.C., or R.N.A.S., was grossly overpaid in the past. This may or may not be; but the fact remains that since 1914 his rate of pay has been 40s. a day, and it is probable that his expenditure bore a fairly close relation to his income. Similarly, a Major, R.F.C., or Squadron Commander, R.N.A.S., has drawn 33s. a day since the same date. Now, after some five years with all prices doubled and all the world talking of or demanding (and getting) higher wages and increases of pay all round, the Lieut.-Colonel gets no increase at all, and is 5s. 6d. down on the pay he has been drawing since February this year, while the Major gets a rise of 1s. or 2s., and, at the same time, loses the 5s. he has also been getting since February.

To put the matter in even a worse light.

Presuming that the rates of 33s. and 40s. were fixed before the war with due regards to the duties and responsibilities of the ranks (which, as mentioned above, many people will, no doubt, deny), and taking the favourite economic argument of Labour leaders, that £1 has only the purchasing-value of 10s. before the war, it will be seen that the £730 per annum which a Lieut.-Colonel drew before the war is now only worth £365 per annum, and yet he is to get no increase.

Not only that, but next year, when all Officers come on to the civilian rates of income-tax, the unfortunate Majors and Lieut.-Colonels (if still in the Service, which is questionable) will lose heavily, even on the face value of new rates as compared to the old.

This seems to me to be entirely wrong; but as the Officers concerned form so small a proportion of the whole, they will, no doubt,, get neither sympathy nor redress—in fact, they will probably be told that they are lucky to be allowed to retain the vast rates of pay that they have undeservedly been getting in the past!

All the same, it is a little hard for any Officer, of whatever rank, to find that the much-heralded increase of pay which he had been led to expect turns out to be for him, personally, such a very "Dutch" rise, resulting in an actual dead loss!

Incidentally, it is interesting to note that the new R.A.F. rates correspond very closely with the new Naval rates.

Presumably, the new Army rates will also be on similar lines, which means, I suppose, that in the opinion of the powers that be the Air Force is no longer a Service of special

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danger. This should, at least, be a good advertisement for the safety of flying!

Yet Naval Officers in submarines still get 4s. a day "risk pay."

Also, a Commander, R.N., draws extra "Command Pay," in addition to his 40s. a day if in command of a ship. By the same reasoning, why should not a Lieut.-Colonel, R.A.F., get "Command Pay," in addition to his £2 when in command of a Wing or Station?

(Signed) MAJOR, R.A.F.

AIRSHIP COMMISSIONS.

The "Evening News" (of Sept. 25th) understands that "the number of permanent commissions to be granted in the Airship Branch of the R.A.F. has been fixed at 30, against the 6,000 granted during the war and 150 in pre-war days."

[One doubts if there was anything like one hundred and fifty airship commissions in pre-war days.—ED.]

FRANCE.

A scheme is under consideration by the military authorities by which demobilised military aviators will be given the opportunity of keeping in touch with flying in general. Two solutions are suggested :—(1) to fix regular periods in which aviators can report for training, etc., and (2) to place at aerodromes near various centres a certain number of military aeroplanes at the disposal of aviators living in the district.

FRENCH AIRSHIP CONSTRUCTION.

At the recent reception given to M. Bossoutrot on his return from Dakar by the French Aero Club, General Duval stated that France had given an order for the construction of six rigid airships of 70,000 cubic metres capacity.

A CONVICTED GERMAN AVIATOR.

Heinrich Frey, a German aviator, has been convicted by court-martial at Amiens of a series of thefts at Soissons and has been sentenced to ten years' hard labour, twenty years' exclusion from France and a fine of 5,000 francs.

THE FIRE AT LE BOURGET.

A serious fire occurred at Le Bourget Aerodrome, near Paris, on Sept. 25th. Soldiers and firemen from Paris contrived rapidly to extinguish the flames. The Le Bourget Aerodrome is the French terminus of the London-Paris Air Service; luckily no stoppage was caused to that service by the fire.

The fire occurred in the Réserve Générale Aeronautique and destroyed a wooden workshop, several machine tools, six motor-cars and three reconstructed aeroplanes. The total damage is estimated to cost 800,000 francs.

ITALY.

THE ITALIAN SEAPLANE SQUADRON AT E.L.T.A.

It appears that, by the efforts of Nav. Capt. Gravino, attaché at the Stockholm embassy of H.M. the King of Italy, the seaplane squadron now at the E.L.T.A. Show, when it leaves, will fly on to Sweden, for commercial propaganda.—T. S. H.

GERMANY.

A BANK-BREAKING VENTURE.

Mr. H. Patrick Devitte, the "Daily Express" correspondent in Geneva, writes on Sept. 27th :—

The Rumanian Bureau at Berne informs me that Rumanian troops yesterday seized a great German biplane with four motors, which was forced to descend at Hotin, in Bessarabia, owing to a leakage in the petrol tank. The biplane contained 300,000,000 roubles (nominally £30,000,000) in new notes, also a complete miniature printing press for the manufacture of notes.

Four German officers who were in the aeroplane were flying to Moscow. They were arrested, and the biplane, notes, and press were seized. This incident proves the relations existing between Berlin and Moscow.

[It seems more likely that the intention was to flood Russia with bogus Bolshevik notes and so help to break the finances of the Bolshevik tyranny.—ED.]

U.S.A.

It is now announced that recruiting for the U.S. Army Air Service has been discontinued according to the instructions of the War Department. This Service has been decreased by 91 per cent. since the Armistice. The following figures of comparison are given :—

Of 195,023 officers and men in the service on Nov. 11th, 1918, but 16,991 remain, of whom 3,426 are officers. Of the 15,646 commissioned officers discharged, 1,638 flying and 1,524 non-flying have entered the Reserve, 20 per cent. of the number discharged.

Since April 1st, 10,000 hours not chargeable to training have been flown at the United States Flying Fields, with 37 fatalities. This shows a high fatality rate of 269 hr. per fatality as compared with 3,149 hr. per fatality for all flying during the last five months of the war.

A CROSS-COUNTRY FLIGHT.

According to the "Aircraft Journal" of America :—

"More than two and a quarter miles a minute is the speed record made by Lieut. Lyman Paterson, of the United States Army, flying from Washington to Langley Field. The 160 miles distance was covered in 70 min., according to an announcement made by the Air Service. It is pointed out that by maintaining this speed it would be possible to cross the Atlantic in considerably less than 24 hours."

One agrees that at this speed the Atlantic could be crossed in "considerably less" than 24 hours.



"ALL THINGS BRIGHT AND BEAUTIFUL": A Group of Aviators of the U.S. Naval Air Service. It is alleged that each of them is the son of a millionaire.

London-Paris Air Express

Summary of First Five Weeks' Flying.

August 25th, 1919, to September 27th, 1919.

Flights Scheduled	69
Flights accomplished	66
Prevented by weather . . .	2
Interrupted by mechanical defect	1
Number of Miles flown . . .	16,500
Average Speed (Miles per hour) .	107

The following is an official summary of the weather flown through during the first five weeks.

Days favourable for flying	3
„ unfavourable for flying . . .	18
„ noted officially as "unfit" for flying .	9

The attention of Bankers, Merchants, and firms which have houses both in London and Paris is again drawn to the unique facilities afforded by this service, which permits urgent documents, express goods, or passengers to be transported the 250 miles between London and Paris in an average time of 2¼ hours. The service, which has been operating daily since August 25th, has been started in order to demonstrate that, with the use of skilled pilots and fast machines, such an express air service can now be run with sufficient reliability to afford a definite, daily convenience to the business world.

LONDON:
AIRCRAFT TRANSPORT & TRAVEL, LTD.,
27, Buckingham Gate, S.W.1.

Full particulars regarding Rates and Freights can be obtained from Aircraft Transport & Travel, Ltd., 27, Buckingham Gate, S.W.1, or from the American Express Co., Queen Street and Haymarket; Thos. Cook & Son, Ludgate Circus, E.C. and 38-39, Piccadilly, W.; General Transport, Ltd., 52, Crutched Friars; J. Jackson & Sons, 7-8, Charing Cross, and King William Street, E.C.; Henry Johnson & Sons, 18, Byward Street and Beak Street, W.; Lepaerial Travel, Piccadilly Circus (Criterion corner); Carter, Paterson & Co., 6, Maddox Street, W., and 3, Cannon Street, E.C.; and Hernu, Peron & Co., 98-100, Queen Victoria St., E.C.

PARIS:
COMPAGNIE GÉNÉRALE TRANSAERIENNE,
118, Champs Elysees.

THE ROYAL AERONAUTICAL SOCIETY IN SCOTLAND.

On Sept. 24th, at Glasgow, the Scottish branch of the Royal Aeronautical Society entertained to luncheon the officers and crew of the Clyde-built airship, "R.34." Sir William Beardmore, whose firm built the airship, presided, and was supported by Lord Blythswood and others.

Sir Robert Horne, Minister of Labour, proposed the toast of the day, and said that Britain had beaten the Germans in the airship, which was our special pride, and the nation was under a debt of gratitude to her intrepid crew.

Major Scott, the commander, acknowledging, said civilian-owned airships would, for a long time, go along the lines of the designs of naval and military craft. Any support civilian owners got from the Government would be of the utmost national importance, because, in a few days, civilian airships could be converted to war craft.

The Marquis of Graham, replying to the toast of "The Builders," said the outlook for the development of commercial aviation was illimitable.

Sir William Ramsay, speaking of the Society, said the aeroplane constructed five years ago was still the most suitable, the most steady, and the safest machine heavier than air. This was the type of machine which had to be developed, and not the light, swift machine, which could do wonderful stunts and paralyse an opponent in actual fighting.

In the evening a public welcome was accorded the crew in St. Andrew's Hall, Glasgow, when amongst the speakers were Sir William Beardmore, chairman, and Sir Robert Horne. Lord Weir, who had been suddenly called to London, was to deliver an address, which, however, was read in his absence.

The King's Congratulation.

King George sent the following telegram :—

The King has received with much pleasure and satisfaction the loyal message from the citizens of Glasgow assembled this evening at the invitation of the Scottish branch of the Royal Aeronautical Society to do honour to the first British airship to cross and recross the Atlantic, and, thanking them for their assurance, His Majesty heartily joins in congratulating the designer and all those associated with the construction of this airship, on the remarkable success it has achieved, and is glad to think that the Clyde has played so prominent a part in establishing this fine record in the annals of British history. The King much appreciates the kind allusions to Prince Albert.

Progress in Research Work.

Lord Weir, in his paper, which was read by his brother, said the chief deduction he drew for the future was the one which the war made perfectly clear—namely, the supreme necessity of the strictest vigilance in the development of research and experiment. Whatever influence the exigencies of the moment might exercise on retrenchment, there must be no reduction of our expenditure on technical development. War was the compelling influence of the intensification of our technical effort

Referring to the immediate future of civil or commercial aviation, his lordship confessed he was a genuine believer in the future of civil aviation. He accepted flying seriously as an ultimately invaluable system of achieving high-speed transport for goods and passengers. He had an unflinching faith that aircraft comprising heavier-than-air or lighter-than-air craft would ultimately confer a genuine boon on civilisation. Early progress in civil aviation would, to the uninitiated, appear slow and unsatisfactory.

An aerial transport company to-day was like a merchant shipping concern without ports or harbours. Regarding commercial aviation, he thought only of the practical and utilitarian aspect of regular services, carrying goods and passengers. He fully recognised the immediate development and wholly admirable and profitable small ventures which would take place in the application of aircraft. For example, he looked to a considerable development on the sporting side and in the personal use of aeroplanes by the not inconsiderable number of those who were pilots during the war. For photographic and survey work a definite field of enterprise and usefulness was open.

Aerial Mail Service.

An increase in the rapidity of communication and of transport would be one of the most definite aids to the progress of civilisation. Mail matter would represent the most favourable class of work as a source of revenue. Thereafter would come urgent and emergency passenger work, e.g., the carriage of goods of a light, valuable, and specialised nature. The vagaries of our climate and the highly developed and speedy existing mail transport rendered the immediate application of aerial mail-carrying in the United Kingdom improbable.

After referring to the performances of the new London to Paris service, his Lordship said they must also realise the tremendous usefulness and value of obtaining actual experience on a more ambitious scale as early as possible. With that in view, one visualised the problem of handling, say, a part of the Indian mail over the section of the route where weather conditions are favourable and uniform at an early date.

If that route were started from Egypt to Karachi, that would constitute the initiation of a chain of Imperial air routes connecting by trunk lines the main units of the British Empire, and they would foresee, in addition, auxiliary feeder lines to and from the smaller centres. There were also many independent services. The most favourable he considered to be the coastal work service in Australia and the West Indies. At present he had the greatest faith in the usefulness of the coastal sort of flying-boat.

The Military Aspect.

As regards Imperial air routes and civil aviation, there entered into the problem the important factor of the future military aerial activities of the Empire. Whatever sum might be apportioned for the defence of the Empire would be allocated between air, sea, and land power, and it was clear that air power was the developing factor of the three. Accordingly, for strategical reasons alone, the different units of the Empire would require to be linked up by definite aerial routes, which would be found to a great extent to coincide with the commercial routes.

As to the State's part, he repeated that the best ends of civilisation would not be served by keeping civil aviation for a Government monopoly. Co-operation between the activities of the State and of private firms would produce the best results. The State must be the pioneer. It must help to build, encourage, and exercise control, but emphatically it must not monopolise.

BRITISH SUPERIORITY.

The "Times" of Sept. 20th referred to the success of the British-made aeroplanes at the E.L.T.A. as follows :—

"Mr. Kenworthy, better known during the war as Commander Kenworthy, states that shortly after the exhibition opened he found the Dutch were mad on the Fokker. The British, however, were not slow in changing this, for a few days after English airmen had been in the air the Fokker was not in the picture. From the first there was absolutely no doubt as to the superiority of the British machine over that of the Fokker type. Without presuming in the least, he could say they beat the lot.

"Mr. Kenworthy, who flew a Kangaroo machine made by the Blackburn Aeroplane Company, said he took eight passengers with him on many flights. When they were coming home they flew in a thick fog at Calais. When halfway across the Channel he and Capt. Woolley, who accompanied him, had something of a scare, for they discovered they had only sufficient petrol to last for another 10 minutes. The fog still surrounded them, and the wind was against them, so they decided to turn back. Top speed had to be resorted to and he calculated that they flew back to Marquise at a speed of 150 miles an hour, for in five minutes they landed. Before they left Amsterdam he and other English pilots received an invitation to meet M. Fokker at dinner, but, added Mr. Kenworthy, 'we refused the invitation.'"

[But for the fact that Mr. Kenworthy was never known as "Commander"—never having held that rank—the "Times" statement is instructive and amusing.—Ed.]

NO TRESPASSING.

Perhaps the first "No Trespassing" sign intended as a warning to aviators has been seen by Mr. G. F. Scales, president of the Miller-Scales Aero Co., of Waterloo, Iowa. The notice read :—

Keep Off This
Farm With Airoplain.
No Trespassing Allowed.

The owner of the farm had not actions for damages in his mind, for in attempting to settle with him for a landing the farmer insisted that he had all the money he needed, and that his livestock did not care to mingle with aircraft, to which they were not accustomed.

The "Aircraft Journal" of America" remarks : That this question will come up again can hardly be doubted, for court action has already been brought which will determine whether a property owner is also owner of the air above his land. Frederick Hoenemann, a farmer near Kansas City, Mo., is seeking to restrain an aeroplane company from using the air above his farm.

AERONAUTICAL ENGINEERING

SUPPLEMENT TO "THE AEROPLANE"

INCORPORATING AIRCRAFT ENGINEERING, AERODYNAMICS, AIRCRAFT FINANCE AND COMMERCIAL AERONAUTICS AND MATTERS PERTAINING TO THE AERONAUTICAL ENGINEER AND THE AIRCRAFT TRADER.

THE WEEKLY COMMENTARY.

A paper read by Wing Commander T. R. Cave-Browne-Cave, R.A.F., before the British Association at Bournemouth is reproduced at some length below.

This paper will be found to contain a large amount of information as to the practical difficulties met with in the design and operation of airships.

The question of various methods of compensating for the weight of fuel consumed, without discharging hydrogen, are of great importance, and are touched on by the author.

Wing Commander Cave's remarks on the subject of the fire risks in airships are reassuring and comforting, and his demonstration of the advantage of increased size in airships is simple and convincing.

The war-time products of the Sopwith Aviation Co., Ltd., are briefly described in this week's article on "Modern British Aeroplanes." Mr. T. O. M. Sopwith, the founder of the firm, was one of the earliest of British pilots, and his achievement of December 18th, 1910, in flying from Eastchurch to Thirlmont (Belgium), 169 miles, on a 60-h.p. Howard Wright biplane must be regarded as one of the finest of the early British performances.

The success that has attended his later efforts as a constructor of aircraft must be regarded as a fitting reward for his pioneer efforts of early days.

A German criticism of the Liberty engine appears on page 1266.

AIRSHIPS.

By Wing Commander T. R. CAVE-BROWNE-CAVE, C.B.E., R.A.F.

A lecture delivered to Engineering Section "G" British Association.

INTRODUCTION.

Airship development has depended very largely upon the work, not only of those scientific men whom we have been able to have in the Service during the war, but of the many others who have given invaluable assistance on an enormous variety of matters. The future development involves even more scientific problems, and I have framed this lecture to include, not the points of most general interest, but mainly those difficulties of greatest interest to the scientific world which we know from experience is always ready to help. The circumstances governing the variation of static equilibrium of an airship will be discussed.

AIRSHIP FABRICS.

The principal difficulty which is experienced with the use of airships for long periods, more particularly in tropical countries, is the deterioration of the fabric under the action of sunlight. This deterioration takes two forms, firstly the strength of the textile material is decreased, and secondly the gas-holding properties of the proofing material are destroyed.

The rigid airship contains a large number of gasbags formed of the lightest possible gastight material. This is usually a very light cotton cloth proofed with goldbeaters' skin stuck to it by means of rubber solution. The skins are then varnished as a protection against moisture. The actual tensile strength of this fabric is only sufficient to prevent damage during the motion of the gasbags in the ship's framework.

The outer surface of the ship is formed by an outer cover of linen of much the same strength as that used for aeroplane wings. The duties which this outer cover has to perform are very important. It has to be stretched sufficiently tight to prevent any flapping or appreciable deformation during the passage of the ship through the air. It must be waterproof and also water-repellant in order to reduce the weight added to the ship by a shower of rain. A further function, and one very difficult to fulfil, is the protection that it has to afford to the internal gasbags.

The outer surface of the non-rigid ships is made with a shining aluminium finish so that as much as possible of the heat and light is reflected. The rubber immediately under the surface is made to contain considerably more litharge than otherwise necessary, as this material absorbs a large proportion of that light which passes the reflecting surface. A similar system is being followed with the outer covers of rigid airships, and judging by the excellent results obtained from somewhat similar methods employed on aeroplane fabric, the protection both to the fabric of the cover and to the internal bags should be very good.

Experience with rigid outer covers is at present small, but it has been found that with non-rigid envelopes made by our latest methods of proofing, the deterioration of the outer surface becomes clearly visible before any serious loss of strength has taken place.

The envelope of a non-rigid ship is formed of layers of fabric which have to be of considerable strength in order to resist the small internal pressure necessary to maintain the rigidity of the ship. Between these layers of fabric is placed one or more layers of gas-tight rubber.

The strength of a fabric envelope can be calculated with considerable accuracy if it is assumed that the fabric is undamaged. The reduction of strength caused by a small local wound is, however, very considerable, because such a wound causes concentration of stress at the edges of the hole, and there is a tendency for the fabric to rip. This dangerous concentration of stress can be very largely avoided in a two-ply fabric if the threads of one-ply are laid at 45 deg. to those of the other. The threads of the diagonal ply then form an effective means of distributing the stress, and also when tearing actually begins tend to form together into a bunch which exerts considerable concentrated resistance to the extension of the tear.

The following table shows the reduction of strength caused by a ½ in. wound cut in a 6-in. strip in a direction at right angles to the direction of the stress.

Fabric.	Strength wounded. / Strength unwounded.
Single ply cotton	0.39
Single ply linen	0.52
2-ply parallel CC.	0.33
2-ply diagonal BD.	0.57
2-ply diagonal CC.	0.72
3-ply diagonal CCC.	0.68

The strength of the fabric used in the envelope of the "N.S." airships is 1,770 kilos. per metre, i.e., 100 lb. per in.

The stress in an airship envelope is very largely determined by the internal pressure which it is necessary to maintain in order to keep correct shape. The circumferential stress which this presure produces in the fabric is, like that in an ordinary boiler shell, about twice that in the longitudinal direction. Ordinary fabric is usually about equal strength in the warp and weft directions, and in order to resist the circumferential tension the envelope has to be made with a quite unnecesary longitudinal strength with a consequent increased weight.

It has been found possible to reinforce an envelope by means of flat bundles of string placed circumferentially round the

envelope at suitable intervals, so that these strings contribute the difference between the circumferential and longitudinal tensions. The fabric, therefore, need only be made sufficiently strong to take the longitudinal tension. This system of reinforcement has not at present been tried on a full-size envelope, but was found to give very satisfactory results when adopted on 20-ft. model envelopes which were tested to destruction.

In considering the best material for envelope reinforcement, very careful attention had to be directed to the tensile strength of a material compared with its weight for a given length. This was found to be most conveniently represented by the length of the strand which would hang vertically down without breaking under its own weight. This was termed the breaking length of the material. Values for some usual materials are given in the table :—

Material.	Breaking length in metres.
Thread, 3-strand cotton	12,600
Thread, 3-strand flax	15,900
Thread, 3-strand hemp	12,800
Pain's light rocket cord	28,600
Best Italian hemp cord	27,500
Airship cotton fabric	10,000
Aeroplane linen fabric	14,000
Envelope fabric (proofed)	4,000
Reinforcing string tape	12,600
Aluminium 10 tons/in.	6,400
Duralumin 24 tons/in.	14,400
Mild steel 30 tons/in.	6,200
H/T steel 100 tons/in.	20,600

Gas-Tightness.

The gas-tightness of fabrics and of seams formed in them is a matter which has been very thoroughly dealt with in papers to the Advisory Committee for Aeronautics, which it is understood will be published very shortly. It may, however, be said that the amount of hydrogen which leaks out through the fabric of an airship is a matter of purely nominal importance with fabrics of the excellence now available. The matter of real importance is the passage of air through the fabric into the gas space. This air reduces the purity of the gas, and unless very large quantities of gas are consumed by the ship by discharge through the valves, it is impossible to eliminate this air sufficiently to maintain the gas purity which is necessary to give the ship her lift.

An interesting point which has been clearly established is that the air which diffuses into the gas space tends to collect at the bottom of the envelope, more particularly in trilobe ships where the circulation of gas is less free than in circular envelopes. Samples of gas taken from within 12 in. or so of the bottom of the envelope show a hydrogen purity of some 1 per cent. lower than that in the rest of the envelope. Further the ratio of oxygen to nitrogen in this impurity shows that the air has come in by diffusion and not by mechanical leakage. This puddle of impure gas only collects while the ship is at rest in the shed, and is quickly dissipated as soon as flight is started.

Some of the chemical and physical changes which accompany the loss of gas-tightness of a rubber-proofed fabric are at present very obscure. Loss of gas-tightness appears to proceed very slowly for a considerable time, and then to become very rapid, almost in the nature of a sudden collapse. In some cases the gas-tightness is actually found to increase for a short time after the fabric has been made.

The Effect of Temperature Changes.

The effect of the sun's radiation on the outer surface of the ship produces other important results. It raises the temperature of the gas and the air contained within the outer envelope to a point considerably above that of the surrounding air. This results in what is termed "false lift." Immediately the strength of the sun's ray decreases the superheat begins to disappear, and the false lift of the ship is reduced. The extent of this superheat sometimes amounts to 30 deg. F. to 35 deg. F., corresponding to a loss of some 6 per cent. of the total lift of the ship. A rigid ship flying towards the sun superheats the gas in her forward compartments considerably more than that aft, and a change of trim results. Flow of air over the surface of the ship, and the circulation of air between the outer cover and the gasbags of a rigid ship tend to reduce superheat.

Changes of temperature in which the gas and air readings remain equal to each other, do not involve change of lift unless the expansion of the gas is sufficient to involve discharge of gas from the ship. If the ship becomes light and is allowed to rise higher than is otherwise necessary, much gas may be discharged. If weight can be taken into the ship, so that she does not rise, the loss of gas may be avoided, and this may be of considerable value during the next night when the ship has cooled down, and possibly absorbed moisture.

There are several methods of taking weight into the ship. One is to condense the exhaust, and by this method a weight considerably in excess of the weight of fuel burnt can theoretically be obtained. It is found that the exhaust gas from a 260 h.p. engine can be cooled to within 10 deg. F. of the atmosphere temperature in a cooler weighing about 120 lb. This would, in a rigid airship, take the place of a silencer weighing some 60 lb., and the added weight is not, therefore, very great. The form of cooler used resembles a honeycomb radiator with 1-in. tubes through which the air passes, the exhaust passing through the space around the tubes. There is, however, difficulty in this condensation, because the cooling surfaces rapidly become fouled and conductivity very greatly reduced.

An alternative is to draw water direct from the sea, either by a propeller-driven pump contained in a body towed by the ship and discharging water up a hose, or by filling a fabric drogue



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and hoisting the water into the ship by winch. Both these operations involve considerable difficulty in handling the ship, more particularly because at the time she wants water she is seriously out of trim.

Hydrogen as Fuel.

A possibly more promising alternative is to burn the hydrogen which would otherwise have to be discharged, and to condense the water of combustion. This is considerably easier than condensing the exhaust gas, because there will be no fouling of the cooling surfaces.

Experiments have been made on the use of hydrogen as fuel, and considerable success has been achieved. It is found that with very simple gear hydrogen can be burnt in an ordinary airship engine. When burning hydrogen alone it is not possible to develop more than 25 per cent. or 30 per cent. of the power which the same engine would give on petrol. If greater power is attempted serious detonation in the cylinder results. By providing a hydrogen-air mixing valve in parallel with the petrol carburetter it is possible to obtain any fraction up to the full power of the engine by suitably proportioning the relative amounts of hydrogen and petrol mixture burnt. The proportion of hydrogen which it is possible to burn depends upon the proportion of full power which is required from the engine. Under all ordinary circumstances a very considerable saving in fuel can be achieved.

The Fire Risk.

The risk of fire in airships has considerably reduced the warlike operations which these aircraft have been allowed to undertake. For commercial purposes some small risk of fire also exists. The proportion of this risk which is due to the presence of hydrogen is, in the case of commercial craft especially, considerably smaller than is generally believed. The engines and other possible sources of ignition are carefully arranged at a considerable distance away from any point at which gas can possibly be discharged, and the speed with which gas when liberated rises clear of the ship is such that only a very serious fire in one of the engine cars could possibly be communicated to the gas.

Although during the war British airships flew nearly 3,000,000 miles the only ships which were destroyed by fire were, one, the first, "S.S." ship which ran into some telegraph wires and caught fire, the crew escaping; two, a coastal ship which landed on the water and caught fire for an unknown reason, and lastly, an "S.S." ship which landed on top of another in a thick fog.

The petrol system is a source of danger which is probably at least as great as that due to the gas. Large quantities of petrol are stored in the keel of a rigid airship, and the petrol system is necessarily connected to the engine cars. The possibility of transmitting fire to the envelope of the ship would be very greatly reduced if paraffin or an equally safe fuel could be employed. The added safety which would be derived from a less inflammable fuel would probably justify some increase in the weight of machinery necessary to develop the required horse-power.

The Importance of Fuel Economy.

It may here be well to draw attention to the relative importance of the weight of the engine and the weight of the fuel consumed. This relation is very different from that which obtains in an aeroplane where the length of flight is considerably less. An aeroplane engine weighs some 3 lb. per horse-power, and may be expected to burn a weight of fuel equal to its own in six or eight hours. The machinery of an airship will, of course, during an ordinary passage run for many times this duration of flight, and further a large proportion of the flight will be carried out at less than the full power of the engines. A "North Sea" airship carried out one patrol of 101 hours, while the flight of R.34 to New York involved a continuous flight of 106 hours. From this it will be clear that an airship engine must be one of the very highest fuel economy, not only at full power, but also at fractions down to 25 per cent. of the maximum power. The increase of weight of engine justified by a small improvement in fuel economy is, therefore, considerable.

Steam Plants.

The use of steam for airship propulsion has been considered, and although the convenience of such a system is very great and the weight of machinery, including boiler and condenser, is not seriously in excess of the corresponding petrol engine, there appears at present no likelihood of reducing the fuel consumption to much less than 1 lb. per horse-power hour. This is clearly prohibitive when compared with the consumption by a petrol engine of less than 0.5 lb. per horse-power hour.

The Design of Airship Engines.

In addition to the requirement of high fuel economy, it is of the greatest importance that an airship engine should be able to run for very long periods without risk of breakdown. A further point is that the engine should be arranged in such a way that all its parts which are liable to failure during running, are made easily accessible, so that a repair can be carried out in the air. This is a very important difference from the aeroplane engine, which is normally inaccessible during flight. An airship engine can be stopped during flight, and must be regarded as at least as easily accessible as that of a motor-boat. The space round it is generally at least as ample, and it is only in exceptional circumstances that the motion of the ship will in any way interfere with the execution of repairs. Defective magnetos have frequently been replaced by others of a different type and the new ones correctly timed. One repair which involved the removal and replacement of one complete cylinder of a two-engined ship, was successfully carried out, and the engine used without trouble for the remainder of the flight. A satisfactory airship engine must, therefore, be one in which repairs, even of this magnitude, can be effected as easily and with as little delay as possible.

Airship Propellers.

The variation of speed of an airship renders the design of her propellers one of very considerable difficulty. She may be required to run on one engine developing its full power and giving the ship a very low speed, or on all her five engines giving her full speed. Under these circumstances the efficiency of her propellers must necessarily be low in some conditions. A satisfactory means of varying the pitch of the propeller should, therefore, lead to a very considerable gain in the efficiency of the ship as a whole. A propeller in which the alteration of the blade angle is sufficient to give reverse thrust would be very convenient, and avoid the reverse gear-box now required.

One Advantage of Airships.

One of the advantages which an airship possesses over an aeroplane is that her greater range will enable her to avoid atmospheric disturbances, and also to take more advantage of any depression which can be approached in such a way as to obtain a favouring wind. Meteorological information can now be obtained from a fairly considerable number of points, but prediction is rendered considerably easier if it is possible to read the barometer at a point on the ground below the ship herself. A barometer reading taken in the ship is, of course, useless unless the height of the ship can be determined by means other than barometric pressure. Instances have occurred in which the barometer has changed so greatly during an airship's patrol, that the ship struck the water during the night when her aneroid registered a height of 300 ft. When crossing an unknown country it is also desirable to determine the height above the ground, independent of the barometer and height above sea-level. To determine this height above the sea, it has been suggested that the report of a rifle discharged in the ship and reflected from the surface of the sea should be timed. A special form of stop-watch, which was used for gunnery research during the war, makes it possible to measure the interval between two similar sounds with an accuracy of within 1/10 second. Up to the present the method has not been found very satisfactory, on account of the difficulty of hearing the reflected report if the ship is not stopped, or her speed seriously reduced. It is, however, possible that in an emergency this device could be used with success by stopping or slowing down the ship. This is, of course, a serious disadvantage to the method, and something better is required.

Hydrogen and Helium.

The generation of hydrogen is probably the greatest difficulty in extending the use of airships to more or less undeveloped countries. Hydrogen at present is manufactured for airship purposes mainly from coke. Some method of manufacturing hydrogen from wood or other vegetable matter would probably prove of very great value in allowing airships to work in those countries in which they have their greatest advantage over other possible forms of transport.

The use of helium has been considered, and much experimental work has been done on the extraction of this gas from the natural gases obtained from wells in Canada and America. The price of this gas, when made by present methods or by any system which appears probable in the immediate future is, however, almost prohibitive, and failing a really remarkable discovery such as the possibility of getting hydrogen to degrade into helium, there does not appear much possibility of reducing the price to a commercial possibility.

Stresses and Construction.

The calculation of the stresses produced in the hull structure of a rigid airship under the many different conditions

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encountered is one of considerable complexity, and one which cannot come within the limits of this lecture. The most interesting members of the structure may be regarded as long struts some 16 ft. long, designed to fail, when the ends are supported freely, under an end load of some 8,000 lb., or a distributed load of some 2,000 lb., i.e., 120 lb. per ft. The construction of such a girder has involved several very interesting, though probably not novel, principles. The bracing pieces which have to be made of an easily stamped section, are formed so that their thin edges come in the neutral axis of the piece, and are, therefore, little exposed to secondary bending. The end of the bracing piece is carefully shaped so that the loading is as little eccentric as possible. Bracing pieces are arranged in pairs, and are riveted together where they cross. The piece in compression can then derive support from its fellow, which must at that time be in tension.

An interesting manner of assessing the relative merits of various types of strut is to consider how far the construction allows the material to develop its full yield stress. If a form of construction is such that the crippling load divided by the area of cross section of the strut approximates closely to the yield stress of the material, the form of construction must be considered very good.

The Advantage of Large Airships.

The advantage to be gained, from a commercial point of view, by using a large ship is clear from the following consideration. For ships covering the same range at the same speed and having similar shape, the displacement varies as the cube of the linear dimensions (l^3), the weight of hull, fabric, etc., as l^3, the resistance, and, therefore, the weight of machinery and fuel as l^2

$$\therefore \quad \underset{K_1 l^3}{\text{gross lift}} = \underset{K_2 l^3}{\text{wt. of hull, \&c.}} \quad \underset{K_3 l^2}{\text{wt. of machinery}}$$

$$\text{Weight of fuel consumed} = K_4 l^2.$$

$$\text{Hence} \quad \frac{\text{freight}}{\text{fuel}} = \frac{K_1 l^3 - K_2 l^3 - K_3 l^2}{K_4 l^3},$$

a function which clearly increases with the size of the ship. It is, therefore, interesting to consider what limits the size of rigid and non-rigid ships of the types at present in view.

Practical Limits of Size.

Increase of length of a rigid of given cross section appears to call for no increase in the strength of her hull, provided the load is properly distributed. No serious restriction to the length of rigids is, therefore, in view. The most dangerous stresses are produced in the main transverse members of rigids by unequal inflation of the gasbags on either side of a bulkhead. The bulkhead is formed of wires lying in the transverse plane and attached to the joints of the main transverses. Difference of pressure in adjacent bags, therefore, induces great tension in these wires, and hence compression in the transverse frame. The possible head of gas produced by the total deflation of one bag increases with the ship's diameter, and so does the span of the wires. In a ship of large cross section, therefore, the compression in the transverse frames becomes very serious.

The non-rigid airship is not, as at present designed, divided into compartments by diaphragms capable of resisting a difference of pressure in the gas on either side. If the ship takes up a very steep pitch the internal pressure at the upper end of the ship wil be seriously increased if the pressure at the lower end is still to be maintained above atmospheric. This accumulation of pressure at the upper end of the ship while pitching may prove a serious difficulty in a really large non-rigid, but it is probable that by the employment of a circular section and fabric reinforced in the manner already referred to sizes considerably greater than any we have built at present can be achieved. The development of a large non-rigid offers—at any rate in the author's opinion—very great promise of advantage, because the ratio of disposable lift (fuel and freight) to the total displacement of the ship is so good. A non-rigid of 500,000 cubic ft. capacity, i,e., carrying a useful load of 7½ tons, will have about the same value (50 per cent.) for this ratio as a rigid ship of four times the capacity (2,000,000 cubic ft.).

The slides which followed illustrated various operations carried out by airships during the war. The last one, which showed the mooring of a rigid airship to a mast, is of extraordinary importance. The difficulty of handling a large airship is very greatly magnified in the opinion of most people. The only serious difficulty lies in getting the ship into her shed when a wind is blowing across the entrance. Bringing an airship to the mast where she is always head to wind and the air is not even disturbed by the presence of a shed, is easy. A 60-ton airship lands in equilibrium so that the upward force the landing party exerts is nil. Compare this with even a 20-ton aeroplane touching the ground at 50 m.p.h., and running a quarter of a mile, at the end of which it is pressing on the surface of the aerodrome with its full weight of 20 tons.

The airship shown in this slide remained at her mast for three weeks in charge of watches, each consisting of one N.C.O. and five men. She experienced winds of 35 m.p.h., with gusts up to 43 m.p.h., very heavy rain and bright sunshine, also several thunderstorms, including the very violent one of July 17th, which passed over the ship at 2 a.m. At times the whole ship appeared to be aglow, and it was easily possible to read the instruments in the keel by the light of the discharges.

The ability to land and be safely secured in bad weather very greatly reduces the number of days which must be regarded as too bad for flying.

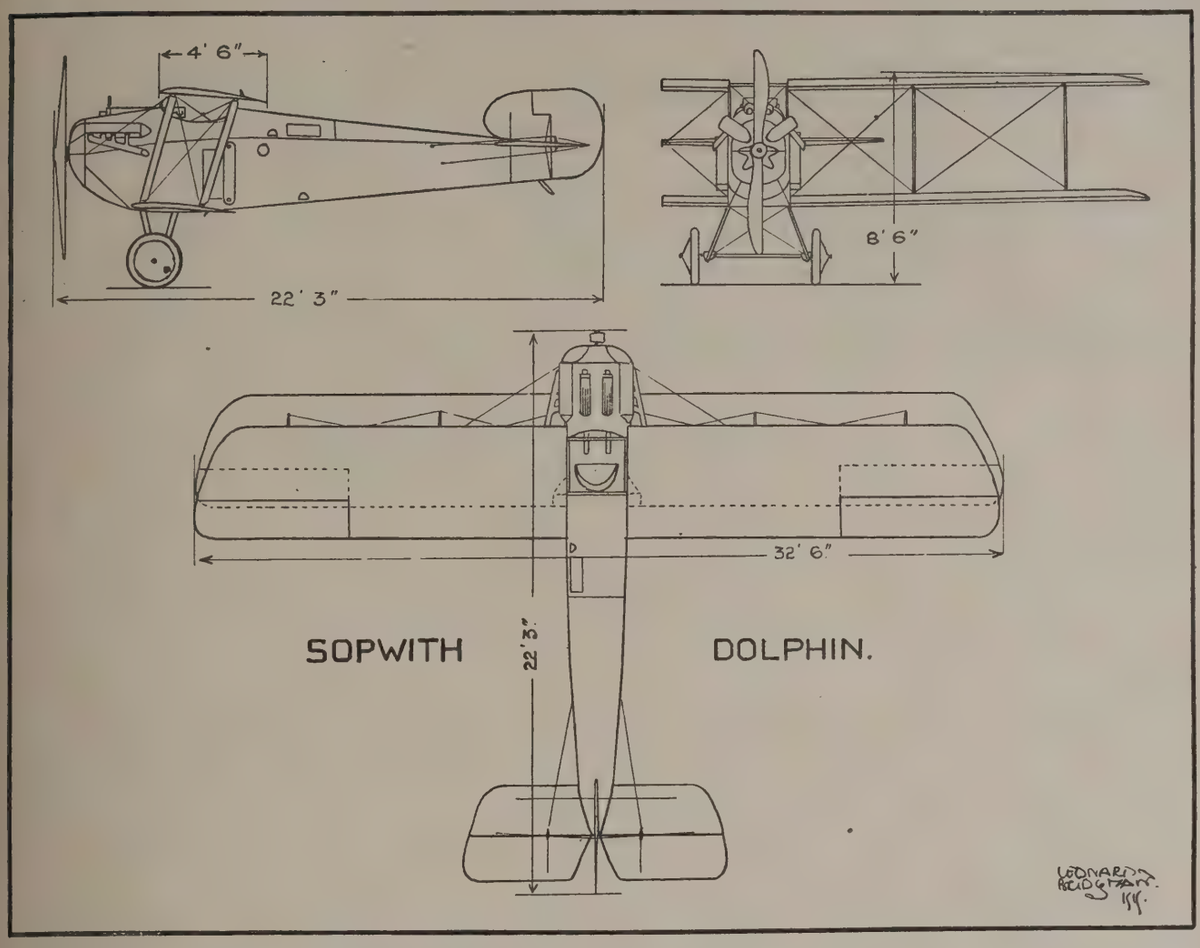
That the airship, both rigid and non-rigid, is a valuable field of investigation which will justify development, both for warlike and commercial purposes, few people who know anything of the details have any doubt. Those who know much about airships are more hopeful than those who know little. The greatest airship enthusiasts are, perhaps, those who know the achievements and the troubles of both airships and aeroplanes.



A Danish type H two-seater Biplane built by the Army Factory at Copenhagen (140 h.p. Argus engine).

MODERN BRITISH AEROPLANES.

XVII.—The Sopwith Aviation Co., Ltd.



The Sopwith Aviation Co. was formed in 1911 at Brooklands by Mr. T. O. M. Sopwith, who had qualified as a pilot in Nov., 1910, on a Howard-Wright biplane, and during 1912 a 70-h.p. tractor biplane and a 40-h.p. A.B.C.-engined biplane, on which Mr. H. S. Hawker set up a British duration record of 8 hours 23 mins., were produced. In 1913 the Sopwith "Tabloid" was brought out, and this machine was the forerunner of all the small fighting scouts of to-day. In 1914 a 100-h.p. Mono-Gnôme-engined "Tabloid" biplane, fitted with floats and flown by Mr. Howard Pixton at Monaco, won the "Schneider" Cup. During the war the firm produced a series of highly efficient aeroplanes, and it is interesting to note that two of their "Tabloid" biplanes were the first machines to bomb Cologne and Düsseldorf in Nov., 1914. Sopwith 1½-strutters were also used by the French Air Service to bomb Essen and Munich.

THE SOPWITH "TABLOID" SCOUT.

The Sopwith "Tabloid" was used during the first part of the late war principally by the R.N.A.S. for almost any odd jobs going. This machine was a slight modification of the 1913 machine by having a Vee-type undercarriage in place of the skid and wheels arrangement and a larger engine, usually the 100-h.p. Mono-Gnôme.

THE SOPWITH "SCHNEIDER" SEAPLANE SCOUT.

The Sopwith "Schneider" seaplane was the original type of machine which won the "Schneider" Cup at Monaco in 1914. The R.N.A.S. ordered a considerable number of these machines, and, although at times they were considerably abused by being made to carry bombs and other armament, were in use right up to the signing of the armistice. Latterly, the fitting of the 130-h.p. Clêrget engine considerably improved their performance and popularity.

SPECIFICATION.

Type of machine	Single-seater tractor seaplane.
Name or type No. of machine	Sopwith "Baby" or "Schneider."
Purpose for which intended	Sea scouting, fighting, etc.
Span	25 ft. 8 in.
Gap, maximum and minimum	4 ft. 6 in.
Overall length	22 ft. 10 in.
Chord	5 ft. 2 in.
Total surface of wings	240 sq. ft.
Total area of tail	26 sq. ft.
Area of elevators	12 sq. ft.
Area of rudder	6.5 sq. ft.
Area of fin	2.7 sq. ft.
Engine type and h.p	100-h.p. Clêrget.
Landing speed	45 m.p.h.

THE SOPWITH "GUN 'BUS."

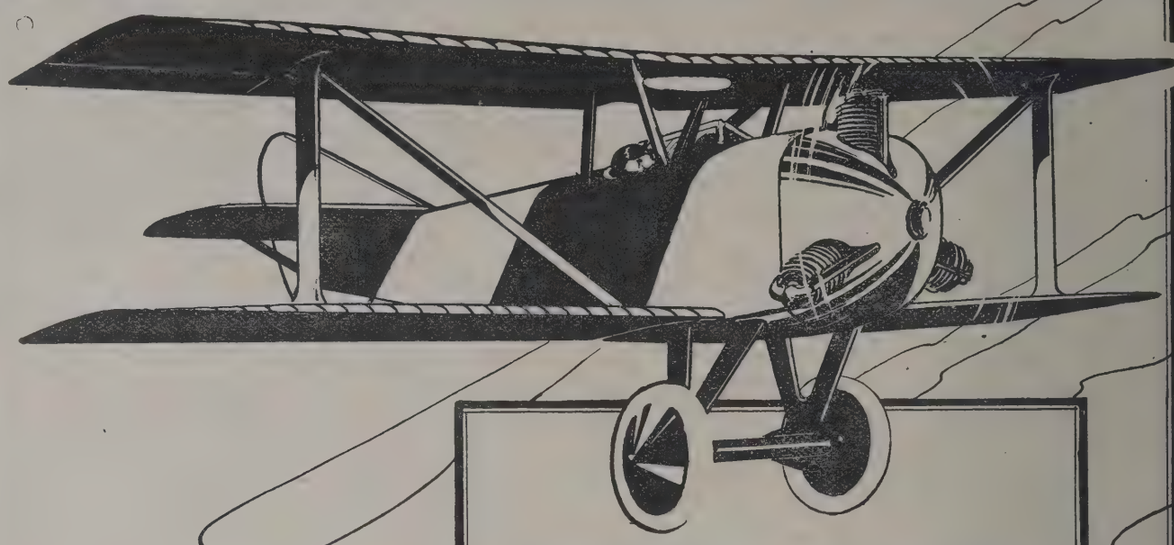
The Sopwith gun carrying biplane was brought out in 1914 and was the only Sopwith production that departed from the more usual tractor type of machine. It was fitted with the 160-h.p. Sunbeam engine and owed its inception to the demand for large fighting machines before the introduction of the fire control gear for tractor machines. It resembled the F.E. in many respects with the exception that it had staggered main planes and a skid undercarriage

THE SOPWITH "PUP."

The Sopwith "Pup" was a direct descendant of the "Tabloid" of early 1914, and was largely used by the R.N.A.S. from 1915 onwards. During its existence it has maintained the reputation of being one of the most delightful machines to fly that have ever been built. In addition its performance, fitted with so low a powered engine as the 80-h.p. Le Rhône, was astonishing, and although its use as a land fighting scout was overshadowed by modern high-powered machines, it was used largely almost up to the end of the war as a ship's scout and for deck flying, etc.

SPECIFICATION.

Type of machine	Single-seater Tractor Biplane.
Name or type No. of machine	Sopwith "Pup."
Purpose for which intended	Fighting Scout.
Span	26 ft. 6 in.



TRANSITIONS IN TRANSIT.

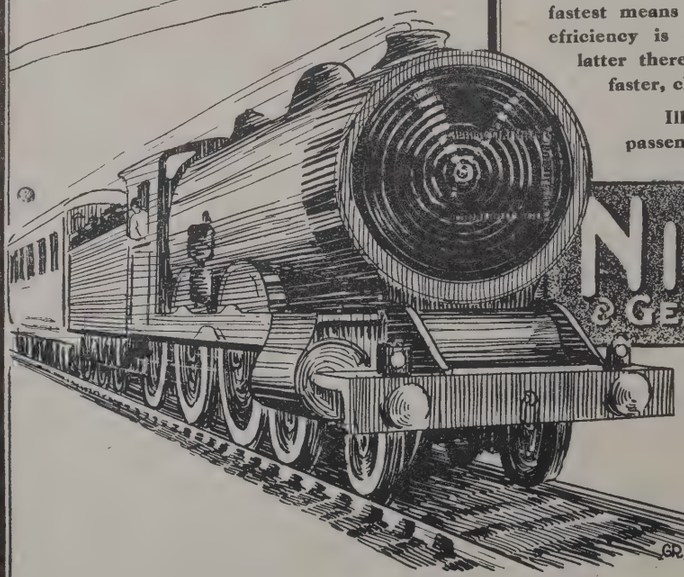
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Illustrated above is the Nieuport 2-seater passenger plane.



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Gap, maximum and minimum ...	4 ft. 4⅞ in.
Overall length ...	19 ft. 3¾ in.
Maximum height ...	9 ft. 5 in.
Chord ...	5 ft. 1½ in.
Engine type and h.p. ...	Le Rhône; 80 h.p.
Tank capacity in gallons ...	Petrol 18 galls.; oil 5 galls.
Performance—	
Speed at 10,000 feet ...	99 m.p.h.
Climb—	
To 5,000 feet in minutes ...	7 mins. 40 secs.
To 10,000 feet in minutes ...	15 mins. 24 secs.
Total weight of machine loaded	1,313 lbs.

THE SOPWITH "1½ STRUTTER."

The Sopwith "1½ strutter" was more or less an enlarged "Pup" and was the first British machine to be fitted with a synchronised gun, the gear being of the Sopwith-Kauper type. The pilot was also put in front and the rear or gunner's cockpit being fitted with a Scarff mounting for a Lewis gun. The "1½ strutter" was for its time an immensely efficient fighting machine and was used in large numbers by the British Air Services as well as by the French and Belgian Governments. The "1½ strutter" was also used as a single-seater bomber by having the gunner's seat removed and being fitted with a 130-h.p. Clêrget engine. The Sopwith "1½ strutter" ship-plane is still being used largely for operating from aircraft carriers and battleships.

SPECIFICATION.

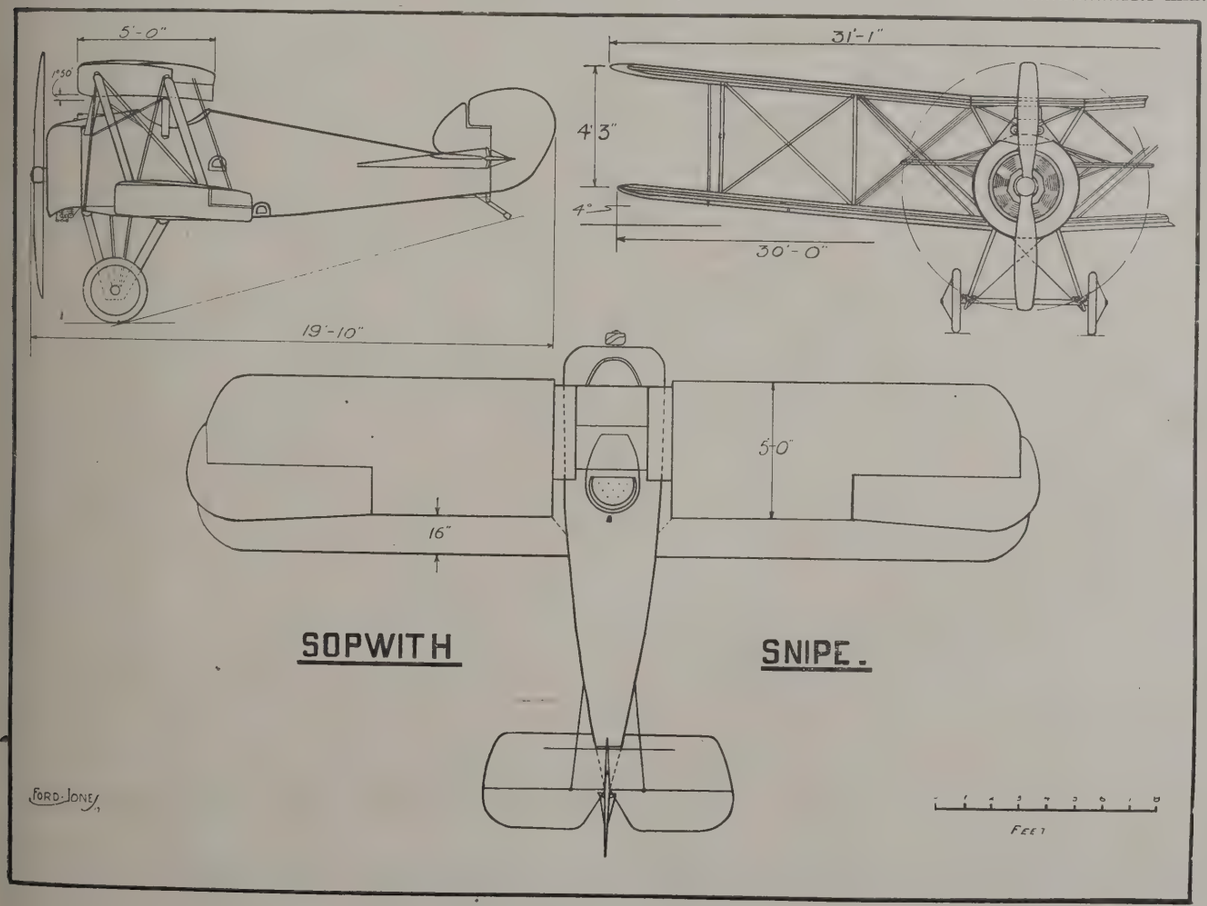
Type of machine ...	Two-seater tractor biplane.
Name or type No. of machine ...	Sopwith "1½ Strutter."
Purpose for which intended ...	Two-seater fighter.
Span ...	33 ft. 6 in.
Gap, maximum and minimum ...	5 ft. 5 in.
Overall length ...	25 ft. 4 in.
Chord ...	5 ft. 6 in.
Total surface of wings ...	353 sq. ft.
Total area of tail ...	57 sq. ft.
Area of elevators ...	21.5 sq. ft.
Area of rudder ...	7.25 sq. ft.
Area of fin ...	3.5 sq. ft.
Area of ailerons ...	52 sq. ft.
Engine type and h.p. ...	130-h.p. Clêrget.
Weight of machine empty ...	1,316 lb.
Load per sq. ft. ...	6.7 lb.
Weight per h.p. ...	18.8 lb.
PERFORMANCE—	
Speed at 10,000 ft. ...	103 m.p.h.
Landing speed ...	35 m.p.h.
Climb—	
To 6,500 ft. in min. ...	12.7 min.
To 10,000 ft. in min. ...	24.6 min.
Disposable load apart from fuel ...	344 lb.
Total weight of machine loaded ...	2,342 lb.

THE SOPWITH "TRIPLANE."

The Sopwith "Triplane" produced in 1916 set a fashion of its own which was badly copied by many German firms, the most famous example being the Fokker D.VII. Designed with a view to cutting down the pilot's blind spots and possessing a remarkable performance in climb, the machine was, for its time, a very successful fighter. It was used by the R.N.A.S. in the land squadrons sent for service to France, and also by the French Naval Air Service.

SPECIFICATION.

Type of machine ...	Single-seater triplane.
Name or type No. of machine ...	Sopwith "Triplane."
Purpose for which intended ...	Fighting scout.
Span ...	26 ft. 6 in.
Gap, maximum and minimum ...	3 ft.
Overall length ...	18 ft. 10 in.
Chord ...	3 ft 3 in.
Total surface of wings ...	231 sq. ft.
Total area of tail ...	23.6 sq. ft.
Area of elevators ...	9.6 sq. ft.
Area of rudder ...	4.5 sq. ft.
Area of fin ...	2.5 sq. ft.
Area of aileions ...	34 sq. ft.
Engine type and h.p. ...	130-h.p. Clêrget.
Weight of machine empty ...	1,103 lb.
Load per sq. ft. ...	6 lb.
Weight per h.p. ...	12.4 lb.
PERFORMANCE—	
Speed at 6,500 ft. ...	112½ m.p.h.
Speed at 10,000 ft. ...	106½ m.p.h.
Speed at 15,000 ft. ...	95 m.p.h.
Landing speed ...	35 m.p.h.
Climb—	
To 6,500 ft. in min. ...	6.5 min.
To 10,000 ft. in min. ...	11.8 min.



To 15,000 ft. in min. .....22.3 min.
Disposable load apart from fuel .....80 lb.
Total weight of machine loaded .....1,543 lb.

THE SOPWITH "CAMEL."

The "Camel," perhaps the best known of British single-seater scouts, was brought out towards the end of 1916 and was more or less an improved "Pup." The installation of the 130-h.p. Clêrget and various other engines up to the 150-h.p. A.R.1, latterly known as the B.R.1, gave the machine an extraordinarily good performance. It is also interesting to note that the "Camel" was the first single-seater scout to be fitted with two synchronised machine guns.

The "Camel" was also largely used for deck flying, getting off the guns of the warships and also flying off lighters towed by fast destroyers. The edition of the "Camel" used for this purpose was known as the "Ships' Camel," and for convenience for stowage purposes the fuselage was made in two parts, the join being just in rear of the pilot's cockpit. For simplicity in joining all controls are external.

SPECIFICATION.

Type of machine	Single-seater Tractor Biplane.
Name or type No. of machine ...	"Camel"—F.1.
Purpose for which intended	Fighting Scout.
Span	28 ft.
Gap, maximum and minimum ...	5 ft. max ; 4 ft. 1 1/16 in. min
Overall length	18 ft. 9 in.
Maximum height	9 ft.
Chord	4 ft. 6 in.
Engine type and h.p.	Clerget ; 130 h.p.
Tank capacity in hours	Petrol 2½ hrs. ; oil 2½ hrs.
Tank capacity in gallons	Petrol 26 galls. ; oil 5¾ galls.
Performance—	
Speed at 10,000 feet	113 m.p.h.

THE SOPWITH "DOLPHIN."

The "Dolphin," produced towards the middle of 1917, was the first Sopwith fighting scout to be fitted with a stationary water-cooled engine, and was designed to give the pilot a large range of vision. For this purpose the pilot was brought up under the centre section, which was left open, allowing the pilot's head to protrude through the planes. A very formidable armament was designed to be fitted, but for practicable purposes it was fitted with two fixed Vickers guns firing through the airscrew and one Lewis gun on a special mounting on the centre-section tube on the left side of the pilot. Owing to the decrease in the gap and the increased span, two pairs of struts were fitted on either side of the fuselage so as to give a better angle to the interplane bracing wires. The "Dolphin" was also adopted by the French and American Governments to be fitted with the 300-h.p. Hispano-Suiza, which gave it a speed of 133 m.p.h. at 16,500 ft., to which height it climbed in 12.2 mins. Unfortunately, owing to the suspension of hostilities, this version of the machine was never used on active service.

SPECIFICATION.

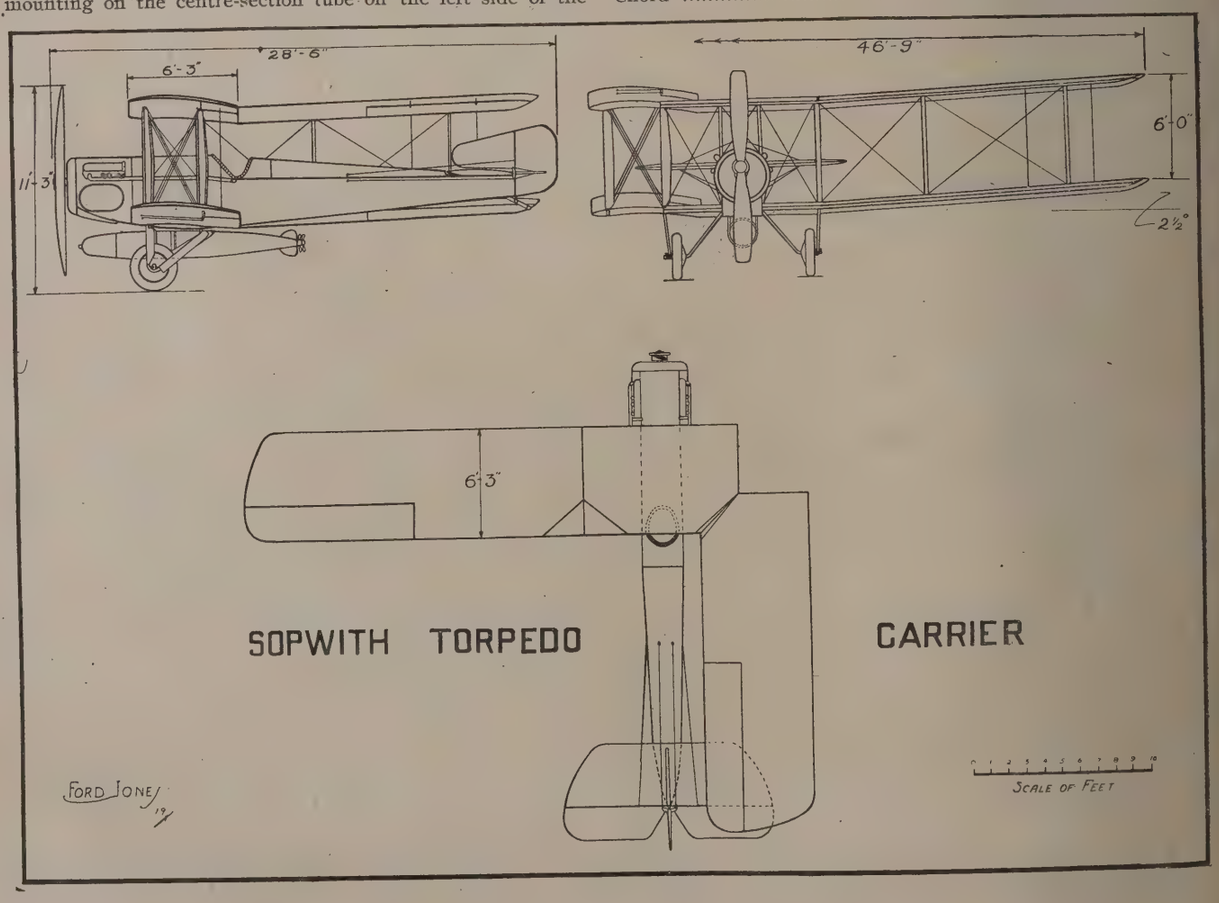
Type of machine	Single-seater Tractor Biplane.
Name or type No. of machine ...	"Dolphin"—5 F.I.
Purpose for which intended	Fighting Scout.
Span	32 ft. 6 in.
Gap, maximum and minimum...	4 ft. 3 in.
Overall length	22 ft. 3 in.
Maximum height	8 ft. 6 in.
Chord	4 ft. 6 in.
Engine type and h.p.	Hispano-Suiza ; 200 h.p.
Tank capacity in hours	Petrol 2¾ hrs. ; oil 2¾ hrs.
Tank capacity in gallons	Petrol 27 galls. ; oil 4 galls.
Performance—	
Speed at 10,000 feet	121½ m.p.h.
Climb—	
To 5,000 feet in minutes	5 minutes.
To 10,000 feet in minutes	12 minutes.
Total weight of machine loaded—	1,959 lbs.

THE SOPWITH "CUCKOO."

In 1915 the Sopwith Co. brought out a torpedo-carrying aeroplane fitted with a 200 Canton-Unné engine. This machine was of a purely experimental nature and was not considered seriously until the Admiralty requested that further machines of the type be built. This resulted in the Sopwith "Cuckoo," which was fitted with a 200-h.p. Hispano-Suiza engine. The machine was a single-seater biplane having a divided undercarriage with no cross-axle, thus allowing for the stowage of an 18-inch torpedo under the centre of gravity.

SPECIFICATION.

Type of machine	Single-seater torpedo-carrying biplane.
Name or type No. of machine	Sopwith "Cuckoo."
Purpose for which intended	Torpedo-carrying, etc.
Span	46 ft. 9 in.
Gap, maximum and minimum	6 ft.
Overall length	28 ft. 6 in.
Chord	6 ft. 9 in.



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Total surface of wings	566 sq. ft.
Total area of tail	53.6 sq. ft.
Area of elevators	18 sq. ft.
Area of rudder	8 sq. ft.
Area of fin	5.7 sq. ft.
Area of each aileron and total area	20 sq. ft., 80 sq. ft.
Engine type and h.p.	200-h.p. Hispano-Suiza.
Weight of machine empty	1,840 lb.
Load per sq. ft.	6.4 lb.
Weight per h.p.	17 lb.

Performance—

Speed at 10,000 ft.	100 m.p.h.
Landing speed	40 m.p.h.

Climb—

To 6,500 ft. in min.	14.5 min.
To 10,000 ft. in min.	26 min.
Total weight of machine loaded	3,370 lb.

THE SOPWITH "SNIPE."

The "Snipe" was produced towards the end of 1917 and was an improvement of the "Camel." The gap was reduced and the height of the fuselage increased so as to bring the pilot well up in line with the centre section, which was left open. The fuselage is circular in section, being faired so as to preserve the form of the circular cowling over the B.R.2 engine. The machine was never fully tried on active service, but the short time it was employed in France it performed extremely well. An experimental model was fitted with the A.B.C. "Dragonfly" engine by the authorities and attained a speed of 156 m.p.h. and climbed 10,000 feet in 4½ minutes.

Specification.

Type of Machine	Single-seater Tractor Biplane.
Name or type No. of machine	"Snipe"—7 F.I.
Purpose for which intended	Fighting Scout.
Span	Top plane 31 ft. 1 in. bottom plane 30 ft.
Gap, maximum and minimum	4 ft. 3 in.
Overall length	19 ft.
Maximum height	9 ft. 6 in.
Chord	5 ft.
Engine type and h.p.	B.R. ; 200 h.p.
Tank capacity in hours	Petrol 3 hrs. ; oil 3 hrs.
Tank capacity in gallons	Petrol 38½ galls. ; oil 7 galls.

Performance—

Speed at 10,000 feet	121 m.p.h.

Climb—

To 6,000 feet in minutes	3 mins. 45 secs.
To 10,000 feet in minutes	9 mins. 25 secs.
Total weight of machine loaded	2,020 lbs.

THE SOPWITH "SALAMANDER."

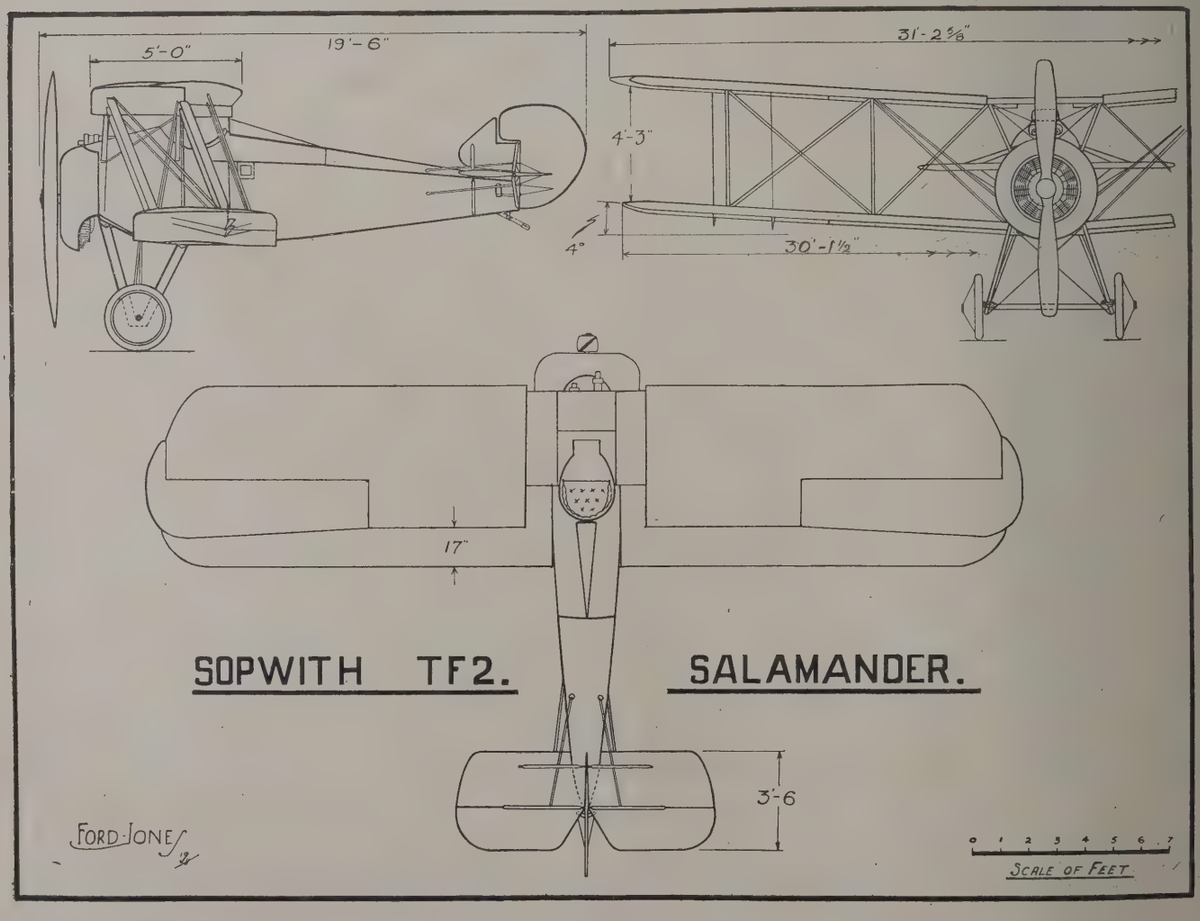
The Sopwith "Salamander" is a development of the "Snipe," the principal difference being that the "Salamander" was designed primarily for the more advanced form of warfare known as "trench-strafing," and as such is fairly heavily armoured. The armour plating is incorporated in the construction and extends from the rear of the engine cowling to the rear of the pilot's seat and weighs roughly about 650 lb. Two fixed guns are carried in the cowling in front of the pilot's seat. A bullet-proof streamline hump in rear of the pilot's head affords extra protection to the pilot.

Specification.

Type of machine	Single-seater biplane.
Name or type No. of machine	Sopwith "Salamander."
Purpose for which intended	Trench fighting, etc.
Span	top 31 ft. 2⅝ in., bottom 30 ft. 1½ in.
Gap, maximum and minimum	4 ft. 3 in.
Overall length	19 ft. 6 in.
Chord	5 ft.
Total surface of wings	272 sq. ft.
Total area of tail	26 sq. ft.
Area of elevators	11 sq. ft.
Area of rudder	9 sq. ft.
Area of fin	2.75 sq. ft.
Area of each aileron and total area	12.75 sq. ft., 51 sq. ft.
Engine type and h.p.	230-h.p. B.R.2.
Weight of machine empty	1,844 lb.
Load per sq. ft.	9.4 lb.
Weight per h.p.	11 lb.

Performance—

Speed at 6,500 ft.	123 m.p.h.



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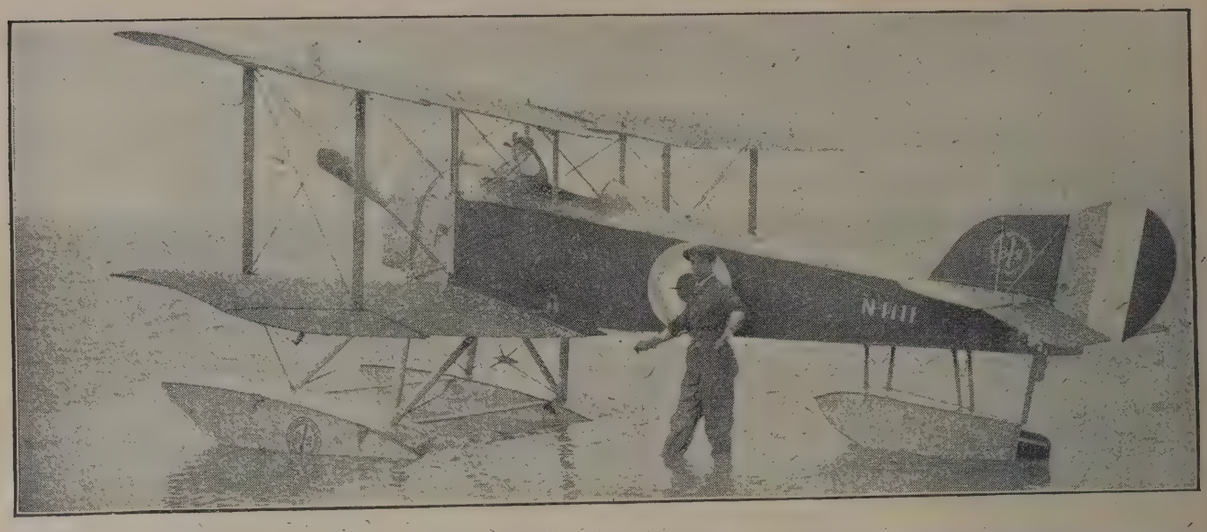
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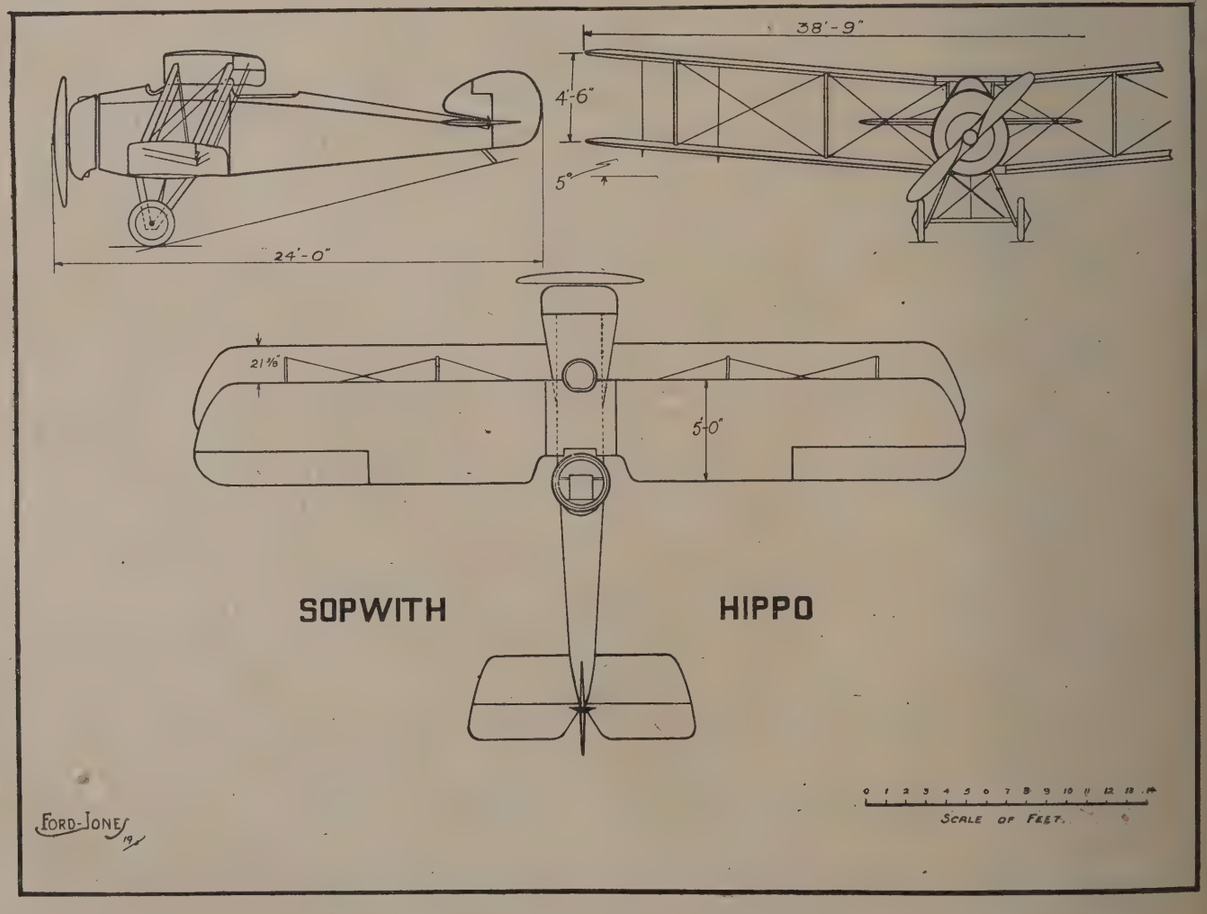
A Seaplane of the Sopwith "Baby" type with 130 h.p. Clerget engine. The machine illustrated was built by the Blackburn Aeroplane and Motor Co., Ltd.

Speed at 10,000 ft.	117 m.p.h.
Landing speed	60 m.p.h.
Climb—	
To 10,000 ft. in min.	17.1 min.
Disposable load apart from fuel	410 lb.
Total weight of machine loaded	2,510 lb.

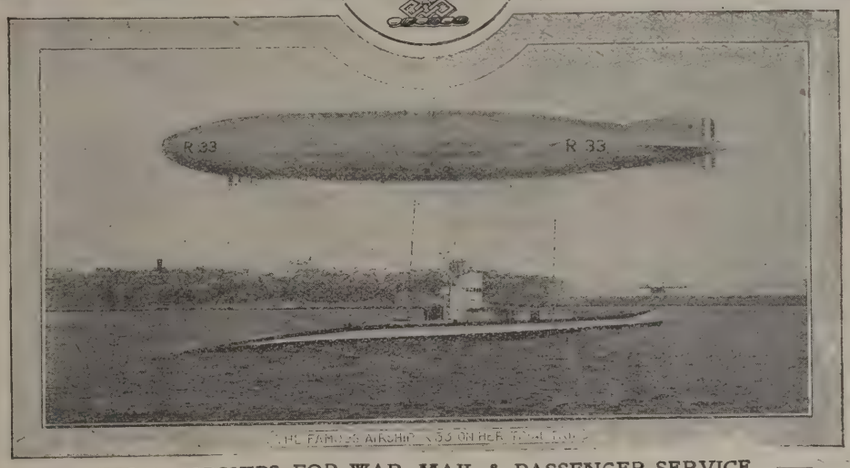
THE SOPWITH "HIPPO."

This was an experimental two-seater fighter, in which the pilot was placed directly in rear of the large 230 R.R.2 or Clêrget engine, in advance of the upper plane, which had a very large backward stagger and was placed directly on top of the fuselage. The gunner's cockpit was in rear of the upper plane. It will thus be seen that both pilot and gunner possessed a very good vision all round.

Many other experimental specimens of the Sopwith menagerie were produced during the war, about which very little is known. Mention might be made of the "Rhino," a two-seater triplane fighter fitted with a 230-B.H.P. "Puma," the "Bulldog," and the "Buffalo," both two-seater fighters fitted with the 230-h.p. B.R.2, etc.



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A GERMAN VIEW OF THE LIBERTY ENGINE.

A report by Herr Otto Schwager, published in the German paper, "Der Motor-wagen," gives a very complete account of the 12-cylinder Liberty aero-engine, based on a sample captured in a DeH.9a.

This type of engine has been described in THE AEROPLANE and the description need not be repeated, but the German comments upon the design and performance of this specimen are interesting.

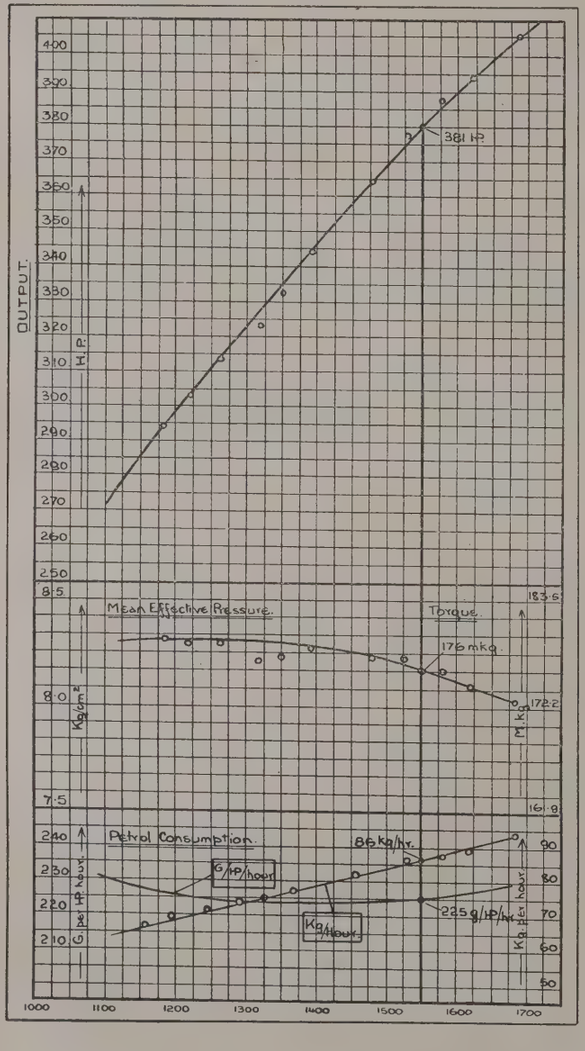
The design of the crankcase and the low weight thereof are favourably commented on, and the working pressures on the crankshaft bearings are considered to be comparatively low.

The driving of the propeller boss through a conical seating on the crankshaft end, instead if making the inner flange of the boss integral with the shaft, is considered unsuitable in an engine of such high power, but is explained by the presence of the double-thrust races which make the engine suitable for either a tractor or propeller airscrew, which it would not be possible to assemble with the solid flange.

The strength and rigidity of the connecting rods are specially noted, and the arrangement of the twin big ends, the straight-through rod running directly on the bronze bush of the forked one is given as evidence that the engine is unsuitable for running at high speeds and that it has not been intended for use in conjunction with a reduction gear. The working pressures on the big end bearings are considered to be very moderate. The loading of the little end bearings are, on the contrary, considered to be very high.

The piston design is favourably viewed—as providing ample strength and a good heat transmission from the piston head to the cylinder walls. The conical cylinder head, allowing for large valve areas, is apparently approved.

The resemblance of the overhead valve gear to that of the Mercédès naturally does not pass unnoticed.



German Test Curves of the Liberty Engine.

The arrangement of the carburetters within the V of the cylinders is considered crude—though it is admitted that the V-type presents serious difficulties in this respect.

The induction pipe system is praised—particularly in regard to the mean gas velocity therein at normal full speed.

The Delco ignition system is described in detail and is very highly commended, both on account of the saving in weight as compared with the normal magneto system, and on account of the superior reliability of the system—since even if the generator is damaged the batteries will still supply current for some hours' flying. It is also pointed out that with this ignition system it would be possible to use a single source of supply for current for ignition, lighting, wireless and heating and thus considerably simplify the electrical installation.

Comparing the weights of the Liberty ignition gear with that of the 375-h.p. Rolls-Royce, Herr Schwager gives the following table :—

ROLLS-ROYCE.		LIBERTY.	
4 Magnetos, each 6.8kg.	27.20kg.	1 Dynamo with driving connections	5.5kg.
8 Magneto brackets	4.31kg.	1 Battery	6.0kg.
1 Rear driving shaft	2.92kg.	1 Switch and field regulator	0.99kg.
1 Front driving shaft	1.34kg.	2 Contact breakers and distributors	4.87kg.
1 Intermediate shaft	0.82kg.	Insulating tube and wiring	4.12kg.
4 Spring clutches	0.78kg.	24 Plugs	2.8kg.
1 Starting magneto	2.91kg.		
1 Insulating tube and wiring	4.96kg.		
24 Plugs	2.64kg.		
Totals	47.88kg.		27.28kg.

The capacity of the circulating pump is considered to be too small, giving a low circulation velocity and therefore needing a radiator of about twice the size that would be called for in German practice.

A curve of horse-power against revolutions obtained by test is given, and the excellent form of the curve is admitted and ascribed to the carefully proportioned valve areas and to the moderate gas velocity in the inlet system. It is stated that although only 381 h.p. at 1,550 r.p.m.—instead of the nominal 400 h.p.—was obtained, yet that the legend h.p. could probably be reached at that speed were the carburation adjusted for maximum power instead of, as it actually was, for the best fuel consumption.

The weight of the engine, given as 396 kilos, with water, but without airscrew hub or exhaust manifold, is considered to be very good indeed.

Altogether the motor is summed up as a remarkable new product, fitted with an excellent and novel ignition system, giving a very low weight per h.p., and fair petrol economy, and it is noted that this result has been attained by the use of component parts of proved design throughout.

Herr Schwager considers, however, that the engine would be considerably improved if the design of the pistons and connecting rods were improved and lightened to fit the engine for a higher speed of revolution and it were then fitted with a reduction gear.

The engine described by Herr Schwager was Liberty motor No. 709, installed in a British DeH.9a "Hyderabad No. 3" built by the Westland Aircraft Works, Yeovil.

A PETROL POURER.

Brown Brothers, Ltd., are advertising a novelty for sale. It is the "Yapp" Petrol Pourer and the illustration shows how it is fitted into a petrol can. The air inlet pipe must be fitted so that its external end faces the opposite corner of the can across the handle.



The forefinger must be kept on the air inlet pipe until the can is raised into an inverted position ready for pouring. If it is desired to stop pouring before the can is empty, it is only necessary to replace the finger.

The "Yapp" takes only thirty to thirty-five seconds to empty a two-gallon petrol tin. The petrol is filtered by a gauze in the "Yapp," which takes up considerably less room than a funnel and is far more convenient to use. The price is 5s. 6d.

COMMERCIAL AERONAUTICS & CIVIL AERIAL TRANSPORT

STANDARD SPEECHES.

NO. 2.—THE PRESIDENT OF THE BORED WITH TRADE.

By "MEDWAY."

A week or so back I ventured to suggest the standardising of speeches for Government officials, and gave an example of the kind of thing I recommended for an Under-Secretary desirous of handing out a little soft soap without really involving himself in anything in particular. It occurs to me that the idea might be extended to serve for other occasions of a different kind.

Lately I have been watching closely the receptions accorded to various industries when they appealed to the Government for some kind of safeguards against foreign competition. In point of fact, the Minister responsible for meeting these people and subjecting them to elementary instruction and mild ridicule, which is considered the proper treatment for their complaints, has already standardised his remarks almost completely. I can, therefore, do nothing more than take him a step farther in this direction.

I recently inflicted upon my readers a few suggestions as to how it seemed to me the Government might help to establish Commercial Aeronautics. I now imagine a deputation from the Aircraft Industry waiting upon the "President of the Bored with Trade" to advocate these or other proposals. As a preliminary, the Industry holds several serious meetings and prepares a complete memorandum which is revised and revised again until it is believed to be as near as possible perfect.

An appointment is made for the reception of the deputation. The Minister does not ask for a statement of its case to be submitted in advance so that it may be analysed and, if necessary, elucidated in correspondence. He is quite content to have the whole thing pitched at his head at top speed in an open meeting, and his power of assimilation is such that, as soon as the reading of the statement is completed, he is immediately in a position to reply to it definitely and in scathing terms. To the accompaniment of the pencils of many reporters, he sets about his unfortunate visitors as follows:—

"Gentlemen, I am more than delighted to see you here to-day, because it affords me yet another opportunity of making exactly the same remarks as I have made on several occasions during the past month. You are aware from my own statements that I possess absolutely complete knowledge of all the circumstances surrounding every industry established in this country. Before you arrived I still had an uncomfortable feeling that yours might prove to be the one and only exception. It was just possible that some member of your industry might have some idea which had not already occurred to me and been rejected as impracticable. It was most unlikely, but as I say it was just possible.

"Consequently I am glad to be in the pleasant position of being able to say to you, after hearing, at any rate, a portion of your statement, to which I confess I did not listen very closely, that you have added nothing to my store of knowledge. This happy fact enables me to squirt off at you my standard speech which has already been presented with much success before a number of most distinguished audiences.

"The Government, as you are aware, is in rather a funny position—funny, that is to say, for anyone but the Government. The function of a Government is to govern. Should it fail to remain in power, it cannot govern. Its function is, therefore, to remain in power. This can best be done by retaining the voting support of members of the House of Commons. Your proposals must, therefore, be considered solely from this point of view. This is where our standardised policy comes in. Were we to offer you exceptional treatment, other people might expect something similar. If we turn you down unmercifully, others will refrain from following in your footsteps. We shall then be able to point to the fact that the great majority of industries have made no representations to us, from which it can be fairly inferred that they are absolutely satisfied with us.

"After this perfunctory explanation of motives I will now put across you our world-famed proof that the less your money is worth the better are you off. The value of a sovereign has gone down. You may, therefore, be jubilant and contented. If we remain in power, we will see that it goes down further. One of these days we hope to arrive at that ideal position at which our currency is worth nothing at all. When this happens, nobody will try to import goods into this country. You will have the place all to yourselves. You, on the other hand, will be manufacturing aeroplanes and airships at no cost at all, since the money you will have paid for labour and material was absolutely worthless. You will therefore be able to place them upon the foreign markets at the cost of about twopence a dozen. The world will be at your feet, and your industry will flourish like a green bay-tree. This, you will observe, will be all our doing.

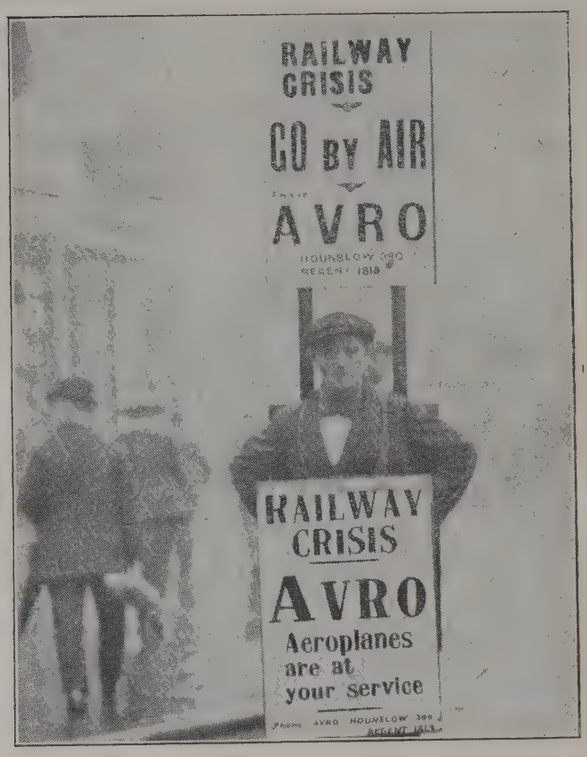
"In these circumstances it would be perfectly absurd to do anything else to help you. You may, if you like, leave with me the statement that you have so kindly prepared. One of these days I will get my secretary to read it to me, unless he has lost it in the interval. In that case I shall ask him to read me 'The Book of Revelations' or 'A Midsummer Night's Dream,' either of which will have an exactly identical effect upon my point of view and upon the desire of the Government to help your admirable industry.

"I see from your expressions that none of you have any further questions to ask, and that you are all now completely satisfied that the Government would be a born fool to do anything whatever to assist you. I shall therefore be obliged if you will consider this meeting closed, and will be most careful to mind the step when leaving!"

This little effort may strike my readers as rather far-fetched. I can assure them that, if they have occasion to go forward with any concrete proposals designed to assist the establishment of commercial aeronautics and are directed to the department I have indicated, it will be found that the reception they get will be almost identically that which I have endeavoured to indicate to them in advance.

CIVIL AERIAL TRANSPORT NOTES.

GREAT BRITAIN.



[*Daily Mail Photograph.*

CATCHING THE TIDE.—How the Avro Company seized the opportunity of demonstrating the possibilities of Civil Aerial Transport.

THE STRIKE AIR SERVICES.

In Germany, after the end of the war, travel by train was almost impossible. The rolling stock had all got into a very bad state through the rough and hard usage it had had during the war. Many locomotives and trucks had to be delivered to the Allies, according to the terms of the Armistice.

In consequence, aerial transport in Germany began well, and services were started to the largest towns all over the country. The prices charged for flights were high. Strikes and lack of petrol lately caused many of the services to be taken off

In England there were no such conditions to give a fillip to commercial aviation. Flying slowly developed from occasional pleasure flights to cross-Channel services. All the big aviation companies had organised their flying, and those who owned small passenger-carrying machines were looking forward sadly to a cold and unprofitable winter, when suddenly along came the railway strike, and now commercial flying is proceeding with feverish activity. There is more civil flying activity in this country now than there ever was before.

The Post Office announced on Sept. 29th :—

"The Post Office is being supplied with as many aeroplanes of the Royal Air Force as it requires, and a certain number are being placed at the disposal of newspapers, the Government realising the importance of the regular distribution of news.

"A Royal Air Force aeroplane left Kenley at 5.40 a.m. on Sept. 29th with the King's mail, landed at Newcastle-on-Tyne, and returned with other mails to Kenley by 1.40 p.m.

"The Postmaster-General has given notice that by arrangement with the Air Ministry, services by aeroplane for the conveyance of letters only will be set up on and from Sept. 30th, between London and the under-mentioned towns :—Birmingham, Bristol, Newcastle, Manchester and Glasgow.

"Letters intended for conveyance by these services should be prepaid at the ordinary inland rate of postage, and, in addition, a special fee of 2s. per oz. for each letter should be prepaid in stamps at the time of posting. Such letters should be handed in over the counter at the offices shown below not later than the times stated. They will be sent out by the next ordinary delivery after arrival at the post-office of destination.

"**Time of Posting.**—General Post Office (King Edward Building), not later than 9 p.m.; Western Central District Office (High Holborn), not later than 8 p.m., Western District Office (Wimpole Street), not later than 8 p.m.

"The present service is experimental, and the arrangements will be subject to modification in the light of experience. If the service is found to meet public needs, it is hoped to extend it to other towns."

A scheme for the conveyance of urgent dispatches by aeroplane, supplemented by dispatch riders, is in operation. The scheme was worked out before the strike by the Air Ministry and the Home Office primarily for the purpose of maintaining communications with the Police Force Commissioners and other Government officials in the provinces in the event of interruption of the regular mail services.

Advantage was first taken of the scheme on Sunday for the conveyance of important dispatches to the North of England and Scotland, and other dispatches were conveyed yesterday to a number of centres throughout England, Wales, and Scotland. Dispatches for the Home Counties of the South-East of England are distributed by aeroplanes working from London. Those for the rest of the country are conveyed from London to four centres in the North Midlands and the West of England, from which they are distributed by other aircraft, or, in a few cases, by road.

At a conference on Sunday, Sept. 28th, between the Air Ministry and the Newspaper Proprietors' Association, facilities were offered by the Air Ministry for aeroplanes to carry newspapers to the provinces. This was considered unnecessary by the newspaper proprietors, but it was arranged that a machine should leave Hounslow daily at midday for Manchester, carrying urgent copy and other material needed to maintain the newspaper services of the provinces. This machine will return at once from Manchester with a similar cargo for London.

THE AVRO SERVICES.

The whole of the energies of A. V. Roe and Co., Ltd., are directed to their strike flying. They are so busy looking flights and sending machines all over the country that the following is the only "official" news received :—

The sudden railway strike has produced a call from many quarters for the services of the Avros. As soon as the crisis became serious, A. V. Roe and Co., Ltd., offered to place the services of all their machines at the disposal of the Government. Pending a demand for special official services, the machines throughout the country have been very busy conveying newspapers, printing matrices, films, etc., to various towns. Special journeys of this nature have been made from Hounslow to Manchester, Bristol, Birmingham, Norwich, Cardiff, etc. Films are being carried for the London Press Cinema to Worthing, Shoreham, Brighton, Eastbourne, St. Leonards and Hastings.

On Saturday, Sept. 27th, four Avro machines left Hounslow at 6.30 a.m. for Bristol, Cardiff, Norwich, and Birmingham. They returned at 9.55, 10.30, 11.5, and 12 noon, and then left again for Rugby, Brighton, Eastbourne, and Hull. Other machines left for Worcestershire, Somerset, and other parts of the country.

According to the "Daily Mail" of Sept. 29th, three Avro machines on Sept. 27th brought people to London from Brighton, Margate, and Weston-Super-Mare, and four other machines carried passengers to Eastbourne, Rugby, Birmingham, and Newbury.

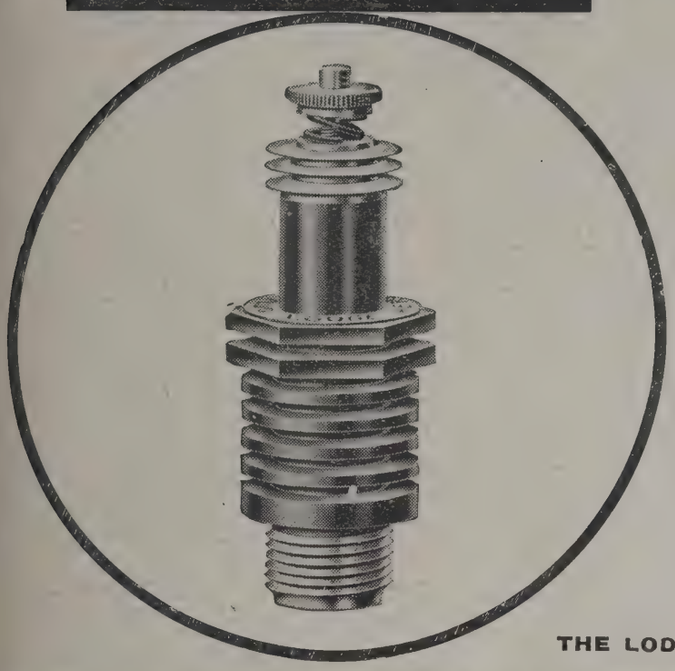
According to the "Daily News" of like date, the Avro Company are running a daily service to London from Bristol, Cardiff, and Norwich at 8.45 a.m., and from Birmingham at 9.30 a.m. These machines deliver the newspapers from London to the various towns early in the morning. A machine will leave Hounslow daily at 2 p.m. for Manchester, returning at dawn the next day.

PUBLIC CONFIDENCE.

The strike has demonstrated the results of the missionary work which A. V. Roe and Co., Ltd., have been doing throughout the summer in popularising flying in so many parts of Great Britain. People stroll in or ring up and ask for an Avro with the same easy confidence with which they would call a land taxi. In consequence the Transport Department has been snowed under with demands, and has been quite unable to meet all the calls made upon it.

What the public does not seem to realise is that the company must charge for the full journey made by the machine. If a traveller would arrange with one friend or three friends to travel together, the expense would be halved or quartered. It would be a good thing for inquirers to ask at the ticket agencies if they know of anyone else who is desirous of travelling in the same direction. In the same way inquiries might be made at the town of destination as to the chances of getting the seats booked for the return journey.

For Air Travelling



"Safety First"

by means of

LODGE

AERO PLUGS

Write for Particulars and Prices.

THE LODGE SPARKING PLUG Co, Ltd, RUGBY.



INCREASED SERVICES.

The Postmaster-General's hand being forced by the strike, the mails were carried to Paris in two Airco machines on Monday, Sept. 29th. Aircraft Transport and Travel, Ltd., are throwing the whole of their organisation into the task of amplifying the London-Paris service. The services both ways are doubled, or even trebled. On Monday, besides the two mail-carrying machines, a D.H.16 carried four passengers and goods to Paris.

On Sept. 29th a Handley-Page machine carried the Belgian and Dutch mails. This was the first time that British mails were carried by air to those countries. Forty-five bags of mails, weighing 1,500 lbs., arrived at Hounslow at 1.10 p.m. At 1.30 p.m. they were loaded in the aeroplane, which then set off for Brussels.

On account of the strike, the Handley Page services to Paris and Brussels have been doubled, i.e., a machine will leave for both capitals every day instead of on alternate days. On Sunday, Sept. 28th, a Handley Page left Cricklewood at 8 a.m. and, after calling at Liverpool, reached Manchester at 12 noon. The machine returned to Cricklewood the next morning.

On Sept. 30th the British Aerial Transport Co. inaugurated a service between London and Birmingham. A machine leaves Hendon at 9 a.m. and 2 p.m., returning from Birmingham at 11.30 a.m. and 4 p.m.

On Sept. 29th, Major C. Draper, piloting a B.A.T. saloon-passenger machine, left Hendon at 11.20 a.m. and landed his passengers at Castle Bromwich Aerodrome, Birmingham, at 12.20. The return journey was started at 3.5 p.m., and the machine arrived at Hendon at 4 p.m.

The Supermarine Aviation Co., Ltd., of Southampton, established a flying-boat service during the week-end from Southampton to Havre. Each boat will carry two passengers and luggage.

The Blackburn Aeroplane Company were to start a regular air service between London and Leeds on Sept. 30th. An aeroplane will leave Hounslow at 12 noon for Leeds, and will carry eight passengers and 400 lb. private mails or merchandise. The fare is 15 gns. single or £30 return. A machine will leave Leeds for London at 10 a.m.

The Central Aircraft Company, at Northolt, and the Grahame-White Aviation Company, also have risen to the emergency and have a number of machines available. The latter company took passengers to Manchester on Sept. 28th, and seats were booked for Calais on Sept. 29th.

It was hoped that a Farman "Goliath" would be ready for the Paris-London service on Sept. 30th. It is reported that the British Government has made a contract with the Compagnie Générale Transaérienne for the transport of all mails for Paris, the charge for these letters being moderate and about equal to the telegraph rate.

A NEW ENTERPRISE

Perhaps the Airco London-Paris services have already made business firms realise how dependable an air line can be. One shipping firm may have thought about starting an air service of their own before the London-Paris lines began, but they certainly sent goods over by the Airco service and found the quick delivery most beneficial to their business.

As mentioned in the issue of THE AEROPLANE dated Sept. 17th, that enterprising firm of steamship owners, shipbrokers, etc., S. Instone and Co., Ltd., have obtained an aeroplane. They bought the machine from the Air Ministry. It is a D.H.4 two-seater biplane, fitted with a 350-h.p. Rolls-Royce "Eagle VIII" engine.

Mr. A. Instone stated that the Air Ministry gave them every assistance in purchasing the machine, and are also arranging for a supply of spare parts.

Lieut. F. L. Barnard (late R.A.F.), the pilot they have engaged, made a great number of cross-Channel flights whilst serving in the Communication Squadron, R.A.F. Besides acting as pilot and carrying the goods and papers of the firm, Mr. Barnard will transact the business of the company on arrival in Paris, and maybe in Italy, when civil flying to that country is allowed, and the firm decide to send freight by air to their agents there.

An aeroplane service is particularly useful to a big shipping company. Contracts have to be made quickly, and goods and papers often have to be rushed to the ship at the last minute. In America, also, there has been a good deal of talk of saving a ship's time by letting it leave the port without the Customs manifest on board and dropping this on board when the ship has got some way out to sea.

It will be remembered that on Sept. 6th Lieut.-Col. W. D. Beatty and Lieut.-Col. W. O. Raikes, of the Air Ministry, set out for Rome on a Bristol "Fighter" and all went well until they got to within twenty-five miles of Rome when they landed and the machine was destroyed by a bush fire. They went to Italy to arrange for civil flying to that country. The people who wished to fly to that country were S. Instone and Co., Ltd.

They appear to be the first British firm, apart from aircraft concerns, to use an aeroplane for business purposes. At all events, they will own the first machine in the history of aviation to carry the house flag of a firm. One hopes that such enterprise will be copied by other firms, not only shipping concerns, but all whose business makes it necessary for them to have dealings with the continent.

THE LONDON-PARIS AND BRUSSELS AIR SERVICES.

The Air Ministry made the following announcement on Sept. 27th:—

"Wireless communication has now been established between the civilian aerodromes at Hounslow (London) and Le Bourget (Paris). Messages can be transmitted between 6.45 a.m. and 7 p.m. Greenwich time. Wireless communication on this route is only available for "Air Service Messages" (viz., messages regarding arrival and departure of aircraft, weather reports, and urgent messages asking for assistance, etc.). Messages of a private or personal nature will not be transmitted.

"Information as to the handing in and delivery of messages, etc., can be obtained from the Civil Aviation Traffic Officer at the Aerodrome."

The aerial service to Paris maintained by Aircraft Transport and Travel, Ltd., has now been running for five weeks, and sixty-nine trips between the two capitals have been made.

The service was maintained last week although the weather was consistently bad and extremely unfavourable for flying.

In the table of flights made, those to Brussels by Handley Page, Ltd., have been included this week. Owing to the railway strikes, it was impossible to obtain fuller details of the Handley Page flights. Details of the flights of the Bréguet machines on the London-Paris service were also unobtainable.

By arrangement with Handley Page, Ltd., Harrods, Ltd., are having the latest fashions in dresses brought over from Paris.

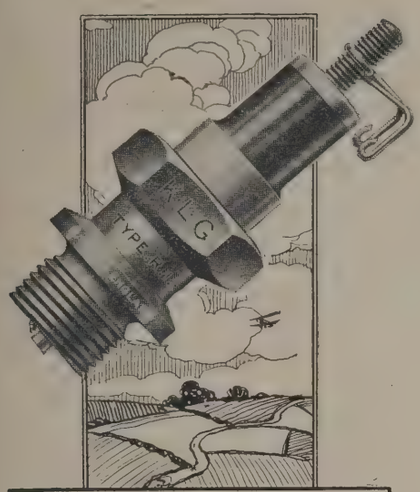
Diners at the Trocadero may book flights at the table. A neat card on each table gives particulars of the times of the services and the charges for them.

LONDON—PARIS & BRUSSELS AIR SERVICES.

Handley Page machines are indicated by H.P. and Airco types by D.H.

Date.	Type and Pilot.	Hounslow (H) to Paris (P) or Brussels (B)	Brussels (B) or Paris (P) to Hounslow (H)	Pass.	Weather.
Sept. 22nd	D.H. 4a Lt. Lawford	(H) 12.40 p.m. (P) 3.15 p.m.		1	Low clouds and showers
	D.H. 4a Lt. Powell		(P) 12.30 p.m. (H) 2.38 p.m.	2	
Sept. 23rd	H.P. Capt. Clarke	(H) 8.5 a.m. (B) 10.15 a.m.		Trial Flight	
	D.H. 4a Lt. M. Mullin	(H) 12.35 p.m. (P) 2.50 p.m.		0	
	D.H. 9 Lt. Campbell-Orde		(P) 12.30 p.m. Marden 3.30p.m. — 5.30p.m. (H) 6.24 p.m.	0	Thick mist and rain
	H.P. Capt. Clarke		(B) 2.45 p.m. (H) 6.55 p.m.	Trial Flight	30 m.p.h. head wind
Sept. 24th	H.P. Capt. Shakespeare	(H) 10.30 a.m. (B) 3.0 p.m.		9	
	D.H. 4a Capt. Baylis	(H) 12.34 p.m. (P) 2.30 p.m.		2	
	D.H. 16 Lt. Shaw		(P) 12.30 p.m. (H) 2.50 p.m.	4	
	D.H. 4a Lt. Lawford		(P) 12.35 p.m. (H) 2.55 p.m.	0	
Sept. 25th	D.H. 16 Lt. Powell	(H) 12.31 p.m. (P) 2.50 p.m.		3	
	D.H. 4a Lt. McMullin		(P) 12.30 p.m. landed Bahot		Very bad weather
	H.P. Capt. Shakespeare		(B) 12.15. landed Marck and Dartford (H) dusk		Gale and mist. Engine trouble
Sept. 26th	D.H. 16 Lt. Campbell-Orde	(H) 12.45 p.m. (P) 3.0 p.m.		3	
	H.P.		(P) 12.0 noon (H) 4.0 p.m.	6	Gale 60 m.p.h.
	D.H. 4a Capt. Baylis		(P) 12.30 p.m. (H) 2.55 p.m.	0	
	D.H. 4a Lt. McMullin		Left Bahot (H) 5.25 p.m.		
Sept. 27th	D.H. 4a Capt. Carleton	(H) 12.55 p.m. (P) 3.10 p.m.		1	
	D.H. 16 Lt. Powell		(P) 12.30 p.m. (H) 2.50 p.m.	0	

Aircraft Travel and Transport, Ltd., charge for goods carried to Paris at the following rates:—



Sole Distributors for the World:
S. SMITH & SONS (M.A.), Ltd
179-185, Great Portland St., Lond n W.1.

SMITH'S

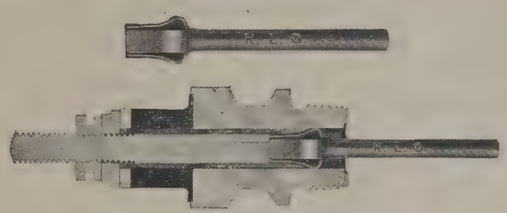
Manufactured by the
ROBINHOOD ENGINEERING WORKS,
: Ltd., Putney Vale, London, W. :

K·L·G

THE MOST DEPENDABLE PLUG IN THE WORLD.

For every Plug purpose the K.L.G. Standard Model R.1 has no equal. It is a one-piece Plug throughout and possesses all the advantages of detachable Plugs without any of their disadvantages. This model has been adopted as standard by many leading Motor Car Manufacturers.

Price 5/- each.



THE K.L.G. PLUG CLEANER.

This cleaner consists of a triple pronged scraper made in one piece from steel. By simply inserting this right into the Plug and giving it several turns backwards and forwards it removes the carbon from the whole surface of the mica insulation, and, of course, cleans it away from the end of the Plug as well. The use of this simple cleaning device maintains the "K.L.G." Plugs in good condition always. Price 6d. each.

Write for Price List of K.L.G Plugs to
S. SMITH & SONS (M.A.), Ltd, 179-185, Great Portland Street, London, W.1.



Dragon Flies — Lions — Falcons — Maoris —
Vikings — Cossacks — Eagles
ALL AERO ENGINES "DO BETTER" ON CASTROL "R"

REMEMBER
That on all the Three Atlantic Flights
Castrol R was used ALSO
Worlds altitude Record, London Madrid Etc.

WAKEFIELD
Castrol
REGD. R

C. C. WAKEFIELD & CO., LIMITED, Wakefield House, Cheapside, London, E.C.2.

1-10 lb. .....7/6 per lb.	5 per cent. reduction if carried 1 day a week
10-50 lb. .....6/6 per lb.	10 per cent .....2 days
50-150 lb. .....6/- per lb.	15 per cent .....3 days
Above 150 lb. .....5/- per lb.	20 per cent. .....4 days
	25 per cent. .....5 or 6 days

No single parcel must exceed 100 lb. in weight, or 160 cubic in. in cubic capacity.

Passengers—single fare to Paris—20 guineas.

Handley Page, Ltd., charge a flat rate of 2s. 6d. per lb., with a minimum of 5s.

Passenger fare to Paris or Brussels on Handley Page

Passengers—single fare to Paris—20 guineas.

Cinematograph companies consign daily boxes containing urgent films on the Airco London-Paris service.

The following firms collect parcels, etc., for both the Aircraft Transport and Travel, Ltd, and for the Handley Page, Ltd., services to Paris.

Parcels for the Airco service must be at the agents by 10.30 a.m. and those for the Handley Page service by 11.15 a.m. :—

The Lep Transport and Depository, Ltd., Castle Street, Long Acre, W.C.

The American Express Co., 6, Haymarket, S.W., and 64, Queen Street, E.C.

Carter, Paterson's offices at Maddox Street, Oxford Street, W.

The following firms collect for the Airco services only :—

Hernu Peron and Co., Ltd., 98, Queen Victoria Street, E.C.

Carter, Paterson's offices at 6, Cannon Street, E.C.

The following firms collect for the Handley Page services only :—

Leopold Walford, 29, Great St. Helen's, E.C.

The Continental Daily Parcels Co., 53, Gracechurch Street, E.C.

Carter, Paterson's offices at 128, Goswell Road, E.C.

Lavington Brothers, 68, Old Bailey, E.C.

LONDON.

HOUNSLOW.—At dawn every morning four Avros leave Hounslow for Cardiff, Birmingham, or wherever they are wanted to go, carrying newspapers, etc. They return home by midday, and after lunch machines often leave for Manchester. One of the machines returned from Manchester to London in two hours, at a speed of 100 miles per hour, which shows that, while the comparatively low-powered engines used are economical to run, the Avros can on occasions show a very respectable turn of speed. Sir William Crossley is among those who have chartered an Avro for a journey from Manchester to London.

Lieutenant-Colonel G. L. P. Henderson (late R.A.F.), flying his own Armstrong, Whitworth biplane, with a 160-h.p. Beardmore engine, and carrying Major Lloyd as passenger, has completed a business flight to Nice and back. They started from Hounslow and arrived at Nice on Sept. 20th.

They left Nice on the evening of Sept. 23rd and came through to London with two stops. The first landing had to be made in the Maritime Alps. The second was at Le Bourget, Paris, where it took between three and four hours to fill up the petrol tanks. Hounslow was reached at 7.45 p.m. on Sept. 25th.

It should be possible to make the journey to Nice within twenty-four hours but for the bad arrangements at the landing grounds on the route. The journey proved the reliability of the aeroplane for that sort of journey. Col. Henderson stated that it was not necessary to undo the engine covering during the ten days that he was absent from London.

Major Stuart-Wortley (late R.A.F.), flying an Airco D.H.4a, left Hounslow at 1.10 p.m. on Sept. 24th for Interlaken (Switzerland). He will give a series of demonstration flights there.

BROOKLANDS.

The aircraft firms in the Weybridge district are jealously guarding their secrets as regards the construction of new types of aeroplanes.

The Air Navigation Company (Blériot's) of Addlestone are at present turning out light cars, and little information is to hand concerning their programme as regards aircraft.

Vickers, Ltd., of Weybridge, are finishing a contract for "Vimy" bombers, after which it is expected they will construct "Vimy" Commercial machines.

The Lang Propeller Company are now building boats of all descriptions in addition to their famous airscrews.

Pilots have been particularly active at Brooklands during the past week (ending September 13th). Machines in the air at different times were a "Vimy" bomber, the Martinsyde Australian machine (which has a pleasing appearance in the air, and is painted all over grey), sundry Sopwith "Snipes," "Doves," and "Gnus," a Bristol fighter and one of the "famous" S.E.5s

Machines also passed over from other aerodromes, and an O/400 Handley Page proved a striking contrast to a Martinsyde F.4 which gambolled above the huge and steady-going "twin."

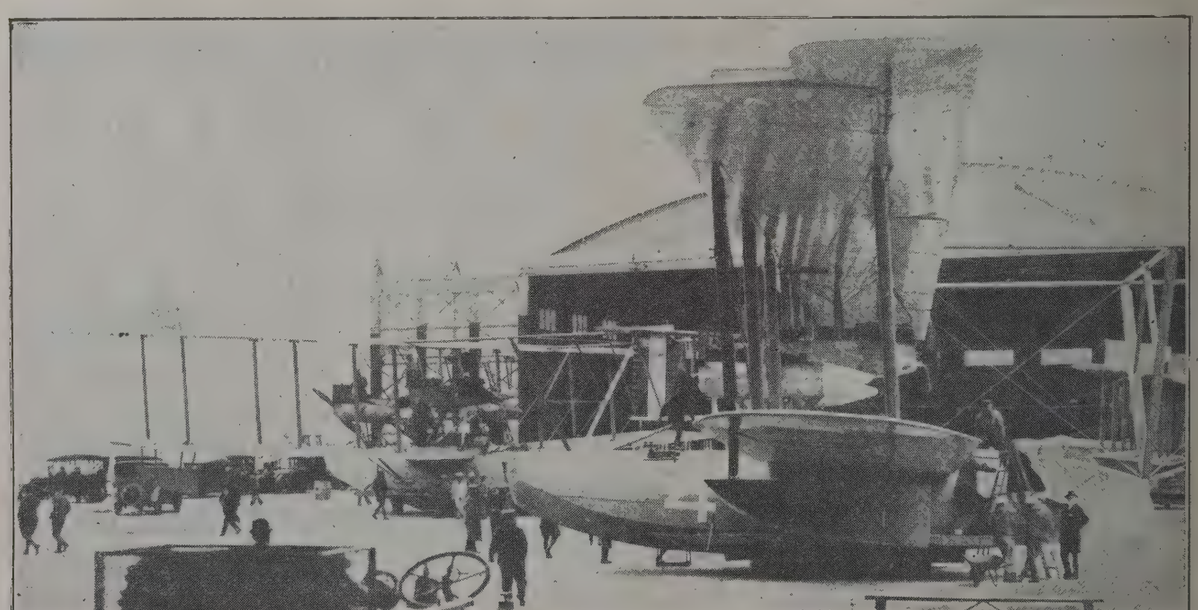
According to local papers the track at Brooklands is to be repaired shortly, and made ready for the next season's motor racing, and the R.A.F. having by then, one hopes, departed, Brooklands will doubtless return to its pre-war position as one of the homes of aviation and motoring.—J. F. S.

DONCASTER.

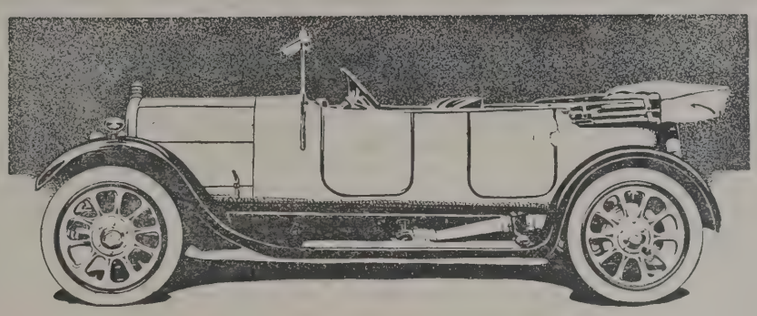
That the Doncaster aerodrome is to be relinquished by the R.A.F. and will not be retained as a civil landing station is bad news for the town. It was expected that the flying ground would be an important feature in the development of the district.

NOTTINGHAM.

Lieut. Macrae, M.C. (late R.A.F.), and his travelling circus of Avros have been at Nottingham during the past week, but previous to the outbreak of the strike the weather was not very favourable for flying. When the strike came fine weather returned, and the Avros got busy. One journey was made to Grantham and Lincoln. The local representative of Messrs. Boots and a supply of drugs were carried. The latter were delivered at shops in both Grantham and Lincoln within an hour of the start.



A side view of the N.C.4, which flew from the U.S.A. to Plymouth via the Azores in June. The photograph gives an excellent idea of the size of the craft. A few such boats would be useful for passenger work between Newcastle, Hull, and London at present.



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Sheffield.

On Sept. 18th over 200 people witnessed 19 passenger flights in an Avro machine at the Coal Aston aerodrome. Ten of those passengers were winners of the "Yorkshire Telegraph and Star" free flights. One of the winners had bought 20 copies of the paper in order to stand a good chance of a flight.

On Sept. 20th, the only other day that flying was possible during the flying week, on account of the weather, 17 passengers were taken up. Ten free flights were given by the "Sheffield Daily Telegraph."

The flying week being over, Capt. Lewis (late R.A.F.), and his party left Sheffield for London on Sept. 21st.

If Mr. Lloyd George flies to Sheffield for his visit on Oct. 14th he will probably arrive on a Vickers-Vimy "Commercial" machine.

IRELAND.

Information was received in Belfast on Sept. 24th that a Handley Page aeroplane, built by Harland and Wolff, had accomplished its 650 miles journey from Aldergrove, Co. Antrim, to Folkestone in 4 hrs. 18 min. This gives the machine an average speed of 140 m.p.h.

[No statement is made as to the direction and velocity of the wind, nor as to the fate of the machine after delivery at Hawkinge.—Ed.]

AFRICA.

South.

Some reference was made in the issue of The Aeroplane for Sept. 10th to the activities of Col. Armes (late R.A.F.), and Major Miller (late R.A.F.), in South Africa.

According to the "Daily News" of Sept. 25th the service between Johannesburg and Pretoria is hoped to be started on Oct. 1st. Both those towns have excellent aerodromes, and are stations on the Cape-Cairo air routes. Three machines have already arrived at Capt Town for the air service.

West.

Two French aviators will shortly make prospecting flights from Dakar to Timbuctoo, and from Dakar to French Guinea and back.

THE ARGENTINE.

The Argentine Government is interested in the acquisition of seaplanes for possible mail service. The few machines which have been exhibited at Buenos Aires have proved to be unsatisfactory. Exhibition flights are being given by European companies.

AUSTRALIA.

An inspection of the Malavan Archipelago was recently made by Mr. M. Anderson, of Aerial Service, Ltd. (Australia). He declared that the London-Australia flight is only practicable if the route follows a series of landing stations at every available site in Asia.

Darwin, in the Northern territory of South Australia, is covered with dense jungle or loose rocks. The making of landing stations in that district would take some months.

The Australian end of the Archipelago presents the most serious obstacles. Between Darwin and Sydney low bush covers a great deal of the ground. Mr. Anderson stated that the safest time for the flight is in the summer.

DENMARK.

The Danish correspondent of The Aeroplane writes :—

It is reported from Copenhagen that the commercial aviation company, Dansk Luftexpres, which will be remembered to have made a start with German Sablatnig land-going aircraft, is preparing a Copenhagen-Gothenburg-Frederikshavn (or Skagen) service with 10 Friedrichshafen seaplanes. The single-trip fare will cost 200 crowns (about £11). The Swedish consent for establishing a seaplane base in Gothenburg is being sought.

FRANCE.

A correspondent of The Aeroplane writes from France :—

The Paris-Lille, Paris-Brussels, and Paris-Cabourg (for Deauville and Trouville) air services cease working as daily services after the end of October. During the winter they will only be worked when and as required.

The Charges for Air Transport

Passenger fares for French aerial transport services next year are to be fixed, it is reported, at 50 centimes per kilometre—roughly, 8d. per mile. This charge covers 10 kilogrammes of personal luggage.

In a straight line the distance Paris-London is 350 km. approximately, and at the above rate the fare would be 175 francs—£7 at pre-war exchange rates—or a little under £5 at the present rate. This figure, of course, is the result of the French Government's efforts to assist commercial enterprise in an intelligent manner.

Comparing this figure with the rates quoted by British aerial transport concerns it would appear that the efforts of the Department of Civil Aeronautics, of the Air Ministry, entirely to suppress British aerial enterprise are likely to be crowned by a very early success.

Some French Experiments.

French activity in the matter of man-propelled aircraft appears to be on the increase.

Poulain—backed by the French Nieuport concern—is again to attempt to win the Peugeot prize, this time with an air-screw drive added to his flying bicycle.

An aviette has been designed by M. de Monge, of the Lumière Propeller concern, for a well-known French acrobat who has the habit of looping on an ordinary "push" bicycle. It is not yet proposed to loop the aviette, however.

The machine is to be a variable surface biplane driven by a Lumière Propeller, and the pilot—in a prone position—is totally enclosed in a streamline fuselage.

In addition, M. Mamet has in course of construction a pedal-driven biplane upon which he hopes to astonish the world. As the total weight is given at 185 k.g. (407 lb.), seems improbable that he will succeed—at any rate, in the intended manner.

M. Damblanc has a helicopter nearly ready for trials and for exhibition at the Aero Show. This machine is said to be a really serious effort, having received the approval of the French "Section Technique." It is also stated that the calculations regarding the apparatus are vouched for by an eminent French mathematician and that the machine may be expected to perform.—J. S.

The Salon Aeronautique.

The following firms are a few who have signified their intention of exhibiting at the VIe. Salon Aeronautique to be held in Paris in December. De Marçay, Caudron, Farman, Latécoëre, Bréguet, Levasseur, Lioré et Olivier, A. Bernard, Nieuport, Morane, L. Clement. This list is not complete, as many other firms have promised to exhibit this year.

GERMANY.

The Danish correspondent of The Aeroplane writes :—

One of the first German pilots, Brunnhuber by name, years ago put up a four-passenger carrying would's record in a 50-h.p. Gnôme-engined Albatros-built Farman box-kite. He was engaged (afterwards) as chief instructor at the German military aviation centre at Doberitz. Evidently, either he was thrown out of the job or preferred to leave under the present conditions prevailing in German military aviation places, as he has accepted a position as acro chauffeur to two people owning aeroplanes. The other day he returned by air in this capacity to Johannisthal from one of the seaside resorts.

A New Airship Service.

According to the "Daily News" of Sept. 27th, a Zeppelin service between Berlin and Stockholm has been arranged jointly by the Deutsche Luftschiffahrts-Actiengesellschaft and the Swedish Air Traffic Company. The airship "Bodensee" will be used on the service, and the fare for the trip is expected to be about £25.

The paper also states that an American mission recently travelled in the airship from Berlin to Friedrichshafen to inspect the Zeppelin works and to discuss the suitability of this type of airship for commercial work in America.

A Flight.

A correspondent writes from Holland :—

The properties of the well-known aeroplane manufacturer, Fokker, have been confiscated by the tax authorities at Schwerin, as Herr Fokker has left Germany without paying the 14,000,000 marks which he owed for taxes. Herr Fokker is of Dutch birth. He is said, however, to have become a German citizen before the war.

According to the "Berliner Zeitung am Mittag," Herr Fokker is said to be still a Dutchman. This paper says further, that Herr Fokker, who is at the present moment in England, has told English journalists all kinds of fairy stories about new inventions which he said he had made shortly before the end of the war, which were much worse than any previous horrible inventions of similar kind.

On inquiry at the British Consulate at Rotterdam one found they did not believe for a moment that Herr Fokker was in England.—N. C.

HOLLAND.

A correspondent writes from Holland :—"There is shortly expected in Holland a large flying machine of the Deutsche Luftschiffahrt Reederei. The machine will probably land on the E.L.T.A. ground or at Soesterberg. This visit is connected with the discussions now going on as to a regular service from Holland to Denmark via Germany.—N. C.

INDIA.

A Reuter's message from Simla, dated Sept. 24th, stated that the Government of India are advocating the formation of a big company, independent of any aircraft construction com-



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pany, with a monopoly for the carriage of mails for 10 years on the same lines as the P. and O.

The Board to advise the Commerce Department has sanctioned the proposal to establish aerodromes at Calcutta, Bombay, Karachi, Nagpur, Madras, Rangoon, Singapore, and Delhi.

ITALY.

The Italian correspondent of THE AEROPLANE writes :—

On Aerial Mails.

Two seaplanes left Brindisi for Athens a few days ago, arriving safely, though one had to stop for adjustments at Patras. Presumably the flight was undertaken in view of the mail service to be started sooner or later.

The Sardinian Postal Authorities are running regular inland postal services between Terranova, Sassari, Caglieri, and Macomer. Similar linking up of the interior of Sicily is officially announced, and a direct Rome-Turin express mail is likely to be started even quicker than its best friends dreamed owing to the telegraph people's discontented state of mind.

Landing-Ground Alterations.

A high personage in the Air Ministry, interviewed by the "Corriere della Sera," is quoted as suggesting much longer taking-off places or the supplementing of present ones by small additional levelled places in line with the main aerodromes. This is to avoid the recent most frequently fatal results of engine failure before altitude has been attained, which generally causes the pilot to try to turn back to the aerodrome.

A Dutch Purchase.

The same H.P. mentions the imminent purchase of a whole seaplane squadron by Holland—probably the mixed Macchi and Savoia which left for that country recently.

The Verona Disaster.

I was present at the commemoration of the five Press representatives who lost their lives in the Verona crash at the Ansaldo aerodrome at Turin. The Hon. Montu, President of the Italian Aero Club, etc., etc., addressed us at length on the future, sparing neither the performing pilots nor the highest authorities. He announced the advantage of having Milan papers at Rome a day earlier than the train could get them there during the recent newspaper strike, and also the institution of an annual competition on a fixed course which the Government is said to be arranging.

Flying services with passengers are being held up considerably as a consequence of the recent disasters. On the other hand, papers and express matters will receive the benefit of the space occupied by Pressmen and enthusiasts in the past. The Milanese papers are reaching Rome a day earlier, for instance, and Turin is receiving express letters half a day earlier. One is inclined to think that the public will appreciate these material advantages more than glowing newspaper accounts of aerial travel.—T. S. H.

SPAIN.

Capt. Truelove and his red and yellow Avro have arrived safely in Spain. General Echague, commanding the Spanish Flying Corps, has been taken up by Capt. Truelove and much enjoyed his flight. He displayed great interest in the type of machine on which the British fighting pilots were trained. It is understood that His Majesty King Alfonso is acquiring this Avro.

SWEDEN.

The Danish correspondent of THE AEROPLANE writes :—

From Stockholm is reported that the Swedish Government has been offered a great number of British Government property aeroplanes, being new aircraft of an original cost of £1,800 each, and to be sold now at half price. The English Government is stated intending altogether to dispose of 10,000 aeroplanes.

SWITZERLAND.

An aviation meeting at Neufchatel began on Sept. 15th and ended on Sept. 22nd. Many French aviators took part, and the proceedings were attended by thousands of spectators.

Captain Bradley, on an 110-h.p. Le Rhône Avro biplane, recently arrived at Lausanne from London, having flown *via* Paris and Dijon. He crossed the Jura Alps and suffered greatly from the cold. He landed safely at Lausanne, where the machine was purchased by the Swiss Aero Club.

UNITED STATES OF COLOMBIA.

An experimental aerial mail service has been inaugurated between Barranquilla and Puerto Colombia, United States of Columbia (South America). It is reported that a special issue of aerial postage stamps, restricted to 200, has been sanctioned by the State in connection with the service.

UNITED STATES OF AMERICA.

The New York-Toronto Air Race.

The order of finishing and the flying times of the contestants in the American Aerial Derby of 1,042 miles are now available, and are as follows :—

Lieut. B. W. Maynard, D.H.4, 465¼ min.
Lieut. H. H. George, D.H.4, 520⅝ min.
Lieut. D. B. Gish, D.H.4, 524¼ min.
Col. G. C. Brandt, D.H.4, 545¼ min.
Lieut. M. J. Plumb, D.H.4, 550⅝ min.
Lieut. P. H. Logan, Le Père, 562 min.
Lieut. Ben Adams, D.H.4, 564 min.
Lieut. John P. Roullot, D.H.4, 570¼ min.
Major R. Schroeder, V.E.7, 572 min.
Serjeant C. B. Coombs, D.H.9, 576 min.
Col. H. E. Hartney, S.E.5A, 589⅜ min
Lieut. R. T. Midkiff, D.H.4, 597½ min.
Lieut. Ross Kirkpatrick, D.H.4, 602¼ min
Lieut. C. F. Brown, D.H.4, 607¾ min.
Lieut. Charles Colt, S.E.5A, 621⅓ min.
Lieut. F. T. Honsinger, D.H.4, 635 min.
Roland Rholfs, Oriole, 667¼ min.
Capt. C. W. Cook, Fokker, 759½ min.
Major A. B. Gilkeson, D.H.4, 764¼ min
C. S. Jones, J.N.4D, 833⅓ min.
Lieut. W. R. Taylor, J.N.4H, 836⅓ min.
Capt. H. B. Chandler, J.N.4H, 895¼ min.
Capt. R. H. Depew, J.N.4D, 898⅓ min.
Capt. S. S. Moore, Can. J.N.4, 912½ min.
Lieut. L. W. Bertrand, Can. Trng., 1,285¼ min.
Lieut. Wallace Young, J.N.4H, 1,313⅓ min.
Col. Wm. C. Barker, Fokker, 1,434⅓ min.
Lieut. C. A. Schiller, Can. J.N.4, 1,520¾.
Major J. W. Simons, D.H.4, 1,536¾.
O. S. Parmer, Standard, 3,323 min.

It says much for the speed and general excellence of the D.H.4 machines, fitted with Liberty engines, that they obtained the first five places, also the seventh and eighth, and had a very good record throughout the race. It seems strange that they could beat the S.E.5s, and also the two Fokkers, of which a great deal more was expected than that one would come in at the end of the race, and the other in the middle.

[But to those who know the real speeds of the much-advertised S.Es. and Fokkers it is quite natural.—ED.]

The civil pilot who made the best time and gained the $10,000 was Roland Rholfs, who came in sixteenth in the race, and was flying a Curtiss Oriole. On starting from Toronto, Rholfs turned an Oriole machine on its back and delayed the start. There were 52 entries for the flight and 28 finished the course. Three pilots made second starts after failing in the first attempts.

Seaplane Tours.

A conference was held recently at the Curtiss Flying Station in Atlantic City to discuss plans for seaplane cruises. Capt. Charles J. Glidden and Mr. Henry Woodhouse, high officials of the Aerial League of America, were present.

Among the seaplane tours announced by Capt. Glidden will be cruises from Atlantic City to Baltimore, Washington and Norfolk, and from Atlantic City to Florida and the Gulf. Other cruises will visit New England ports, while others will follow the Mississippi and other great American rivers.

Seaplane cruises from Atlantic City to New York and up the Hudson will be among the first to be organised. Capt. Glidden also announced that winter cruises on the Pacific and Gulf Coast will be organised this year.

According to the "Times" of Sept. 29th :—Tentative plans are now under consideration for a seaplane flight from San Diego (California) to the Philippines, via Hawaii and Wake Island (north of the Marshall Islands), and Guam.

New Air Routes.

The Curtiss Aeroplane and Motor Corporation will establish shortly three new passenger air routes. A service from New York to Rochester may be started in the autumn. The other two routes, which will probably open next spring, are between Erie and Pittsburg and Hamilton and Toronto in Canada.

The Aerial Mail Service.

The most difficult part of the route of the mail service has been found to be over the mountains from New York to Bellefonte (Pa.). Early morning ground fogs are very thick and the winds are very variable and changeable. The weather varies the speed of the mail aeroplanes so much that the stage is sometimes flown at 132 m.p.h. and sometimes at 81 m.p.h. In a period of nearly two months, on four occasions the wind was strong enough to reduce the speed to less than 60 m.p.h.



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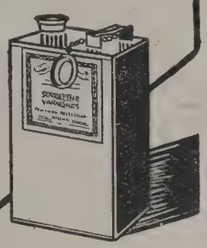
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AIRCRAFT FINANCE

The Fall in Aircraft Shares.

The fall in aircraft shares, following the Government's saving scheme, has produced some comment in the daily Press. Publicity, so long as it is not an exaggeration or misinterpretation of facts for political motives, is welcome; it is likely to do good; it cannot do harm, though the truth is sometimes unpalatable. It is a platitude that, unless national expenditure is made to conform more with the income, the situation must become increasingly menacing and ugly. One also realises that the process of assimilation is calculated to be really painful to some as well as unpleasant to the majority who unwillingly come into direct contact with the pruning-knife.

The Capital at Stake.

Admittedly the end justifies the means, but with some reservations so far as the Aircraft Industry is concerned. It ought to be clearly understood that the capital at stake is not inconsiderable. The "cut" in Government orders was inevitable, and therefore calls for no comment. But it is different with the moral obligations of the Government. No matter what anyone may claim, aircraft were, and still are, in the experimental stage, and those who subscribed the capital at stake had the negative satisfaction of seeing very beneficial results to the nation at large, without any corresponding pecuniary reward.

No Policy: the Parallel of Shipping.

Now the Authorities are doing the worst possible thing by leaving the Industry, if not exactly in the lurch, in a condition of suspense. If it drifts aimlessly without any guiding policy from the central authority, the financial effect is calculated to grow more serious. It is not spoon-feeding that is needful; it is a definition of national policy. Direct doles would be harmful; but if one takes the parallel of the shipping industry, there is a basis to work on. The shipping industry receives a subsidy in respect of mail and other things; this is payment for services rendered, and valuable services, so that there is no flavour of charity. Why not similar subsidies for aviation? The cost would be small, and the reward would be proportionately large, once things settled down on an actual commercial basis. The suggestion that aviation is not yet sufficiently advanced to justify such a charge on the national revenue is unreasonable.

The Disadvantages of Profitable Alternatives.

The average investor risked money in aircraft ventures, firstly, because of the novelty and, secondly, because of the belief that in national interests the Government would accord a certain small measure of support. From all accounts, other countries appear to realise better the obligations in this respect. The shares have fallen away in value, but not because of any inordinate quantity of selling. The manufacture of milk-cans may prove an excellent source of profit, and there are other side-lines and alternatives. This is all very well; but, if circumstances ultimately force the manufacture of "extras" to a primary position and aircraft is side-tracked, the change over would necessarily imperil the national efficiency in aviation. That would be disastrous.

Individual Share Movements.

As to the fluctuations in share values, Aircraft Manufacturing "B" Preference have been dealt in up to 14s. 9d., but the quotation was down to 13s. 6d.—14s. 6d., and the "A" are about the same level, having also recovered. The 7 per cent. Short Term Notes, due 1921-5, have changed hands at 96, a price which represents a very big yield if held till maturity. A slight recovery to 16s. 3d. has occurred in Peter Hooker Preference. Waring & Gillows show little improvement. There has been a reaction to 35s. in Vickers Ordinary; the new shares are purchaseable sixpence or so lower; both rank equal now, and would constitute very good investments.

MORTGAGES AND CHARGES.

Mayrow Industrial Systems, Ltd.—Charge on leasehold premises, 23, Flood Street, Chelsea, with contents, furniture at 39, Victoria Street, S.W., contracts in hand, patents, etc., dated July 18th, 1919, to secure £3,000 and bonus of £600. Holder: A. W. P. Kemp.

AN AGENCY IN AMERICA.

An agency for the British and Colonial Aeroplane Co., Ltd., has been opened at 512, Fifth Avenue, New York, by Mr. William G. Ranels.

A NEW AMERICAN COMPANY.

The Interallied Aircraft Corporation have recently been incorporated in New York. They will sell and manufacture aeroplanes, seaplanes, engines and accessories. They have twenty-five Curtiss training machines for immediate delivery.

Col. W. A. Bishop, V.C., D.S.O. (late R.A.F.), is the president of the company, and Major, W. G. Barker, V.C., D.S.O. (late R.A.F.), is a vice-president.

AIRCRAFT INSURANCE.

Bray, Gibb, and Co., Ltd., of 166, Piccadilly, wish it to be known that they are willing to give advice and assistance with regard to aviation insurance. As to the cost of such insurance this company state that it is impossible to give particulars of rates available because each risk must be treated on its own merits.

ERSATZ CASTINGS.

In view of the strike of 50,000 ironfounders from practically every foundry in the Kingdom, Barimar, Ltd., have arranged to place their large staff of expert welders at the disposal of machinery owners and users whose businesses are held up for the want of new castings. It is often possible to repair every kind of metal by metal fusion in a few hours.

A CHANGE OF ADDRESS.

In order to cope with their greatly increased business—both export and in London and the Home counties—Dunford and Elliott (Sheffield), Limited, the well-known firm of steel manufacturers, have found it necessary to open their own offices in London, at 4, Copthall Buildings, Copthall Avenue, E.C.2, and in future all communications in connection with steel, etc., for export or for delivery in London and the South of England should be sent to the new address.

The general management of the London office is in the hands of Mr. Ivor S. Winby, who has hitherto controlled Messrs. Dunford and Elliott's export business, whilst the services of their London Agent, Mr. E. St. Clair Duncan, are retained in the capacity of sales manager.

A TESTIMONIAL.

The following is an extract from a letter received by C. A. Vandervell and Co. from Mr. F. L. Rapson:—

"As you are probably aware, my Rolls-Royce car is about to start on an official 10,000-mile tyre test under R.A.C. supervision, and as the same C.A.V. outfit is still in use on this car as *originally fitted*, with a mileage of 117,000, I have decided to send the car into your works to have the electrical installation thoroughly overhauled. You will be interested to hear that during the entire mileage recorded above, 73,000 of which were on war work, I have never been held up for a single moment due to electrical troubles."

EXTRACTS FROM "THE LONDON GAZETTE."

GREAT BRITAIN.

MILITARY.

WAR OFFICE, September 22nd.

TERRITORIAL FORCE.—INFANTRY.—13th Bn. Lond. R.—Sec. Lt. H. F. Gaynor (Lt., R.A.F.) to be Lt., and to remain secd., July 12th, 1918.

17th Bn., Lond. R.—Sec. Lt. G. H. Halls (Sec. Lt., R.A.F.) to be Lt., and to remain secd., Oct. 26th, 1918.

19th Bn., Lond. R.—Sec. Lt. F. Badcock to be Lt., May 28th; Sec. Lt. S. Nisbett to be Lt., June 18th.

20th Bn., Lond. R.—Sec. Lt. R. S. Herring, M.C. (Lt., R.A.F.), to be Lt., and to remain secd., Sept. 1st, 1918.

24th Bn., Loud. R.—Sec. Lt. W. D. Kennard (Sec. Lt., R.A.F.) to be Lt., and to remain secd., June 19th, 1918.

WAR OFFICE, September 23rd.

REGULAR FORCES.—ESTABLISHMENTS.—R.F.C.—Mil. Wing.—Staff Officer, 3rd Class.—Temp. Sec. Lt. (now actg. Maj.) C. H. Smith, Gen. List, R.F.C., and to be temp. Capt. while so empld., from Oct. 17th, 1917, to March 31st, 1918.

AIR FORCE.

FROM THE "LONDON GAZETTE."

AIR MINISTRY, September 23rd.

R.A.F.—PERMANENT COMMISSIONS.—The notification appearing in the "London Gazette" of Aug. 1st appointing the following officers to permanent commns. is cancelled :—Lt.-Col. A. E. Cairnes, D.S.O., Maj. W. D. S. Sanday, D.S.O., M.C. (A.); Capt. C. H. Darley, D.S.C., D.F.C. (A.); Capt. E. J. L. Gilchrist, M.C., D.F.C. (A.); Capt. T. E. B. Howe, A.F.C. (A.); Capt. P. E. M. Le Gallais, A.F.C. (A.); Capt. A. S. Redfern (A.); Capt. G. M. T. Rouse (A.); Lt. N. S. Dewey, M.C. (A. and S.); Lt. R. R. Evans (A.); Lt. G. G. G. Graves (A.); Lt. H. N. Loch (A.); Lt. D. S. Robertson (A.); Lt. A. W. Simon (A.); Lt. P. L. Stephens (Ad.); Lt. W. F. Williamson (A.).

The surname of Lt. E. J. D. Townesend (S.O.) is as now described, and not "Townshend," as in "Gazette" of Aug. 1st.

The initials of Lt. J. W. Nixon (Ad.) are as now described, and not "L. M.," as stated in "Gazette" of Aug. 1st.

The following temp. appts. are made at the Air Ministry :—Staff Officers, 2nd Class.—Air.—Flt. Lt. D. S. K. Crosbie, Aug. 27th; Flt. Lt. F. N. Halsted, D.S.C., Sept. 15th.

The following temp. appt. is made :—Staff Officer, 1st Class.—Air.—Wing Comdr. A. W. Bigsworth, C.M.G., D.S.O., A.F.C., Sept. 17th, vice Sqdn. Ldr. C. E. Maude.

FLYING BRANCH.—The following Majs. are graded for purposes of pay and allowances as Lt.-Cols. whilst empld. as Lt.-Cols. (A. and S.) :—J. S. Mills, D.S.C., from April 22nd to July 31st; S. H. B. Harris, A.F.C., from May 1st to Aug. 9th.

The following Capts. are graded for purposes of pay and allowances as Majs. whilst empld. as Majs. (A.) :—I. N. C. Clarke, D.S.C., to May 17th; C. J. Truran, A.F.C., to June 30th; J. H. D'Albiac, D.S.O., from July 24th to July 31st, May 1st.

Capts. to be graded for purposes of pay and allowances as Majs. whilst empld. as Majs. (K.B.) :—A. T. Moore, O.B.E., M. H. Spencer, to June 29th, May 1st.

Capt. K. B. Harborn to be Capt. (A.), from (S.O.), March 15th (substituted for the notification in the "Gazette" of July 15th).

Lt. (Hon. Capt.) C. E. Holman to be actg. Capt. whilst empld. as Capt. (A.), from Oct. 31st 1918, to April 30th.

The following Lts. are graded for purposes of pay and allowances as Capts. whilst empld. as Capts. (A.) :—J. D. Seal, from May 1st to June 30th; S. B. Collett, from May 17th to July 31st; C. G. Mathew, July 8th.

Lt. (Hon. Maj., actg. Capt.) G. T. Barry to be Lt. (Hon. Maj., K.B.), and relinquishes the actg. rank of Capt. on ceasing to be empld. as Capt., June 1st.

Lt. G. H. Langley relinquishes the grading for pay and allowances as Capt. on ceasing to be empld. as Capt. (A.), July 24th.

Flying Officer H. B. Pett, M.C., relinquishes the grading for pay and allowances as Flt. Lt. on ceasing to be empld. as Flt. Lt. (A.), Sept. 1st.

Flying Officer M. A. Benjamin, M.C., to be Flying Officer (A.), from (S.O.), Aug. 19th.

Sec. Lts. to be Lts. :—H. C. Wright, April 28th, 1918; C. E. Tidy, March 23rd; P. J. Dowell, March 27th (substituted for the notification in the "Gazette" of July 29th); Alex. Shepherd, May 4th (substituted for the "Gazette" of July 29th, wherein this officer was described as "Arthur Shepherd").

Sec. Lt. D. O. Onslow-Carleton (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt. (A.), Feb. 11th.

W. R. Wood (temp. Sec. Lt., Manch. R.) is granted a temp. commn. as Sec. Lt. (O.), May 18th, 1918.

The following relinquish their commns. on ceasing to be empld. :—Lt. W. B. Ferrier (Lt., Cent. Ont. R.), Sept. 10th; Capt. J. H. C. Minchin (Capt., Sco. Rif.), Sept. 15th; Sec. Lt. N. Cave (Lt., R. Sussex R.), Sept. 16th.

Transferred to the unempld. list :—Sec. Lt. D. J. Brebber, Sec. Lt. N. Duncan, Sec. Lt. J. W. Eastman, Sec. Lt. C. W. Graburn, Feb. 1st; Lt. H. F. Dugall, Feb. 15th; Sec. Lt. E. S. Alger, March 20th; Capt. J. D. Stodart, March 24th; Sec. Lt. F. E. Finlay, April 1st; Sec. Lt. J. A. Wrighton, April 15th; Sec. Lt. A. Roche, April 19th; Lt. F. L. Wills, April 22nd (substituted for notification in "Gazette" of June 13th, wherein this officer was described as "Lt. F. L. Willis"); Lt. H. S. Starling, April 25th; Lt. C. W. Cook, Lt. (actg. Capt.) G. C. Dixon, April 30th; Lt. J. F. Thompson, May 1st; Sec. Lt. H. L. Wood, May 2nd; Sec. Lt. W. H. R. Jarvis, Lt. A. B. Massey, A.F.C., May 20th; Sec. Lt. H. R. Hayden, May 25th; Capt. F. U. Y. Weldon, May 28th; Sec. Lt. T. O. James, June 13th; Lt. G. W. Hockey (substituted for the notification in "Gazette" of June 27th, wherein this officer was described as Sec. Lt. G. W. Hockey); Lt. (Hon. Capt.) S. H. Holland (substituted for notification in "Gazette" of May 16th), June 16th; Sec. Lt. A. L. V. Jaussonius, June 17th; Lt. S. McB. Black, June 30th; Sec. Lt. J. D. W. Hindson, Sec. Lt. F. L. W. Irving, July 12th; Flying Officer C. E. Young, Aug. 6th; Flying Officer D. T. C. Rundle-Woolcock, Flying Officer H. W. Wheatley, Aug. 8th; Pilot Officer W. N. Jackson, Pilot Officer H. H. Jager, Pilot Officer J. L. Wilcock, Aug. 10th; Flying Officer R. V. Curtis, Pilot Officer R. Isaacs, Aug. 14th; Flying Officer A. A. James, Aug. 15th; Flying Officer D. W. Stuart, Flying Officer A. Ward, Aug. 26th; Pilot Officer G. J. Farnworth, Flying Officer J. G. Robertson, Aug. 27th; Pilot Officer A. M. Flanigan, Flying Officer W. C. Jeffries, Aug. 29th; Pilot Officer S. C. Rainbow, Aug. 30th; Flying Officer J. H. Page, Pilot Officer W. G. Pearson, Sept. 1st; Pilot Officer (Hon. Flying Officer) H. W. Lester, Sept. 2nd; Flying Officer E. J. O. Ross, Sept. 3rd; Flying Officer R. F. Palmer, Flying Officer W. Rogers, Sept. 6th; Pilot Officer V. C. Davis, Sept. 8th; Pilot Officer A. F. Nelson, Pilot Officer (Hon. Flying Officer) H. A. Pound, M.C., Sept. 9th; Pilot Officer G. Exley, Flying Officer S. C. T. Littlewood, Sept. Keen, Sept. 12th; Pilot Officer J. W. Sinton, Sept. 13th; Flying Officer W. G. Brind, D.F.C., Flying Officer V. C. Hemsley, Pilot Officer V. G. Record, Pilot Officer J. G. Walton, Sept. 16th; Pilot Officer L. T. Corbett, Flying Officer W. H. Davies, Sept. 17th; Flying Officer G. D. Longfellow, Sept. 18th; Flying Officer G. H. L. Cox, Pilot Officer L. J. Hall, Flying Officer W. T. Ward, Sept. 20th; Pilot Officer F. Cox, Sept. 22nd; Pilot Officer W. H. C. Robson, Sept. 23rd.

Maj. F. W. Honnett relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Sept. 9th.

Lt. W. E. Joseph, R.F.A., relinquishes his commn. on account of ill-health caused by wounds, and is granted rank of Capt., Aug. 22nd.

The following Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank :—K. D. MacLeod, July 12th (substituted for notification in "Gazette," Feb. 28th); L. A. Bushe (contracted on active service), July 19th; R. S. V. Morris, Aug. 3rd, 1918.

Lt. E. R. Gunner resigns his commn., Sept. 24th.

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank :—E. S. Noble, July 12th; P. V. Tempest, Sept 13th.

Sec. Lt. G. Hughes to take rank and prec. as if his appt. as Sec. Lt. bore date Jan. 11th.

Sec. Lt. S. N. Giroux to take rank and prec. as if his appt. as Sec. Lt. bore date Oct. 24th, 1918.

The notification in "Gazette," July 16th, 1918, concerning Sec. Lt. M. E. Miller is cancelled. The notification in "Gazette," April 9th, 1918, stands.

The notification in "Gazette," April 11th, concerning Lt. E. F. Jones is cancelled.

The notification in "Gazette" of July 11th concerning Sec. Lt. A. G. Ely is cancelled.

ADMINISTRATIVE BRANCH.—Maj. R. Cockburn, O.B.E., is graded for pay and allowances as Lt.-Col. whilst empld. as Lt.-Col., from May 1st to July 30th.

Maj. A. E. Loder to be Maj., from (S.O.), July 18th.

Sqdn. Ldr. G. H. Thomson, O.B.E., to be Sqdn. Ldr., from (S.O.), Aug. 29th.

Flying Officer (Hon. Flt. Lt.) D. C. G. Sharp to be actg. Sqdn. Ldr whilst empld. as Sqdn. Ldr., Aug. 1st.

Capt. H. C. Mallett, M.B.E., is graded for pay and allowances as Maj. whilst empld. as Maj., May 1st to July 12th.

Flt. Lts. to be Flt. Lts., from (S.O.) :—F. J. Gray, O.B.E., Aug. 1st (substituted for notification in "Gazette" of July 4th); G. M. Broadburn, A. Warnock, Aug. 15th.

The following Lts. are graded for pay and allowances as Capts. whilst empld. as Capts. :—L. B. Nicholls, May 1st; A. H. Tarper, from May 1st to 19th; F. W. H. Durrant, from (T.), from May 1st to Aug. 16th.

Lt. (Hon. Maj.) A. J. Battine is graded for purposes of pay and allowances as Capt. whilst specially empld., June 8th.

Lt. H. Gwynne-Smith relinquishes grading for purposes of pay and allowances as Capt. on ceasing to be empld. as Capt., June 30th.

Lt. A. Eggar to be Lt., from (S.O.), July 5th (substituted for notification in "Gazette" of July 22nd, wherein this officer was described as L. A. Eggar).

Flying Officers to be Flying Officers, from (S.O.) :—J. A. H. Savage, Aug. 15th; H. C. Pyper, Sept. 1st.

Sec. Lts. to be Lts. :—(Hon. Lt.) L. B. Clarkson, April 2nd, 1918; W. Simmonds, Jan. 10th; W. R. Wood, Feb. 1st (substituted for notification in "Gazette" of Feb. 4th); E. P. Woodman, June 20th.

Sec. Lt. W. R. Wood to be Sec. Lt., from (O.), Oct. 8th, 1918 (substituted for notification in "Gazette" of Nov. 5th, 1918).

Sec. Lt. H. Preston (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt., Sept. 28th, 1918.

Lt. D. S. Cairnes (Lt., Rif. Bde.) relinquishes his commn. on ceasing to be empld., June 17th.

Transferred to unempld. list :—Lt. E. F. Jones, March 29th; Lt. F. A. Whitfield, April 12th; Sec. Lt. R. H. Walker, April 14th; Lt. O. O'Conner, April 30th; Lt. N. S. Cameron, May 1st; Sec. Lt. H. Hopkinson, May 18th; Sec. Lt. G. Lovett, June 16th; Lt. C. P. Robertson, June 30th; Lt. G. V. Walsh, July 8th; Lt. A. T. Redgwell, July 17th; Capt. S. M. Wood, July 25th; Pilot Officer W. R. G. Williams, July 11th; Pilot Officer (Hon. Flying Officer) C. O. Coton, Aug. 26th; Flt. Lt. W. H. Mainprize, Sept. 3rd; Pilot Officer E. G. Burden, Pilot Officer D. J. Fryer, Flying Officer (Hon. Flt. Lt.) C. J. Trail, M.C., Sept. 12th; Pilot Officer F. P. Carroll, Pilot Officer H. F. Hendry, Sept. 13th; Flt. Lt. E. Newing, Flying Officer (Hon. Flt. Lt.) R. A. Shepheard-Walwyn, Sept. 16th; Flying Officer F. A. Whitfield, Sept. 20th.

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank :—K. D. Kayler, May 20th (substituted for notification in "Gazette," Jan. 10th); G. J. Murphy (contracted on active service), July 12th; C. W. Tuck, July 12th (substituted for notification in "Gazette," Jan. 7th).

The notification in "Gazette," July 22nd, concerning Sec. Lt. G. J. Murphy is cancelled.

The notification in "Gazette," Feb. 28th, concerning Lt. B. W. Blayney is cancelled.

The notification in "Gazette," Aug. 9th, 1918, concerning Lt. C. R. Ansell (R.W. Surr. R.) is cancelled.

The notification in "Gazette," Aug. 2nd, 1918, concerning Sec. Lt. R. S. V. Morris is cancelled.

The notification in "Gazette," Feb. 21st, concerning Lt. N. Smith is cancelled.

The notification in "Gazette," May 23rd, concerning Sec. Lt. C. H. Marston is cancelled.

The notification in "Gazette," Oct. 15th, 1918, concerning Sec. Lt. H. Preston is cancelled.

TECHNICAL BRANCH.—To be actg. Majs. whilst empld. as Majs., Grade (A.) :—Capt. K. D. Abercromby, from (Ad.), April 1st, 1918 (substituted for the notification in the "Gazette" of April 19th, 1918); Lt. T. L. F. Burnett, M.B.E., May 1st (substituted for notification in the "Gazette" of July 15th).

The following Capts. are graded for purposes of pay and allowances as Majs. whilst empld. as Majs., Grade (A.) :—J. Stewart, E. Holloway, O.B.E., to May 21st, May 1st.

Capt. W. J. Waddington relinquishes the grading for purposes of pay and allowances as Maj. on ceasing to be empld. as Maj., Grade (A.), July 25th.

Flt. Lt. N. V. Wrigley to be Flt. Lt., Grade (B.), from (S.O.), Aug. 1st.

Lt. (actg. Capt.) A. W. Furbank to be Lt., Grade (B.), and to relinquish the actg. rank of Capt. on ceasing to be empld. as Capt., Dec. 1st, 1918.

Lt. R. W. Lewis relinquishes the grading for purposes of pay and allowances as Capt. on ceasing to be empld. as Capt., Grade (B.), May 20th.

Lt. R. G. Whitcombe relinquishes the grading for purposes of pay

and allowances as Capt. on ceasing to be empld. as Capt., Grade (A.), July 21st.

Lt. K. I. Goodman to be Lt., Grade (A.), from (Ad.), May 17th, 1918 (substituted for the notification in the "Gazette" of Sept. 3rd, 1918).

Lt. (Hon. Capt.) G. M. Nobbs is graded for purposes of pay and allowances as Lt. whilst empld. as Lt., Grade (B.), Nov. 26th, 1918.

Lt. B. S. S. Rockey to be Lt., from unempld. list, Feb. 7th, with precedence next below Lt. A. S. Dunn.

Sec. Lts. to be Lts.:—(Actg. Capt.) W. W. Hammond, April 2nd, 1918, and to retain the actg. rank of Capt. until April 30th (substituted for notification in the "Gazette" of Aug. 29th); E. A. Gater, May 3rd (substituted for notification in the "Gazette" of July 29th).

V. G. Darrington (Lt., R.F.A.) is granted a temp. commn. as Lt., Grade (A.), Nov 5th, 1918, with seniority from April 1st, 1918 (substituted for notification in the "Gazette" of Nov. 26th, 1918).

Sec. Lt. (Hon. Lt.) H. R. Sterrett to be Lt., without pay and allowances of that rank, April 2nd, 1918.

Transferred to unempld. list:—Sec. Lt. C. H. Marston, March 7th; Capt. (actg. Maj.) L. S. Metford, April 19th (substituted for notification in the "Gazette" of Sept. 9th); Sec. Lt. (actg. Capt.) G. E. Hodges, April 30th (substituted for notification in the "Gazette" of July 11th); Sec. Lt. G. Wells, June 6th; Maj. C. A. L. Harrison, July 8th; Flying Officer B. S. S. Rockey (R.E.), Aug. 7th; Pilot Officer J. O. Cooper, Aug. 20th; Pilot Officer A. Robinson, Aug. 25th; Pilot Officer F. J. MacLennan, Sept. 1st; Flying Officer E. D. Inskip, Sept. 3rd; Pilot Officer E. J. Brooks, Sept. 5th; Flt. Lt. A. J. Boulter, Sept. 8th; Flying Officer J. H. Gladding, Pilot Officer P. F. Jessop, Sept. 11th; Flt. Lt. D. C. Waylen, M.B.E., Sept. 12th; Pilot Officer (Hon. Flying Officer) V. L. Henwood (substituted for notification in the "Gazette" of March 7th); Pilot Officer L. W. Scoggins, Sept. 13th; Flying Officer W. Duff, Flt. Lt. C. E. Elliott, Flying Officer F. H. Goodwin, Sept. 16th; Pilot Officer (actg. Flt. Lt.) J. H. Lytle, Flt. Lt. C. E. Stent, Sept. 17th.

Lt. C. M. Kelly relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain his rank, Sept. 9th.

The following are removed the Service, His Majesty having no further occasion for their services as officers:—Lt. A. C. Hankey, Sec. Lt. C. J. Young, Sept. 24th.

Medical Branch.—Transferred to unempld. list:—Capt. W. H. Payne, Feb. 24th; Sqdn. Ldr. (actg. Wing Comdr.) F. F. Muecke, C.B.E., Aug. 31st.

Memoranda.—The following relinquish their commns. on ceasing to be empld.:—Temp. Hon. Lt. F. W. Hedgecock, Aug. 20th; Temp. Hon. Lt. H. Bedson, Sept. 16th.

Transferred to the unempld. list:—Capt. (actg. Maj.) P. P. C. Penberthy, O.B.E., from (S.O.), April 30th; Flying Officer F. W. Hedgecock, Aug. 20th; Pilot Officer R. D. McE. Hart, Sept. 13th; Flying Officer H. Bedson, Sept. 16th; Sqdn. Ldr. G. W. Cranfield, M.B.E., from (S.O.), Sept. 17th; Sqdn Ldr. J. H. Hills, O.B.E., from (S.O.), Sept. 21st.

Sec. Lt. A. L. Maquard is dismissed the Service by sentence of a General Court-Martial, Aug. 20th.

The notifications in the "Gazettes" of Aug. 8th and Aug. 19th concerning Capt. P. P. C. Penberthy are cancelled.

The notifications in the "Gazette" of Aug. 22nd concerning Sec. Lt. R. J. Walker and Pilot Officer C. A. Russell are cancelled.

The notification in the "Gazette" of Sept. 9th concerning Capt. S. M. Wood is cancelled.

PERSONAL NOTICES.

NAVAL.

Engagement.

WILLIAMS—BRUCE.—The engagement is announced of Capt. W. T. S. Williams, D.S.C., R.A.F. (late R.N.A.S.), only son of the late Dr. Walter Williams, M.B., of Portmadoc, North Wales, and of Mrs. Williams, of St. Albans, Hertfordshire, and Ethel Marjorie, only daughter of Brig.-Gen. C. D. Bruce, C.B.E., of 31, Buckingham Gate.

MILITARY.

Engagements.

FROST—SNOWDEN.—The engagement is announced between Captain O. H. Frost, M.B.E., M.C., R.A.F., only son of the late Mr. Robert Frost and Mrs. Frost, of 11, Coleherne Road, S.W., and Pamela Lucy Mary, elder daughter of the late Mr. Herbert Snowden and Mrs. Snowden, of 80, Elm Park Gardens, S.W.

HARRIS—BURNS.—A marriage has been arranged, and will shortly take place, between Lieut. Kenneth Milner Harris, Suffolk Regt., attd. R.A.F., youngest son of the Rev Charles P. Harris, M.A., B.C.L., LL.D., Oxford, of Staplegrove Rectory, Taunton, Somerset, and of Mrs. Harris, and Alys, elder daughter of Mr. B. H. Burns and Mrs. Gower-Burns, Christchurch, New Zealand.

McCALMAN—NEALE.—The engagement is announced between the Rev. Hugh McCalman, M.C., Chaplain, R.A.F., only son of Lieut.-Col. and Mrs. McCalman, of Bournemouth, and Mildred Rosalie, youngest daughter of Mr. and Mrs. M. W. Neale, of Sutton, Surrey.

PORTER—STEPHENS.—An engagement is announced between Capt. Garthshore Tindal Porter, R.G.A. and R.A.F., eldest son of the late T. P. Porter, Esq., Government Surveyor, Queensland, Australia, and of Mrs. Porter, late of Cheltenham, and Christine Cecilia, elder daughter of Mr. and Mrs. Albert Stephens, Gloucester.

Marriage.

DEACON—RIDDEY.—On Sept. 25th, at Moreton-in-Marsh, Capt. G. R. A. Deacon, M.C., R.A.F., younger son of Mr. A. W. Deacon, J.P., of Swindon, was married to Edith Mary Riddey, elder daughter of Mr. J. A. Riddey, of Moreton-in-Marsh, Glos.

AIR FORCE.

Engagements.

JONES—STAFFORD.—The engagement is announced between Capt. C. N. Jones, A.F.C., late R.A.F., only son of the late Alfred G. Jones, of Shantung, China, and of Mrs. Jones, Elmhurst, Lonsdale Place, Derby, and Dorothy, elder daughter of the late George M. Stafford, of Sydney, Australia, and of Mrs. Stafford, 68, Holland Park Avenue, W.11.

LESLIE—TAYLERSON.—The engagement is announced between Kenneth Chapelow Leslie, late Lieut., R.A.F., of Launceston, Cornwall, and Doris Ellen, only daughter of Mr. and Mrs. Taylerson, of Stranton, Reigate.

LONGMAN—EDSALL.—The engagement is announced between Lieut. Reginald Longman, R.A.F., youngest son of Mrs. C. Longman, Wryde, Raymead Avenue, Thornton Heath, and Olive, eldest daughter of Mr. and Mrs. Percy Edsall, Hughenden, Dunheved Road North, West Croydon.

RODWELL—LIVOCK.—The marriage between Lieut. R. J. Rodwell, R.A.F., and Margery, eldest daughter of Mr. and Mrs. Livock, of Newmarket, will take place on Tuesday, Oct. 21st, at the Roman Catholic Church, Newmarket, at 2.30. There will be no reception, but all friends are welcome at the church.

Marriages.

COCKERELL—REED.—On Sept. 24th, at Ufton Church, Warwickshire, Major Henry Cockerell, O.B.E., R.A.F., son of the late Henry Cockerell and Mrs. Cockerell, of Osterley Park, was married to Amy Gertrude, daughter of Mr. and Mrs. Reed, of Ufton, by the Venerable the Archdeacon W. H. Hutton.

DALES—STRINGER.—On Sept. 23rd, at St. Nicholas, Kenilworth, Noel Mansfield Dales, late R.A.F., youngest son of the late Eli Dales, and of Mrs. Dales, of Bishops Wilton, Yorks., was married to Winifred Alice, only daughter of the late Major J. C. Stringer, Royal Warwickshire Regt., and of Mrs. Stringer, of Park Hill, Kenilworth, by the Rev. J. W. Dennis.

GODDARD—BERNARD.—On Sept. 16th, at Durley Church, Capt. Hubert E. Goddard, R.A.F., late E. Yorks Regt., younger son of Col. W. E. Goddard, J.P., V.D., D.L., and Mrs. Goddard, of Thwaite House, Cottingham, Yorks, was married to Enid Bernard, daughter of the late Mr. Edmund Bernard, J.P., and Mrs. Bernard, of Snakemoor, Botley, Hants, by the Rev. P. Koelle.

TAYLOR—LOCOCK.—On Sept. 20th, at St. Margaret's, Angmering, Capt. Bernard Archie Taylor, R.A.F., only son of Mr. and Mrs. A. Taylor, of Dunollie, Crawley, was married to Kitty, third daughter of the late Capt. H. F. Leicester Locock, and of Mrs. Leicester Locock, of Pooks Hill, Angmering, Sussex.



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ON OUR INLAND AERIAL POSTS.

It has always been a kind of article of faith with the population of this country that the British Post Office is the most wonderful institution of its kind in the world. People have always believed that anything committed to the care of the Postal Authorities was as safe as if it were in the Bank of England, and that any letter was always sure to be delivered—even if it took ten years to deliver it. And to a very great extent this faith has been justified. The non-delivery of a letter or parcel in the British Isles is one of the most unusual of Nature's phenomena.

But the Post Office is not fond of new-fangled ideas, and its methods are slow and circuitous. For example, it was years before it adopted motor transport for mails—in which delay perhaps it was justified when one remembers the early motor vans which the Post Office was badgered by the motor trade to adopt. Also, the Post Office took over a very fairly efficient telephone system from a private company and made it one of the slowest and least efficient services of its kind, though, it must be admitted, a reasonably sure means of communication provided that the user is possessed of adequate patience.

Therefore, taking the history of the Post Office into consideration, it was not reasonable to expect that it would leap enthusiastically at the aeroplane as a means of conveyance in normal times. Nevertheless, when in an abnormal time such as the present, the Post Office was obliged by force of circumstances to countenance the use of aeroplanes, the aforesaid history of the department did at least justify one in hoping that reasonable commonsense would be used in organising the new service.

An Inexplicable Muddle.

Just what has happened to the Post Office is not very clear at the moment. So far as one knows, it has not invited the assistance of the Committee of the Royal Aero Club in laying down the rules and regulations for the Aerial Post: and it seems that the Department of Civil Aviation has had very little to do with the affair beyond allowing the use of aerodromes and sending a few machines and calling a meeting of people in the Aircraft Industry to discuss the Post Office proposals. Therefore there seems no obvious reason for the amazing imbecility with which the whole affair has been mismanaged.

It would be interesting for the sake of historical record to know the name of the official who laid down the regulation that the fee for letters by the aerial mail should be 2s. an ounce. It would be equally interesting to know the name of the official who thought of the brilliant idea of "hiring"—which really means commandeering—all available civilian aeroplanes for postal work. For the net effect of the work of these two great geniuses was to stop the sending of letters by aerial post and to stop civil aerial transport. From which it has followed that during the past week the sky has been full of aeroplanes, burning vast quantities of petrol and carrying nothing and nobody—except their very bored pilots.

To make matters worse, having thus succeeded in disorganising civilian aerial transport, the Post Office, after two days, cancelled all the mail-carrying by civilian transport firms, and transferred its mails to the care of the R.A.F. This may, perhaps, have assured greater reliability so far as reliability was concerned, though one doubts it, but it certainly interfered with the first steps of a struggling industry towards developing a new and paying form of activity. On the other hand, it gave the R.A.F. a job of work to do, and made a number of young gentlemen supremely happy after months of idleness.

And then to crown it all the Post Office stopped sending mails by the R.A.F. after four days.

Freaks and Figures.

Take a record of the opening day, as shown in the Civil Aerial Transport Notes this week. It has been stated by the "Morning Post," writing presumably with authority, that 315 letters were carried, though there was fuselage capacity for 4,750 lbs.

Allowing that the 315 letters each weighed the statutory ounce, the total weight of letters carried would be just under 20 lb. Therefore carrying capacity for 4,730 lb. was wasted. That means, roughly, that 34 passengers were prevented from travelling.

One does not imagine that 34 passengers arrived at the various aerodromes and danced with rage when burly postmen prevented them by physical force from getting into the machines. But if only ten people who wished to travel on urgent business were refused seats at the various booking-offices it means that considerable harm has been done to civil aviation, and very probably to the trade of the country. On the other hand, it might very well prove that the bulk of the total load of 19 lb. 11 oz. of letters consisted of quite unnecessary communications sent by people who were willing to spend a couple of shillings for the fun of having a sample of the earliest official aerial mail.

When one comes to consider some of the details now available one scarcely knows whether to laugh or cry over these puerile attempts at running a mail service.

For example, a Westland Limousine carried 1 lb. 1 oz. (not forgetting the one ounce) of letters from Hounslow to Bristol. Just imagine sending a Rolls-Royce engine and a pilot (and accommodation for three passengers) 120 miles to carry 1 lb. 1 oz.! And remember that the machine had to fly from Yeovil to Hounslow in the first place in order to pick up its "load."

Then we learn that a Blackburn Kangaroo (two Rolls-Royces of 375 h.p. each) flew from Hounslow to Newcastle with 3 lb. 8 oz. You perceive the wisdom of the Postal Authorities in choosing a twin-engined machine for the extra load, which—if you have a slight knowledge of arithmetic—you may prove is more than three times as great as that carried by the Westland.

This problem must have presented considerable difficulty. If the load for Newcastle had been 4 lb. 4 oz. obviously there would have been a grave risk in committing it to the care of anything less than a four-engined Handley Page.

However, apparently experience teaches even the officials of the Post Office, for one learns that the Newcastle machine left at 7.50 a.m., and at 8 a.m. another Kangaroo left for Renfrew carrying 13 lb. 10 oz. of mails. One is aghast at this official recklessness. One can only assume that, having seen the Newcastle machine lift its load with apparent ease, the officials felt justified in taking the risk.

Or perhaps by that time some of the officials of the Department of Civil Aviation had arrived—doubtless greatly inconvenienced by being thus compelled to be out in the middle of the night (as it would be, judging by former Air Ministry hours)—and had proved to the Post Office authorities that such a load was safe. One official department is always ready to accept the figures of another, even though the mere civilian may know perfectly well that the figures are either foolish or faked.

Anyhow, this success in lifting 13 lb. 8 oz. with only two engines—where, judging by the first postal effort with the Westland machine, thirteen and a half engines at least would have been necessary—the Authorities were spurred to still further recklessness. They actually allowed a B.A.T. commercial machine with only one engine to leave for Didsbury carrying 6 lb. 2 oz. of mails.

Truly "Education is a great thing!" as an Irish servant once remarked when her mistress demonstrated to her that she could write her name with her finger in the dust on top of the piano. At this rate of progress we may find aeroplanes carrying a full load of mails in the course of the next century.

Profits and Losses.

It is stated by the "Daily Mail" that a Post Office official said: "The charge is very little more than that for a telegram, and the service does not meet its cost, nor is it expected to do so." Apart from the fact that this is a very damning statement for an official to make in these days when the official scream is all for economy, why send a letter by aerial post if it costs more than a telegram?

But is the service not expected to meet its cost? One has one's doubts. If the machines carried their full load the service would not merely pay. It would afford a clear case for a charge of profiteering against the Government. For consider the case of any ordinary single-engined machine which is quite able to carry a load of 700 lb.

Now 700 lbs. is equal to 11,200 ounces, and at 2s. per ounce this is equal to £1,120. One gathers that the Post Office hires these machines at about £100 per trip, which leaves £1,020 for other expenses and profit. If one allows £20 for the motor services to and from the terminal aerodromes, the Post Office would show a clear profit of about £1,000 on an outlay of £120, which is at the rate of about eight hundred and fifty per cent.

A Paying Proposition.

If the Post Office authorities had exercised a little common sense they could quite easily have made the Aerial Post pay its way and have made it a real benefit to the community. Instead of prohibiting the sending of aerial letters by charging 2s. an ounce, and limiting the places at which such letters can be posted to three post-offices in positions which are not frequented by people who are likely to want to send letters by air, the charge should have been 6d. per ounce, and it should have been permissible to post such letters anywhere.

Naturally it will be objected that such a course would mean extra sorting. In theory it would. In practice it would not. For every letter bearing a 6d. stamp and marked clearly "Air Mail" by the sender would merely go straight into the air mail section, and the extra sorting would be no more than if several thousands of people suddenly took to writing daily to Auchtermuchtie or Kiltimagh.

The Air Mail letters would merely represent another place on the map, so far as the G.P.O. was concerned, and the sorting of the Air Mail letters themselves has to be done in any case, whether the postal aeroplanes carry 315 letters in the day or 315,000 letters. In fact, the cost per letter of sorting 315 letters must be enormous, whereas the cost of sorting big numbers is very small when charged to each letter proportionately.

As concerns the sixpenny stamp, one would argue that such a low fee would induce thousands of people to send letters by air posts who would not pay 2s. an ounce. Thus the postal aeroplanes would be assured of a full load for every journey.

Now 700 lb. of letters at 6d. per oz. is equal to £280 per load. And as the machines cost, as aforesaid, £100 per trip for hire, the Post Office would still have £180 for incidental expenses, and so might very well run the service at a profit.

Perhaps the Postal Authorities will be good enough to consider this suggestion in the interests of economy and of the taxpayers' pockets. While they worked the inland aerial posts merely wasted petrol and money and were of no use at all to anybody who matters. The only good thing about them was that they provided the aeroplane and engine makers with good material for advertisements. Of which material, by the way, few have made the best possible use.

The Air Ministry's Eccentricities.

As one might have expected, the Air Ministry's share in the proceedings was calculated to make matters worse. Presumably the Post Office was indifferent as to whence the letters went, though it would have a slight bias in favour of the most accessible aerodromes. Consequently the Air Ministry chose to send the mails from Hounslow, which involved a long drive from the G.P.O. through the thickest of London traffic, and through that awful traffic jamb at Brentford, which always means delay.

The obviously sensible thing to do was to send the mails from Hendon or Cricklewood, either of which are miles nearer to the G.P.O. than is Hounslow, and either of which can be reached by either of two roads (the Edgware Road and the Finchley Road), both of which are singularly open and free from heavy traffic. The mails could get to either aerodrome in less than half the time it took for them to reach Hounslow. And, moreover, both Hendon and Cricklewood are actually on the way to the great cities in the North whither go the greater portion of the mails, whereas Hounslow is quite out of the way and involves a longer air journey.

All of which is quite in keeping with the methods of the Department of Civil Aviation, which for some incomprehensible reason seems to be obsessed by a love for the Wilderness of Hounslow, only rivalled by its affection for the death-trap at Kenley.

An Irish Economy.

Apropos the Air Ministry's vagaries, one hears that it has been preparing to run an official aeroplane service of Bristol Fighters from Holyhead to Dublin. Now everybody knows that the Bristol Fighter is one of the finest aeroplanes in the World. But why, in the name of common sense, run a land-machine service over 60 miles of sea? What are our flying-boats and sea-planes doing? It must take over half an hour at least



THE AERIAL MAIL.—Loading the London-Paris mail into the Airco D.H.16 machine at Hounslow.

to cross that 60 miles of water, and if there is a head wind the time must go up to three-quarters of an hour. Baldonnel, the Dublin landing-ground, is, like all the other official aerodromes, ten miles on the *wrong* side of the city which it is supposed to serve. And that means another three-quarters of an hour to get the mails back into Dublin.

Thus the time from Holyhead to Dublin is something over an hour and a half. And all the time there is a perfectly good and regular mail-boat service between the two places which takes three hours. So that to save a very problematic hour and a half the Air Ministry apparently proposes to risk a number of valuable lives and machines by sending land machines over the sea.

In any case, if there is any violent hurry with specially urgent official dispatches a flying-boat could get off smooth water in Holyhead Harbour and alight in smooth water at Kingstown or in the mouth of the Liffey and save all the land journey from Baldonnel to Dublin. But that, of course, is far too simple a proposition to appeal to the Air Ministry, at any rate on either its Civil Aviation or its Naval side.

The Benefit to the R.A.F.

On the other hand the purely Military side of the R.A.F. seems to have done, as usual, extraordinarily well. One may not, of course, go into details concerning its organisation for the distribution of special dispatches from Government Departments to the Provinces, but one can vouch for the fact that it has been excellently done. The regularity and speed with which dispatches have been taken and replies brought back has surprised and pleased even the most stolid and unbelieving of officials.

Also one gathers that certain patrol-work which has been done by the R.A.F. along the railways has had considerable moral effect on the lower-class railwaymen and has definitely restrained acts of sabotage. So that, despite all the silliness and muddle-headedness of the Post Office people and of the Civil Aviation authorities, aviation in general and the R.A.F. in particular have profited by the strike.

Economy and Prohibition.

Yet another minor eccentricity is concerned with a kind of local aerial mail which, one is told, is being run in the Liverpool area. There are, it will be recalled, certain of those sacred "prohibited areas" in the Mersey Defence district, and though the postal aeroplanes are piloted by R.A.F. officers, or by ex-R.A.F. officers, they are compelled to make a detour of an extra 15 miles to avoid these areas.

And this is done at a time when urgent appeals are being made to all motorists to economise every drop of petrol. Truly our officials are a race apart. Perhaps "Mr. Pussyfoot" might give them some good advice on the subject of the inordinate consumption of spirit.

The Uses of Official Muddles.

It will be interesting to see how all this muddle is straightened out in course of time. Though the strike appears to be broken, we are still a long way from Industrial Peace, and though perhaps the use of aerial mails may have ceased by the time these notes appear, doubtless they will be revived at the next crisis.

Our officials do actually learn sense if one gives them time, and especially if they are criticised with sufficient causticity. One has done one's little best in this direction, and so one hopes that the points raised in this article may help towards economy and efficiency in the future of aerial mail-carrying.—C. G. G.



THE AERIAL MAIL.—Taking mails aboard the Handley Page London-Brussels aeroplane. The aeroplane carried 1,500 lb. of official mail to Brussels on Sept. 29th. The same machine returned on the following day with a pilot, mechanics, two passengers, and 1,940 lb. of mail. It also carried a 2½-year-old baby. Apparently machines flying to the Continent can carry much more than those used at home!

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NAVAL & MILITARY AERONAUTICS

[The "Official Gazette" Notices and the Personal Notices will be found on p. 1350.]

GREAT BRITAIN.

MILITARY.

THE CASUALTY LIST.

Reported Oct. 4th.

PREVIOUSLY REPORTED MISSING, NOW REPORTED KILLED.—Phillippo, Lt. A. J. C., R.A.S.C., attd. R.F.C
Ottey, Sec. Lt. R. G., R.F.C.
Samuels, Sec. Lt. G. B., Durh. L.I., attd. R.F.C.
Smith, Capt. A. H., M.C., R.F.C.

AIR FORCE.

SEARCHLIGHTS FOR AERODROMES.

The Air Ministry announced on Oct. 6th that as a temporary and emergency measure to assist belated aircraft to locate their aerodromes after dusk the Air Ministry has arranged for vertical searchlight beams to be projected from the following aerodromes about dusk till all service machines have arrived :—

Hounslow, one vertical beam.
Kenley, two vertical beams.
Limpne, three vertical beams, arranged in a triangle.

AN AERODROME FIRE.

A fire occurred on Oct. 2nd at Shotwick Aerodrome, near Chester. At about seven o'clock a hangar was observed to be on fire. The promptitude of two local fire brigades prevented the fire from spreading, but the hangar was burned out, and a number of aeroplanes destroyed. The cause of the fire is unknown.

Shotwick Aerodrome is an important R.A.F. Air Station, and is also a civilian flying ground.

A FORCED LANDING.

A message from St. Raphael, dated Sept. 30th, states that an S.E. biplane, No. 246, piloted by Capt. L. Edward, R.A.F., was forced to land near Sillans-la-Caseade, near Dragnuignan. The machine was on its way from London to Egypt, via St. Raphael.

THE FREEDOM OF THE CITY.

Major C. Scott, R.A.F., the commander of H.M.A. R.34, received the freedom of the city of Dunbar in recognition of the flight of R.34 across the Atlantic.

THE RESULT OF AN ACCIDENT.

Serjeant Thomas Bunting, R.A.F., has died from burns caused by the explosion of an R.A.F. motor-launch moored in Poole Harbour, which was reported last week.

FRANCE.

On Oct. 3rd a reception was held at the Aero Club de France in honour of Commandant Vuillemin who has recently concluded his aerial tour from Paris to Cairo and back. The reunion was presided over by H.I.H. Prince Roland Bonaparte the Comte de la Vaulx, and General Duval.

GERMANY.

The Allied Supreme Council met on Sept. 29th in Paris to discuss the question of how to prevent the Germans from selling or exporting their aircraft material contrary to the order of the Allied and Associated Powers. A resolution on the subject proposed by Marshal Foch was considered and accepted.

It was also decided to insist on the Germans surrendering the sums they have already received by the sale of aircraft material without the sanction of the Allied and Associated Powers. The question of the distribution of German aircraft among the Allied and Associated Powers was discussed, and the report of the military representatives was accepted.

On Oct. 3rd the following appeared in the "Intransigeant," of Paris, concerning the adoption by the Supreme Council of the report of the Inter-Allied Commission of aircraft material :

"According to the programme which was decided upon for the sharing out of the Zeppelins, France will have the first choice, then Great Britain, and then the United States. After this choice has been made the remaining Zeppelins will be destroyed. The different Powers will also have the right to choose various makes of German aeroplanes, Belgium, Greece, Roumania, and Serbia also taking part in this partition.

"No official confirmation of the destruction of Zeppelins by the Germans has been received, but it is known to the French authorities that German officers attached to the airship service are destroying all vessels the existence of which was not formerly known to the Allies

"According to the terms of the Peace Treaty, the manufacture of German machines must cease six months after the ratification of the Treaty by the Powers. A factory at Dusseldorf is at present engaged in constructing a giant type of Zeppelin. The work is being hurried forward in order that it may be finished before the ratification of the treaty."

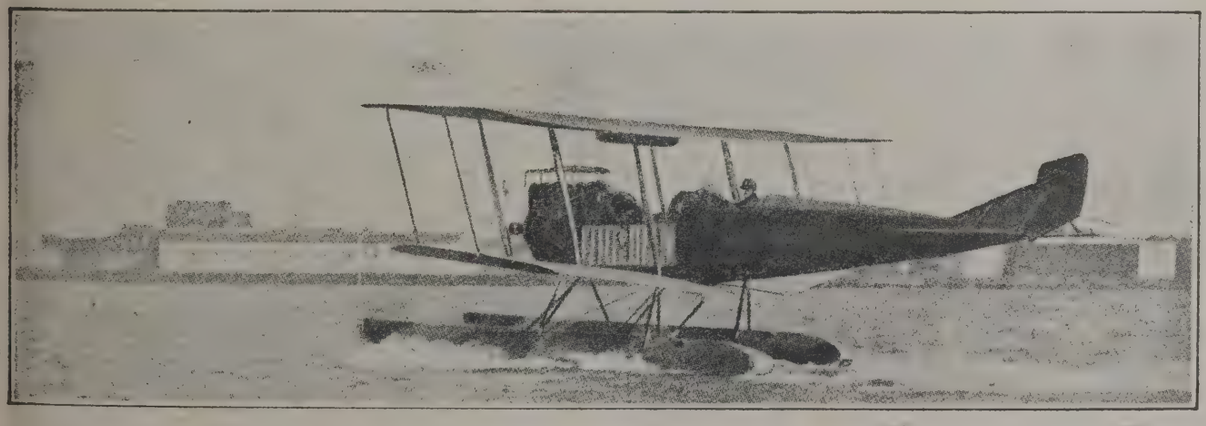
HOLLAND.

Capt. Hardenburg, of the Royal Dutch Army, commanding certain aviation units in the Netherlands, and Lieut. Labouchère, Military Attaché at the Dutch Legation in Paris, are visiting aeronautical factories and aerodromes, both civil and military, in order to draft a report on the development of French aviation during the war. Lieut. de Fleurieu, of the Headquarters Staff of the Military Aviation Arm of the French Army, has been detailed to conduct these officers on their tour.

ITALY.

The following news has been communicated by the Italian correspondent of THE AEROPLANE :—

In consequence of the Fiume affair, all flying has been stopped. As on the occasion of the general strike when terrestrial vehicles were put out of action by that means, the magneto or commutator has been removed from all aero en-



IN WAR TIME.—A German D.F.W. Seaplane. This type was used at Lübeck during the war for training purposes.

gines. Even the newspaper, Milan-Rome, carriers and the Sardinian inland mail have been stopped.

In spite of this, the Naval "Ace" and Gold Medallist, Casagrande, succeeded recently in getting away from Pola with three seaplanes and several officer pilots and mechanics to Fiume, where D'Annunzio, who was just back from the Grobnitro aerodrome, welcomed them effusively. Later in the day two Samls and three SVAs from Trento joined the patriotic Aero Forces. There are thus some score of first-class pilots with their 'buses at Fiume.

Evidently, as might have been expected, D'Annunzio counted upon his fellows for news, money and other aid, and he appears to be using aeroplanes for sending news out of Fiume. There is an aerodrome there, of course.—T. S. H.

A report from Spalato states that on Sept. 22nd an Italian aviator, presumably from Fiume, dropped proclamations issued by D'Annunzio over Zara. These stated that D'Annunzio would occupy Spalato and Dalmatia as far as Cattaro as soon as he had sufficient forces.

JAPAN.

The Japanese Army has purchased some hundred or so aeroplanes from the French Government through that country's aeronautical mission.

An aviation school has been established at Tokorozawa, near Tokyo, and several others are being established. Maurice Farman pusher machines are used for elementary and Sopwiths for advanced training.

The Navy has also bought a large number of seaplanes, of which Maurice Farman (for training), Short, Sopwith, Salmson, Deperdussin, Nieuport, and Curtiss are to be the principal types.

SWEDEN.

The Danish correspondent of THE AEROPLANE writes :—

A paper on psychologic flying tests was read on Sept. 17th in Stockholm by Oberlehrer Rudolf Schulze, chief of the institute in Leipzig for experimental pedagogy and psychology. The lecture was attended by General Uggla on behalf of the King, further by the War Minister Nilson, some professors, and a number of flying officers.

The lecture was financially supported by the Government and the Swedish Air Traffic Co. Herr Schulze mentioned first the tests applicants were subjected to at big German concerns like the A.E.G. and the Berlin trams, and next treated the various apparatus and means of testing the various senses and the individual reactions of candidates, suggesting as a good scheme that pilots should work out for themselves difficult imagined positions and how they would behave then.

SPAIN.

The Spanish Government has considerably increased the establishment of its Flying Services by the recent addition of some 40 French aeroplanes and about 20 British.

U.S.A.

A PIONEER HONOURED.

To be Honorary Companion of the Distinguished Service Order :—

Lieut.-Col. John Armstrong Drexel, United States Signal Service, Washington (formerly attached to the Air Ministry, London).

J. Armstrong Drexel will be remembered by his flying at the first Bournemouth flying meeting and elsewhere, having taken his Royal Aero Club certificate No. 14 on a Blériot monoplane at Beaulieu, Hants, on June 21st, 1910.

He subsequently set up a British altitude record of 6,595 ft. for aviator alone, on a Blériot monoplane at the Lanark meeting in August, 1910.

THE HOUSE OF BOLO.

By G. L. DORE.

Before May 1st, 1919, there were many officers in the House of Bolo dealing with matters aeronautical; they all had great acting rank and much pay, and sat in comfortable chairs before large desks, smoking cigarettes and talking to their pals or lady clerks.

These ladies, who appeared to be mostly chosen for their good looks, also drew much pay, which they spent on gorgeous raiment to please the eyes of the officers.

On the desks of the officers were many tin trays, on which were stuck labels bearing mystic words, such as "In," "Out," "Pending," "Action," and "Speak," and from time to time very small messengers would enter and place papers in the tray marked "In," then the officer would glance at the papers and put them into another tray where they would stay for perhaps a week or perhaps longer before they were moved into another tray.

Very few of those officers had been up in an aeroplane, and it was rumoured that some had never even seen one, but theirs was the task of running departments in Bolo House.

There were others who had seen Service flying in France, but they were few, and there were some who arrived before 11.0 a.m. in the morning, and who did not take two and a-half hours for lunch, and leave for home at 5.0 p.m.; but they were not many.

However, Bolo House continued to flourish, and new hotels and buildings were taken over frequently to house the staff, which continually increased.

There were many departments in Bolo House, and they all had their little failings. "Records," which should have known everything about everybody, knew very little about anybody, and would answer nearly all queries by, "We have no trace of this," or, more shortly, "No trace," and any information which they did give could hardly be relied upon.

"Casualties" occasionally killed the wrong people, which was disturbing.

"The Printing Section" gave great promises which led to bitter disappointments.

"Airships" were the most feared people; they all had great rank and looked very naval; they had splendid offices overlooking the Thames, which they never entered; but so greatly were they respected that no one dared to enter their offices even to win a waste-paper basket or a tin tray.

"Permanent Commissions" had a large staff who spent their days sorting files; many conferences were attended, and yet nothing could be decided, and no one obtained a Permanent Commission in the R.A.F.

There were many other departments also; some did great things and some nothing, but all lived very happily then.

On the First of May, 1919, there was much distress, for all officers who held acting rank had to relinquish it, and all the generals became colonels, and all the majors became lieutenants, which pleased them not at all.

On the next day nearly all the officers were demobilised, despite their protests that Bolo House could not progress without them, and now they are wandering in the streets seeking work and finding none.



COMPARATIVE SIZES :—The German bombs illustrated are of the following sizes :—25 kg., 50 kg., 100 kg., 300 kg.



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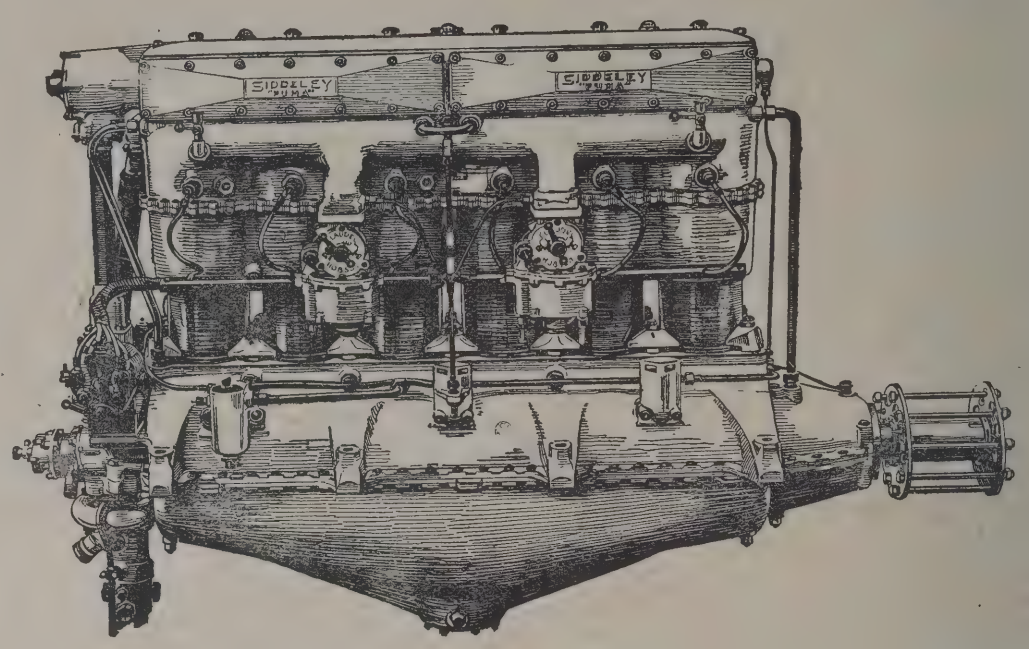
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The **SIDDELEY** AIRCRAFT ENGINE

The Folkestone to Cologne Air Mail

THE Aerial Mail Service from Folkestone to Cologne (recently discontinued) was carried out by two squadrons of the Royal Air Force, one of which was equipped with D.H.9 aeroplanes fitted with 230 h.p. Siddeley Aircraft Engines. The journey was performed in an average of 3 hours 22 minutes. The average weight of mail carried per journey was over 160 pounds.

That the service was efficient is proved by the fact that during the week ended August 16th over 7,000 pounds of postal matter was safely carried from this country to the troops in Germany. Of 45 journeys commenced only one was not completed.

Write for Brochure "Three Announcements."

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The WORLD of AERONAUTICS

NEWS OF THE WEEK FROM ALL QUARTERS

A Royal Flight.

On Oct. 3rd H.M. the King of the Belgians, who is at present on a visit to the United States of America, flew over the City of New York in a seaplane.

The Royal Aero Club Seaplane Competition.

On account of the Railway Strike, the Committee of the Royal Aero Club, at its meeting on Oct. 1st, 1919, decided to postpone the Seaplane Competition proposed to be held at the end of this month.

It would be interesting to know in what way a seaplane competition is influenced by a railway strike. One would have supposed that the occasion would afford an excellent opportunity of demonstrating conclusively that aircraft are not in any way dependent on railways or the vagaries of railway personnel. This cancellation would appear to prove once and for all the unfitness of the Committee of the Royal Aero Club either to organise or control the sport of flying in this country.

Readers are referred particularly to the Aero Club's official notices this week.—C. G. G.

The Professorship of Aeronautics.

Some further particulars are now available concerning Capt. Bennett Melvill Jones who was recently appointed Professor of Aeronautics at Cambridge. One is indebted to the "Liverpool Courier" for the following :—

Mr. Bennett Melvill Jones, whose appointment as Professor of Aeronautics at Cambridge has been announced, is a son of Mr. Benedict Jones, formerly of Birkenhead, now residing at Megavissey, in Cornwall.

He was educated at Birkenhead School, and in 1906 took an Exhibition for Mathematics at Emmanuel College, Cambridge, where later he became a scholar, graduating in First Class in 1909 in the Mechanical Sciences Tripos. A year later he was a shop student at Woolwich Arsenal, afterwards proceeding to the National Physical Laboratory at Teddington, where he was engaged in aeronautical research until May, 1913.

During this period, in conjunction with Dr. L. Bairstow, he carried out experiments on aeroplanes which were far in advance of anything then known, and established many principles which were quite new, but are now the foundation of aeronautics. He constructed a wind channel and aeronautical balance, which are now standard experimental instruments, and conducted many other researches. . . . . .

A Lieutenant in the London Territorials (Royal Engineers), when war broke out, he volunteered for foreign service, and was in camp for a month, when he was then sent to the Royal Aircraft Factory at Farnborough, and until May 1916, was in charge of many departments of research. In 1916, when the Government gave the late Colonel Professor Hopkinson a free hand to start an experimental station at Orfordness and to choose his own assistants, his first selection was Mr. Jones, who then carried out numerous and important experiments on aeronautical gunnery, gun sights, bombing, navigation and night-flying, which had most important results on the war. In order to observe the actual practice in war, Mr. Jones went several times to France and took part in actual air fighting. On one of these expeditions he was piloted by his younger brother, Mr. B. H. Ll. Jones, who was one of the most skilful of pilots, but has since been killed.

In July last year Mr. Bennett Jones was removed to London with the rank of Lieut.-Colonel, and became one of the Assistant Controllers of the Technical Department of the R.A.F.

He has obtained the Air Force Cross, and has been several times "mentioned."

An Air Lifeboat.

On Saturday, 4th inst., a very heavy mist came over Hounslow, and cross-country flights became impossible. So the Avros turned their attention to salvage operations.

Before dawn the drone of twin-engines was heard through the murk. The noise wandered uneasily to and fro, and it became evident that some large aeroplane was completely lost. Signals were made from the aerodrome without result; so at last an Avro was asked to perform the function of an aerial life-boat. It went up and groped about in the dark in the direction of the noise, and presently made out a large machine with 10 passengers aboard roaming unhappily round with a "four a.m. and I can't find the keyhole" air.

The Avro pilot had to go cautiously, for when he began to fly towards the liner he lost sight of the aerodrome. However, he fired Verey lights and presently attracted the attention of the liner and directed it safely to earth. It had taken an hour and a half to get to Hounslow from another London aerodrome.

Again, after dark that night, an Avro had to go up to show the way to a second large machine which had lost its bearings. (R.N.L.I., please note.)



One of the Blackburn "Kangaroos" getting off at the E.L. T.A. Show. The B.A.T. Shed is the first from the right, and the bigger Sheds housed the Vickers "Vimy" and the Handley Page machines.

The WORLD of AERONAUTICS (continued)

The Work of an Aerial Customs Office.

Every commercial aeroplane entering or leaving the country must be reported to the Officer in Charge of His Majesty's Customs and Excise at Hounslow Aerodrome. Its pilot must declare the nature of the goods carried. The organisation is now in full working order and it is the boast of the Excise Officer that no pilot leaves the country without carrying with him all information that the Customs officer at the destination aerodrome may wish to know.

Difficulties were encountered when the branch was first opened, but they are being adjusted by experience. Now there is very little delay or inconvenience, either to pilots or passengers. If an incoming machine is forced to land at another aerodrome for petrol or any other reason, the local Customs officer has to report the affair to Hounslow, and takes steps to see that none interferes with the cargo.

The railway strike practically doubled the work at Hounslow. The official records showed that 111 machines had left for the Continent and 81 had arrived up to midday, Sept. 30th.

Before the strike began the average of departures from Hounslow was three aeroplanes a day. On Monday, Sept. 29th, there were eight departures. Three machines arrived on that date and six on Sept. 30th.

The value of the cargoes varies enormously. On Sept. 30th the value of a small piece of jewellery from Paris was declared at £400. The Customs officer on his inspection is usually accompanied by a representative of the company which owns the aeroplane.

Fairy Tales.

On the return of the American Air Mission to the United States from Europe after an extensive study of European air establishments, Assistant Secretary of War Crowell made the following statement:—

"Great Britain has come to consider the dominance of the air as at least of equal importance with that of the seas, and is frankly and avowedly planning a definite policy of aerial development to that end."

Having seen and heard something of what Great Britain is doing towards the dominance of the air we can only repeat that well-known and much-used expression: "Thank God we have got a Navy."

From Aeroplanes to Poultry Runs.

One hears of aeroplane constructors turning their attention to the manufacture of many articles from wheel-barrows to window-sashes and from perambulators to poultry runs. Motor-cycles, motor-car bodies, all kinds of furniture, rowing-boats, and dozens of other articles are being made by firms that were during the war busy on the work of turning out Service and training machines. One naturally feels it wrong that the skilled employees of the great firms should have to turn their abilities to the production of comparatively mundane articles; but, at the same time, one feels that the firms that are making great efforts to find any sort of work that will keep their workpeople employed are acting in the right spirit. When the boom in commercial aviation does come they will be in a position to take advantage of it. It would be a thousand pities to see most of the skilled aircraft workers disbanded and absorbed by other industries, for it would be a matter of some difficulty to bring them together when wanted.

208 Squadron.

With reference to the notice of the 208th Squadron Dinner, would-be diners are requested to note that this dinner is postponed indefinitely, owing to the railway strike. Those who wish to attend the dinner when it does take place are asked to communicate with H. A. Zinn, Flying Officer and Adjutant, No. 208 Squadron, Royal Air Force, Netheravon, Wilts.

The S.M.M.T. Olympia Show.

The Society of Motor Manufacturers and Traders, Ltd., wish to state that there is no foundation whatever in any rumour that their November Motor Show at Olympia will be either postponed or abandoned.

Petrol Supplies.

There are adequate stocks of motor spirit in the country to meet *all* requirements. In the continued difficulties of railway transport the trouble is to get the motor spirit into the hands of those who need it for food distribution and other essential national needs. The companies which distribute petrol are confident that this can be done with the co-operation of the public and the trade.

Distribution by motor transport to garages, etc., must be discontinued, all such transport being required for other purposes. Dealers and commercial consumers requiring motor spirit must therefore call at the local depots of the distributing companies and bring with them all empty packages available, as supplies of full packages will be limited to the number of empties returned.

The hoarding of motor spirit or the use of it by those who do not really require it during railway difficulties is contrary to the public interest. The distributing companies much regret the inconvenience caused, which they hope will not be of long duration.

Excess of Zeal.

Martinsydes, Ltd., and Mr. A. Trott were summoned before the Woking magistrates on Sept. 27th in respect of dealing in mutton by retail without a registration certificate, and also for supplying meat contrary to the Rationing Order on or about Aug. 29th.

Mr. Symes said he was prepared to plead guilty to the summonses. Martinsydes had a farm, and reared a number of sheep. These were killed off in time, the meat being brought to Woking and sold to the employees at ordinary prices.

The firm were under the impression that they were entitled to give their own men preference. They were misled by inspired articles asking people to keep pigs, rabbits, etc. The works canteen catered for 2,000 men, and was started under the Welfare scheme.

The firm tendered their sincere regret to the Local Food Control Committee that such an offence should have occurred. Mr. Symes hoped that the Bench would take a lenient view of the occurrence. If convicted the firm would be barred from being represented on the Food Control Committee.

The Bench dismissed the whole of the summons upon payment of costs, and Mr. Symes expressed his thanks to them.



Those who protest against the proposed scheme to hunt Caribou by aeroplane may regard with greater favour the method of giraffe-hunting by aeroplane as suggested by the German paper "Luftpost."



The Ruling Factor

The Historic reputation of the
Beardmore Aero Engine
results from its all-round superiority

This has been proved up to the hilt in record after record previous to the War—and by its own particular characteristics boldly shown during the War. The History of the Beardmore is not based on "meteoric stunts" but on sound service in every case. This service has always been available from the Beardmore—is now—and always will be available under the most exacting phases in Aviation.

These claims are not "mere rhetoric" but are proved by the fact that to-day a large number of leading Aircraft Manufacturers are adopting the

Beardmore Aero Engine
As Standard Post-War Power Unit.

This Beardmore qualification permits its claim of being the best Engine for Commercial Transport in the Air.

BEARDMORE AERO ENGINE, LTD.
112, GREAT PORTLAND STREET - - LONDON, W.I.
Works: Parkhead Works, Glasgow.



A BOON TO COMMERCIAL FLYING.

One of the surest signs of the stability of a new industry is given when one finds business men of proved ability and business firms of high standing launching out in a big way in that new industry. There has always been a suspicion at the back of the mind of everybody concerned with aircraft, that the interest taken by the big armament firms in aircraft merely indicated that firms of that class, knowing that there was a war coming, began to take an interest in aircraft in the early days so as to be in the market with war aircraft when the war came.

It is, therefore, satisfactory to find that some big armament firms so far from dropping their interest in aircraft are actually tending to take a keen interest in the development of commercial aeronautics.

Among the firms which have done much for aircraft during the war, one may certainly place the firm of Sir Wm. Beardmore and Co., Ltd. Apart from the fact that the firm has built a very large number of excellent aeroplanes, the firm deserves particularly to go down to history as having provided our Flying Services with one of the most satisfactory and thoroughly reliable aero-engines that has ever been constructed; and, incidentally, one of the first aero-engines produced in this country.

The immense foresight of Sir William Beardmore, Bart., chief of the firm, was shown when he purchased the British rights of the Austro-Daimler engine some two years before the war. Those most competent to judge held, then, that the Austro-Daimler was certainly one of the very finest aero-engines in the world, although, at the time, the ultra-light air-cooled engines threatened to displace water-cooled engines for all purposes.

In spite of this, Sir Wm. Beardmore gambled on the Austro-Daimler. When the designs reached the Beardmore works result was the 120 h.p. Beardmore, which was just coming into its own when war began. It was an eminently reliable engine, but was a trifle heavy for its power. Naturally, the Beardmore people proceeded to improve it, and during the first year of war produced the 160 h.p. Beardmore, which was one of the very few engines produced in 1915, and still in use at the end of the war. In fact, to-day there are many excellent war pilots who hold that as a machine, which is guaranteed to get its crew from one place to another without fail in any weather, the old Beardmore-engined Armstrong-Whitworth is still in the very first rank. Lieut.-Col. G. L. P. Henderson's recent tour to the Riviera and back in 21½ hours' travelling time is a proof of the statement and of the fact.

With such a record as producers of engines, it is not surprising that the Beardmore firm should base its first move in commercial aeronautics on the reliability and popularity of the 160-h.p. Beardmore engine. The immediate future policy of the firm is one which, when one comes to consider it carefully, is of the soundest and at the same time one of the most useful moves for the benefit of commercial aeronautics that can possibly be made.

As Mr. Luther, who, as is well known, has handled Beardmore aero-engines from their beginning, pointed out to the writer recently, in the present state of civil aviation the question of cost in relation to work done has to be considered far more seriously than has been the case during the past four years, or in fact during any period in the history of aviation, for we are now past both the experimental stage and the "power-at-any-price" stage, and have to settle down to plain business propositions.

The Beardmore people are convinced that this must be realised by all practical men who have an opportunity of observing the amount of service obtained from engines designed exclusively for war purposes in relation to their cost. Also this must be taken in relation with the influence that the war will have upon future production costs.

Now the number of Beardmore engines and parts thereof at present existing represent an enormous amount, both in cash and in potential value, to commercial aeronautics, and this value cannot be adequately used unless it is collected and handled in a manner which will give the aeroplane manufacturers the best possible service. It is equally important that behind the potential value of these engines there should be an organisation of experience and resource, both material and financial, upon which manufacturers can rely.

The scheme of the Beardmore Company therefore is more or less as follows:—The Company has purchased every 160-h.p. and 120-h.p. Beardmore engine in the possession of the Government, and also all the spare parts available for those engines. The engines will be taken to the firm's works at Parkhead, where they will be dismantled, thoroughly examined and improved in certain details where war experience has shown slight alterations to be desirable. The engines will then be rebuilt, and each one will be given a thorough power and endurance test, after which it will be offered for sale to aeroplane manufacturers with a first-class guarantee, and at a price which cannot be touched by any engine of similar power built under present-day industrial conditions.

Under this scheme aeroplane manufacturers will be enabled to put on the market thoroughly reliable passenger-carrying aeroplanes to the number of, at any rate, some thousands, at a price which will make commercial aviation a business proposition. The reliability of the engine is bound to increase public belief in the reliability of aircraft in general, and so the foundations may be laid for bigger business in more expensive aeroplanes and engines in time to come.

When one discloses the fact that this deal with the Government runs into a six-figure transaction, it may be realised that Sir William Beardmore has considerable faith both in his own engine and in the future of aviation. It would appear that the doubt of the general public concerning the commercial side of aeronautics at present is largely caused by the realisation on the part of the business man of the fact that aeroplanes have still to prove their ability (now that Government support is withdrawn) to show a return on the capital invested.

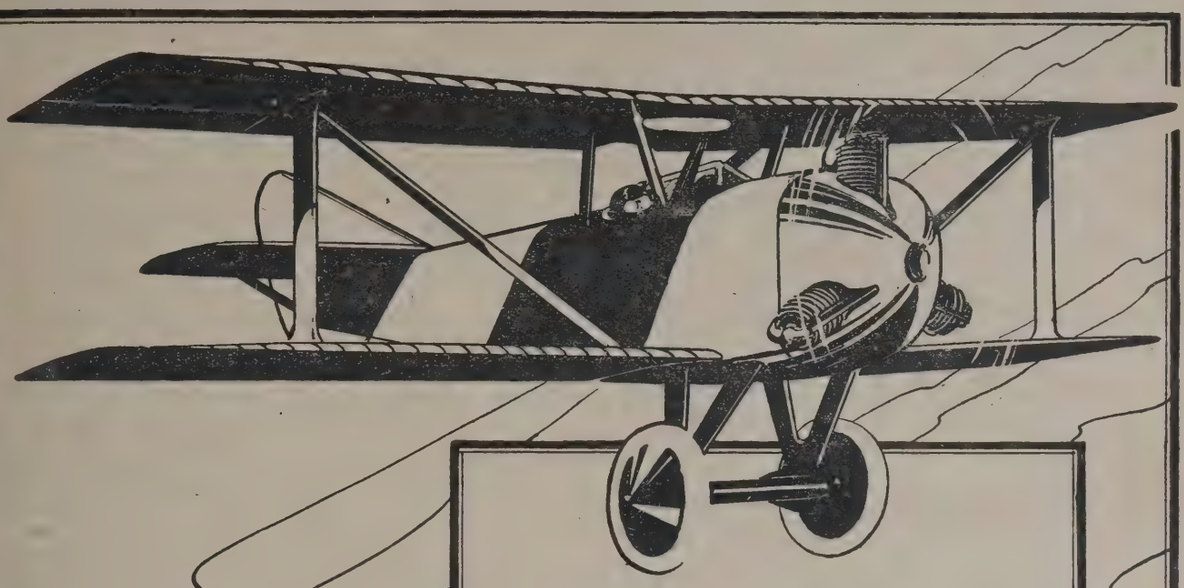
Anything that tends to reduce the initial cost and to inspire public confidence must therefore serve to make the immediate prospects of aviation more encouraging. This at any rate appears to have been the inference of Sir William Beardmore and the chiefs of his departments when reviewing the prospects, and one agrees that their inference is correct.

This move on the part of the Beardmore Company is bound to be of considerable value to the whole Aircraft Industry during the next year, but one may state that it is only the first move in the Beardmore policy. It would perhaps be inadvisable to go into further details as to later moves, but in general one may say that the Beardmore firm is by no means forgetful of the need for high power engines for big machines, and one may expect to see some very interesting developments in this direction when the proper time comes. And then the experience of the Beardmore Company in building thoroughly reliable engines in smaller powers will naturally give confidence in their newer productions.

On the whole, one considers that not only is the Beardmore firm to be congratulated on the foresight of its chief in taking this bold step, but that the Aircraft Industry, as a whole, is to be congratulated on the fact that Sir William Beardmore's faith in the future of flying has induced him to sanction such a big scheme.—C. G. G.



AN INTERESTING EXPERIMENT.—A curious twin-engined Rumpler biplane of 1916 or thereabouts. The engine-housing and under-carriage arrangements are particularly interesting.



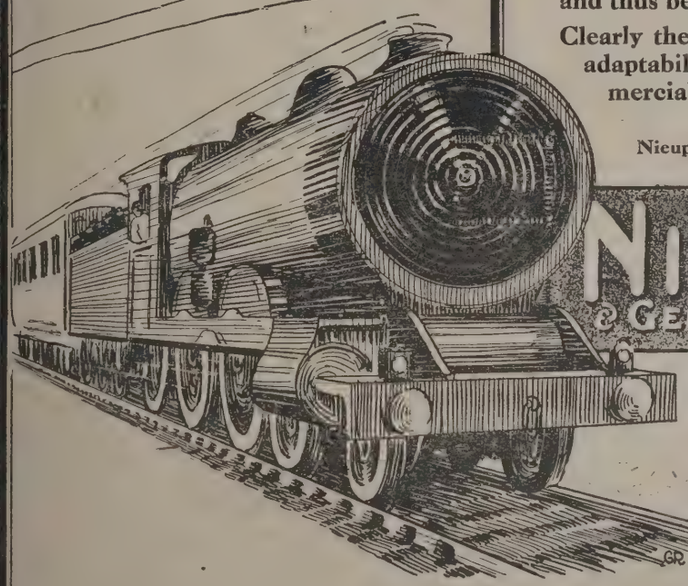
THE STRIKE.

The Railway Strike has demonstrated in a remarkable degree how the Aeroplane may not only be a substitute for the steam engine but how it may actually supersede it.

Nieuport machines were at once requisitioned by the Government and are successfully carrying newspapers, mails and parcels to all parts of the country in record time. Business men take long and short distance trips in safety by 'plane, and thus become independent of railways.

Clearly the strike has shown the eminent adaptability of the Aeroplane for commercial purposes.

Illustrated above is the Nieuport 2-Seater Passenger 'Plane.



BRITISH
NIEUPORT
& GENERAL AIRCRAFT Co. Ltd.

CRICKLEWOOD, LONDON, N.W.2

Telephone : WILLESDEN 2455 (3 lines).

Telegrams : NIEUSCOUT, CRICKLE, LONDON.

ENTHUSIASM AND HARD WORK.

Those who wish to find evidence of the deep depression that is said to have enveloped the aeronautical world should certainly not visit the larger and more enterprising firms in the industry.

While daily newspapers are telling their readers that civil aviation is a wash-out, the enthusiasts are carrying on work that will make the year 1919 remembered in history as the period that saw the dawn of what is destined to be one of the world's greatest industries. The spirit that animates many firms is well exemplified by the words of Major W. G. McMinnies, of the Avro Company, who, in a conversation the other day, cheerfully remarked that we all ought to be very grateful for living in the greatest time in history which gives all of us such magnificent opportunities.

This summer A. V. Roe and Co., Ltd., have given pleasure flights to over 30,000 people at an average price of one guinea per flight. Assuming that a distance of 10 miles is covered in each of the flights, we may say that the total mileage covered by these passengers is equivalent to twelve and a half times round the world. In this great distance there has only been one slight mishap to a passenger, who had his jaw injured in a crash. These figures should do much to inspire confidence among the general public.

Useful Work.

At the present time there is no doubt that these pleasure flights are playing a very useful part in the development of civil aviation. The thousands of people who have flown for the first time this summer almost invariably describe their experiences with enthusiasm to their friends, who become anxious to fly themselves.

Those who have flown once for pleasure are not likely to hesitate to use an aeroplane when urgent business requires them to travel quickly from place to place. One feels, therefore, that this work is educative and that the effect can only be good.

One makes this comment because in certain quarters one has heard it suggested that "joy-flying," as it is commonly called, is not serious aviation at all and is doing no good to the industry. There is no doubt that it is doing good, as it has demonstrated to the public that flying is a practical and pleasurable method of travelling.

The First Regular Service.

A. V. Roe and Co., Ltd., claim to have been the first firm to start a regular aeroplane service in Great Britain. About May 10th of this year they began daily flights between Manchester and Blackpool every day of the week, excluding Sunday, and this service was running regularly without any trouble whatever until Sept. 30th.

Three-seater machines with Le Rhone engines have been used. The machines left Blackpool at 12 noon, reached Southport at 12.15 and Manchester at 12.45, and the fares charged were five guineas for the single journey and nine guineas for the return

During ten days a regular service was in operation between Lake Windermere and Douglas, Isle of Man, for the purpose of carrying copies of the "Daily News" to the island. Avro seaplanes were used, and these were able to make the journey in from six to eight hours less time than that taken by train and boat.

During three weeks in July the "Evening Standard" was carried from London to Southsea and Brighton. During this period there was only one forced landing, and on that occasion another machine was sent out, took the papers from the one that had landed, and completed the journey, so very little time was wasted.

An Amphibious Machine.

From a practical point of view the short flights from London are not so successful as longer journeys, because when passengers or goods of any sort have been taken to Hounslow Aerodrome and then conveyed by air to their destination the same time has been taken as would be occupied by a train journey. A seaplane that could land on the Thames close to the newspaper offices and then fly to the coast towns would seem to be the solution of the difficulty. The ideal machine would be amphibious.

A large number of cross-country flights, mostly for business purposes, have been made. When the American N.C.4 made the first Translantic flight the "Daily Mirror" sent a photographer to Plymouth by air to obtain photographs of the machine and crew, which could not possibly have been obtained in the same time by any other means.

About the same time two Guards officers in London told A. V. Roe and Co., Ltd., that they wished to get to a town in Rutland to attend a birthday dinner-party, but had to be back for duty in London the same evening. A flight was arranged. They left London at 5.30 in the afternoon, arrived in good time for dinner, and were back for duty in London before 10 o'clock.

A Spirited Effort.

The Derby Day flights will be remembered by many. The company had undertaken to fly people down to the race-course, but many difficulties were in the way. Aeroplanes were prohibited from landing within two miles of the course, so the company hired a field about two and a half miles away. It was raining heavily on that day and there was a ground mist which gave the pilots some difficulty. Seven machines flew in formation and in their flights carried 44 people.

This effort must be regarded as a very spirited one on account of the difficulties which would have caused a less enterprising firm to abandon it. After the flights had been booked it was discovered that, as the regulations stood, it was illegal to make a charge for passenger flights. The money was therefore returned to those who had booked seats and the flights were given free of charge. This shows a spirit of determination to serve the public in spite of dilly-dallying obstruction, and is pleasing proof of the enthusiasm that is to be found in the industry.

At the present time the company is ready to take passengers to any part of the country at almost a moment's notice, and they have drawn up a tariff of regular charges as follows :—

List of Prices for a 3-seater Avro for 1 or 2 Passengers.

Hounslow to—	Single. £ s. d.	Return. £ s. d.	Approx. time taken for Single Trip. hr. min.
Harwich Folkestone Dover Southampton	18 15 0	25 0 0	1 0
Birmingham Bristol	26 0 0	35 0 0	1 25
Grantham	28 2 6	37 10 0	1 35
Nottingham	32 16 3	43 15 0	1 40
Sheffield	37 10 0	50 0 0	2 0
Doncaster Hull	43 14 0	58 5 0	2 25
Manchester Leeds	48 0 0	64 0 0	2 45
Swansea Liverpool	54 15 0	72 10 0	3 0
Plymouth Barrow	60 0 0	80 0 0	3 30
Holyhead Newcastle	67 10 0	90 0 0	3 45
Glasgow Edinburgh	112 10 0	150 0 0	6 0

A charge of £1 per hour is made when the machine is retained on the ground, up to a maximum of £10 per day. An additional charge of £3 10s. per hour is made for a five-seater Avro.

Engines for Commercial Aviation.

Mr. Priest, with whom the prospects were also discussed, expressed the opinion that the future of commercial aviation depends upon the designers and manufacturers of aero-engines. He pointed out that practically all the engines of to-day were designed for war use. High efficiency has been the chief consideration, and such points as economical running have not received the attention that is necessary when engines are to be produced for purely commercial purposes.

In striving for high efficiency engines have been produced which develop extremely high power in proportion to their weight, but the perhaps necessary result has been that such engines require very frequent overhauling. In war time, when large numbers of mechanics were available, this was not such a grave objection as it will be in commercial aviation at a time when skilled labour is expensive.

Mr. Priest thinks that for civil aerial transport work an engine is required which can be run economically with regard to fuel and oil and which will give long service without the constant attention that was required by the super-efficient aero-engine developed during the war. He does not think that the commercial engine need necessarily be water cooled, but thinks it probable that there is a great future for the air-cooled radial type.

Long-Distance Routes.

With regard to regular services, he does not think that there is much chance for development in Great Britain, though a limited amount of commercial flying might be done between England and Ireland. Long-distance routes between England and the Continent, and to countries that have not highly developed systems of railways, will offer the best chances for firms that intend to open up regular services.

RECENT
AIRCO SUCCESSES

THE AERIAL DERBY, 1919

THE winning machine, an Airco 4R, with a Napier engine, averaged a speed of 129 miles an hour—since declared a record by the Royal Aero Club. Two other Airco machines started, the Airco 4, with a Rolls-Royce engine, and the Airco 9, with a Siddeley "Puma" engine. The Airco 4 finished third, and the Airco 9 fifth. Of the seven machines finishing three were Aircos.

FIRST
THIRD
AND
FIFTH

AMERICAN AERIAL DERBY

IN this race, flown over a course 1,042 miles in length, the winning machine, an Airco 4, averaged throughout a speed of 136 miles an hour; while the second and third places were also secured by Airco 4's.

FIRST
SECOND
AND
THIRD

INTERNATIONAL RACE AT AMSTERDAM

IN this contest, flown in connection with the Aircraft Exhibition at Amsterdam, there were between thirty and forty starters, including the fastest of the French and Italian machines. The first and second speed prizes were won by Airco machines. The Airco 9R, with a Napier engine, the fastest machine in the race, covered the closed circuit of 130 miles at a speed of 145 miles an hour; while the second fastest time was that of the Airco 4A, with a Rolls-Royce motor.

FIRST
AND
SECOND
SPEED
PRIZES

THE AIRCRAFT MANUFACTURING COMPANY, LIMITED

London Office: 27, BUCKINGHAM GATE, S.W.1.

Chairman (and Founder, 1911), Mr. G. HOLT THOMAS.

Concerning the alleged assistance that the Government has given to those who are trying to develop commercial aviation Mr. Priest speaks bitterly. He thinks that if the Government had been a rival firm trying to crush competitors it would have acted exactly as it has been acting since the Armistice.

A case in point may be quoted. After the Armistice it became clear to A. V. Roe & Co., Ltd., that very large numbers of machines owned by the Ministry would be sold. The firm entered into negotiations to find out if it were possible to repurchase the machines, and went so far as to make a definite offer. This was refused on the grounds that the Disposal Board was unable to find out how many machines there were actually in hand!

Since then Avro machines have been sold by the Disposal Board, it is believed to purchasers all over the world, and A. V. Roe & Co., Ltd., have not been informed as to where the machines have been sent, so have been unable to follow up the business and offer their experience and resources to the purchasers.

It is thought that the Disposal Board may, for example, have sold Avro machines to Japan, where it is quite possible that they have simply been purchased as samples and may be copied.

Such methods can only lead to disaster in the industry. Had the firm been allowed to repurchase the machines, representatives would have been sent out to open negotiations with foreign countries and business would undoubtedly have resulted and continued. The Disposal Board has merely been distributing all over the world, at bargain rates, machines that incorporate the results of years of experiment, so that foreign competitors may pick the brains of British designers at their leisure.

The entire methods of disposing of aircraft are, Mr. Priest thinks, contrary to the interests of the industry. Instead of helping British manufacturers to gain the world's market, the Disposal Board seems to have regarded itself as an aircraft dealer determined to under-sell and to force its rivals (the manufacturers) out of the business. P. A. B.

"AIRCRAFT IN PEACE AND WAR."

Under the above title a very handsome brochure has been issued by the Blackburn Aeroplane and Motor Co., Ltd., of Leeds, in celebration of the tenth anniversary of the foundation of their business.

The Blackburn Aeroplane and Motor Co., Ltd., was founded in 1909 by Mr. Robert Blackburn, and so may be ranked as one of the few companies who were in a position to turn out aircraft at a moment's notice and thus helped to keep the original Air Services at the outbreak of war equipped with aircraft.

From August, 1914, up to the cessation of hostilities they were engaged in making numbers of aircraft of both their own and outside design.

Most of the text is written by Sir John Foster Fraser, F.R.G.S., who was one of the various people engaged by the British Government in propaganda work, and gives a complete description of the work and the works of the Blackburn Co. from their foundation to the present day, together with an idea of the future policy of the firm.

The whole brochure is very well printed on art paper and is illustrated with photographs of the machines built by the Blackburn Co. to their own and many other designs, views of the works, scale drawings and specifications of some of the machines built by them for war services, etc.

The company wish to point out that they will be very glad to supply a copy of this book to any person through whom they may hope to get into touch with business—that is, to anyone connected with the Press, to those having official or commercial connections with foreign countries, or to anyone connected with the Aircraft Industry either in this country or abroad.

A COLONIAL PROGRAMME.

The Nieuport and General Aircraft Company, of Cricklewood, London, has arranged an extensive Colonial programme. As commercial flying in this country has not developed yet to any great extent and shows no sign of doing so for some time to come, the company is not building many aeroplanes. Telephone switchboards and similar articles are being made. Complete plans have been made for building their several types of commercial machines at short notice, but as yet, owing to the number of machines demobilised from the R.A.F. which can be bought fairly cheaply, there is very little demand for new machines.

In the Colonies there is a great immediate future for commercial aviation, and the Nieuport Company are not blind to the possibilities. They have sent out representatives to Canada, South Africa, and India, and Mr. Sydney Pickles is acting as their agent in Australia. A British Nieuport machine will be sent to him.

The Colonial representatives of the company are all pilots late R.A.F. Capt. Reginald S. Carroll, A.F.C., is the representative at Bombay, for Asia. Capt P. C. C. Passman is the representative at Cape Town, South Africa.

A scheme has been prepared to cover South Africa with a network of services, and has been submitted to the Government. It is hoped that Capt. Passman will interest the financiers of the country so much that South African capital will be put into the enterprise.—G. I. Dore.

THE ROYAL AERO CLUB.

SPECIAL COMMITTEE MEETING.

A Special Meeting of the Committee was held on Wednesday, October 1st, 1919, when there were present:—Group-Captain C. R. Samson, C.M.G., D.S.O., R.A.F., in the Chair, Mr. Ernest C. Bucknall, Lieut.-Col. F. K. McClean, Air-Commodore E. M Maitland, C.M.G., D.S.O., R.A.F., Lieut.-Col. Alec Ogilvie, and the Secretary.

Election of Members.—The following New Members were elected:—The Hon. Mrs. Bethell, Ronald William Carmichael, Leo Austin Walsh, Vivian Claud Walsh.

Schneider Trophy.—Mr. Priest, of Messrs. A. V. Roe and Co., attended before the Committee in support of the protest lodged by his Company against the elimination of the Roe Seaplane from the Schneider Race.

Royal Aero Club Seaplane Competition.—The report of the Technical and Competitions Committee was presented by Lieut.-Col. F. K. McClean.

On the motion of Lieut.-Col. Alec Ogilvie, seconded by Mr. Ernest C. Bucknall, it was unanimously resolved: "That on account of the Railway Strike, the Royal Aero Club Seaplane Competition proposed to be held at the end of October, 1919, be postponed."

HOUSE COMMITTEE.

A Meeting of the House Committee was held on Monday, September 29th, 1919, when there were present:—Mr. Ernest C. Bucknall, in the Chair, Mr. Herbert J. Corin, and the Secretary.

THE FLYING SERVICES FUND.

A Meeting of the Flying Services Fund Committee was held on Friday, September 26th, 1919, when there were present:—Group-Captain C. R. Samson, C.M.G., D.S.O., R.A.F., in the Chair, Mr. Chester Fox, Squadron-Leader T. O'B. Hubbard, M.C., R.A.F., and the Secretary.

Grants and Allowances.—The following Grants and Allowances were made:—

(13) The School Fees of £3 15s. of the son of the father of a Lieutenant in the Royal Flying Corps killed on active service.

(105) An allowance of £3 a month for six months to the mother of a Cadet who died on active service.

(112) An allowance of £3 a month for six months to the widow of a 1st Class Air Mechanic in the Royal Air Force killed on active service.

(129) An allowance of £4 a month for six months to the widow of a 2nd Class Air Mechanic in the Royal Flying Corps killed on active service.

(141) An allowance of £4 a month for six months to the widow of a Private in the Royal Air Force who died on active service.

(145) An allowance of £4 a month for six months to the mother of a Private in the Royal Flying Corps killed on active service.

(148) An allowance of £1 a month for six months to the mother of a Private in the Royal Flying Corps who died on active service.

(153) An allowance of £2 a month for twelve months to the widow of a 2nd Class Air Mechanic in the Royal Flying Corps killed on active service.

(161) An allowance of £2 a month for six months to the mother of a Private in the Royal Air Force who died on active service.

(164) An allowance of £4 a month for six months to the mother of a Private in the Royal Flying Corps who died on active service.

(172) An allowance of £2 a month for six months to the widow of a Private in the Royal Flying Corps killed on active service.

(178) A Grant of £10 to the widow of a Sergeant Mechanic in the Royal Flying Corps killed on active service.

(183) An allowance of £1 a month for six months to the mother of a 3rd Class Air Mechanic in the Royal Flying Corps who died on active service.

(230) An allowance of £1 10s. a month for six months to the mother of a 3rd Class Air Mechanic in the Royal Air Force killed on active service.

(231) An allowance of £2 a month for six months to the mother of a 2nd Class Air Mechanic in the Royal Air Force killed on active service.

(251) The School Fees up to £50 per annum of the brother of an ex-Flight Sub-Lieutenant in the Royal Naval Air Service incapacitated on active service.

(253) An allowance of £4 a month for six months to the widow of a Private in the Royal Air Force who died on active service.

(258) An allowance of £3 a month for six months to the mother of a 1st Class Air Mechanic in the Royal Air Force who died on active service.

(263) An allowance of £3 a month for six months to the mother of a Private in the Royal Air Force who died on active service.

(265) An allowance of £2 a month for three months to the mother of a 2nd Class Air Mechanic in the Royal Flying Corps who died on active service.

(268) An allowance of £2 a month for three months to an ex-A.M.I. in the Royal Naval Air Service incapacitated on active service.

THE FIRST DIRECT NON-STOP TRANSATLANTIC FLIGHT.

There has been a widespread expression of opinion that the first direct Transatlantic Flight by Sir John Alcock and Sir Arthur Brown on a Vickers' "Vimy" Rolls Biplane on June 14th-15th, 1919, should be permanently recorded in the Club House.

The idea has been fully considered by the Committee, and they have decided to obtain portraits in oils, for hanging in the Club, of both Sir John Alcock and Sir Arthur Brown.

Sir John Lavery has very kindly consented to paint the portraits at a purely nominal figure, the canvases being 30 in. by 25 in.

A subscription list has been opened and subscriptions limited to £1 1s. are invited towards the cost.

AERONAUTICAL ENGINEERING

SUPPLEMENT TO "THE AEROPLANE"

INCORPORATING AIRCRAFT ENGINEERING, AERODYNAMICS, AIRCRAFT FINANCE AND COMMERCIAL AERONAUTICS AND MATTERS PERTAINING TO THE AERONAUTICAL ENGINEER AND THE AIRCRAFT TRADER.

THE WEEKLY COMMENTARY.

Commenting upon a paper on "The Scientific Progress of Aviation during the War," which was read before the British Association by Mr. Bairstow, Capt. Sayers points out that the author really admits that the progress made is very small. If this fact is properly realised by those who are concerned in the scientific study of aerodynamics, there is some prospect of a real advance in knowledge.

A Siemens Schuckert single-seat fighter, fitted with the Siemens rotary engine, is described in this issue. This machine was produced too late to take part in the war, but it is understood to have given very fine results on its tests. A note upon, and a drawing of the Siemens rotary engine, is also given. The opposite rotation of the cylinders and the crankshaft is a novel feature in a practicable engine. Though the principle has been often suggested, it has never before been successfully employed.

Aeroplanes produced by the firm of Vickers, Ltd. are the subject of this week's instalment of "Modern British Aeroplanes."

THE SCIENTIFIC PROGRESS OF AVIATION DURING THE WAR.

By Capt. W. H. SAYERS, late R.A.F.

A paper read by Mr. Leonard Bairstow, F.R.S., C.B.E., before "G" Section (Engineering) of the British Association during their recent session at Bournemouth, bearing the above title, raises quite a number of fields for instructive discussion.

In the first place, the paper, as a whole, serves to accentuate the fact that aviation, in so far as the design of aircraft is concerned, has made little, if any, progress during the war, since, if it had, Mr. Bairstow would scarcely have refrained from mentioning the fact. In actual fact, the main part of Mr. Bairstow's paper deals with the subject of the relation of model tests to full-size results.

In this matter Mr. Bairstow is perfectly frank. He says:—

"No single case of fluid motion round objects used in aviation has as yet been deduced from a solution of the equations of motion, and the process followed has been frankly empirical. One of the most important early problems was the finding of that shape of aeroplane which gave minimum resistance for a given lift due to motion. Within somewhat narrow limits this problem has been solved, and for some time it has been possible to say that an aeroplane of good design would fly at a speed known from its weight and horse-power. Similar standard relations apply to the rate of climb and to the height to which it can climb."

If this means anything—and it must be presumed to—it must mean that the properties of aerofoils and the general proportions of the various parts of an aeroplane to give the minimum of resistance have been so fully and definitely established by model experiment that, armed with the results of these experiments, one reasonably capable designer is as good as any other.

In actual fact this standardisation of aeroplane performances for any given weight per horse-power has little to do with the accuracy or reliability of model tests or of any other determination of the best form for aerofoils. It is almost entirely the result of war conditions. A designer attacking the problem of turning out, let us say, a single-seater fighter against time and in competition with other designers, quite naturally based his attempt on the known performance of the best existing machines of similar type.

Under the special conditions no extensive experimental work was possible, and for safety's sake standard forms for aerofoils, strut sections, and the like had to be used, with at the most very minor modifications.

The loading of any standard aerofoil section was fixed within fairly narrow limits by the landing speed called for—and to all intents and purposes very little was left to the individual designer except to keep his structure weight, and hence his total weight, down to the minimum.

This weight per h.p. in practice has been the only important variable within the average designer's control, and there is little remarkable in the fact that performance can be measured fairly accurately as a function of this particular variable alone.

Had the conditions of the past five years uniformly called for a landing speed of between 20 and 30 miles per hour instead of from 40 to 55, the standard curves of maximum speed, of climb, and of ceiling plotted against weight per h.p. would have been quite different from the present ones, and the fact that so empirical a method of predicting performance is so generally accurate proves nothing but that aeroplane design is in a state of stagnation.

The only fact of real importance is that over the range from an S.E.5 to a Handley Page size makes no appreciable difference to the performance for a given weight per h.p., which is to say in effect that within the present limits of size of aeroplanes there is no marked change in the general character of the air disturbance set up in flight, and consequently no important "scale effect."

Mr. Bairstow then proceeds to discuss, purely from the scientific point of view, the whole question of the application of the result of tests on models to the prediction of full-size effects.

The whole theory of the validity of model tests rests on the assumption that the nature of the air flow round the model under test is similar to that of the flow round the full-size component under working conditions.

When a fluid of high viscosity, which for the present purpose may be approximately rendered as of great stickiness, is forced past an obstructing body at a low speed, this stickiness prevents any abrupt changes in the velocity of adjacent particles of fluid, and the flow in consequence is smooth and steady, with quite slow changes in either the direction or velocity.

If either the velocity of the flow past the obstacle be increased, or the viscosity of the fluid be decreased to a sufficient extent, this "stickiness" is overcome by the inertia of the moving particles of fluid, and sudden and abrupt changes, both of velocity and of direction, may occur, leading to an entirely different type of flow, which may produce a total change in the resistance characteristics of the obstacle.

It is fairly obvious that the determining factor of a sudden change of flow in a fluid of given density and viscosity is some measure of the maximum acceleration impressed upon the fluid in passing round it, and that thus both the shape and the size of the obstacle will influence the conditions under which similar forms of flow will occur.

Upon this line of reasoning it is only safe to assume that the results of a wind-tunnel test on a model of L feet span can only be applied with certainty to a scale enlargement in every detail of that model of n times the span when the model is tested at an air speed n times that of the full-sized machine.

Thus, if the machine of which a model is to be tested be of 36 ft. span and its resistance characteristics are required at 100 m.p.h., then a 36 in. span model tested at 1,200 m.p.h. should give directly applicable results.

Unfortunately it does not, because the general theory of the similarity of flow assumes that air is incompressible by the forces set up in its movement—an assumption fairly close to the truth at low velocities, but very far from it at speeds approaching that of sound—and it is in most cases impossible to arrange a sufficiently high air speed in a wind tunnel to render model tests directly applicable to full-scale work without running into this difficulty.

It is frankly admitted by Mr. Bairstow that the changes in the resistance of two similar bodies which are caused by differences of dimension or differences of velocity, cannot yet be calculated, and that the whole basis of the application of model tests to full-scale work is the experimentally established fact that within limits it is found that the resistance of a model in a wind tunnel and a machine in flight do vary as the square of the dimensions of the two bodies and as the square of the air speeds. Although the resistances do vary from the square law within the limits now in question, the variations seem to be slow and regular, and it is therefore assumed that the type of air flow round the model is nearly similar to that round the full-scale machine.

Mr. Bairstow states that attempts at the mathematical solution of the conditions of flow in certain typical cases are now being attempted at the N.P.L.—with the assistance of Miss Cave—and that it is hoped in time to achieve some success in this effort, and thereby place the relations between model and full-size experiments upon a sound mathematical basis.

In the meantime Mr. Bairstow's lecture may be welcomed as a very frank admission that model tests can be relied upon to just that extent to which full-sized practice bears them out, and no further.

As it is a fact admitted by the N.P.L. authorities that, although in certain cases there is only a negligible difference between the lift coefficients of a model and of a full-size wing, there are in the same cases differences of the order of 15 per cent. between the drag coefficients on the two scales, it seems fairly just to assume the possibility of very much greater divergences between models and full-size machines when changes in the form of wings, etc., which lead to greatly different values of the pressure coefficient are involved.

It may therefore be taken as an admitted fact that model experiments, unsupported by full-size tests, are at present of little value to anybody. There is some reason to believe that a great deal of harm has been done in the past by a failure on the part of the N.P.L. and the Advisory Committee for Aeronautics to recognise this, and it is to be hoped that in future, under Mr. Bairstow's guidance, this error may be avoided.



The accompanying photograph shows an Airco D.H.4 machine with a Napier "Lion" engine, 450 h.p., which was flown by Capt. Gathergood, A.F.C., for the first time in the Aerial Derby. Since then, as may be seen, the wing arrangement has been altered, and it was flown by Capt. Gathergood to the E.L.T.A. Exhibition at Amsterdam in 2 hr. 10 min., this being the fastest time for the journey. While in Amsterdam, he flew the same machine in a race of 137 miles, which he won at an average speed of 145 m.p.h., against 35 competitors. The next machine in the race took 10 minutes longer over the course. These performances, and the non-stop flight to Madrid in 7¾ hrs., as the power plant of an Alliance biplane, prove the Napier to be in the very first rank of aero engines.

From the early days of aviation

The "Bristol" Aeroplanes

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The "BRISTOL" FIGHTER Type F2.B.



In September, 1917, a "BRISTOL" Fighter was delivered from the "BRISTOL" works and put into commission in the fighting area. It was unfortunately landed in Holland and soon afterwards was acquired by the Dutch Government. From that time until now, though in continuous use by Dutch pilots, it has never been repaired or renovated in any way, and every unit is exactly as when it left the "BRISTOL" works. Even the "Cellon" dope has never been renewed.

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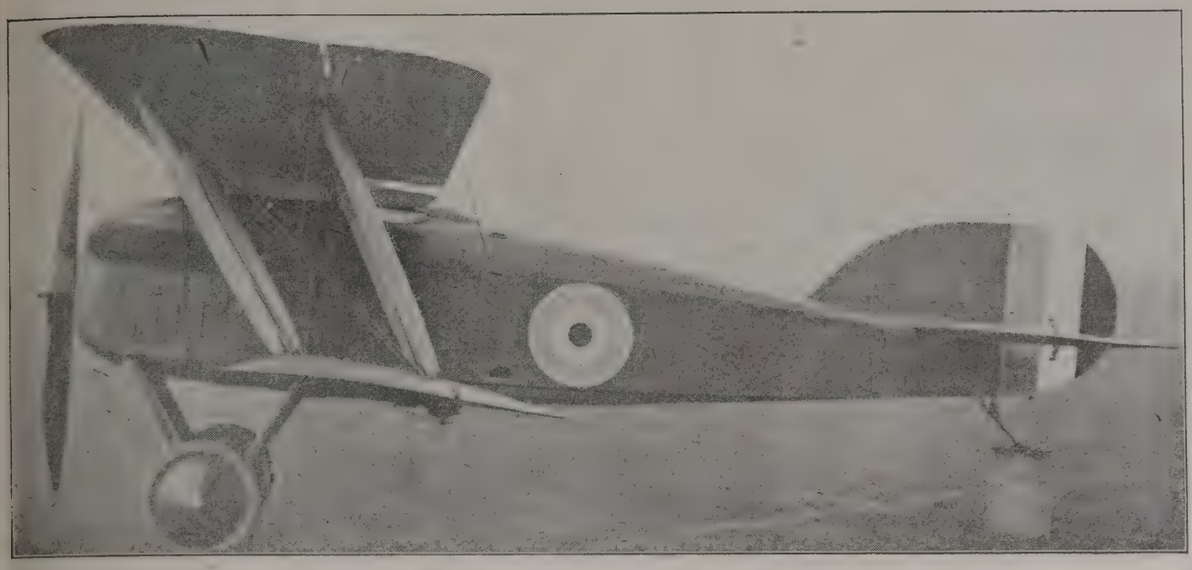
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XVIII.—Vickers, Ltd.



The Vickers Type F.B. 16H. Single-seat Fighter (300 h.p. Hispano-Suiza Engine).

The Aviation Department of Vickers, Ltd., was founded in 1911 under the control of the late Major Wood (9th Lancers).

Originally, the firm acquired the sole British rights in the R.E.P. machine of M. Robert Esnault Pelterie. Starting from this basis the department under Major Wood developed the series of machines with which the name of Vickers is associated.

The Vickers "Gun-'bus," originally produced in 1913, was the only practicable fighting machine in the possession of the R.F.C. at the outbreak of war, and rendered invaluable services during the first six months of hostilities.

Since then Vickers, Ltd., have manufactured aeroplanes of many types and sizes with conspicuous success and some of their recent products are described hereafter.

THE VICKERS F.B. 16H.

The Vickers F.B. 16H. is a single-seater fighting scout. The planes are rather heavily staggered, and fitted with two pairs of struts either side of the fuselage, no centre section is fitted, the top planes being fitted direct to the inverted Vees forming a cabane in front of the pilot's seat. The top plane is well cut away over the pilot's seat to give a clear view upwards.

The tail unit consists of a large fin and unbalanced rubber and tail plane and divided elevators, the fin and tail-plane being well braced above and below with Rafwire.

The elevator controls are outside the fuselage.

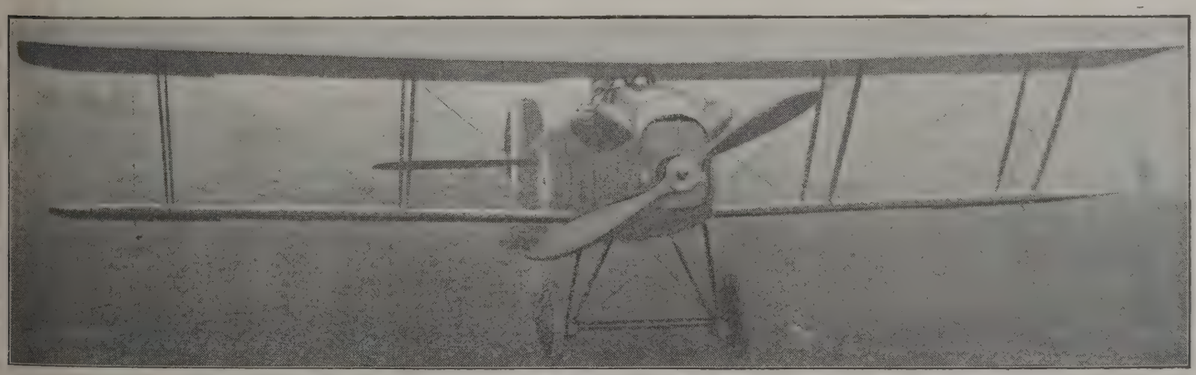
The armament consists of two fixed Vickers' guns fitted inside the cowling in front of the pilot's cockpit.

SPECIFICATION :—

Type of machine	Tractor Biplane, single-seater
Name or type No. of machine	F.B. 16H.
Purpose for which intended	Fighter.
Span	T. 31 ft. ; b. 30 ft.
Gap, maximum and minimum	4 ft. 5 in.
Overall length	21 ft. 8 in.
Maximum height	8 ft. 1 in.
Chord	T. 5 ft. 4 in. ; b. 4 ft. 2 in.
Total surface of wings	272 sq. ft.
Span of tail	11 ft.
Total area of tail	33.8 sq. ft.
Area of elevators	15.3 sq. ft.
Area of rudder	6.5 sq. ft.
Area of fin	7 sq. ft.
Area of each aileron and total area	2 × 9.5 + 2 × 6 = 31 sq. ft.
Maximum cross section of body	8 sq. ft.
Horizontal area of body	36 sq. ft.
Vertical area of body	57 sq. ft
Engine type and h.p.	Hispano-Suiza ; 300 h.p.
Airscrew, diam., pitch, and revs.	8 ft., 6 ft., 1,875.
Weight of machine empty	1,636 lbs.
Load per sq. ft.	8.45 lbs.
Weight per h.p. (300 h.p.)	7.65 lbs.
Tank capacity in gallons	Petrol 40 galls. ; oil 5 galls.

PERFORMANCE—

Speed low down	147 m.p.h.
Speed at 10,000 feet	140 m.p.h.
Landing speed	53 m.p.h.



Front View of the Vickers F.B. 16H. Single-seat Fighter (300 h.p. Hispano-Suiza Engine).



Three-quarter Front View of the Vickers "Vampire" Trench Fighter (200 h.p. B.R.2 Engine).

Climb—	
To 5,000 feet in minutes	3.3 minutes.
To 10,000 feet in minutes	7.8 minutes.
To 20,000 feet in minutes	23.5 minutes.
Disposable load apart from fuel (including crew)	327 lbs.
Total weight of machine loaded	2,300 lbs.

THE VICKERS "VAMPIRE."

The Vickers "Vampire" is a small single-seater pusher fighter designed primarily for trench fighting.

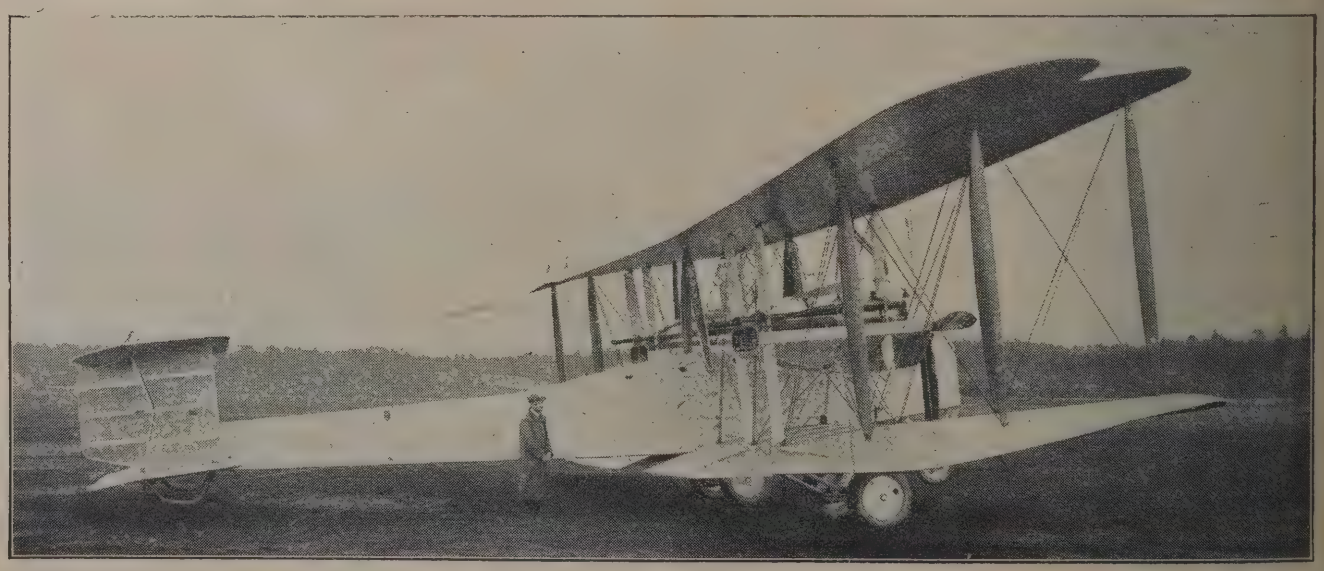
The small nacelle is directly under the under-surface of the top plane, and is connected to the lower plane by short struts. The tail booms are fitted at the ends of each of the rear inner interplane struts, and are parallel in plan view, but in elevation converge at the fixed tail-plane. The chassis is of the usual Vee type, rubber sprung.

SPECIFICATION :—

Type of machine	Pusher Biplane, single-seater.
Name or type No. of machine ...	"Vampire" B. R. 2.
Purpose for which intended	Trench fighting.
Span	Top 31 ft. 6 in. ; bottom 27 ft. 6 in.
Gap, maximum and minimum ...	52 in.
Overall length	22 ft. 11 in.
Maximum height	9 ft. 5 in.
Chord	Top. 5 ft. 6 in. ; bottom, 4 ft. 6 in.
Total surface of wings.....	267 sq. ft.
Span of tail.....	12 ft. 3 in.
Total area of tail	38 sq. ft.
Area of elevators	16 sq. ft.
Area of rudder	6.7 sq. ft.
Area of fin	6.4 sq. ft.
Area of each aileron and total area	(2 x 12) + (2 x 6) = 36 sq. ft.
Maximum cross section of body...	7.6 sq. ft.
Horizontal area of body	16.6 sq. ft.
Vertical area of body	24.5 sq. ft.
Engine type and h.p.	B.R. 2 ; 200 h.p.
Airscrew, diam., pitch, and revs.	8.75 ft., 9 ft., 1,300.
Weight of machine empty (including 500 lbs. steel armour...	1,870 lbs.
Load per sq. ft.....	9.1 lbs.
Weight per h.p. (228 h.p.)	10.7 lbs.
Tank capacity in gallons	Petrol 29 galls. ; oil 6 galls.
PERFORMANCE—	
Speed low down	121 m.p.h.
Speed at 10,000 feet	115 m.p.h.
Landing speed	54 m.p.h.
Climb—	
To 5,000 feet in minutes	5 minutes.
To 10,000 feet in minutes	12 minutes.
Disposable load apart from fuel (including crew)	568 lbs.
Total weight of machine loaded...	2,438 lbs.

THE VICKERS "VIMY" TWIN-ENGINED BIPLANE.

The Vickers "Vimy" was designed as a long-distance bomber, and, following the usual practice of twin-engined machines, has a single fuselage, carrying the pilot and two gunners, one in the nose, and the other just aft of the trailing edge of the main planes.



Side View of the Vickers "Vimy" twin-engined Bomber (two Rolls-Royce "Eagle" engines 375 h.p. each), on which Capt. John Alcock, D.S.C., and Lieut. Arthur Brown flew the Atlantic.

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¶ The light weight per h.p. developed, proved efficiency, and reliability of the 450 h.p. Napier Aero Engine, gives the Aeroplane to which it is fitted great advantages for long distance flights.

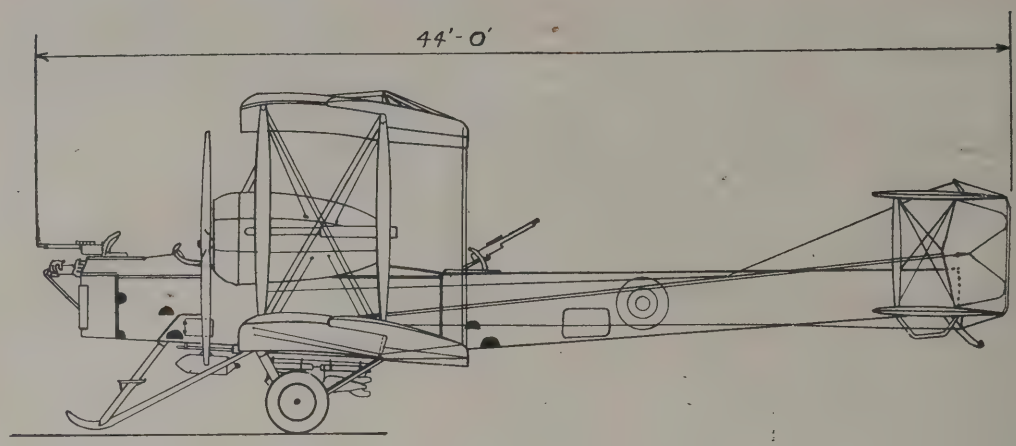
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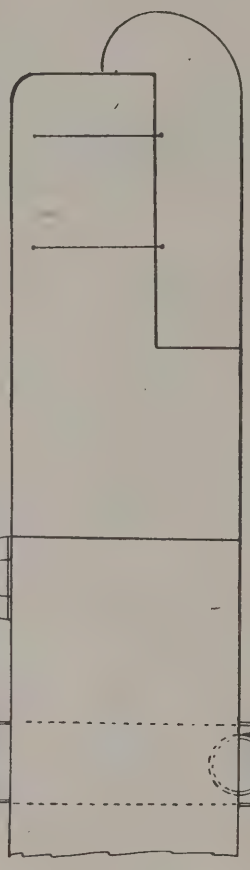
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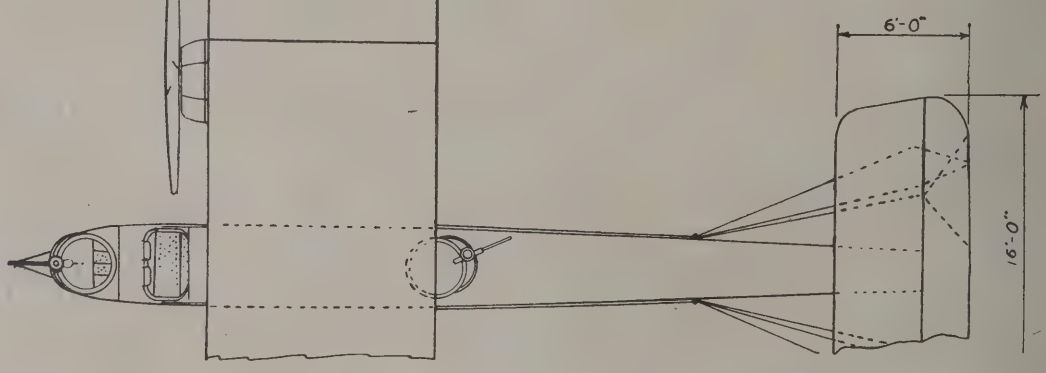


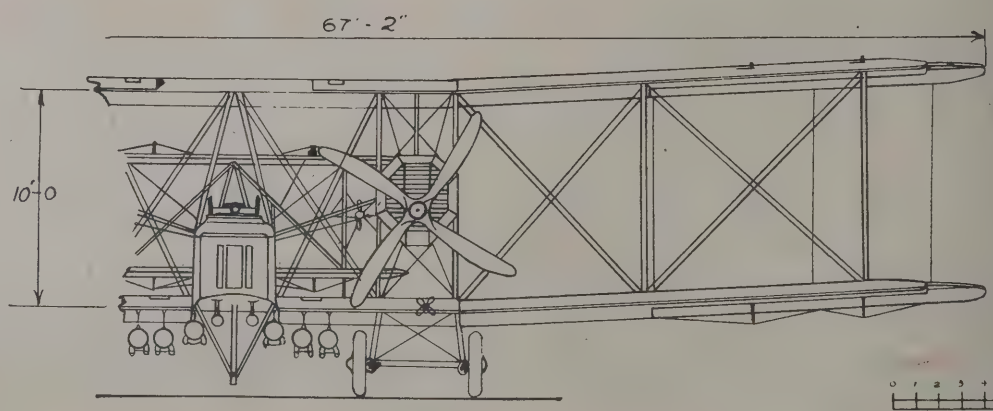


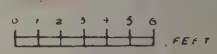
VICKERS

VIMY

AEROPLANE

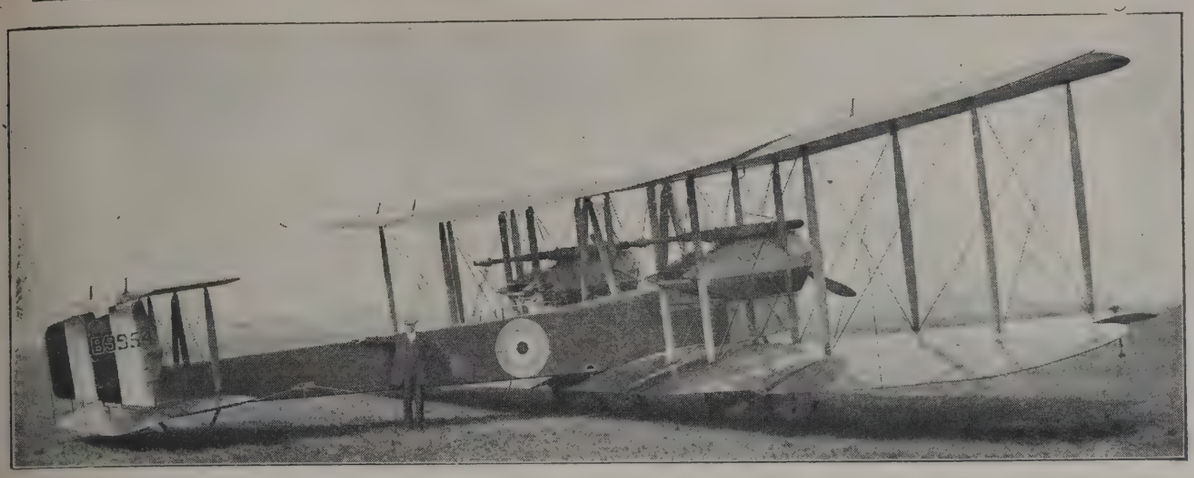






SCALE

FORD-JONES 19



Three-quarter Side View of a Fiat-engined "Vimy" Bomber.

The engines are housed in "power-eggs," each containing one complete power unit, with its respective petrol and oil tanks, carried halfway between the planes, one on either side of the fuselage.

Under each engine unit is a separate undercarriage of two Vees of steel tube, between which an axle and two wheels are slung on shock-absorber.

To prevent the machine standing on its nose after too fast a landing a skid is fitted under the front of the fuselage.

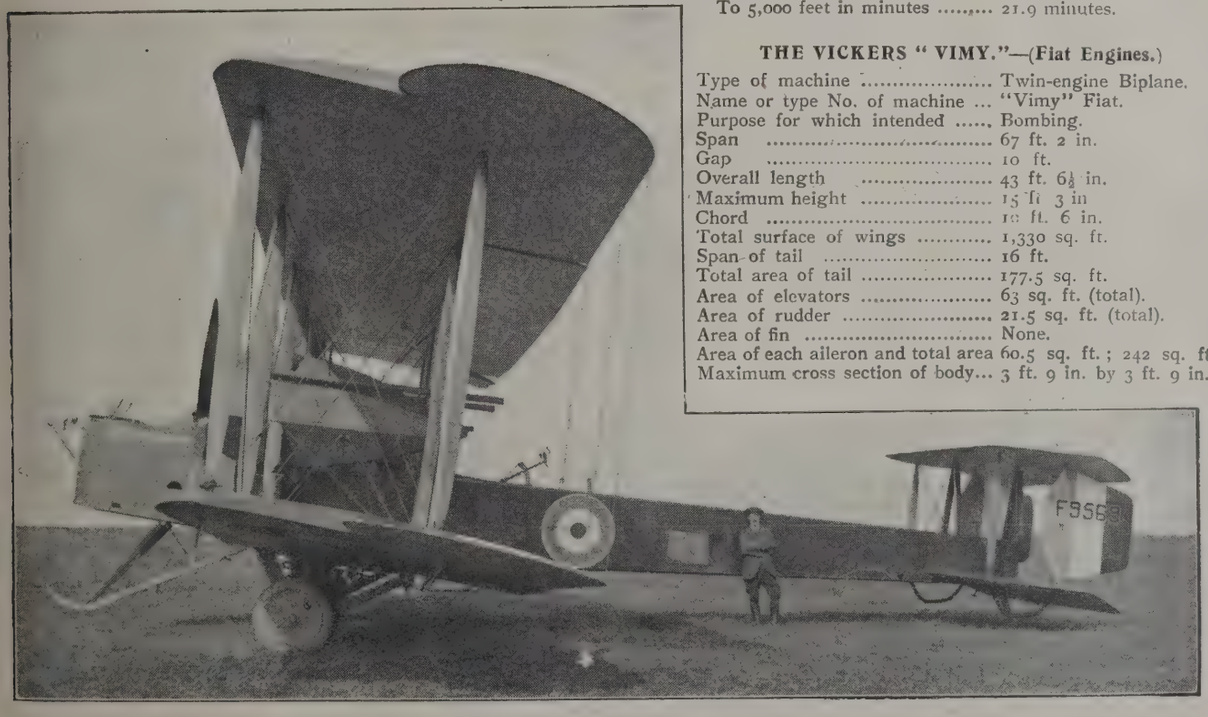
Four large balanced ailerons are fitted to the main planes. The empennage consists of a biplane tail fitted with unbalanced elevators, and twin rudders with no fixed fin-area.

It is probably unnecessary to remind readers of The Aeroplane that the Vickers "Vimy" is the machine upon which Capt. Sir John Alcock and Lieut. Sir Arthur Whitten Brown made the first non-stop Atlantic flight.

The following specification gives particulars of this machine fitted with various types of engine :—

THE VICKERS "VIMY."—(Rolls-Royce Engines.)

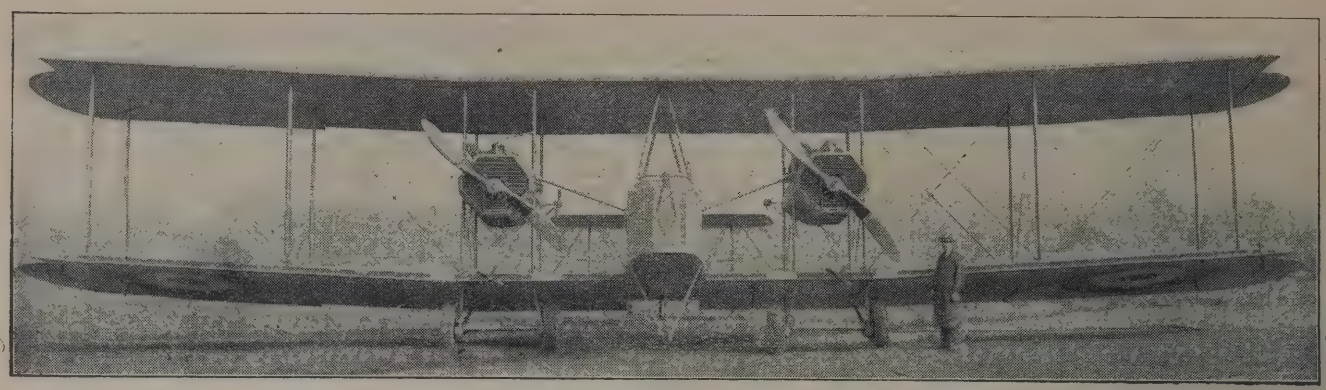
Type of machine	Twin-engine Biplane.
Name or type No. of machine	"Vimy" Rolls.
Purpose for which intended	Bombing.
Span	67 ft. 2 in.
Gap	10 ft.
Overall length	44 ft.
Maximum height	15 ft.
Chord	10 ft. 6 in.
Total surface of wings	1,330 sq. ft.
Span of tail	16 ft.
Total area of tail	177.5 sq. ft.
Area of elevators	63 sq. ft. (total).
Area of rudder	21.5 sq. ft.
Area of fin	None.
Area of each aileron and total area	60.5 sq. ft. ; 242 sq. ft.
Maximum cross section of body	3 ft. 9 in. by 3 ft. 9 in.
Horizontal area of body	125 sq. ft.
Vertical area of body	120 sq. ft.
Engine type and h.p.	Two 350 h.p. "Eagle Mark VIII" Rolls-Royce.
Airscrew, diam., pitch, and revs.	10.5 ft. dia., 9 ft. 11 in. pitch, 1,950 revs.
Weight of machine empty	7,100 lbs.
Tank capacity in gallons	Petrol 452 galls. ; oil 18 galls.
Disposable load apart from fuel	2,010 lbs. (including crew of 3)
Total weight of machine loaded	12,500 lbs.
Load per sq. ft.	9.4 lbs.
Weight per h.p.	17.8 lbs.
Performance—	
Speed low down	103 m.p.h.
Speed at 5,000 feet	98 m.p.h.
Speed at 10,000 feet	
Landing speed	56 m.p.h.
Climb—	
To 5,000 feet in minutes	21.9 minutes.



Side View of a Fiat-engined "Vimy" Bomber.

THE VICKERS "VIMY."—(Fiat Engines.)

Type of machine	Twin-engine Biplane.
Name or type No. of machine	"Vimy" Fiat.
Purpose for which intended	Bombing.
Span	67 ft. 2 in.
Gap	10 ft.
Overall length	43 ft. 6⅛ in.
Maximum height	15 ft. 3 in.
Chord	10 ft. 6 in.
Total surface of wings	1,330 sq. ft.
Span of tail	16 ft.
Total area of tail	177.5 sq. ft.
Area of elevators	63 sq. ft. (total).
Area of rudder	21.5 sq. ft. (total).
Area of fin	None.
Area of each aileron and total area	60.5 sq. ft. ; 242 sq. ft.
Maximum cross section of body	3 ft. 9 in. by 3 ft. 9 in.



Front View of a Fiat-engined Vickers "Vimy" Bomber.

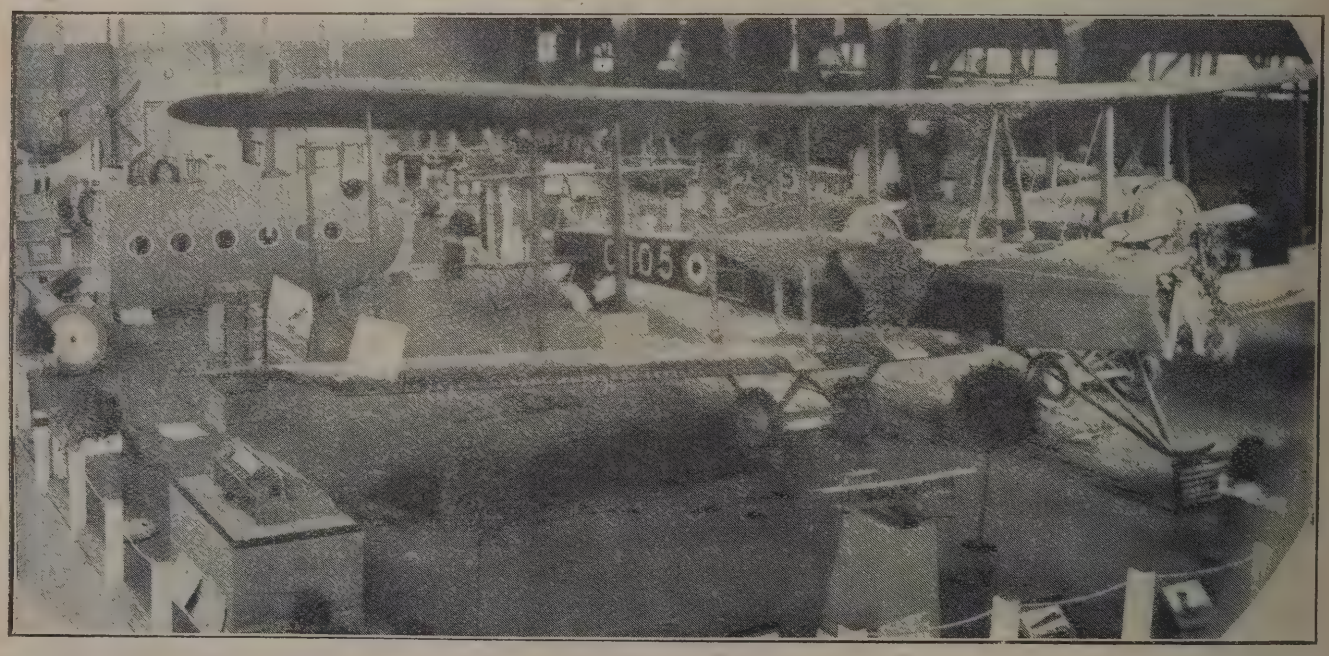
Horizontal area of body	125 sq. ft.
Vertical area of body	120 sq. ft.
Engine type and h.p.	Fiat A/12 bis.
Airscrew, diam., pitch and revs.	9.4 ft. dia., 5.85 ft. pitch, 1,700 revs.
Weight of machine empty	6,426 lbs.
Tank capacity in hours	
Tank capacity in gallons	Petrol 170 galls.; oil 17 galls.
Disposable load apart from fuel	2,479 lbs. (including crew of 3)
Total weight of machine loaded	10,300 lbs.
Load per sq. ft.	7.75 lbs.
Weight per h.p.	17.2 lbsfl
PERFORMANCE—	
Speed low down	98 m.p.h.
Speed at 5,000 feet	96 m.p.h.
Speed at 20,000 feet	
Landing speed	53 m.p.h.
Climb—	
To 5,000 feet in minutes	14 minutes.
To 10,000 feet in minutes	45 minutes.

THE VICKERS "VIMY."—(Hispano-Suiza Engines.)

Type of machine	Two-engine Biplane.
Name or type No. of machine	"Vimy" Hispano.
Purpose for which intended	Bombing.
Span	67 ft. 2 in.
Gap	10 ft.
Overall length	43 ft. 6⅛ in.
Maximum height	15 ft. 3 in.
Chord	10 ft. 6 in.
Total surface of wings	1,330 sq. ft.
Span of tail	16 ft.
Total area of tail	177.5 sq. ft.
Area of elevators	63 sq. ft. (total).
Area of rudders	21.5 sq. ft. (total).
Area of fin	None.
Area of each aileron and total area	60.5 sq. ft.; 242 sq. ft.
Maximum cross section of body	3 ft. 9 in. by 3 ft. 9 in.
Horizontal area of body	125 sq. ft
Vertical area of body	120 sq ft
Engine type and h.p.	Two 200 h.p. Hispano-Suiza.
Airscrew, diam., pitch, and revs.	9.25 ft. dia., 5 ft. pitch, 2,100 revs.
Weight of machine empty	5,420 lbs.
Tank capacity in gallons	Petrol 91 galls.; oil 14 galls.
Disposable load apart from fuel	2,900lbs. (including crew of 3)
Total weight of machine	9,120 lbs.
Load per sq. ft.	6.85 lbs.
Weight per h.p.	22.8 lbs.
PERFORMANCE—	
Speed low down	90 m.p.h.
Speed at 5,000 feet	87 m.p.h.
Speed at 20,000 feet	
Landing speed	51 m.p.h.
Climb—	
To 5,000 feet in minutes	23.5 minutes.

Since the Armistice, the Vickers "Vimy" has been converted to a commercial mail and passenger-carrying machine by fitting it with a new fuselage designed to carry passengers and/or merchandise.

This version of the machine was described and illustrated in detail in the issue of The Aeroplane of June 11th, 1919. The trans-Atlantic "Vimy," illustrated on page 1314, piloted by Capt. Alcock, was a standard bomber fitted with big tanks in lieu of places for bombs and gun.



A View of the Vickers Stand at the E.L.T.A. Exhibition at Amsterdam. In the foreground a Vimy Bomber, and to the Left Rear the Cabin Compartment Unit of a "Vimy" Passenger-carrier.

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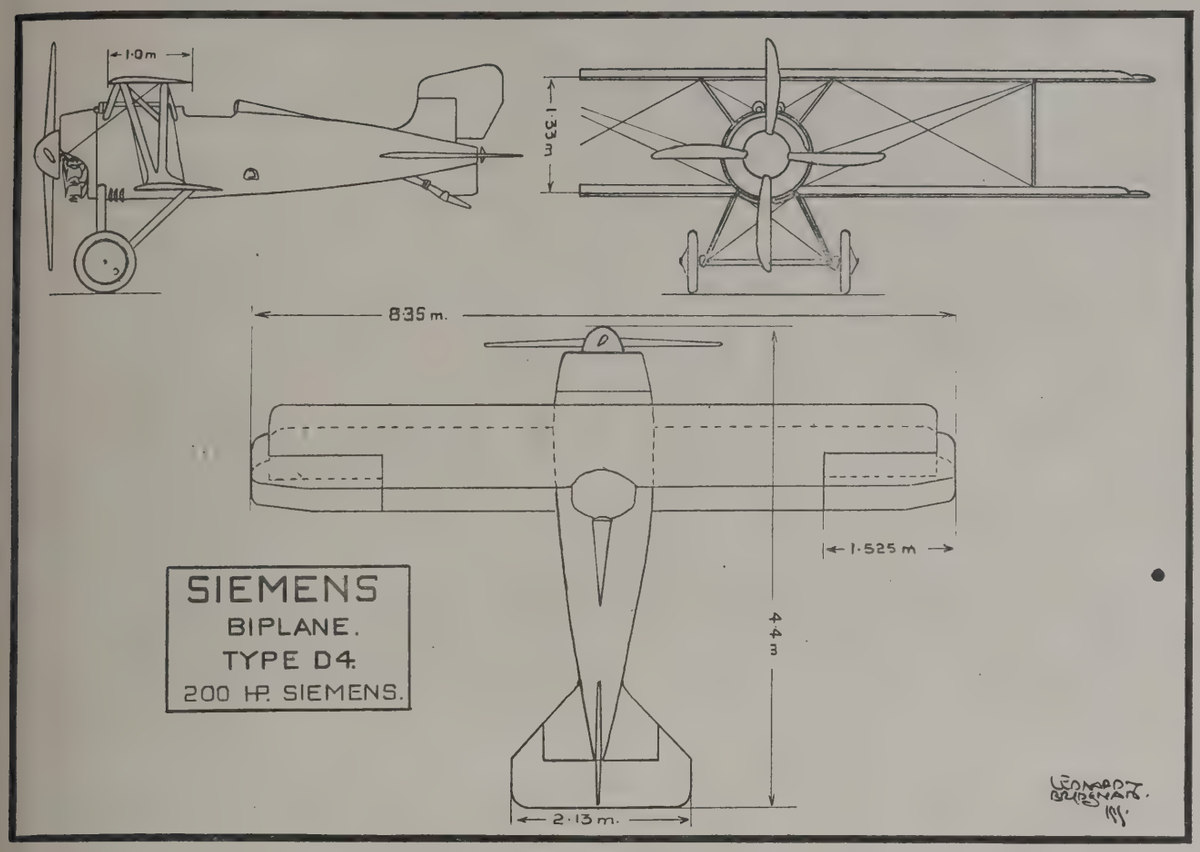
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THE SIEMENS-SCHUCKERT D.IV SINGLE-SEATER.



The Siemens-Schuckert scout with a rotary motor was referred to in THE AEROPLANE of Dec. 25th, 1918. More information is now available, the particulars following having been published in a recent issue of "Flugsport."

The Siemens-Schuckert D.IV single-seater biplane was turned out for a fighting scout competition which was held in January, 1918, comparable to the French war-time avion trials. Equipped with a 11-cyl. Siemens and Halske rotary engine, the machine showed a climb in excess of the then requirements, and possessed good manœuvring qualities and sufficient speed. To improve the type the speed, especially in diving, was increased at the expense of the climbing capacity by changing the form and section of the wings. The form and detailed measures are evident from the scale drawings. The total span amounts to 8.35 metres with a chord of 1 metre; neither arrow nor V arrangement is employed.

The aircraft is equipped with a four-bladed airscrew of a diameter of 2.80 metres and a pitch of 3.90 metres, the Germans having also found this type of advantage, claiming to attain much in this case without loss of efficiency, as proved by test. The landing gear can be shortened and landings rendered much easier at high speeds (and why not mention the reduced head resistance and accordingly speed increase from the former result?—TRANSLATOR).

The body is made of three-ply wood, shaped to offer a minimum of head resistance. The plywood is nailed in single plies to the girder of bulkheads and four pine longitudinals, a feature being the diagonal wooden pieces going from bulkhead to bulkhead and affording the fuselage a special rigidity.

The rudder, elevator, and lower keel fin, arranged as a skid support, are mounted on the body end. The tail plane is curved symmetrically on both sides and has an angle of incidence of 0 deg. The rudder is curved on one side to neutralise the spin of the slip stream. The top fin and the fixed tail plane are attached in the usual way. The rudder and elevator are both balanced, and as the rudder is provided above the elevator the latter is made in one piece.

Both the rudder and elevator are made of tubes and sheet-metal ribs, and all control cables are doubled and pass over no pulleys.

The seat of the pilot rests on duralumin tubes and can be adjusted in two directions, and the safety-belt of the pilot is fixed to the longerons with intermediate spiral springs.

The pilot's cockpit is equipped with the usual instruments (tachometer, compass, altimeter, throttle and the ignition



Three-quarter Front View of the Siemens Type D.IV Single-seater Fighter.



The Rotary-engined Siemens D.IV Fighter

levers, magneto switch, petrol stop-cock, etc.). The control lever carries at the top end the normal hand-grip adopted by the German Army authorities, and on the left side is fitted with a throttle lever. Furthermore, a special lever is provided as an emergency throttle for the engine. By means of a special locking device the controls can be maintained in any position. The control lever is carried in a fork in a longitudinal lay-shaft which carries at its front end a twin lever for the control of the ailerons, which are made entirely of steel tubes to be as little as possible vulnerable to gun-fire.

The steel tube landing gear is of the standard V type. The main axle is made of chrome-nickel steel of 55 mm. diameter and is suspended on spiral springs. The landing gear is streamlined by means of aluminium sheets with the object of reducing head resistance.

The top plane is made in one part. The spars are glued, of two parts and of square section. The hollow sections are spindled out of the solid wood which is left at the main points. The ribs are made of 15 mm. 3-ply wood with flanges, being mounted at intervals of only 160 mm. and carefully secured to the spars by means of small glued blocks. The interior bracing of the planes is carried out with tubes and wires. The fabric is sewn to the ribs. All main spar fittings clasp round the spars to avoid weakening them by drilling.

The biplane is fitted with four balanced ailerons attached to the rear spars. They are operated by tubes inside the planes, which goes to reduce the head resistance beside reducing the engagement vulnerability as already mentioned. The tail fin is made of wood in V shape, being supported upon and mounted on a strong wooden bridge inside the tail plane and fixed with two light screws. The two supporting struts of the fin are of streamline section and hollowed.

The centre section support is cable braced, and the gun-mounting is used as part of the structure. The main wiring is by means of two cables of ample dimension to give as small an elongation as possible even at high stresses. With the object of safety, a front drift cable is further provided for long, quick nose dives.

The armament consists of two fixed machine-guns mounted in the usual way for firing through the propeller.

THE SIEMENS 11-CYLINDER ROTARY ENGINE.

The results of the 9-cyl. Siemens' rotary engine of 110-h.p. proving unsatisfactory, an 11-cyl. model of 220 h.p. was developed from the former. This differs from other rotary motors produced so far in that the crankshaft and cylinders both revolve in opposite directions. The cylinders turn in one direction at 900 r.p.m. and the crankshaft at 900 r.p.m. in the opposite one, which gives a total of 1,800 revs. per min., with only 900 for the airscrew, which has the effect of a good screw efficiency and goes to reduce the centrifugal force and its influences and thus to increase the reliability.

The high number of engine revs. increases the performance and reduces the motor weight. The advantages claimed for the low cylinder speed are the reduced air resistance of the rotating parts resulting in an improvement of the performance that the opposite rotations of the masses almost abolishes the gyroscopic effect improving the manœuvring qualities of the aircraft, that the fuel consumption is said to be considerably lower than in other rotaries, being equal to that of fixed motors, that the Siemens' rotary engine can be throttled from 900 r.p.m. to 350 revs.; further, that the cylinders can easily be dismantled, that the provision of two magnetos go to increase the reliability of the motor, and that the motor can be started by starting magneto.

The inlet and exhaust valves of the Siemens' rotary are operated by push-rods, and the engine is super-dimensioned to be suitable for high altitude flights. The normal output amounts to 200 h.p., the maximum one to 240 h.p., at a total weight of 194 kilos, which works out at a weight of 0.81 kilos per horse-power.

The motor, of 124 millimetre bore by 140 m.m. stroke, is suspended at three points in a malleable iron frame that is fixed with suitable stampings to the four longitudinals.

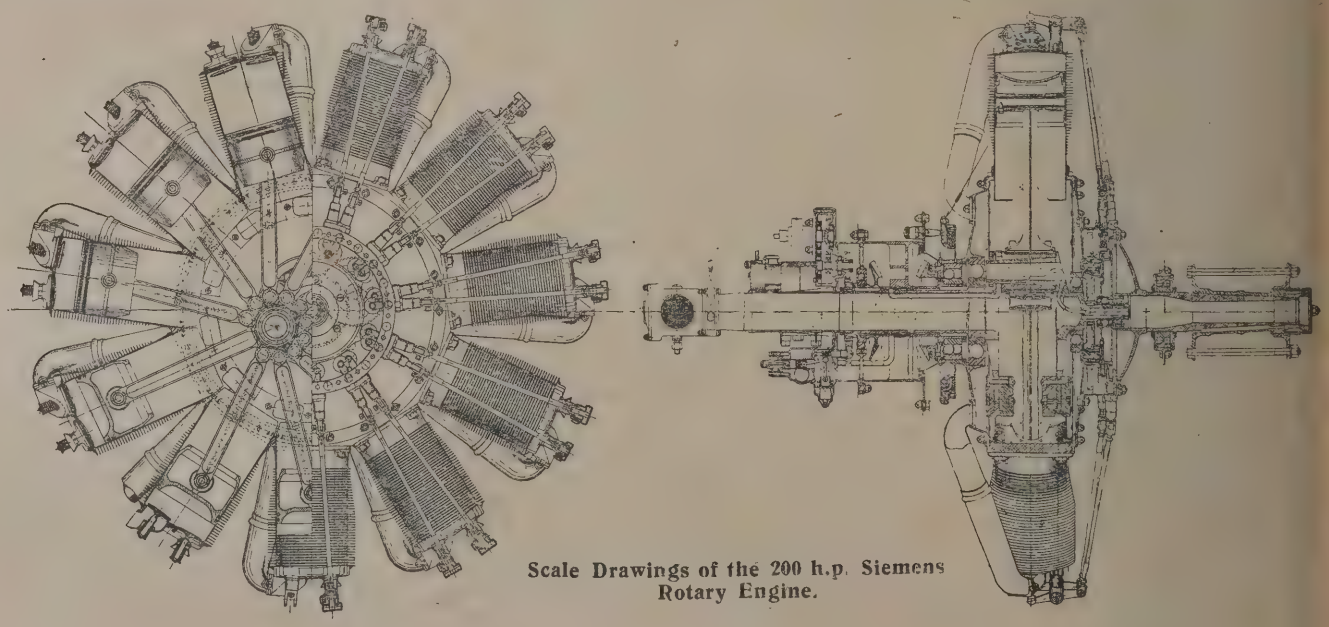
Recent models have been improved to make the quick and easy removal of the motor possible.—HI.

A NEW FRENCH AERONAUTICAL JOURNAL.

A new French monthly, known as "L'Air," has recently made its appearance.

This journal, under the management of M. G. Roche d'Estrez, deals with aviation from both the technical and the popular point of view, and appears to have received the support of a number of the leading French technical authorities.

It is excellently illustrated and well written, and it is well worth the subscription (10 francs per annum, outside of France) to all those who wish to keep in touch with French aeronautical activities. Its address is 85, Rue St. Lazare, Paris.



Scale Drawings of the 200 h.p. Siemens Rotary Engine.

To "Aeroplane" Subscribers.

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A CONFERENCE OF DOMINION METEOROLOGISTS.

During the past week there was held in London the first Conference of Representative Meteorologists from the Dominions under the presidency of Sir Napier Shaw, Director of Meteorological Office and Acting Controller of Meteorology, Air Ministry.

At the opening meeting held on Tuesday, Sept. 23rd, the delegates were welcomed by General Sir F. H. Sykes, G.B.E., K.C.B., C.M.G., Controller-General of Civil Aviation, and Sir Napier Shaw.

Colonel L. F. Blandy, D.S.O., R.A.F., then read a paper on arrangements for transmission of meteorological information by wireless. He outlined a scheme covering the whole of Europe, Mediterranean, and North Africa. In the discussion which ensued, the delegates expressed their opinions as to how far the scheme could be adopted in the various Dominions. The afternoon discussion was directed to a discussion of transmission of observations by W/T from ships at sea. The delegates then visited the wireless station at the Air Ministry.

On Wednesday morning, Sept. 24th, 1919, Squadron Leader A. D. Spiers, R.A.F., opened a discussion on the aerial routes, Cairo-Karachi, and Cairo to the Cape. The subject was discussed from a meteorological standpoint, and the delegates concerned emphasised the interest of their respective Governments in the proposed routes. Subsequently, Sir F. Stupart (Canada) raised the question of instruments and equipment for upper air observations by means of pilot balloons. A decision was also reached on the best form of report for aviation purposes. The afternoon was devoted to the selection of stations for the general study of climatology of the globe. Later, the delegates visited Kew Observatory, Richmond.

Thursday was devoted to visits to the kite balloon testing station, Kingston Hill, and the R.A.F. Meteorological Station, Bedford.

On Friday, Sept. 26th, the Conference discussed the Convention for International Aerial Navigation. It was difficult to enter into a detailed examination of the meteorological clauses of this Convention, as these had not been seen by the Dominion meteorologists before their arrival in England. Consideration of the International codes was left over for the International Meteorological Conference which started in Paris this week. On behalf of the hydrographer of the Navy, a paper on hurricanes and hurricane conditions was circulated. A considerable amount of information on this subject was already available, and it was decided that records and the reports of all hurricanes observed in the future should be sent to the Meteorological Office, London, with a view to analysis and investigation.

On the question of further co-operation on meteorological matters of the several parts of the Empire, Colonel Bates (New Zealand) proposed "that the Conference of representative meteorologists of the British Empire assembled together for the first time should agree to continue as an association for the exchange of views from time to time upon scientific matters concerning the achievements, requirements and organisation of their services." This was carried unanimously. Sir Napier Shaw was elected the first President, and members were invited to submit rules for the guidance and acceptance of the Association.

The Conference has been beneficial in bringing together the various meteorological organisations of the Empire, and it is hoped that as a result complete co-operation will be maintained between Dominions, Crown Colonies, and the Mother Country. It is unnecessary to point out the need for this co-operation in view of the development of the great aerial routes of the Empire.

The following delegates were present:—Sir Napier Shaw (Great Britain) (Chairman), Capt. A. J. Bamford (Ceylon), Lieut.-Col. D. C. Bates (New Zealand), Mr. H. D. Grant (Admiralty), Mr. H. A. Hunt (Australia), Mr. H. Knox-Shaw (Egypt), Mr. C. Stewart (South Africa), Sir F. Stupart (Canada), Dr. G. T. Walker (India), Capt. D. Brunt, of the Meteorological Office, and Capt. R. M. B. Mackenzie, R.A.F., of the Air Ministry, acted as Secretaries to the Conference.

AERONAUTICS AT THE NORTHAMPTON INSTITUTE.

It is announced that an evening course of lectures on Aeronautical Engineering is to be given at the Northampton Institute, St. John Street, Clerkenwell, during the forthcoming session by Squadron-Leader F. W. Bramwell, R.A.F.

The lectures in question are to deal with practical aeroplane design, and are intended to qualify students for positions such as that of assistant designer in an aircraft factory's drawing office.

In conjunction with the lectures there is a laboratory course in the Institute's aeronautical laboratory, which is equipped with a 4 ft. wind tunnel and other necessary appliances which will enable students to obtain a working knowledge of the experimental basis upon which the theory of aeroplane design rests.

At a similar series of lectures held during last winter it was found that a considerable number of would-be students were under the very prevalent but entirely erroneous idea that it is possible to become an aeronautical engineer without any knowledge of engineering or even of elementary mechanics and the simplest mathematics, and at the first lecture held this session, on Tuesday, Sept. 23rd, it was found that a similar misapprehension existed.

It has been pointed out in these pages on more than one occasion that aeronautical engineering is merely one specialised branch of the engineering industry as a whole, and that it is necessary to become an engineer before becoming an aeronautical engineer.

It cannot be too strongly impressed upon would-be students of aeronautical engineering that it is hopeless to attempt to acquire any useful knowledge of a specialised application of engineering—such as aeroplane design—without first acquiring a general knowledge of engineering principles, and a sufficient knowledge of mathematics to carry out the calculations involved in their application.

The attempt to do so will merely lead to the bewilderment of the student and to delay in the progress of those of his fellow-students who are reasonably qualified to benefit from the classes he is attending.

Students who wish to profit by the educational opportunities offered by such colleges as the Northampton Institute, unless they feel perfectly confident that their general engineering knowledge is sufficient to permit of their assimilating any particular course of classes, should make a point of consulting the authorities at the Institute in question. They will thus be enabled to avoid wasting their own and other people's time in attending lectures which they cannot understand.

THE USES OF CONSUTA.

Probably most people concerned with hydroplanes or with flying boats have heard of the Saunders "sewn hull" system of boat construction. When first introduced copper wire was used for sewing and was very successful, but more recently Mr. Saunders has evolved a new method of sewing with special thread which, judging by all tests, is both stronger and more reliable, lighter and more flexible, than the copper sewing. Also the new method of sewing lends itself to much more rapid production by means of machinery specially designed for the purpose.

This new sewn woodwork is known by the name of "Consuta," and it has already been used largely in the construction of flying boats. It will be remembered that in the early flying boats a considerable portion of the hull which did not come into direct contact with the sea was covered with linen fabric. Somewhat naturally it was found that linen fabric was not, after all, the best possible material for the purpose, and when Mr. Saunders began producing "Consuta" in lighter gauges these fabric sections of the hull were replaced by "Consuta," which proved entirely satisfactory.

It is now being used for the whole covering of flying boats of the largest size—in fact, of a larger size than anything which has so far been produced, and, from what one has seen, it is likely to give much more satisfactory results than any species of three-ply or other ply-wood which has yet been invented.

When in the Isle of Wight recently Mr. Saunders was kind enough to take one round his works and to show one the various uses to which "Consuta" is being put. One may not, of course, describe in detail the big boats in which it is being used, but one may say that it is also being used with great success for the skins of motor-boats.

Mr. Saunders is constructing a number of small hydroplanes of a standard type which should find a ready market. The extraordinary feature about this standard type production is that the whole boat is completed, with the exception of the installation of the power plant, before the skin is put onto the skeleton, and it strikes one at first as being quite extraordinary to see a complete new boat with all its fittings in place, but without any planking whatever.

The whole method of construction is convincing testimony to the original mind of Mr. Saunders, for there can be but very few men in any business who, with his long experience of their own particular trade, would strike out suddenly into such an entirely revolutionary method of construction.—

C. G. G.

A GERMAN AIRCRAFT WORKS CLOSING

The Danish correspondent of The Aeroplane writes:—

It was resolved to close down the Rumpler Aircraft Works, at a meeting of shareholders, as the company had been unable to find profitable after-war trade.

COMMERCIAL AERONAUTICS & CIVIL AERIAL TRANSPORT

GREAT BRITAIN.

THE AERIAL MAIL SERVICES.

By arrangement between the Postmaster-General and the Air Ministry aerial mail services were started between London and various provincial towns on Oct. 1st.

The first machine to leave Hounslow on that date was a Westland limousine which carried 1 lb. 1 oz. of mail to Bristol and started at 7.40 a.m., arriving at Bristol at 9.10 a.m.

An Avro, carrying 2 lb. 11 oz., left at 7.45 a.m. for Birmingham and arrived at 9.15 a.m.

A Blackburn "Kangaroo," owned by the Grahame-White Co., carrying 3 lb. 8 oz., left at 7.50 a.m. for Newcastle and arrived at 11.20 a.m.

A Blackburn "Kangaroo" belonging to the Northern Aviation Company, carrying 13 lb. 10 oz., left at 8 a.m. for Glasgow and arrived at Renfrew aerodrome at 1 p.m.

A B.A.T. commercial aeroplane, carrying 6 lb. 2 oz., left at 8.15 a.m. for Didsbury, Manchester, and arrived at 10.45 a.m.

In all, 315 letters were carried. There was accommodation for 4,750 lb. of mail.

The machines which carried the mails to the three northernmost cities, Glasgow, Newcastle, and Manchester, were scheduled to return on the day following their arrivals there. Those flying to Birmingham and Bristol were to return on the same day. The machines left at dawn. The mails were conveyed to the aerodrome on the previous night by G.P.O. vans.

Directions for the posting of the mail were stated in last week's issue of THE AEROPLANE. The mails were dispatched from the Post Offices in sealed boxes and a receipt was given for each at the aerodrome.

According to the "Daily Telegraph" of Oct. 2nd, fifty-four R.A.F. aeroplanes were employed on Oct. 1st to distribute the mails over the country.

Copies of the "Times" newspaper were delivered by aeroplane to personages of importance in the United Kingdom and abroad during the strike up to Oct. 2nd.

On Oct. 2nd 320 "letter packets" were carried by the aerial mail services. The inward mail to London from the five abovementioned cities was rather less than the outward mail. The principal contributor was Newcastle, from which centre 115 letters were sent to London.

It was estimated that the revenue from the service did not amount to one-tenth of its cost, and it was said that the service would be discontinued within this country after the normal train service had been resumed.

The first aeroplane for London carrying the Glasgow mail left Renfrew aerodrome in the morning of Oct. 2nd with a heavy bag of mails. The machine arrived in London before midday. The aeroplane which left Hounslow for Glasgow had to descend at Hendon owing to fog. A landing had to be made at Doncaster for petrol and a further stop was made at Newcastle. Owing to rain and fog, the machine stayed the night at Turnhouse aerodrome, near Edinburgh.

An R.A.F. machine, piloted by Lieut. Shepherd, with Lieut. Page, left Kenley for Newcastle at 5.37 a.m. on Oct. 2nd. The machine ran out of petrol when nearing Newcastle at 8.45 a.m. The pilot tried to make a landing in a football field, but a wing struck a building and the machine came down in a street. As a result of the accident Lieut. Shepherd had his skull fractured and broke an arm. He died later from his injuries. Lieut. Page was uninjured and delivered the mails.

An R.A.F. Bristol biplane, No. 4,577, carrying mails from Salisbury to Pembroke, made a bad landing at Llanelly on Oct. 6th. The machine was damaged, but the two aviators escaped without injury. Thousands of people visited the scene of the accident during the day.

It is stated that fifty R.A.F. aeroplanes were employed to carry the mails on Oct. 3rd. The mails were again carried to Bristol, Birmingham, Manchester, Newcastle and Glasgow by civil aviation machines. An Airco machine carried the French post to Paris and a Handley Page went to Brussels, taking the mail for Belgium, Norway, Sweden, and Denmark.

An official statement from Downing Street issued on Oct. 3rd stated that owing to the improvement in the train services it had been decided to discontinue the civil aerial mail services in Great Britain.

THE IRISH MAILS.

The Under Secretary for Ireland denied on Sept. 30th the report that an air service between England and Ireland was about to be established. A prominent official of the Post Office informed a Press representative on Oct. 1st that it was quite probable that an Irish service would be instituted, although the Department had not arrived at a decision.

According to the "Morning Post" of Oct. 1st, an air service for the conveyance of Government dispatches had been organised between Holyhead and London. It was to work in connection with the Kingstown and Holyhead mail service.

A G.P.O. official stated on Oct. 2nd that there would not be an Irish aerial mail, as official communication had been established by means of train to Bangor, motor van to Holyhead, and by boat in the usual way.

THE AIR POST STOPPED.

The Secretary of the General Post Office announced on Oct. 6th that in the altered circumstances the conveyance of mails by aeroplane between London and Bristol, Birmingham, Manchester, Newcastle, and Glasgow, had been discontinued.

ANTI-STRIKE AVIATION.

A. V. ROE AND CO., LTD.

During the week the Avros were busy helping the State and the public to tide over the strike. But booking ahead was a difficult matter, and, at one time, the Government left them to their own devices; then put on petrol restrictions; then employed some machines for the air mail; and, finally, opened all civil flying again. However, four Avros carried the "Daily Chronicle" to Cardiff, Bristol, Birmingham and Norwich for several days in succession. Matrices of the "Daily News" were taken to Manchester on two occasions. Copies of the "Daily Sketch" were taken to Weston-super-Mare, and of the "Daily Chronicle" to Cleethorpes, near Hull, and to Swansea.

To the Avros was entrusted the task of carrying the mails to Castle Bromwich for so long as the Government kept the air mail going.



IN STRIKE TIME.—Aeroplanes assembled at a London Aerodrome. These machines carried supplies of newspapers to Manchester, Plymouth, Sheffield, and Weston-super-Mare.

Several journeys were made to Manchester, one in very tragic circumstances, for two ladies had to attend a funeral there and could not have arrived in time by any other means.

Other cross-country journeys were to Rugby, Eastbourne, Gloucester, Stroud, Oxford and Saffron Waldon.

THE BRITISH AERIAL TRANSPORT CO., LTD.

The B.A.T. Co.'s emergency aeroplane service from London to Birmingham was flown on Sept. 30th for the last time. A machine left Hendon at 10.45 a.m. piloted by Mr. Cyril Turner. Castle Bromwich Aerodrome, Birmingham, was reached just before noon. The return journey was started at 1.5 p.m. and the machine reached Hendon at 2.10 p.m.

The machine started on its second flight at 3 p.m., piloted by Major C. Draper. Birmingham was reached at 3.45 p.m., and the machine left there again at 4.15 p.m. and arrived at Hendon at 5.20 p.m. The company announced on Sept. 30th that owing to the Government requiring their commercial aeroplanes for mail service, the service to Birmingham has been discontinued, and will not run until further notice.

THE NIEUPORT AND GENERAL AIRCRAFT CO.

Two Nieuport two-seater "Nighthawk" biplanes were on the Hendon aerodrome on Oct. 1st. They were ready to carry the mail to Dublin and Edinburgh. The machines and their pilots were held in readiness for Government service.

THE SUPERMARINE AVIATION WORKS, LTD.

On Saturday, Sept. 27th, despite the strike, thousands of copies of the "Southern Daily Echo" were delivered to Bournemouth. The proprietors of the newspaper arranged with the Supermarine Co. that one of their flying-boats should carry the copies. The service was carried out quickly and smoothly and showed the possibilities of the flying-boat for commercial use.

The flying-boat received the cargo of news at 6 p.m. and, piloted by Cmdr. Hobbs, D.S.O., D.S.C., the machine set out for Bournemouth. The weather was fine, and at about 6.43 p.m. the machine flew into the bay and alighted east of Bournemouth Pier. The papers were taken to the shore in several rowing boats.

The flying-boat service from Woolston (Southampton) to Le Havre was started on Sunday, Sept. 28th. Shortly after 5 p.m. two machines left for France, each carrying a couple of passengers, with luggage. The boats became separated in a storm, but both reached their destination safely. On the return journey one flew straight back to Woolston and the second landed at Bembridge, Isle of Wight, to fill up with petrol. It reached the sheds a little later.

On Monday, Sept. 29th, two flying-boats left for Le Havre at noon, and in addition to carrying passengers they bore mails. Amongst the contents of the mail-bag were several interesting letters, including a message of greeting from the Mayor of Southampton to the Mayor of Le Havre, another from the President of the Southampton Chamber of Commerce, a third from the French Consul, and a greeting from the editor-in-chief and general manager of the "Southern Daily Echo" and its allied journals to the editor of the "Journal du Havre."

The letter which the Mayor of Southampton sent to his Worship of Le Havre was as follows :—

My dear Sir, — I wish on behalf of the people of Southampton to extend to you and the inhabitants of Le Havre our most cordial greetings upon the inauguration of this, the first, public aerial service between any English port and French port. The boat service between Le Havre and Southampton has been established for a long period, and has had, and I hope will continue to have, a remarkably successful existence, and this strong link between our two towns is further increased by this establishment of the flying-boat service, due to the enterprise of a Southampton firm, the Supermarine Aviation Company, by whose courtesy I am sending this letter through the agency of one of the initial flying-boats.

It may be, Mr. Mayor, that time will prove that this aerial service between our respective ports will become a necessity, and grow into one of very great importance.

With all good wishes,
Yours very sincerely,
(Signed) S. G. KIMBER, Mayor.

According to the "Daily Telegraph," of Oct. 1st, one of the machines which flew to Le Havre on Sept. 20th returned to Newhaven in the evening with a passenger. As it was too late to fly home the pilot stayed the night there and came back the next day.

On Sept. 30th another flying-boat was sent to Le Havre with two passengers and their luggage.

VICKERS, LTD.

An aeroplane mail service was opened on Oct. 1 by Vickers, Ltd., between their head offices in London and the Naval Construction works at Barrow. An aeroplane piloted by Lieut. Simpson (late R.A.F.) arrived at Walney airship station in the morning with letters from London and Sheffield. After lunch the pilot flew back to London. The service is to be flown daily. Vickers, Ltd., are willing to take urgent messages from Barrow people to London by the service.

A small airship, in the service of the Royal Navy, stationed at Barrow, has been lent to Vickers, Ltd., in connection with their aerial mail service between Barrow and London. Mails have been carried by this ship to Sheffield and thence by aeroplane to London. Vickers, Ltd., have also carried urgent letters from London to Barrow for local people.

OTHER NEWS

A number of ex-Royal Air Force wireless operators have volunteered at the Air Ministry for service. These are being placed as quickly as possible.

On the special official service arranged for Paris, two machines left carrying five passengers and 150 lb. of mail on Sept. 30th.

Over one ton of newspapers was delivered by air on Sept. 30th. The papers were flown from London at dawn to Bristol, Birmingham, Cardiff, Norwich, etc.

The Right Hon. H. A. L. Fisher, Minister of Education, flew from Sheffield to London on Sept. 30th to attend a meeting of the Cabinet.

Arrangements were made to transport the artists in touring theatre companies last week-end by aeroplane.

THE CONTINENTAL SERVICES.

A LONDON-HOLLAND AIR SERVICE.

The British Aerial Transport Co., Ltd., arranged to start a service to Holland on Oct. 7th. The machine, a B.A.T. FK26 commercial biplane, was due to leave Hendon at 11 a.m. for Hounslow, where the Customs formalities are observed.

The aeroplane was scheduled to leave Hounslow at 11.30 a.m. with a cargo of Emaillite Dope. The journey to Soesterberg aerodrome, near Amsterdam, is expected to take three hours.

The return journey will be made every Wednesday, and the machine will leave Amsterdam at 11.30 a.m. This week four passengers have booked seats from Holland. There is a waiting list for the service at both ends of the route.

As soon as the demand merits it, the service will be run more frequently. The FK26 can carry four passengers or 1,000 lb. of goods, and has a cubic capacity of 140 cubic ft. Passages may be booked at the offices of the company at 38, Conduit Street, W.1, from which address a car will leave for the aerodrome every Tuesday at 10.15 a.m.



THE STRIKE-SERVICE.—The Airco D.H.10 machine which Capt. Gathergood flew to Newcastle in 2hr. 10 min. on Sept. 30th, loading up previous to the start.

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A novelty among War Books.

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It consisted in the landing by aeroplane of spies behind the enemy lines.

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Extract from Chapter I.

"The 'ace' of the special mission was generally a man celebrated in other branches of aviation, but these men were not always recognised according to their deserts during the war. They were only known to the commanders, and sometimes—in the case of popular heroes—they were traduced by the crowd which grew indignant at hearing nothing of its peacetime idols."

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The Revelations of Roy (With apologies to Artemas.)

"Hearken unto the revelations of Roy, and profit thou by his experiences."—*"The Revelations of Roy," XXI. 2.*

Extract from Chap. II.

1. And when he was come unto Farn, Roy was compassed about by a great multitude.

2. And he beheld winged chariots of divers designs; thus there were the Scout, and the Dolphin, and the Martinsyde, and the Camel, even that which produceth the hump.

Extract from Chap. XXI (and last).

17. And in all thy ways consider this, that there be two things greater than any other in forming the character of him that flies; and the one is Energy and the other, it is Enthusiasm.

19. And take thou a pride in being an aviator; for hath not the great Hender said, These young men are the salt of the Earth.

20. Go thy way in courage and good cheer; and greet the Great Adventure with a song.

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The Handley Page Continental Services.

On Sept. 29th, 30th, Oct. 1st and 2nd Handley Page Transport, Ltd., on their London-Paris and Brussels Air Services carried eighty-six passengers, two tons of freight, and three and a half tons of mails, which is roughly 250,000 letters.

There is great difficulty in getting the machines from Brussels and Paris off to time. Besides the Customs formalities, the excitable Belgian and French people will fight for the front seats. In addition, they will not enter the machines until they have made exhaustive inquiries as to the position of the lavatories and the saloon bar, which they firmly believe is carried on every Handley Page.

Owing to a printer's error, the single fare in a Handley Page machine to Paris or Brussels was quoted at twenty guineas. The fare is, in fact, fifteen guineas.

In the table of the London-Paris and Brussels air services last week it was stated that a Handley Page machine, on Sept. 24th, left Hounslow at 10.30 a.m. and arrived at Brussels at 3 p.m. Owing to the amount of additional flying then being done by the Handley Page Transport, Ltd ., on account of the strike, they were unable to check the times of their machines with those which The Aeroplane had received from other sources. They have now stated that that machine left Cricklewood at 10.30 a.m. for Hounslow. The journey to Brussels was started from Hounslow a few minutes after noon.

The Airco London-Paris Air Service.

Date.	Type.	Pilot.	Left Hounslow	Arr. Paris.	Left Paris.	Arr. Hounslow.	Pass.
Sept. 29th	D.H. 4a	Capt. Baylis	1.23 p.m.	3.30 p.m.			2
	D.H. 16	Lt. McMullin	1.25 p.m.	3.30 p.m.			Mail
	D.H. 4a	Lt. Powell	2.20 p.m.	4.35 p.m.			2
	D.H. 16	Capt. Carleton			11.30 a.m.	2.22 p.m.	2
Sept. 30th	D.H. 16	Lt. Chattaway	12.45 p.m.	3.0 p.m.			2
	D.H. 4a	Capt. Baylis			11.30 a.m.	1.40 p.m.	0
	D.H. 4a	Lt. Shaw			11.45 a.m.	2.6 p.m.	2
Oct. 1st	D.H. 4a	Capt. Courtney	12.45 p.m.	3.25 p.m.			2
	D.H. 16	Lt. McMullin			11.45 a.m.	1.40 p.m.	0
Oct. 2nd	D.H. 9	Lt. Shaw	1.0 p.m.	3.25 p.m.			2
	D.H. 16	Lt. Powell			11.30 a.m.	2.40 p.m.	4
	D.H. 16	Lt. Chattaway			11.50 a.m.	2.41 p.m.	4
Oct. 3rd	D.H. 4a	Capt. Baylis	12.53 p.m.	3.10 p.m.			1
	D.H. 4a	Capt. Courtney			11.30 p.m.	2.0 p.m.	2
Oct. 4th	D.H. 16	Lt. McMullin	12.50 p.m.	3.20 p.m.			4
	D.H. 9	Lt. Shaw			11.30 a.m.	2.20 p.m.	2
	D.H. 4a	Capt. Baylis			11.30 a.m.	1.55 p.m.	2

With reference to the above table of flights, on Sept. 30th the D.H.4a, piloted by Lt. Shaw, which left Paris at 11.45 a.m., carried Maj.-Gen. Sir F. Sykes, K.C.B., C.M.G., and his secretary as passengers.

Express parcels were taken in every machine except in that on Sept. 29th, which carried the Government mails. On Oct. 1st the "goods" carried to Paris included a pedigree blue Persian kitten which was consigned to a lady in Geneva.

On Saturday, Oct. 4th, the Airco London-Paris Service completed its sixth week of continuous operation.

Although the weather was unfavourable on twenty-eight days, eighty-three flights have been accomplished out of eighty-six scheduled. As a proof of the reliability of aeroplanes nowadays, during the 20,750 miles of flying, only once has a pilot been forced to alight through mechanical trouble.

Mr. Holt Thomas said recently, "This service is the first link in a European chain of 100 miles an hour aerial ways. Before long we shall be able to save not merely hours, but days, in the transport of letters from London to some of the great Continental cities."

London.

Hendon.—Sir James Purves Stewart, a Harley Street specialist, recently flew from Hendon to Leicester in a Grahame-White aeroplane, to perform an operation. It is understood that his nerve was unaffected.

Hounslow.—On Sept. 30th Capt. Gathergood (late R.A.F.), piloting an Airco D.H.10, flew to Newcastle with a load of newspapers. Newcastle was reached in 2 hours 10 min. The return journey took 2 hours 50 min.

On October 2nd Capt. Gathergood, piloting an Airco D.H.10, left Hounslow at 1.15 p.m. for Renfrew on Government mail service. He arrived at Renfrew at 6 p.m.

On Oct. 3rd Capt. Square (late R.A.F.), piloting an Airco D.H.9, left for Paris *en route* for Madrid at 12.15 p.m. and arrived at Paris at 2.45 p.m.

On Oct. 4th Maj. Stuart Wortley, piloting an Airco D.H.4a, arrived at Hounslow at 4.35 p.m., having left Interlaken, Switzerland, at 11.15 a.m.

Hamble.

About 30 little brothers and sisters of the famous Avro "Baby" are soon to make their appearance in the world. Flying men do not need to be reminded of the original "Baby's" triumph in the Sealed Handicap of the Aerial Derby, of other wins at Hendon, and of the sensation it created at Amsterdam. But 25 miles on the gallon of petrol at 70 m.p.h. are figures to give food for thought to business men who have mastered the art of flying, especially in view of the recent transport upheaval. It would be interesting to have a peep at Sir Philip Sassoon's diary during the past 10 days.

Southampton.

An Avro seaplane, carrying newspapers from Southampton to Guernsey, was wrecked in a fog behind a breakwater off Alderney on Oct. 5th. The pilot, Capt. Evans, was rescued.

Warrington.

The Golden Eagle Aviation Co., Ltd., sent two D.H.6 machines from St. Annes-on-Sea for the Warrington Flying Week. Mr. H. W. Griffin, the hon. secretary of the Infirmary Fund, arranged the Flying Week, which started on Sept. 25th.

For one guinea the passengers were taken for quite lengthy flights, and the aviation company only received one half of each guinea. The other ten and sixpence went to the Infirmary £10,000 Fund, and Mr. Griffin fully expected that it would be wiped off before the end of the week.

The first passenger to be taken up was Alderman Bennett. Lady Grenall also had a flight. Tickets for free flights were offered to all residents of over seventy years of age, and at least two took advantage of the offer. The flying took place from a newly licensed field in Chester New Road.

A charge of twopence was made for admission to the ground, and a body of stalwart men in blue kept the crowd back. Refreshments were served in two marquees.

The managing director of the Golden Eagle Aviation Co., Ltd., is Major H. S. Shield, who flew over to Warrington from St. Annes-on-Sea. Capt. Hedges, also of the company, took many passengers up during the flying week.

INDIA.

The Government of India has sent a circular to the Chambers of Commerce proposing that there should be seven maintenance centres for aeroplanes within the Government's jurisdiction. They are Bombay, Calcutta, Madras, Karachi, Delhi, Nagpur and Rangoon. It is believed that these centres will be sufficient for all probable air routes in India and Burma. They will also enable every advantage to be taken of the speed and range of air transport.

The Government also state that after taking the best technical advice, they believe that civil aviation will best be encouraged by the grant of an air mail-carrying monopoly to one company for a term of years. Other companies would be able to enter into competition for other transport than that of mails.

The policy at present outlined is for inland aviation only. The Government is waiting to see the result of long-distance flights before proposing anything for the carriage of mails between India and Europe.

CHINA.

Lieut. E. C. Ricou, a pilot in the French Army Air Service, visited the Aero Club of America on Sept. 14th. He has been chief of the French Air Forces operating in China. In addition to being an aviator he is an engineer, and has been prominent in starting large electric and water companies.

He is financing his aviation enterprise himself. Lieut. Ricou intends to start a commercial aerial route between Shanghai, Hong Kong, Haifung, Canton, Tonkin and Maçao. Passengers and light freight will be carried.

During the war Lieut. Ricou saw extensive service in the French campaign in Salonica and was shot down and wounded three times. After he had been ordered to China he was responsible for the crushing of a local rebellion which had been actuated by German influence

FRANCE.

The Salon de l'Aeronautique.

Among the British firms who will exhibit at the Salon de l'Aeronautique, which opens on Dec. 19th next, are the Aircraft Travel and Transport, Ltd.; Westland Aircraft Works, Ltd.; Boulton and Paul, Ltd.; Vickers, Ltd., and Handley Page, Ltd.

The Italian aeroplanes and seaplanes to be shown are the Ansaldo, Fiat, Macchi, Alta Italia, and Caproni.

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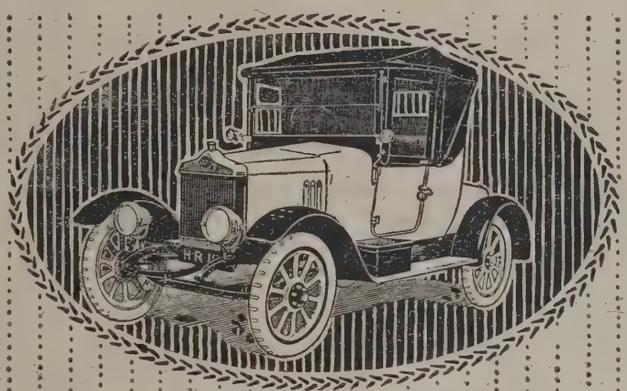
The Distributing Companies are confident that this can be done with the co-operation of the public and the trade.

The distribution by motor spirit transport to garages, etc., must be discontinued, all such motor transport being required for the purposes already indicated.

Dealers and commercial consumers requiring motor spirit must therefore call at the local depots of the Distributing Companies and bring with them all empty packages available, as supplies of full packages will be limited to the number of empties returned.

The hoarding of motor spirit, or the use of it by those who do not really require it during the railway strike, is contrary to the public interest.

The Distributing Companies much regret the inconvenience caused, which they hope will not be of long duration.



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Godbolds.

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The Height Record.

The "Commission Sportive" of the Aero Club de France homologated on Oct. 3rd the height record gained by Casale. The height given is 31,230 ft. It is not clear whether or not this is claimed as a world's height record. In any case, it has still to be homologated by the Federation Internationale Aéronautique. Greater heights have been attained lately in America, but have not so far been homologated.

An Attempt on the Speed Records.

M. Sadi Lecointe on Sept. 29th, at Villacoublay, made several attempts on the world's speed record. Flying a single-seated Spad-Herbemont at 5.40 a.m. he made four flights over a five-kilometre course at a mean speed of 167.7 miles an hour. He then flew a two-seated Spad-Herbemont biplane with Bernard, his mechanic, as passenger (his weight is 180 lb.). His mean speed was 133.3 miles an hour.

Later in the day, when the wind had dropped, M. Lecointe flew over the same course on a single-seated Spad-Herbemont at a mean speed of 184 miles an hour, and on a two-seater with M. Bernard as passenger at 175 miles an hour. These two speeds, if homologated by the F.A.I., will constitute world's speed records.

These attempts were controlled by the technical section of the Aeronautical Service.

One congratulates M. Herbemont on the performance of these machines, and it is to be hoped that he is in some way consoled for his ill-fortune in connection with the Schneider Cup race.

A New Aerial Mail Service.

It is reported that a direct postal air service between Paris and Kieff, the capital of the Ukraine, was due to start on Oct. 5th.

A New Caudron Biplane.

On Sept. 27th M. Pierre Chanteloup carried out tests of a new small Caudron biplane. In general appearance it resembles the large two-engined Caudrons, and its landing chassis is not unlike that of the standard Avro biplane. It is fitted with an 80 h.p. Le Rhône engine. The trials were satisfactory.

From Paris to Vittoria.

M. Fronval, on a Morane-Parasol monoplane (110 h.p. Le Rhône), and M. Bourgeois on a Morane-Parasol monoplane (80 h.p. Le Rhône), left Villacoublay at 9 a.m. on Sept. 24th with the intention of flying to Vittoria. They both landed at Angoulême to refill with petrol. M. Bourgeois was unable to restart, owing to lack of petrol, but M. Fronval continued his journey, reaching Vittoria at 1.40 a.m., thus having covered 480 miles in 4 hr. 40 min., including the stop at Angoulême. M. Bourgeois followed him to Vittoria on Sept. 27th. These pilots made a series of flights at Vittoria before the King of Spain and large crowds on Sept. 30th.

They intend to make exhibition flights near various cities in Spain.

The Paris-Melbourne Flight.

M. Etienne Poulet, whose Caudron biplane is now ready, is now only waiting for further permits from the British Government, before beginning the flight. He has purchased this machine at his own expense, and is not financed in any way by Government or private enterprise. He had put two extra tanks in the machine, and will thus be able to carry 121 gallons of petrol.

During the flight he expects to use 2,150 gallons of petrol and 500 gallons of oil. The longest sea crossing will be about 520 miles in length, and the total duration of the flight from Paris to Melbourne is expected to be about 200 hours. The total distance over the route selected by M. Poulet is 13,300 miles.

With him he takes food sufficient for four days, two carrier pigeons, rifles and revolvers.

A correspondent writes:—

Lack of Supervision.

In France, there are no "ground engineers" to control the proper condition of machines before leaving the ground, and the result is a constant series of small accidents, which would be easily avoided with proper maintenance. The propeller bolts breaking on a well-known passenger machine on two occasions recently, provide a typical example.

One company here is providing an excellent example, and that is the "Société de Transports du Sud-Ouest." They run their enterprise with the precision of a military squadron, and change their motors every 50 hours. The result is that they have operated the whole summer without a single accident.

The Cup Deutsch.

The Deutsch Cup is being put up for competition again, and the race will take place on Oct. 13th. A Nieuport 29, with 300 h.p. Hispano-Suiza engine and a Nieuport monoplane, with 180 h.p. Le Rhône, have been entered. Both of these machines have had their wings clipped, bringing the total loading up to about 60 kilos per square metre.

M. Malard, who fell into the Channel when crossing for the Schneider Cup, is the pilot for the Nieuport 29, and M. Jensen is the pilot for the monoplane. M. Sadi Lecointe has entered the Spad 21 with clipped wings, with which he made the air speed record of 288½ kilometres per hour on Tuesday.

The Winter Season.

All the Air Transport Lines operating from Paris towards the North are closing down at the end of October.—J. S.

A Colonial Effort.

According to the "Times" of Sept. 25th two French aviators are to make prospecting flights from Dakar to Timbuctoo, and from Dakar to French Guinea and back.

HOLLAND.

An Avro Circus.

After the close of the E.L.T.A. Exhibition (is it a redundancy to add the word "Exhibition?") on Sept. 14th, three Avro three-seaters and one five-seater flew to Ockenbury, near The Hague. The pilots were Messrs. W. G. R. Hinchliffe, D.F.C., A.F.C., D. Shanks, F. P. Adams, and Smith. There they again found a bad aerodrome, and did not enjoy the best of weather. They stayed there, however, for the 26th, 27th, and 28th Sept., took up passengers, and did quite well. The Avro is already accepted in Holland as, *par excellence*, the machine for pleasure flying.

They next proceeded to Middelharnis and operated there on Oct. 3rd and 4th. This town is a charmingly picturesque capital of an old-world Dutch island, and, as someone remarked, it seemed sacrilege for such a blatantly modern invention as an aeroplane to break on its mediæval calm. Passengers in wooden clogs and flying helmets typified the paradoxical situation. However, the rustic Hollander took to the air as readily as Van Tromp and de Reuter took to the water. The short meeting was a great success, and the enthusiasm of the people was unbounded. All the pilots were garlanded *more Indico* with really beautiful wreaths of roses and other flowers.

The Hollanders throughout were charming hosts, and it was noted that at the E.L.T.A. Herr Fokker seemed to wish to wipe out the memory of certain regrettable incidents in his past career.

But in the Netherlands, as elsewhere, the grumpy farmer provides occasional comic relief. Once Mr. Shanks had a forced landing in a meadow, put things right himself, and flew away. Later, a letter was received from the farmer, backed by the local burgomaster, complaining that in the field there had been a horse which was so frightened by the engine that it had since nearly had an accident. Likewise, two cows had given less milk since the occurrence, and the farmer felt morally convinced that their calves would in consequence be born dead. He thought that 200 guelders (about £20) would no more than meet the moral and material damage.

The three three-seaters flew back to England on Oct. 5th. They carried extra supplies of petrol, landed on the beach at Calais and filled up their own tanks. At Calais they found many disconsolate soldier-men hung up by the strike and unable to spend their leave at home, who piteously begged for "a lift." The mist hung low over the Channel and over Kent, and the last stage of the journey was an anxious time for the pilots, but they felt their way round the hills and arrived safely.

The actual flying time for these three machines on their journey home from Amsterdam was 3 hours 30 minutes.

The pilots are returning by boat to Holland to use the other Avros which are over there to give the Hollanders little more enjoyment—and incidentally to revel themselves in unrestricted butter and sugar.

Memories of E.L.T.A.

Mr. W. R. Kenworthy, the Blackburn test pilot, has returned recently from the Amsterdam Exhibition, where he has been taking up passengers in a Blackburn "Kangaroo" machine for six weeks. His views of the Dutch people and of the Exhibition are interesting, and are as follows:—

The Hollander's enthusiasm for the E.L.T.A. was enormous. They have seen little flying during the war. All classes patronised the show, and more passengers were taken up than even the most sanguine hoped for. The millionth visitor passed the turnstile a few hours before closing time. The Dutch are very good sportsmen and very open-handed. In fact, those at the E.L.T.A. were very much like an English crowd at a 1913 aviation meeting in this country.

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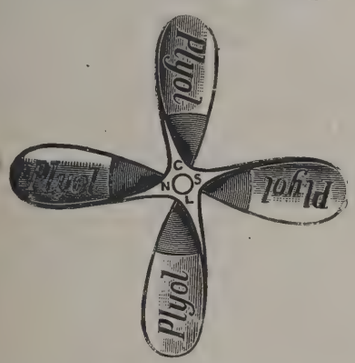
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517A.



A Blackburn Kangaroo, with Mr. Kenworthy as pilot, at Amsterdam.

The Netherlands Court and Government also showed great interest. The Queen, the Prince Consort, and the Queen-Mother visited the show, and the Services were very much in evidence. Mr. Kenworthy had the honour of giving the Secretary of State for War his very first flight—incidentally, the only one he had time to take.

The Blackburn record at Amsterdam has been most satisfactory. Three "Kangaroos" have been out there, one for six weeks, one for a fortnight, and the third for a short week, piloted respectively by Messrs. Kenworthy, Woolley and Veale. They have had no accident either to machine or passengers, and have carried 1,400 paying passengers (roughly, 40 per cent. of the total paying passengers taken up by the 32 machines flying there), as well as numerous complimentary passengers. On their record day they carried 90, of whom 75 were revenue passengers. This was a record for the whole show. Everyone liked the machine, and many had repetition flights.

While the passengers were in the air they showed absolute lack of nervousness; they stood up, tried to talk up wind, and hung overboard to a ghastly extent. On one occasion Mr. Veale found the whole crowd standing up, so he locked the controls, turned round, and had a good chat. Perhaps his testimony to the machine is most valuable, because until the day before he flew to Holland, he had never been in a "Kangeroo," and was by conviction a small-machine man. That day Mr. Veale took a short run round, and the next day put off from Brough with his wife, luggage, mechanics, etc.

In all, Mr. Kenworthy covered 8,000 miles. He would have done a good deal more had not the aerodrome sand necessitated a five days' stop owing to the covering of the airscrews suffering from attrition. He regarded his run home as one of the best performances—three hours from the E.L.T.A. to Lympne and two hours from Hounslow to Brough, with a consumption of only twenty-five gallons per hour for the two "Eagle" Rolls-Royce engines.

Financially, the Blackburn Co. are very pleased with the expedition. The receipts and expenses on the first two machines showed such a favourable balance that they judged it worth while for the third machine to go out and back for a bare week's work—and it was worth while, even after allowing an ample overhead figure. Mr. Kenworthy thinks that the Blackburn Co. were the only people to make an actual profit all in; but, of course, this is only an estimate.

A German Effort.

The following advertisement from the Dutch Press may be of interest to the British aerial transport trade :—

> Leaving on October 2nd, the large
> Air Limousine,
> in which are places for five passengers, from the E.L.T.A. ground to Berlin. Departure 9 a.m. Price, 3,780 marks per person.
> Apply to Hôtel des Pays Bas, Amsterdam (Deutsche Luftreederei), (German Air Service).

ITALY.

The Italian correspondent of The Aeroplane writes :—

The Rome-Tokio Flight.

It is announced that Lieut.-Col. Ernest La Polla, one of the best-known pre-war pilots, and an intimate friend of the poet-soldier, Gabriel D'Annunzio, has consented to take command of the Rome-Tokio regularity flight in the place of the latter, who has been quoted as saying that it was merely as a blind that he accepted the Government's invitation to run the affair.—T. S. H.

The Pensuti Triplane.

I learn that the Pensuti triplane is to be built by Ernesto Breda and Co., at Milan, who built the small Ardea biplane.

A Waterplane Meeting.

The National Aerial League's fête at Como has been suspended by the Government. It is hoped that the proposed waterplane meeting may be held which is arranged for the end of September or early October on Lake Como. Signor Janello is to fly at the meeting, and the Powers that govern are to assist.

The Aerial Mail Services.

The "Corriere della Sera" announces that the newspaper aero-mail from Milan to Rome and the inland Sardinian mail are no longer working, though the suspension is, it is hoped, only temporary.

The following further details of the Vickers "Vimy" crash have been received from the Italian correspondent of The Aeroplane :—

On Sept 28th a Vickers "Vimy" No. 1,622, en route for Cairo, without any warning landed at the Vigna Valle (dirigible school of aerial gunnery camp), near Rome. Capt. C. H. Darley was the O.C., with four people on board.

Later on, with three of these four up, the machine left for Rome (Centocello) and flew against a tree, which it transported 100 metres, till fire broke out and the machine crashed. The C.O., bravely sticking to his post, became a victim of the fire, the two others threw themselves out of the machine, Lieut. Curtis being badly hurt, and Airman Holton undamaged. The former is at the Ospedale Civico at Bracciano, Rome.—T. S. H.

SWEDEN.

The Danish correspondent of The Aeroplane writes :—

Under the name of P.O. Flying Company and under the management of the Swedish Lieut. Per Oscar Hirrström, four British flying officers have, during the past summer, carried out a successful passenger joy-ride and stunt exhibition in Sweden with two 110-h.p. Le Rhône Avros and one De Havilland. They are Major H. Rally Johnston, Capt. K. Saunders, and Lieuts. Philips and May. They have inspired so much confidence since their start in July last that more aeroplanes are to be acquired, and a large flying-school is to be opened at Stockholm, according to the "Swedish Motor News." So far the following provincial Swedish cities have been visited: Upsala University town twice, Västerås, Arboya, Köping, Orebro, Eskilstuna, Norrköping, Göteborg, Gäfle, and Falun. —E. H.

SPAIN.

The International Air Convention.

Spain is the first country to put this into operation, and the authorities have arrested several French pilots this week because the papers for their machines were not in order.

SWITZERLAND.

The Aerial Post.

The Swiss aerial post which should have ended on Oct. 1st is to be continued until the end of October. It is thought that this service will be undertaken by a private company.

An Altitude Record.

The Swiss aviator, Prongin, accompanied by M. Haefeli, broke the Swiss altitude record by rising to a height of 7,250 metres on a Haefeli biplane.

Mr. Bradley, who arrived in Lausanne recently to take over the technical direction of the Avro school at that place, has been forbidden to fly by the Swiss Government. No reasons are yet known for this order.

An Aerial Service.

The Italian correspondent of The Aeroplane writes :—

The municipal authorities of Locorno, close to the Italian-Swiss frontier, are considering, in conjunction with a Swiss aerial transport company, the organisation of an aerodrome on the Maggia delta, close to the town. The running of a "Zeppelin" service between Germany and Italy is said to be the reason thereof. Possibly a Zeppelin-built aeroplane service is meant.

Continued mention of some such service is rife, and a descent on the Lombard trading centres is only too likely, considering the Hun interests in the district.—T. S. H.

UNITED STATES OF AMERICA.

The New Use for Flying Boats.

An aeromarine flying-boat circled above the S.S. "Leviathan" at 4 a.m. on Sept. 8th, when she was some distance

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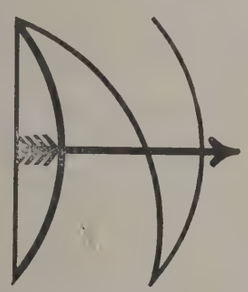
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ROACH ROAD WORKS, OLD FORD, LONDON, E.

cut at sea from New York, and dropped a mail pouch on the deck. General John J. Pershing was on board the liner and received his important letters and the morning news several hours before reaching the port on his journey from Europe.

A Big Passenger-carrying Machine.

The first Lawson Air Liner, which is said to be the first multi-motored passenger-carrying aeroplane with an inclosed cabin to attempt a cross-country flight in the United States, has recently made a journey from Milwaukee to New York.

The machine started from Milwaukee for Chicago in August. It continued to Chicago and Cleveland. At Toledo the machine was delayed by slight damage caused by it grazing the branches of a tree. It then flew to Buffalo and Syracuse, where a bad landing was made, necessitating a 10 days' stop.

The aeroplane left Syracuse on Sept. 13th with Mr. Alfred W. Lawson as pilot, with an assistant pilot, three mechanics and four passengers. According to the "Aerial Age" of America it reached Mineola, 312 miles away, in 2 hrs. 47 min. The speed averaged was, therefore, 112 m.p.h. The passengers played bridge in wicker chairs.

On Sept. 15th 12 passengers, mostly newspaper reporters, were flown from Mineola to New York.

Hunting with Aeroplanes.

Enthusiastic sportsmen in the Adirondacks think that aeroplanes will soon be used in connection with hunting in the mountains there. It is said to be probable that one of the aeroplanes which has been conveying passengers on sight-seeing trips near Lake Placid will be tested shortly with a view to determining its use in locating the haunts and feeding grounds of deer.

Aerial Police Protection.

When the Boston Police Force threatened to strike recently, the manager of the Curtiss Aeroplane Company, of New England, offered the services of his pilots and aeroplanes for aerial police protection. The "Aerial Age" states that it is probable that Boston will soon establish an aerial police department.

Aerial Taxies.

A seaplane made the first metropolitan aerial taxi trip on Sept. 14th. The passengers were a dancer, a reporter, and a dog mascot of the New York Sight-seeing Aero Taxi Company. The fare charged is a dollar a minute, not including war-tax. This strange "taxi" landed its "fares" at the same point from which it picked them up.

Aeroplanes for Business.

Mr. S. E. J. Cox, of Dallas City, Texas, has purchased a Curtiss J.N. biplane. He is an oil-promoter, and has bought the machine for travelling to his various oil wells and refineries, and for advertising purposes. Mr. Cox has purchased also a Curtiss "Oriole" for his own use.

Two Curtiss Agencies.

Mr. William Blair, the manager of the Curtiss agency at Detroit, Mich., is making a flight from Chicago to Detroit in a Curtiss "Sea Gull." He will visit several customers and prospective customers on his journey.

A new company has been formed in San Francisco, named the Earl P. Cooper Co., to act as distributors for Curtiss aeroplanes in the northern half of California and in Nevada. The "Aerial Age" states that a flying school and a number of aerial transportation lines will be operated by the company. Curtiss "Orioles" and "Sea Gulls" will be used. Earl Cooper is a well-known automobile racing driver.

The New York-Toronto Race.

The winner of the reliability test in the International Air Derby has been declared. He is Major R. W. Schroeder, and he flew a Vought V.E.7 fitted with an 150-h.p. Hispano-Suiza engine. In the actual speed contest, noted in last week's issue of The Aeroplane, he was ninth.

In the reliability contest the second, third and fourth places were obtained by Curtiss J.N.-4H machines, and the fifth by a J.N.-4D. The Liberty-engined D.H.4 machines were mostly placed about the middle of the reliability table. Lieut. B. W. Maynard, the winner of the speed contest, was placed ninth, as his machine, a D.H.4 fitted with a 400-h.p. Liberty engine, was very lightly loaded.

The system by which the reliability handicaps were worked out is as follows: The machine's possible useful load was multiplied by its still air speed and divided by its horse-power. This gave an index number showing its ideal performance. By multiplying its actual useful load by its actual speed in the race and dividing that by its horse-power an index number was produced showing its actual performance. The ratio of the index number of the actual performance to that of the ideal performance was then brought to a percentage and the position of the machine in the reliability contest was determined.

The cash prizes for reliability, including the 10,000 dol. given by a hotel syndicate, are to be divided among eight of the nine civilian pilots who completed the course. Even Lt.-Col. W. C. Barker, V.C., D.S.O. (late R.A.F.), who, flying a Fokker, was last but three in the speed contest and last of all in the reliability contest, will receive his share.

Enthusiasm in the States.

It is stated that the Curtiss Eastern Airplane Company of the United States of America, although in existence but a few months, has sold over 75 Curtiss aeroplanes, the majority being Army training machines.

No sooner does a batch of 15 or 20 machines arrive at this company's aerodrome at Pine Valley, than the whole number is sold. It is stated to be impossible even to get a "joy-ride." Other companies appear to find things much the same, so that the future of aviation in the United States seems assured.

MARTINSYDE ACTIVITY.

Martinsyde, Ltd., are embarking upon a fairly extensive programme, ranging all the way from passenger-carrying aeroplanes to bicycles and farm wagons. One hears that drawings for the two latter future products of the firm are being made out, and that special machinery for their manufacture is being installed in various parts of the works.

Among the types of aeroplanes which Martinsyde, Ltd., are constructing and contemplating constructing are some interesting machines. One of these is the machine which they will enter for the Australia flight. This is a dual control two-seater biplane.

The pilot sits in rear of the observer or passenger. The general appearance of this machine is similar to that of the Martinsyde Transatlantic machine. It is fitted with a Rolls-Royce "Falcon" engine of 285 h.p.

Another machine being erected is a three-seater dual controlled biplane, which a film company intend to use for taking pictures from the air. Again, the pilot's cockpit is behind that of the passengers, in which there is room for two persons sitting side by side. The lines of this machine are similar to those of the Australian flight biplane.

A land undercarriage or floats may be fitted. The engine is presumably either a "Falcon" Rolls-Royce or a 300-h.p. Hispano-Suiza.

A three- or four-seater "limousine" biplane is also under construction, intended to carry either passengers and luggage or freight. The pilot sits above the petrol tank, immediately behind the engine. Behind him there are situated a small space for luggage, and then two seats for passengers behind each other, each seat accommodating two persons. The seats may be removed if desired and the space utilised for freight.

Rumour has it that a single-seater biplane will shortly be produced by this firm, somewhat similar to their F.4 machine, but with a greatly increased performance.

It is probable that Martinsyde, Ltd., will devote no small portion of their energies to participation in competition flying.—J. F. S.

A CHANGE OF ADDRESS.

The Palmer Tyre, Ltd., wish it to be known that their Leeds depot has been moved to large premises at York Road, North Street Corner, Leeds. Owing to labour troubles the new depot is still in an unfinished state, but Mr. Pepper, the manager, will give prompt attention to all requirements of the Aircraft Industry and the Motor Trade.

NEW COMPANIES.

Ogilvie and Partners, Ltd.—Private company. Registered Oct. 2nd. Capital, £10,000 in £1 shares. To take over the business of a consulting aeronautical engineer carried on by A. Ogilvie, C.B.E., F.R.A.E.S., at Gwydir Chambers, 104, High Holborn, London, as "Ogilvie and Partners." The subscribers (each with one share) are: A. Ogilvie, 3, Hans Crescent, S.W.1, consulting aeronautical engineer; F. P. Walsh, 23, Cheyne Court, S.W.3, civil engineer. A. Ogilvie is permanent governing director and chairman. Registered office: Gwydir Chambers, 104, High Holborn, W.C.1.

MISAPPREHENSION.

While in the vicinity of Brooklands the other day one heard a small boy remark, as a Vickers "Vimy" machine began to glide towards the aerodrome: "I say, that aeroplane's shut off its steam!" Which reminds one of certain people who, when they saw the exhaust trailing behind an aeroplane, said: "That must be a fighting aeroplane; look at the smoke from the machine-gun." Doubtless people are now better educated in aeronautical affairs, having actually flown, an experience which seems to make most people curious as regards the function of the external and visible components of an aeroplane.—J. F. S.

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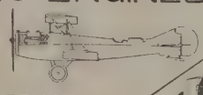
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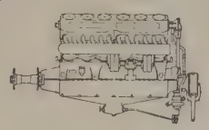
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EXTRACTS FROM "THE LONDON GAZETTE."

GREAT BRITAIN.

MILITARY.

War Office, Sept. 25th.

Regular Forces.—Establishments.—R.F.C.—Mil. Wing.—Flying Officer.—Lt. H. C. Leaver, 4th E. Lan. R., T.F., from a Flying Officer (Observer), March 9th, 1918, with seny. from Dec. 6th, 1916.

Eqpt. Officers, 2nd Class.—Capt. B. Attenborough, 2nd London R., T.F., from the 3rd Class, March 31st, 1918.

3rd Class.—Capt. B. Attenborough, 2nd Lond. R., T.F., and to be secd. Feb. 11th, 1918.

Infantry.—Garrison Batt.—Yorks L.I.—1st Res. Garr Bn.—Temp. Sec. Lt. G. A. Lynch resigns his commn. on appointment to R.A.F., Aug. 8th, 1918.

AIR FORCE.

Air Ministry, Sept. 26th.

R.A.F.—Permanent Commissions.—The following are granted Permanet Commissions in the ranks stated with effect from Aug. 1st:—

Group Capt.—E. M. Maitland, C.M.G., D.S.O., A.F.C.

Wing Commrs.—J. N. Fletcher, A.F.C.; T. R. Cave-Brown-Cave, C.B.E.; W. C. Hicks, A.F.C.; A.D. Cunningham, O.B.E.; J. W. O. Dalgleish, O.B.E.

Sqdn. Leaders.—E. H. Sparling, D. Harries, A.F.C.

Flight Lts.—G. G. H. Cooke, D.S.C., A.F.C.; R. A. Cochrane, A.F.C.; R. S. Booth, A.F.C.; G. M. Thomas, D.F.C.; J. B. Cole Hamilton, T. P. Y. Moore, P. E. M. Maitland, A.F.C.; P. G. N. Ommanney, W. Underhill, D.S.C.; A. H. Wann, T. W. Elmhirst, A.F.C.; I. C. Little, A.F.C.; J. A. Barron, H. L. Rutty, F. L. C. Butcher, H. S. Scroggs, E. F. Turner, A.F.C.; R. S. Sugden, A.F.C.; R. S. Montagu, D.S.C.; H. V. Drew, A.F.C.; R. V. Goddard, J. H Hagon, A. W. Mylne, C. W. C. Browne.

Flying Officer.—S. B. Harris, A.F.C.

The following temp. appointments are made at the Air Ministry:—

Staff. Offr., 3rd Class (Air).—Flight Lt. F. N. Halsted, D.S.C., Sept. 15th (substituted for notification in "Gazette," Sept. 23rd). (P.) Lt. F. W. Memory, Nov. 11th, 1918, and to be actg. Capt. whilst so employed (substituted for notification in "Gazette," Nov. 26th, 1918).

The following temp. appointments are made:—Staff Offrs., 2nd Class.—(P.).—Capt. R. B. Waite, M.B.E., May 1st; (T.) Squadron Ldr. R. K. Pillers, O.B.E., from S.O.1, Sept. 15th.

Staff Offr., 2nd Class (2nd Grade).—Lt. (actg Capt.) A. D. Carey, June 10th, and to be actg. Maj. while so empld.

The rank of Capt. G. S. Lardner is as now described, and not Lt., as stated in "Gazette" of Sept. 9th.

Flying Branch.—Maj. G. P. Wallace, D.S.O., to be actg. Lt.-Col. while employed as Lt.-Col (A.) from Feb. 27th to April 30th.

Maj. N. M. Martin to be Maj. (A.), from (S.O.), from Nov. 20th, 1918, to Dec. 29th, 1918.

Squad. Ldrs (S.O.) to be Squad. Ldrs (A.):—A. G. R. Garrod, M.C., D.F.C., Sept. 6th; P. C. Maltby, D.S.O., A.F.C., Sept. 15th.

Squad. Ldr. R. M. Field to be Squad. Ldr. (S.), from S.O.), Sept. 15th.

Capt. L. D. McKean is graded for purposes of pay and allowances as Maj. while employed as Maj. (A.) from May 1st to June 4th.

Capt. I. C. Little, A.F.C., is graded for purposes of pay and allowances as Maj. while employed as Maj. (Airship), May 1st.

Capt. G. E. Livock is graded for purposes of pay and allowances as Maj. while employed as Maj. (S.) from May 1st to June 29th.

Flight Lts. to be Flight Lts. from (S.O.):—C. H. Keith (A.), F. W. Walker, D.S.C., A.F.C. (A. and S.), Sept. 15th; P. J. Sumner (K.B.), Sept. 10th.

Capt. E. M. Pizey is graded for purposes of pay and allowances as Capt. while empld. as Capt. (A.), Nov. 25th, 1918.

Lts. to be actg. Capts. while empld. as Capts. (A.):—(Hon. Capt.) A. Storey, D.F.C., from Nov. 21st, 1918, to April 30th; C. E. Maitland, D.F.C., July 14th.

Lt. O. R. Gayford, D.F.C., to be actg. Capt. while employed as Capt. (O.), May 1st (substituted for notification in "Gazette" of July 22nd).

Lt. (Hon. Capt.) A. Storey, D.F.C., is graded for purposes of pay and allowances as Capt. whilst employed as Capt. (A.), from May 1st to June 15th.

Lt. E. M. Henderson relinquishes the grading for pay and allowances as Capt. on ceasing to be empld. as Capt (A.), July 25th.

Flying Off. F. C. Deane to be Flying Off. (O.), from (Ad.), Aug. 30th.

Flying Off. A. F. Lang to be Flying Off. (O.), to (T.), Aug. 1st.

Sec. Lts. to be Lts.:—Hon. Lt. W. Bagnall, April 2nd, 1918; G. B. Emery, April 25th, 1918; F. Wood, Oct. 26th, 1918; W. R. N. Cheetham, Jan. 5th; L. Walsh, Jan. 16th; F. W. Dunnett, Feb. 16th; E. P. C. Godsil, April 2nd; O. V. Lee, R. D. Rogers, April 25th; A. N. Abbott, May 8th; J. G. Walton, June 6th; V. G. Record, June 13th; L. T. Wilson, July 5th; W. Urwin, July 10th.

Sec. Lt. S. W. Tinham (late Gen. List, R.F.C., on prob.), is confirmed in rank as Sec. Lt. (A.), July 29th, 1918.

177058 Cdt. J. H. R. Hopkins is granted a temp. commn. as Sec. Lt. (O.), Nov. 10th, 1918.

The following relinquish their commns. on ceasing to be empld.:—Lt. J. M. M. Hume (Lt., Black Watch), Feb. 24th; Lt. R. Whyte, May 20th; Lt. A. H. A. Alban, D.F.C. (Lt., R.A.), Lt. A. M. Diamant (Lt., R.A.), Aug. 26th; Lt. (Hon. Capt.) E. J. Loug (Capt., Gordon Highrs.), Aug. 27th; Sec. Lt. (Hon. Lt.) P. N. Melitus (Lt., R. War. R.), Aug. 30th; Sec. Lt. (Hon. Lt.) N. MacLeod (Lt., Seaforth Highrs.), Sept. 1st; Sec. Lt. (Hon. Lt.) D. Neil (Lt. Can. Forestry Corps), Sept 31d; Sec. Lt. T. W. Woodrow (Lt., R.A.), Sept. 6th; Lt. W. E. Davis, M.C. (Lt., Gloucester R.), Sept 11th; Lt. W. D. Robertson, (Lt., R.E.), Sept. 18th.

The following are transferred to the unemployed list:—Sec. Lt. W. G. Bamber, Sec. Lt. R. E. Bennett, Sec. Lt. H. E. Collins, Sec. Lt. F. B. Common, Sec. Lt. J. W. Crawford, Sec. Lt. L. B. Dixon, Sec. Lt. W. J. Eastman, Sec. Lt. L. P. Flynn, Sec Lt. E. Laver, Sec. Lt. J. H. Mahoney, Sec. Lt. I. A. Robertson, Feb. 1st; Lt. G. F. Anderson, Mar. 1st; Lt. L. M. Archibald, April 10th; Sec. Lt. C. C. H. Grosse, April 13th; Sec. Lt. (Hon. Lt.) R. W. Harvey, April 17th.

Lt. A. J. Amor (R.G.A.), May 2nd (substituted for the "Gazette" of May 9th, wherein this officer was described as Lt. J. A. Amor); Lt. A. F. White, May 14th; Lt. F. L. Smith, June 12th; Sec. Lt. H. S. Moore, July 11th; Sec. Lt. J. W Bishop, Sec. Lt E. H Brown, July 12th; Sec. Lt. A. E. Stephenson (substituted for the notification in the "Gazette" of July 29th); Sec. Lt. F. C. Adams, July 17th; Pilot Offr. R. J. Brotherton, A.F.C., Aug. 1st; Pilot Offr. (Hon. Flying Offr.) A. R. Cowan, Aug. 19th; Flying Offr. A. Perren, Aug. 21st (substituted for the notification in the "Gazette" of May 13th; Pilot Offr. J. H. McLellan, Aug. 22nd; Flying Offr. N. R. Anderson, Pilot Offr. R. F. Angus, Pilot Offr. R. Stowell, Aug 29th; Flying Offr. L. S. Latham, Sept. 1st; Flying Offr. G. H. Vasse, Sept. 3rd; Flying Offr. W. E. Hazelton, Flight Lt. H. A. Page, Sept. 7th; Pilot Offr. G. F. Anderson, Pilot Offr. H. Bell, Flying Offr. A. R. Dalby, Pilot Offr. L. P. B. Faddy, Sept. 8th; Flying Offr. W. Allen, Pilot Offr. J. H. Grierson, Flying Offr. R. R. Heaton, Flying Offr. D. S. St. A. McCulloch, Flying Offr. W. D. Renshaw, Pilot Offr. L. F. Shipp, Pilot Offr. E. H. Van der Riet, Sept. 9th; Pilot Offr. R. H. Coath, Flying Offr. E. A. Seymour, Pilot Offr. L. G. Warren, Pilot Offr. F. E. West, Flying Offr. A. S. Wilcockson, Sept. 10th; Pilot Offr. F. Allsop, Pilot Offr. W. R. Bannister, Flying Offr. J. G. Gore, Flying Offr. W. M. Hirst, Flying Offr. L. F. Hodges, Pilot Offr. G. H. Knight, Flying Offr. A. C. Campbell-Orde, Pilot Offr. S. Poole, Flying Offr. G. B. Powell, Pilot Offr. L. E. Tremayne, Sept. 11th; Pilot Offr. (Hon. Flying Offr.) H. E. Ford, M.C., Pilot Offr. F. W. Morgan, Pilot Offr. J. F Newton, Flying Offr. R. A. Spencer, Flying Offr. R. C. Stokes, Flying Offr. J. G. Sutton, Pilot Offr. G. Wilkie, Flying Offr. T. H. Wood, Sept. 12th; Pilot Offr. J. R. Jones, Pilot Offr. P. F. T. Luckham, Pilot Offr. H. W. Ogg, Pilot Offr. V. J. W. G. Shaw, Flying Offr. J. A. Shearer, D.F.C., Flying Offr. D. L. Walker, Sept. 13th; Pilot Offr. R. G. Adams, Flying Offr. H. W. Chattaway, Sept. 17th; Flight Lt. H. A. Laycock, D.F.C., Sept. 20th; Flying Offr. F. I. Fleming, Pilot Offr. H. B. L. Wilkinson, Sept. 23rd; Flying Offr. O. H. Curry, Sept. 24th; Flight Lt. B. A. Taylor, M.B.E., Sept. 25th.

Capt. A. H. Dalton (Lt., Hussars) resigns his commn., Sept 27th.

Lts. relinquish their commns. on account of ill-health contracted on active service, and are permitted to retain their rank:—A. Hartley, May 6th (substituted for notification in "Gazette," May 16th); H. H. House, Sept. 9th.

Lt. S. A. Harper, M.C. (Lt., Cheshire R.), resigns his commn., Sept. 27th.

Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—W. P. Wemple, July 12th; T. V. J. Nicholas, July 18th (substituted for notification in "Gazette," July 29th, wherein this officer was described as Sec. Lt. T. U. J. Nicholas).

Capt. K. G. MacDonald to take rank and prec. as if his appointment as Capt. bore date July 1st, 1918

The initials of Sec. Lt. E. W. Cowdery are as now described, and not "E. I.," as stated in "Gazette," July 1st.

The initials of Lt. N. P. Edwards are as now described, and not "J. P.," as stated in "Gazette," Aug. 22nd.

The Christian names of Sec. Lt. Gerald Marcus Jackson Morton are as now described, and not as stated in "Gazette," Aug. 30th, 1918.

The notifications in "Gazette," March 28th, concerning Sec. Lt. E. C. Heyes and Lt. C. A. Jordan are cancelled.

The notification in "Gazette," June 20th, concerning Lt. J. W. S. Mellish is cancelled.

The notification in "Gazette," June 11th, concerning Sec. Lt. T. C. Stranger is cancelled. The notification in "Gazette," Aug. 12th, stands.

The notifications in "Gazette," July 25th, concerning Sec. Lt. T. K. Ludgate and Sec. Lt. W. P. Wemple are cancelled.

Administrative Branch.—Wing Commander R. E. M. Russell, C.B.E., D.S.O., to be Wing Comdr., from (S.O.), Aug. 30th

Sqdn. Leader A. J. Currie to be Sqdn. Leader, from (S.O.), Sept. 3rd.

Capt. A. W. Crombie to be Capt., from (T.), July 19th (substituted for notification in "Gazette," Aug. 1st).

Flt. Lts. to be Flt. Lts., from (S.O.):—E. O'D. Crean, Aug. 29th; F. F. Lloyd, Sept. 1st; A. M. Waistell, Sept. 14th; H. G. Hutchinson, Sept. 15th.

Flt. Lt. J. W. Havers to be Flt. Lt., from (A'ship), Sept. 9th.

Lt. G. Roberts to be actg. Capt. whilst empld. as Capt., June 3rd.

Lts. are graded for purposes of pay and allowances as Capts. whilst empld. as Capts.:—P. E. D. Addis, W. Halliwell, F. J. Logan, T. Mack, May 1st; V. G. Davis, to July 14th); (Hon. Capt.) J. R. Gould, May 16th.

Flg. Offr. (actg. Flt. Lt.) J. C. Cantrill relinquishes the actg rank of Flt. Lt. on ceasing to be empld. as Flt. Lt., Sept. 3rd.

Flg. Offr. F. Pratt relinquishes the grading for pay and allowances as S.O.3 on ceasing to be specially empld., Sept. 2nd.

Flg. Offrs. (A.) to be Flg. Offrs.:—O. D. Freeman, Aug. 1st; G. N. Prout, Aug. 21st.

Lt. I. MacL. Moffats to be Lt., from (O.), Jan. 20th (substituted for notification in "Gazette," March 4th, wherein this officer's rank was shown as Sec. Lt.).

Flg. Offrs. to be Flg. Offrs., from (S.O.):—J. Duncan, Sept. 1st; W. F. Duff, Sept. 4th; G. D. Ashby, P. A. Simmonds, Sept. 15th.

Flg. Offr. (Hon. F./Lt.) E. J. Langridge, M.B.E., to be Flg. Offr., from (T.), Sept. 1st.

Lts. and Qmrs., Gen. List, are granted temp. commns as Lts.:—J. Hicks, G. Roberts, J. Sims, May 27th, 1918.

Sec. Lts. to be actg. Lts. whilst empld. as Lts.:—W. Fell, Oct. 1st, 1918, to April 30th (substituted for notification in "Gazette," Nov. 26th); J. Mellor, Nov. 15th, 1918 to April 30th.

Sec. Lts. to be Lts.:—F. H. M. Francis-Hawkins, Dec. 15th, 1918; G. E. Shipp, April 11th.

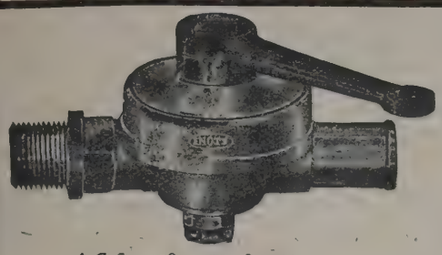
Sec. Lt. J. H. Grey to be Sec. Lt., from (S.O.), Jan. 3rd (substituted for notification in "Gazette," March 25th).

The following relinquish their commns. on ceasing to be empd.:—Lt. J. B. Edgar (Capt., R. Sco. Fus.), Oct. 11th, 1918; Lt. C. B. Millett, Feb. 28th; Lt. C. P. Sisley (Lt., R.G.A.), June 17th; Lt. J. D. G. MacRae (Lt., Sea. Highrs.), June 30th; Capt. S. C. Reuny (Capt., K.O.S.B.), July 1st; Sec. Lt. J. G. Berry, Aug. 24th; Capt. G. W. Bright (Lt., R.N.R.), Aug. 26th; Capt. P. F. J. Kent (Lt., Dgn. Gds.), Sept 6th.

The following are transfd. to unempld. list:—Lt. C. A. Jordan, Feb. 11th; Sec. Lt. E. C. Heyes, March 11th; Sec. Lt. T. K. Ludgate, April 27th; Sec. Lt. H. E. Barry, July 10th; Pilot Offr. C. Armstrong, Aug. 2nd; Pilot Offr. A. N. Burrow, Sept 8th; Pilot Offr. A. G. Adams, Flt. Lt. J. H. N. H. Burke, Sept. 10th; Flg. Offr. G. A. MacMillan, Sept. 12th; Pilot Offr. C. W. Braddy, Sept. 13th; Pilot Offr. (Hon Flg. Offr.) D. B. Martin, Sept. 14th; Pilot Offr. J. E. G. Rochemonte, Sept. 24th.

Capt. W. S. Cole, C.G.M., D.S.M., relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain his rank, Sept. 17th.

Lt. (Hon. Capt.) F. J. Smith relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain the rank of Capt., Sept. 9th



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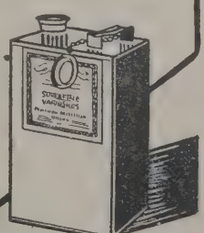
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Sec. Lt. W. K. Holmes relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Sept. 19th.

The notification in "Gazette" Feb. 28th concerning Lt. J. Handley is cancelled.

The notification in "Gazette" of April 4th concerning Lt. C. B. Milett is cancelled.

The notification in "Gazette," May 27th, concerning Lt. N. M. Hoskins is cancelled.

The notification in "Gazette," June 3rd, concerning Sec. Lt J. Macarthy is cancelled.

TECHNICAL BRANCH.—Maj. G. P. Grenfell, D.S.O, is graded for purposes of pay and allowances as Lt.-Col. while employed as Lt.-Col., Grade (A.), from May 1st to July 31st (substituted for notification in "Gazette," Sept. 9th).

Maj. T. H. Vitty to be Maj., Grade (A.), from Grade (B.), July 24th.

Capt. F. H. Songhurst, M.B.E., is graded for purposes of pay and allowances as Maj. while employed as Maj. Grade (A.), from May 1st to July 31st.

Lt. A. H. Hughes to be actg. Capt. while employed as Capt., Grade (A.), June 20th.

Lt. H. F. Wilkinson is graded for pay and allowances as Capt. while employed as Capt., Grade (A.), May 1st.

Lt. (Hon. Capt.) C. Chapman, D.S.C., is graded for purposes of pay and allowances as Capt. while employed as Capt., Grade (A.), from (O.), from June 4th to July 31st.

Flight Lt. O. S. Stiles to be Flight Lt. Grade (B.), from K.B., Sept. 15th.

Sec. Lts. to be actg. Capts. while employed as Capts., Grade (B.) :—H. C. Hull, from Jan. 12th to April 30th; (Hon. Lt.) W. A. Winter, May 1st.

Flying Offrs. to be Flying Offrs., Grade (A.) :—H. Norrington, from (S.O.), Sept. 2nd, H. W. Armstrong, from (K.B.), Sept. 9th.

Sec. Lt. (actg. Lt.) J. A. Joyce to be actg. Lt. while employed as Lt., Grade (A.), from Grade (B.), from Nov. 8th, 1918, to April 30th.

Flying Offr. J. M. McEntegart to be Flying Offr., Grade (B.), from (S.O.), Sept. 15th.

The following relinquish their commns. on ceasing to be employed :—Capt. G. H. J. Mercer (Lt. D. of Corn. L.I.), Sept. 1st; Col. the Hon. A. Stopford, C.M.G. (Capt., R.N.), Sept. 13th.

The following are transferred to unempld. list :—Sec. Lt V. Sands, March 11th; Lt. N. Haig, May 28th; Flg. Offr. E. W. Dormer, Sept. 1st; Flt. Lt. R. G. G. Maund, Sept. 8th; Flt Lt. A. Clayton, Flt. Offr W. T. Curtis, Flg. Offr. B. Hesketh, Flg. Offr. J. Morris, Flg. Offr. (Hon. Flt. Lt.) R. W. Morison, Sept. 9th; Flg. Offr. A. Charig, Sept. 10th; Pilot Offr. M. J. Curtis, Pilot Offr. E. J. Totoonchie, Wing Cmdr. J. L. Travers, Sept. 11th; Flg. Offr. A. S. A Herne, Flg. Offr. K. S. Hughes, Sept. 12th; Pilot Offr. W. S. Jackson, Sept. 13th; Pilot Offr. W. Littlemore, Sept. 17th.

Lt. A. L. C. Fuller (Lt., Dgn. Gds.) resigns his commn., Sept. 22nd.

Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank :—T. A. Russell, Sept. 6th; G Spurgen (contracted on active service), Sept. 10th.

The surname of Capt. G. L. Godden is as now described, and not "Gooden," as stated in "Gazette" of Aug. 19th.

MEDICAL BRANCH.—Capt. T. E. Mulvany relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, Aug. 13th (substituted for notification in "Gazette" of Sept. 2nd).

CHAPLAINS BRANCH.—The Rev. A. J. N. Saunders is transferred to unempld. list, May 27th.

MEMORANDA.—Sec. Lt. (Hon. Capt.) F. C. Marsh is granted the hon. rank of Maj., July 4th.

The following Overseas Cadets are granted temp. commns. as Sec. Lts., with effect from Feb. 15th, and relinquish such commns., with permission to retain the rank, from the day following termination of standardised voyage in the case of those claiming immediate repatriation, and from the day following demobilisation in England in all other cases :—316105 C. D. Hooper, 184852 H. S. Morris (since killed).

Pilot Offr. (Hon. Flg. Offr.) W. E. Cowie is transferred to unempld. list, from (S.O.), Sept. 3rd.

The surname of G. H. Piercy is as now described, and not "Piercey," as stated in "Gazette" of June 24th.

PERSONAL NOTICES.

MILITARY.

ENGAGEMENTS.

ATTWATER — WHEATLEY.—The engagement is announced between Lieut. Harry Fletcher Attwater, Northumberland Fusiliers (att. R.A.F.), eldest son of the late Rev. H. S. Attwater and Mrs. Attwater, of Lytham, and Winsome Wingate Wheatley, elder daughter of Lieut. Colonel J. P. D. Wheatley, R.A.F., and Mrs. Wheatley, Carlisle.

BROOKE—IRWIN.—A marriage has been arranged between Captain Arthur Brooke, 10th Hussars, attd. R.A.F., younger son of the late Sir Douglas Brooke, Bart., and Lady Brooke, of Colebrooke, Brookeborough, County Fermanagh, and Lilian Maud (Lola), daughter of the late Mr. Charles B. Irwin, of Drumglass House, Dungannon, and Mrs. Orpen-Palmer, The Barracks, Birr.

SETH-SMITH—MCKERGOW.—The engagement is announced between Kenneth Arthur Seth-Smith, 5th Fusiliers, attached R.A.F., youngest son of Mr. and Mrs. Martin Seth-Smith, Colwood, Bolney, Sussex, and Doris Roberta, only daughter of Lieut.-Col. R. W. McKergow, O.B.E., M.F.H., and Mrs. McKergow, Twineham Grange, Sussex.

BIRTH.

DISNEY.—On Sept. 22nd, at Heronsgate, Rickmansworth, Herts, to Lieut.-Col. H. A. P Disney (late T.F. and R.A.F.) and Mrs. Disney—a son.

AIR FORCE.

MARRIAGE.

GIBSON—BORWICK.—On Sept. 10th, at Toronto, Canada, Lieut. Campbell Blakeley Gibson, late R.A.F., eldest son of Mr. Campbell B. Gibson, of Welland, Ontario, was married to Beatrice, youngest daughter of Mr. Charles Borwick, of 168, Blythwood Road, Toronto, Canada.

BIRTHS.

DURSTON.—On Sept. 29th, at "The Rays," Ryde, I.o.W., to Vera, wife of Capt. A. Durston, A.F.C., R.A.F.—a daughter.

McMINNIES.—On Oct. 2nd, at 18, Gloucester Road, Birkdale, Southport, the wife of Major W. G. McMinnies (late R.A.F.), of a son.

TAIT.—On Sept. 30th, at a nursing home, Southsea, to Sybil (née Sparkes), wife of Capt. W. M. Tait, A.F.C., R.A.F.—a son.

BALLOONS FOR CONSUMPTIVES.

The following, by the medical correspondent of "The Times," appeared on June 16th :—A short time ago it was suggested in "The Times" that the good effects of a high-altitude sanatorium might be obtained by means of captive balloons. The point was made by Surgeon Anderson in a recent work on the medical aspects of flying. In its last issue the "British Medical Journal" deals with the matter under the heading of "Aerial Spas," and makes reference to another article on the subject, by Captain Brown, R.A.M.C., appearing in the "National Review."

The idea, as we pointed out before, has a good deal of scientific backing. An atmosphere entirely free from germs is one of the medical attractions of the Swiss mountain resorts. This can be obtained at 5,000 ft. above any English town. Tubercular patients might thus be able to have sanatorium treatment of a new kind after the same manner.

That the subject is being considered in a serious spirit is proved by the fact that the "British Medical Journal" received an article recently from an officer of the Royal Army Medical Corps, in which he worked out in some detail the requirements for fitting out a captive airship as a tuberculosis sanatorium. There are, however, various questions of atmospheric pressure and density which have an important bearing on the subject. These questions are not yet fully understood, though careful researches have been carried out on mountain sickness and allied states by Barcroft and others. The field opened up is interesting, and may be valuable.

G. R.

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ON THE COMING OF AERIAL TRANSPORT.

A PROPHETIC EFFORT AND A MINOR REVELATION.

All who are in any way believers in the future of aviation can foresee the period when those who wish to travel with speed and in comfort will fly in preference to travelling by land or water. Also, as one has pointed out in these notes from time to time, it is fairly evident that regular transport and travel by air will come as a natural process of evolution from that species of flying which is commonly called "joy-riding": just as motor transport developed from the fearsome joys of the "get out and get under" days of early automobiles, and as the bicycle has become merely a geared-up auxiliary to the human boot after being a mechanical aid to sport developed from the neck-breaking fascinations of that extraordinary vehicle paradoxically known as the "ordinary" bicycle.

But the difficulty has been to discover the precise state of affairs which will give to flying that impulse which will, so to speak, cause the precipitation of joy-riding and crystallise it into firmly established aerial transport. One believes that at last one has discovered this impelling cause which has hitherto been so obscure.

So far, all our visions of future aerial transport has been based on pure faith. And it will be remembered that an inspired schoolboy once defined faith as "believing what you know isn't true." The eye of faith has seen the future of flying for centuries, but it has been the intermediate steps which have never seemed true.

The first true step was seen when Orville Wright held a flying-machine off the ground for a few yards in December, 1903. Since then we have advanced somewhat, but the top step has always remained invisible. Now at last it seems to be in sight, though we shall take some time to reach it. Therefore one proposes to venture on a little prophecy by way of showing the process by which we may arrive at our goal.

Prophecy and Practice.

But, first of all, one would like to express one's indebtedness to Mr. Cramp, Mr. Thomas, and the National Union of Railwaymen for this minor revelation which has enabled one to see clearly the Coming of Aerial Transport. But for their strike one might still be groping in the dark and seeing only with the eye of faith. To-day one sees more clearly in the light of the great Laws of Cause and Effect, and of Supply and Demand. Let us then consider the matter.

Primarily, when a man (as usual, embracing woman) travels from place to place he wishes to do so as quickly and as comfortably as possible. The railway train succeeded because it was quicker and smoother than the stage coach. The motor-car is superseding the railway train because for journeys up to 150 miles or so it is quicker and less tiring to get into a car at one's own door and alight at one's destination than it is to go to a railway station, wait for a train (or, alternatively, worry about catching a train and hustle into it at the last moment), sit in a stuffy carriage with unpleasant people, and finally scramble for a porter and a cab to take one to the end of the journey.

All who can afford to keep a car, and many who cannot but do, travel by road in these days in preference to travelling by train. Even those who neither can nor do keep a car travel by road when possible. Hence the rapidly growing popularity of that horrific mechanism the motor *char-à-bancs*.

Furthermore, the increasing reliability of internal-combustion engines, the success of mechanical transport during the war, and the tens of thousands of men and women who have been educated by the war in the driving, maintaining, repairing and organising of motor vehicles, are all combining to bring more and more motor vehicles onto the roads. The result is that already the roads are becoming uncomfortably crowded. And the increase has been particularly noticeable in the past two months.

The Revelation.

Some two or three months ago an R.A.F. officer lately returned to the motor trade remarked that during the previous week-end he had been out testing a new fast foreign car, and that never once was he able to find a clear stretch of road where he could let her out and try her best speed. Since then one has done a good deal of driving on a British car which is very far from fast, and even on that it has been difficult to find opportunities for "letting out" at any time of the day or week.

Even on the Coventry-London road one was constantly held up by traffic jambs. Coming up from Southampton one afternoon it was not possible even once to rush a hill, because on every hill there were always two, and sometimes three or four, motor vehicles proceeding in opposite directions and blocking the road.

Then came the strike. Every available motor vehicle was put on the road. The pace of the traffic in London itself became slower than the pace of a four-wheeled horse-cab.

One day, going down the Bath road in a hurry, one found that the traffic was thicker fifteen miles out from London than it was in Oxford Street before the war. At last one found what looked like a clear run of a few hundred yards and opened the throttle. Before the speed had risen much above the legal limit another batch of vehicles came round a corner, on went the brakes, and one cursed the traffic and the roads and the drivers, and especially the railways which ought to have been carrying all this stuff but were not. Then the quiet little woman sitting beside one said gently: "It's no good. We shall have to fly."

The Logical Development.

And when you come to think of it, that is the only logical development from the state of affairs which is going to arise in the very near future, though at first sight it seems like a revelation.

Every motor factory in this country is going full speed

ahead with vehicles of all kinds, from lorries to cycle-cars. There are tens of thousands of vehicles on order in America and France. And, despite the pious resolutions of those papers which vowed never to accept enemy advertisements, there will be thousands of German cars brought into Great Britain in the next year or so.

The result will be that if only half the motor vehicles which are on order to-day are put on the roads during the next twelve months the traffic on our main roads in the country will be as thick as our street traffic was before the war. And the average speed of that traffic will be as low as was the speed of pre-war street traffic.

Already the motor manufacturers seem to realise that the day of the fast touring car is gone, for wherever one goes in motor-car or body works one finds an increasing number of limousine or landaulet or coupé bodies being built. In fact, at one big shop—formerly devoted to aeroplane production—all the work was being done on closed cars; and at another, out of 18 bodies in course of construction, 16 were coupés. Which means that the motor trade is selling town carriages and not fast long-distance cars.

The Help of the Railways.

Over and above this it is well to remember that already the railways are practically State-controlled—which means that they are not controlled at all, and are rapidly deteriorating from being the most efficient railway system in the world, under the spur of mutual competition, into the usual slackness of a Government job run by amateur politicians. Ere long our railways will doubtless be State-owned, and so will sink to the level of our telephone system.

This will naturally be a very great help to aerial transport, for when it takes 6 or 7 hours to get to Manchester or Liverpool by rail by "State express service" consisting of 2 or 3 trains a day—instead of 4½ hours with 6 or 7 trains a day under business management—people who are bent on business will obviously prefer to fly the distance in an hour and a half. And if the Aircraft Industry is half awake to its opportunities it will start at once to prepare for regular passenger services.

A Misplaced Hope.

The objection has been raised by certain "doubting Thomases" that the Ministry of Transport under the versatile Sir Eric Geddes intends so to improve our roads that our road traffic will be able to circulate rapidly and safely. This hope of improvement displays a lack of knowledge of that elemental fact—with which Mr. Fairey made such useful play at Bournemouth—that the whole fabric of British Society is based on the Land Laws, and that it takes a separate Act of Parliament to remove any land boundary.

Even if power were given to the Ministry of Transport by a single Act to commandeer any land required for road improvements it would take fifty years to widen and straighten our main roads—leaving by-roads out of the question. And strikes by the Amalgamated Society of Road Makers would probably add another ten years to that. So the progress of this new Eric will be, like that of his more famous name-sake, little by little, in spite of all his bull-at-a-gate methods.

Also, the output of motor vehicles will certainly increase very much faster than the roads can be improved to carry them. This much can be seen in the United States to-day, where every road within twenty miles of a big city carries a constant procession of motor vehicles. And in America, be it remembered, the authorities have a much simpler job, for they have only to make new roads through open country, whereas in this country roads, villages, and towns will have to be altered all at once if the traffic is to move as it should.

Moreover, the present absurd speed-limit will have to be removed. And that means another Act of Parliament.

America's Beginning.

Those who take the trouble to read carefully the notes on Commercial Aeronautics in this paper will have grasped already the fact that aeroplanes are being sold in the United States to private individuals at a far greater rate than they are being sold here. And this in spite of the fact that a lot of the stuff which the good Americans are buying is of a kind that no self-respecting British aviator would fly.

Some of these machines are being bought simply for advertisement, but one hears that the majority are bought by people who really want to use them for personal transport, either because the existing roads in the States are so crowded that there is no fun in motoring, or because there are no roads at all. Which is merely another example of extremes meeting.

The Aerodrome Trouble.

Another objection which has been raised is that, even if the Aircraft Industry does pluck up courage and establish regular air lines, it is going to take at least as long to get from the centre of any city to the aerodrome as it does to get from the centre to the railway station, if not longer. That is true at the moment, but it seems possible that the aerial transport firms themselves may organise motor services to the aerodromes which will overcome this trouble. And in the case of London, long before the war it was accepted as a fact that the Golder's Green Tube was to be extended to the London Aerodrome at Hendon.

Other cities which are not blessed with Tubes will perhaps in time develop municipal aerodromes with a municipal tram or 'bus or car service to and fro. And the smaller towns and bigger villages will be able to establish aerodromes quite close to their borders.

The Simple Solution.

There is, however, a still simpler solution of the difficulty. That is not to bother about aerodromes at all—except as garages—and to equip all the important aerial transport lines with amphibious machines which can start from and alight on land or water equally easily.

There is no difficulty about building such machines for civilian work. The first Sopwith "Bat-Boat" was an amphibian, and won the prize offered by Mr. Mortimer Singer for an all-British machine of this kind. The offer of the prize is evidence of Mr. Singer's foresight, and the fact that nothing has been done since 1912 to develop the type until the conditions were issued recently for the Government's 1920 Competition is no credit to the British Aircraft Industry nor the Technical Department at the Air Ministry, nor to the Royal Aero Club, which is supposed to interest itself in the Sport of Aviation—a sport for which the amphibian is particularly suited.

Every great city has a ready-made aerodrome on the river which has made it a great city. And in the case of the few cities which have grown large owing to some special industrial cause—such as Birmingham and Manchester—it might well be easier to form a big lake than to build a land aerodrome. One forgets the exact size of the Edgbaston Reservoir at Birmingham, but one seems to remember that it is big enough to be used by seaplanes, and it is very much more accessible than the Castle Bromwich aerodrome.

Of our greatest cities, London, Liverpool, Hull, Portsmouth, Southampton, Plymouth, Falmouth, Bristol, Edinburgh, Glasgow, Dublin, Belfast, Cork, Londonderry, Dundee, and Aberdeen are all so situated that amphibious aeroplanes can penetrate almost to their business centres, whereas in every case their nearest land aerodromes are miles outside the city boundaries.

The Matter of Cost.

The greatest hindrance at the moment is the question of cost. Few can afford the prices charged to-day for aerial transport. Who could pay £15 15s. for a single fare to Paris, or £25 to Swansea (apart from the fact that most people would pay as much to avoid going to Swansea)? Prices must come down. And they will come down as soon as those who are responsible awake to the fact that supply creates demand just as much as demand creates supply.

Petrol must come down to a shilling a gallon instead of its present abnormal price. If not, we must use benzol or adapt our engines for alcohol. Already one knows that aero engines have done good work on benzol.

Then the cost of engines must come down. Already one great firm has taken the first step towards supplying thoroughly reliable engines at a price which brings the complete three-seater 100-mile-an-hour aeroplane inside £1,000.

And aero-engine makers who charge that sum, or double that sum, for an engine alone will do well to remember that their present engines have not to bear the heavy charges of tests and experiments, for all those costs have already been paid by the Government during the war. Therefore all they have to reckon in their costs is material and labour, plus overhead factory and selling charges.

Perhaps few of them have considered that a £2,000 engine means a charge of £200 per annum on the aeroplane simply as interest on capital invested and allowing nothing for depreciation. Allowing the engine 1,000 hours' flying in the year, this means 4s. per hour capital charge alone. The point is worth considering. Engine prices must come down, and the sooner they come down the greater will be the sales and the greater the ultimate profits to the makers.

The demand already exists for aerial transport. The Avro Company's work in carrying 30,000 passengers (which means at least 300,000 passenger-miles) without killing one of them shows that travelling by Avro is safer than travelling on an American railway. Similarly, the Airco's seven weeks of regular service to Paris with only one failure to start, and without a serious accident to any passenger, shows that aerial transport is safe. The Handley Page service to Brussels, though more recent, has confirmed so far the safety and regularity of flying.

With lowered fares the demand will be far greater, for confidence in the safety of aerial transport is now instilled into the public mind. So that it is certain that, given easy access to passenger-carrying aeroplanes and fares which are within the reach of those who are less than millionaires, there can be a boom in Civil Aerial Transport at once. The doubtful factor is whether British manufacturers of aeroplanes and engines and organisers of aerial transport have the capital—and the pluck—to lower their prices so as to make more money.

A Clear View at Last.

Thus one sees at last a clear view of how we shall come to use aeroplanes as ordinary transport vehicles. Instead of travelling from London to Liverpool in an uncomfortably packed and slow train, or crawling in a car through a mephitic crowd of automobiles, we shall take a taxi to the Temple Steps, board an amphibian, get off the river as may best suit the wind, and alight in an hour and a half, or at most two hours, on the Mersey, within five minutes of Dale Street.

In the journey to Dublin or Paris we shall have still greater advantages, for we shall eliminate all the discomfort and worry of the steamboat journey, and shall



The Hamburg-Amerika liner "Bodensee" over Berlin. The airship, which is 395 ft. long, has accommodation for 50 passengers.

alight on the Liffey or on the Seine for the first time after leaving the Thames. And because our machine is amphibious we shall fly straight overland, knowing that in case of engine failure we can land safely on any open piece of ground.

Railway strikes, State deteriorated railways, crowded roads, bad surfaces—all the annoyances of terrestrial travel will not matter. For, as Colonel John Porte said a few days ago, when holding forth on this same subject, "There is plenty of room up top-sides."—C. G. G.

ON FALSE ECONOMIES.

In their time His Majesty's varied Flying Services and the powers that from time to time have ruled over them have done many things. They have done the right thing in the wrong way, and the wrong thing in the right way. They have committed indiscretions on so grand a scale as to have scored veritable triumphs, and they have done the obviously right thing in so hole-and-corner a style as to have nearly rent asunder the Empire.

They have conducted themselves in such manner that they have at one and the same time incurred the considered disapproval of the "Times" and THE AEROPLANE, the "Daily Herald" and the "Morning Post."

They have combined into one body those two incongruous elements, the R.N.A.S. and the R.F.C., in so wondrous a medley that the members of the composite body disapprove of themselves even more cordially than they ever detested that one of the original elements to which they did not belong.

With so vast a field of achievement to pick from, it is scarcely surprising that there should be some things of real value to be found within the R.A.F.

HOMES OF EXCELLENCE.

Amongst these without doubt should be classed the two testing stations at Grain and Martlesham.

Both these establishments had their origin prior to the All Fools' Day fusion. That they have not been reduced since to inutility and inefficiency may be ascribed to the fact that they are both of them located in rather inaccessible and not particularly fashionable neighbourhoods, and that both of them have had plenty of quite hard work to do. They have therefore attracted only such officers as were keenly interested in their work, and have escaped from that devastating influx of brass-bound promotion-hunters in search of a quiet life who have so seriously compromised the reputation of most of the technical branches of the Air Services.

Under the control of a series of extremely able and competent commanding officers, these two stations have quietly and unostentatiously carried on the development of reliable methods of testing the performances of all kinds of aircraft, and they have done this in a way which has gained for them the confidence of all aeroplane manufacturers who have had to deal with them, despite the R.A.F.-engendered distrust of all official tests against which they had to make headway.

THE INDUSTRY'S CONFIDENCE.

The designer of a new type of aircraft knows now that, if his machine is sent to either of these establishments for test it will be flown by capable and unbiased pilots, that every precaution will be taken to secure the most accurate possible measurements of its performance, and that its general suitability for its intended purpose will be reported upon by men who know their business and have no interest beyond a wish to help in the improvement of the aeroplane breed.

The services rendered to the British Air Forces and to the British Aircraft Industry by Grain and by Martlesham far exceed those of all the rest of the technical branches of the Service put together, with the N.P.L., the Advisory Committee on Aeronautics, and the Royal Aircraft Establishment thrown in.

It is therefore not surprising that the "Times"-impelled economy campaigners have settled upon these really useful stations as a fit field for their operations, and that it has been definitely decided to shut down Martlesham Heath for the whole of the next winter. A valiant effort is being made by the responsible and competent ones who remain in the Technical Department to save Grain from the same fate, but there is every likelihood that this effort will fail.

WHERE ECONOMY OPERATES.

It is gathered that by closing down Martlesham and leaving it under a guard of 50 men, some 200 rank and file of the Air Force will be released for the more essential duties of releasing W.R.A.F. cooks, clerks, and mess waitresses, and that roughly an equal saving can be made from Grain.

In order to secure this, it is proposed to deprive the R.A.F. and the British Aircraft Industry of the excellent testing organisations which have been built up at these two establishments.

True, it is proposed to close them only for the winter, but to anyone acquainted with the manners and customs of the Air Ministry it will be obvious that, having once dispersed the trained staffs now employed at these stations, it is in the highest degree improbable that they will ever be re-collected and put to their right work again, and with unexperienced officers and untrained men such an establishment will not be likely to return to decent working order until it is again time to shut down for the winter.

THE BENEFITS OF PUBLICITY.

The matter is of the very highest importance, both to the R.A.F. and to the Aircraft Industry in general. Neither Grain nor Martlesham Heath have ever possessed a publicity department, such as that unblushingly run by the members of the Royal Aircraft Establishment, and therefore the general public have never even heard of them, and they present an easy mark for our economy-mongers.

But if the Air Force and the Aircraft Industry of the country are to survive, it is absolutely essential that properly organised full-size aeroplane laboratories should be maintained. If it needs the whole 2,000 officers and the 25,000 men to which the R.A.F. is to be reduced to staff them, they should be kept going.

It is possible to improvise an Air Force in case of emergency if the material is available. The material can only be available if full-size research work is carried on continuously and uninterruptedly, and if the manufacturer is continuously encouraged to improve his product.

THE NEED FOR KNOWLEDGE.

All the camouflaged soldier amateur aviators in the country—excellent fighting pilots though some of them are—will be precious little use to the country in the next Great War if the Aeroplane Industry is dead.

It is therefore up to the still surviving aircraft manufacturers of this country to take this matter up. If this policy is persisted in, it will be no long time before privately designed aircraft are again handed over to the Royal Aircraft Establishment for test and report, with consequences not really difficult to foresee.

If, in spite of all protests, the Air Ministry persist in this—the most stupid of their errors—it would be well worth the S.B.A.C.'s while to attempt to buy up Martlesham Heath as a going concern, offer to its staff decent living wages, and run it for the benefit of the Industry.

It would not be very long before they could realise quite a handsome profit on the fees for testing Government aircraft.—W. H. S.

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AN HISTOR C EVENT.

An event of the foremost importance in the history of aviation is recorded in the French section of Commercial Aeronautics this week. It is there stated the MM. Gastambide and Levavasseur have obtained successful experimental flights with a variable surface aeroplane of the latter's design. To the present generation of pilots these names mean nothing, so it may be well to explain that the father of M. Gastambide in partnership with M. Mengin financed and built a monoplane in 1908, which monoplane and its engine were designed by M. Levavasseur, who at that early date had produced an aero-engine (originally designed for racing motor-boats), which weighed only 5 lb. per horse-power.

This engine, which was of the "Vee" type, was called the Antoinette, after the daughter of M. Gastambide, and it embodied most of the outstanding features of the best modern aero-engine practice, besides others which may yet return to use. The original Gastambide-Mengin monoplane became in 1909 the famous Antoinette monoplane, and it remains to this day the most graceful flying-machine ever built. Also, it was, in spite of its early date, so efficient as to compare favourably with many highly reputable machines of to-day.

The Antoinette failed to survive because of errors in detail design and because of the peculiar system of control adopted, but aero-dynamically and æsthetically it was seven or eight years in front of its time. *Père* Levavasseur retired from aviation and nothing has been heard of him in the world of aeronautics since 1912. His return, in company with M. Gastambide Junior, may be taken as signifying that in the intervening years he has studied the progress of aeronautical science and feels himself competent to solve the problem of variable surface, which problem is one of the chiefest factors in the future of commercial aeronautics. It would be the highest poetic justice if it should prove that the great engineer and pioneer Levavasseur has solved that problem and has fulfilled the promise given in earlier days.—C. G. G.

THE R.A.F. RECORDS MYSTERY.

The following letter has been received with reference to the mysterious disappearance of the pre-war Records of the "First Four Squadrons":—

Sir,—May I have your permission to bring before your readers a matter of national importance? I am engaged in preparing, from official material, a history of the War in the Air. When our Army took the field in August, 1914, it was assisted by Numbers 2, 3, 4, and 5 Squadrons of the Royal Flying Corps. The value of the help given by these squadrons cannot easily be over-estimated; indeed, but for the information they supplied the Germans might possibly have succeeded in surrounding and destroying the whole of our Expeditionary Force.

The Royal Flying Corps were thoroughly trained for their work. From the date of the formation of the Corps, in May, 1912, down to the outbreak of war, they had been engaged in preparing themselves, by constant exercise and manœuvre, for just such a task as fell to them. Their numbers were small, but they were perhaps the most efficient and best-trained Air Force in Europe. The training was carried out at the centres—Farnborough, Netheravon, and Montrose—where the squadrons were stationed, and a record of the work done was entered by the commanding officers in the Squadron Record Books.

These record books have all disappeared. When the War broke out the commanding officers were ordered to forward their record books to the Royal Flying Corps Headquarters at South Farnborough, and this was done. Then year followed year; the Flying Corps, as everyone knows, developed at an enormous rate; the Royal Aircraft Factory at South Farnborough grew out of all recognition; and in the growth and change of the time the record books, packed in Renault or Gnome engine boxes, were shifted from place to place at South Farnborough.

When a man is fighting for his life he has not time to spend on the relics of his infancy. Nevertheless, the record books were preserved, and when the Royal Air Force was formed, late on in the war, they were dispatched from South Farnborough to the depot that was being formed at Blandford. There is evidence of their dispatch, but direct first-hand evidence of their receipt is lacking, and they have not been found at Blandford.

The Royal Air Force is now rapidly being demobilised, but among past or present members of the force someone who reads this letter may remember seeing the record books and may have something to tell. Any clue to their whereabouts would be more than welcome at the Historical Branch of the Royal Air Force, 2, Cavendish Square, London, W.1. Their importance is great. They were written by men whose names are now widely known, and whose early work did much to win for us our dominant position in the air.

(Signed) WALTER RALEIGH.

[It is hoped that everybody who can throw any light on the mystery will communicate with Sir Walter.—Ed.]

AN UNKIND FATE.

The railway strike has been unkind to others than those who were merely discommoded by the difficulties of transport. It will be remembered that last week the Committee of the Royal Aero Club postponed the Schneider Cup Consolation Race—officially known as the "Royal Aero Club Seaplane Competition"—on account of the railway strike, apparently assuming—as did most people—that the strike was going to last until the end of the month, and so would save the Committee all the trouble of having to organise a competition. One can picture to oneself the Committee sitting back and folding its hands and saying "Thank Heaven! That saves us a lot of trouble, because nobody will expect us to hold a competition in November or December."

Fate, however, seems resolved to be unkind to the Committee, for no sooner was the postponement announced than a wire arrived from Italy entering a Savoia seaplane for the new race. One is not aware whether it is the identical Savoia which did so well in the Bournemouth fiasco, but, seeing that the same company has entered for the Royal Aero Club Seaplane Competition, the Committee is now in the unpleasant position of leaving foreigners to assume that the British seaplanes are afraid to meet the Italian again under more favourable conditions.

If Fate had been more kind the Committee could safely have resumed once more its habitual attitude of a dormouse; but the Italian entry must at least disturb its dreams.

CONGENIAL WORK.

The Committee of the Royal Aero Club states that "there has been a widespread expression of opinion that the first direct Transatlantic Flight by Sir John Alcock and Sir Arthur Brown on a Vickers' Vimy Rolls biplane on June 14th-15th, 1919, should be permanently recorded in the Club House," and has opened a subscription list with the object of paying for "portraits in oils" which Sir John Lavery has consented to paint "at a purely nominal figure."

One would like to point out to the Committee—which appears to include several educated men—that the first direct trans-Atlantic flight was made by Captain John Alcock, D.S.C., and Lieutenant Arthur Brown, and that these officers did not become Knights till some time after their feat. Also one would like to indicate that the flight in question was the first direct flight in history, and not merely the first on "June 14th-15th," nor the first on a "Vickers' Vimy Rolls Biplane." Furthermore, the Committee might note that "trans" is merely an adverb and not the name of a place.

However, doubtless, as in the case of the Schneider Cup fiasco, the Committee meant well, and one wishes the subscription success. Doubtless ordering "portraits in oils" is more congenial work than labouring to promote the sport of aviation.—C. G. G.

THE TANK INQUIRY.

Lieut.-Comdr. Harold Perrin, late R.N.V.R., Secretary of the Royal Aero Club, and Lieut.-Comdr. Barry, late R.N.V.R., desire it to be known that they have never put in a claim for reward in regard to the invention of the Tanks. They were called as Crown witnesses, and that is their only connection with the affair.

WANTED—A SECRETARY.

The Council of the Royal Aeronautical Society invite applications from members of the Society for the post of Secretary, which will shortly become vacant.

Applications should reach the Secretary at 7 Albemarle Street, W.1., before October 31st, 1919.

Applicants should state their War Service, Membership Grade, Secretarial and Technical Qualifications, and the rate of pay required.

ROYAL AERO CLUB NOTICES.

COUPE HENRY DEUTSCH DE LA MEURTHE.—Organised by the Aero Club de France under the Regulations of the Fédération Aéronautique Internationale and the Commission Sportive Aéronautique of France.

The Cup is an objet d'art of the value of 10,000 francs, with prizes of 20,000 francs each, to be awarded to the first three holders of the Cup.

1st Holder: Emmanuel Helen, May 1st, 1912. Distance: 200 kilos. Time: 1 hr. 30 min.

2nd Holder: Eugene Gilbert, October 27th, 1913. Distance: 200 kilos. Time: 1 hr. 13 min. 25 sec.

The third prize of 20,000 francs is now open for competition.

It is a speed contest in a closed circuit of about 200 kilometres, embracing Terrasse de St. Germain, Senlis, Meaux, Melun, Terrasse de St. Germain.

On September 2nd last, Sadi Lecointe completed the course in 48 min. 8 sec., giving an average speed of 249 kilos. 307 m. per hour.

If this speed is not beaten by one tenth within one year Sadi Lecointe will be the winner of the third prize of 20,000 francs and the final holder of the Trophy.

Particulars of the Competition can be obtained from the Royal Aero Club.

FEDERATION AERONAUTIQUE INTERNATIONALE CONFERENCE.—The Conference of the Fédération Aéronautique Internationale will be held at Brussels on the 22nd, 23rd, and 24th October, 1919.

The following delegates will represent the Royal Aero Club:—Lieut.-Col. F. K. McClean, Lieut.-Col. Alec Ogilvie, Lieut.-Col. Mervyn O'Gorman, C.B., Mr. Harold E. Perrin (Secretary).



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NAVAL & MILITARY AERONAUTICS

[The "Official Gazette" notices will be found on p. 1412].

GREAT BRITAIN.

FROM THE COURT CIRCULAR.

Buckingham Palace, Oct. 11th.

Major-General Sir Frederick Sykes (Controller-General of Civil Aviation) had the honour of being received by His Majesty, when the King invested him with the Insignia of a Knight Grand Cross of the Most Excellent Order of the British Empire (Military Division).

Lieut.-Colonel Robin Grey, Royal Air Force, also had the honour of being received by His Majesty, when the King invested him with the Insignia of a Companion of the Distinguished Service Order.

NAVAL.

Admiralty Appointments.

The following appointments have been made:—

Oct. 7th.—Paymr. Comdr.—W. D. Sarratt, to "Vindictive" (temp.), Oct. 6th.

Oct. 8th.—Lieut. (Retd.).—S. D. A. Grey, D.S.O., to rank of Lieut.-Comdr. (retd.), seny. Oct. 1st.

Admiralty Communique.

The following is extracted from a communiqué from the Senior Naval Officer in the Baltic, Rear-Admiral Sir Walter Cowan, R.N., issued on Oct 10th, dealing with the attack upon Kronstadt Harbour by C.M.Bs. and aircraft which took place on the night of Aug. 17th-18th. This attack was undertaken as a cover to our mine-sweeping operations, which were being undertaken with the ultimate object of sending foodships to Kronstadt and Petrograd:—

"The position of the ships in the harbour had been ascertained by aerial photographs, and the attacks on them rehearsed in detail by the boats against our ships. Aircraft were to co-operate, and it was planned that they should arrive and bomb the harbour just before the C.M.Bs.' engines could be heard. This time-table was most accurately carried out."

The following narrative of the part played by the aircraft has been compiled from reports received by the Admiralty from officers concerned:—

"Eight aircraft took part in the operation. The intention was that the aircraft should attract all attention in Kronstadt, so that the C.M.Bs. should be neither heard nor seen to approach the harbour; and with that end in view the bombing attack was timed to commence five minutes before the C.M.Bs. reached the line of forts to the northward of Kronstadt, and further, to continue until the boats reached the harbour entrance.

"The machines were detailed (a) to attack the flotilla leader anchored in the entrance to the harbour; (b) to attack guns' crews on the breakwater and searchlights; (c) to stand by to attack the line of forts and cover the retreat of the C.M.Bs. All the machines had orders to draw anti-aircraft fire.

"It is concluded that the presence of aircraft in this operation diverted the enemy's attention from surface craft, as until the boats reached the entrance to the Middle Harbour, all firing was anti-aircraft, and no searchlights were trained on the water. Even afterwards searchlights were trained on the sky and several batteries continued high-angle firing."

MILITARY.

A Tribute to Major-General E. B. Ashmore, C.B., C.M.G., M.V.O.

In the "London Gazette" of Sept. 26th it is announced that Major-General Ashmore is placed on the half-pay list of the Royal Artillery. He has, however, not yet relinquished his appointment as G.O.C. L.A D.A. The following graceful tribute to L.A.D.A. and General Ashmore is taken from the "Daily Express" of October 8th:—

"L.A D.A.

"So Colonel E. B. Ashmore—such being the substantive rank of Major-General Ashmore, lately commanding the London Air Defences—has been placed on half-pay. Thus passes, presumably in its war-time form, at all events, the exceedingly efficient organisation known shortly as Lada, which made it so hot for the Hun that he never tried to raid London after his disasters on Whit Sunday, 1918, though he made afterwards nineteen raids on Paris.

"The Mind of the Barrage.

"General Ashmore came over from France to take charge of our A.A. defences in the late summer of 1917, and to his combination of qualities as airman, gunner, and general officer belongs the chief credit for a very remarkable success. It was after his coming that the gun barrage became a scientific instrument of defence, and the night-flying squadrons owed much to his sympathetic enthusiasm. London owes him a debt that should not be forgotten now that the maroons are silent.

"Most who knew him and all who did not called him 'Splash' Ashmore. At an inspection he was the fiercest general who ever walked between the ranks of a gun detachment, and he had an intolerance of fools and junior officers which may sometimes have failed to tolerate wisdom. In mess he had the most charming smile and a suave courtesy which was no concealment for a very active and brilliant mind. He won many honours overseas and at home, and deserved them all. The A.A. gunners whom he commanded at home have no honours, not even one medal ribbon. Do they deserve one? General Ashmore could tell us."

Lieut.-Col. Robin Grey, D.S.O.

It may be called to mind by those who have been connected with aviation since pre- and early war days that Lieut.-Col. Robin Grey, Grenadier Guards and R.A.F., whose name appears in the Court Circular of Oct. 11th, was taken prisoner by the Germans in 1914. Capt. Grey—as he was then—was one of the first British prisoners of war to be sent to Karlsruhe for what was called by the British Press "retaliatory treatment." It was alleged that this was to be a deterrent to the Allied air raids upon the "open" Rhine cities, but, in fact, Karlsruhe was merely a clearing-house for prisoners whose camps were being changed.

AIR FORCE.

The King's Certificate.

The Air Ministry announced on Oct. 7th that His Majesty the King has been pleased to approve of the issue of a Certificate to Officers who have relinquished their commissions during the War under the following circumstances.

A.—Having served in a sea-going Ship of War at Sea, or abroad in a theatre of operations, since August 4th, 1914, and who have been invalided on account of ill-health or wounds, not due to misconduct, and where such is or are certified under the authority of the Air Council to be caused or aggravated by service

B.—Having been invalided on account of ill-health or wounds certified under the authority of the Air Council to have been caused or aggravated by service while engaged on flying duty at Home in connection with operations against the enemy, or aerial coastal patrol work, since August 4th, 1914.

C.—Having been invalided on account of disablement certified under the authority of the Air Council to be directly attributable to the action of the enemy, e.g., Air Raids or Naval Raids.

The certificates for officers of the R.F.C. who relinquished their commissions prior to April 1st, 1918, will be issued under the regulations laid down in Army Order 138 of 1918. The certificates for Officers of the R.N.A.S. who relinquished their commissions prior to April 1st, 1918, will be issued by the Admiralty.

His Majesty the King has further approved of the award of a special distinctive certificate to be entitled the King's Second Certificate, to officers who, after having become eligible for the award of the King's Certificate voluntarily served again, and again relinquished their commissions during the War, under the circumstances detailed in Paragraph 1 of this Order.

Applications from Officers who have already left the Service, and who are entitled to these Certificates should be addressed to:—

The Secretary, Air Ministry (P.4.E.), Kingsway, London, W.C.2.

Applicants must state:—(a) Full name and rank. (b) The grounds upon which the Certificate is claimed. (c) Details of service for which it is claimed, including the Branch or Arm of H.M. Service in which the applicant was serving at the time. (d) Date of relinquishment of Commission. (e) Whether a Certificate has already been applied for or been granted, in respect of service in the ranks, etc.

ROLLS-ROYCE

THE ENGINES WHICH MADE THE FIRST DIRECT FLIGHT ACROSS THE ATLANTIC.

The future of flying depends on trustworthiness.

Extracts from the "Daily Mail" (leading article), September 2, 1919 :—

THE PARIS AIR EXPRESS.

A GREAT ACHIEVEMENT.

It has fallen to a British firm, using British machines navigated by British pilots, to accomplish the most remarkable performance that so far stands to the credit of civil flying. Since Monday week the Aircraft Company's London-Paris Air Express has run either way, whatever the weather, to schedule time, covering the journey day after day in 2¼ hours. Though the weather was particularly unfavourable last week, on only 1 out of 15 journeys had the passengers and goods to be diverted to the alternative route.

The first requisite of a commercial air service is reliability, and as last week an efficiency of 94 per cent. was attained the business world has convincing evidence that the new service is of real use.

Commercial flying is as important to us now as military flying was then. Its possibilities are great, and in it we must be first.

We are exhibiting at Olympia, November 7-15, 1919. Stand No. 74

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ARE USED FOR THE PARIS AIR EXPRESS

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The R.A.F. Cadet College

The following was issued on Oct. 8th :—

The Air Ministry has just issued a small booklet containing the regulations for the Royal Air Force Cadet College. It is obtainable from H.M. Stationery Office or their agents and from any bookstall at 3d.

The R.A.F. Cadet College has been instituted for the purpose of affording special education to candidates for Commissions in the R.A.F., and is intended exclusively for those who desire to make the R.A.F. their permanent profession in life.

The limits of age for admission to the College will be from 17½ to 19 years, with the exception of those who have served or are serving in the Forces, and are recommended by their C.O. for a permanent commission in the R.A.F., in which case the upper age limit will be 21. All applications for the printed form of application for admission to the examination should be made to the Secretary, Civil Service Commission, Burlington Gardens, London, W.1.

The booklet sets forth in detail the subjects for examination and possible marks. The subjects for the entrance examination which are obligatory are English, English History and Geography, elementary Mathematics, and one modern language. The optional subjects are Latin, Greek, another modern language, Mathematics (elementary, intermediate and higher), Science and elementary Engineering. All the obligatory subjects must be taken, but not more than three of the optional class may be taken, and candidates will be expected to qualify (to obtain not less than 33 per cent. of the total marks allotted) in each of the four obligatory subjects. Candidates will receive extra marks if they hold Certificate A from the O.T.C., or if they have served in the senior division of the O.T.C., or if they have completed four months' continuous service as Officers, Warrant Officers, or Non-Commissioned Officers and men in the Services. A certificate to this effect must be furnished on a form supplied to applicants by the Civil Service Commissioners.

A certain number of prize Cadetships will be awarded to successful competitors in order of merit at such examination, carrying certain emoluments and financial benefits. These are designed to give assistance to those who stand in need of the emoluments attached to them. Each candidate for Cadetship will be examined by a Medical Board.

There will also be a King's Cadet appointed by the Secretary of State for Air and Honorary King's Cadets nominated by the Secretary of State for Air, and a limited number of Cadetships will occasionally be filled by suitable candidates specially nominated by the Air Council, such recommendation being submitted by the candidate's headmaster.

The course of studies at the R.A.F. College during the first year will include :—

> English literature and language; the British Empire; practical mathematics, including mechanics and draughtsmanship; general elementary science; history of the R.A.F.; outline of Army and Navy organisation and characteristics of the various arms and types of ships; map reading; R.A.F. law and administration; drill (with rifles) and physical training; hygiene and sanitation; practical work in the workshops: the Morse code; passenger-flying with instruction in map reading, and use of compass and machine-gun.

During the second year the course will be :—

> Theoretical and practical instruction in engines, including magnetos and their management; theory of flight; practical rigging; advanced work in wood and metal workshops; wireless telegraphy and telephony; machine and Lewis gun; instruction in aviation.

The terms of payment are under consideration and will be issued shortly. They will correspond generally with those at the Royal Military Academy and Royal Military College, excepting that the R.A.F. Cadets will draw pay at 5s. a day during their first year's course, and 10s. a day during their second year's course. Other details concerning the syllabus of instruction at the College, government and organisation, discipline, etc., will be found in the booklet.

Extra Leave for Officers and Men of the Royal Air Force.

The Air Ministry announced on Oct. 7th that officers and other ranks of the Royal Air Force who were on leave in the United Kingdom on Sept. 27th will be considered to have their leave cancelled with effect from that date and will be entitled as from Oct. 8th (inclusive) to the remaining portion of their leave plus seven extra days.

These officers and airmen, who volunteered their services and were employed on duty in connection with the railway strike, but who were not on leave on Sept. 27th, will, on completion of this duty :—

(1) If on the home establishment, return to their units and then receive seven days' pay.

(2) If from France, Flanders, or the Rhine, report to the O.C., R.A.F., Manston, near Ramsgate, who will then grant them seven days' leave pending return to their units.

Vouchers will be given for these leave journeys.

Disbandment of the W.R.A.F.

The Air Ministry announced on Oct. 7th :—An Order has been issued for the final disbandment of the Women's Royal Air Force, which has already been reduced to small proportions through rapid demobilisation during the past few months.

The new Order that demobilisation of the large majority of officers and other ranks will be completed by November 8th. A small number will be temporarily retained for the purpose of closing records and winding up the affairs of the Force, and other special duties.

The Air Council has also issued the following special order :

"The Air Council desire to express their appreciation of the good work done by the Force both during and after the period of hostilities.

"In spite of much difficulty and in fact of hostile and unjust criticism, the W.R.A.F. has left a record of which they can feel well proud. During hostilities the good work they accomplished went far towards enabling the R.A.F. to reach the dominating position in the air which had such a direct influence in the achievement of the final victory.

"Subsequent to the Armistice, when it was necessary to disperse a large portion of the Airmen to civil life, it was the W.R.A.F. who made it possible for the R.A.F. to meet the demands made upon it and maintained the services at the aerodromes until new male personnel could be enrolled.

"The necessity for the demobilisation of the W.R.A.F. is now imperative, but in returning to civil life, Commandant Dame Helen Gwynne-Vaughan, D.B.E., Officers and Members may feel assured that they carry with them the good wishes of the Air Council and a debt of gratitude from the nation."

FRANCE.

General Hirschauer and the Senate.

General Hirschauer, formerly Director of Military Aeronautics, has announced his intention of contesting the senatorial election in the Lower Rhine.

The Paris-Cairo-Paris Flights.

The details of the flights from Paris to Cairo and back made by Commandant Vuillemin and Lieut. Dagnaux are as follows :—These officers made the flight on Bréguet biplanes (300-h.p. Renault engines). Commandant Vuillemin and his mechanic, Binet, succeeded in completing the course, but Lieut. Dagnaux had an accident on the return journey at Beyrout and had to finish the voyage by ship.

The distances and dates of the stages of Commandant Vuillemin's flight are as follows :—

Paris-Marseilles (Aug. 11th), 433 miles.
Marseilles-Naples (Aug. 12th), 435 miles in 6 hr. 30 min.
Naples-Salonica (Aug. 13th), 466 miles in 5 hr. 45 min.
Salonica-Constantinople (Aug. 14th), 310 miles in 4 hr.
Constantinople-Cairo (Aug. 16th), 807 miles (372 over the sea) in 8 hr. 30 min.
Cairo-Beyrout (Aug. 26th), 372 miles (310 over the desert) in 5 hr.
Beyrout-Constantinople (Aug. 28th), 621 miles in 8 hr.
Constantinople-Naples and Naples-Istries (Sept. 8th), 745 miles and 496 miles—1,241 miles in 15 hr.
Istries-Paris (Sept. 9th), 391 miles in 4 hr. 30 min.

Commandant Vuillemin is a distinguished officer in the French Army who has served for some years in the aerial arm of the service. He achieved many successes in aerial action against the Germans, as his seventeen citations in dispatches prove. For the last three years of the war he was graded as a *chef d'escadrille*. He is an Officer of the Legion of Honour and a Companion of the Distinguished Service Order and has the Croix de Guerre (with thirteen palms and five stars) and the Order of St. Anne, 3rd Class (Russia).

His energies have not faded since the incitements of war have vanished for a space.

GERMANY.

An Exodus of Aeroplanes.

About 170 of the military aeroplanes which ought to be delivered to Allied Powers under the terms of the Peace Treaty have been conveyed to Holland with almost ostentatious secrecy. Their identification marks were altered and it is possible that many may evade the vigilance of the Allies.

The Trial of German Aviators.

According to the Chicago "Tribune" on Oct. 7th the Supreme Council of the Allied and Associated Powers met

Official Thanks to Members.

The Home Office
Ministry of Food
Ministry of Transport
Postmaster General

and the

Chief Commissioner of Police

have expressed keen appreciation of the invaluable services rendered by Members of the Automobile Association during the Strike period.

The Executive Committee

cordially thank all Members, Agents and Repairers and Friends whose prompt and generous response to the Call enabled the Association to be of such value to the State.

W. JOYNSON-HICKS,
Chairman.

STENSON COOKE,
Secretary.

THE AUTOMOBILE ASSOCIATION AND MOTOR UNION,
Fanum House, London.

in Paris and discussed the advisability of trying the various German officers who are alleged to be guilty of any "violation of the recognised rules of warfare."

It is stated that the British list comprises, among others, certain aeroplane and airship crews who at various times were sufficiently unfortunate as to be ordered to raid London. Apparently, according to this message, it was no "violation of the recognised rules of warfare" to bomb Midland or coastal towns.

SWEDEN.

Lieut. Rödehn, of the Swedish Air Force, who put up a long-distance record recently, was flying at the beginning of the month on an 110 h.p. Albatros and crashed in a wood at Malmslätt, breaking his thigh badly.

RUSSIA.

Official Communiques.

General Denikin.

Oct. 6th.—In the region of Fastoff and Izotoff British aviators, flying exceedingly low, dispersed the Red Cavalry.

Esthonian.

Oct. 5th.—Esthonian aviators observed the Bolshevist rearguards hurriedly retiring through Pskoff.

A Newspaper Yarn.

On Oct. 11th it was reported that after a bombardment from aeroplanes Riga was occupied by German troops.

Mr. Arthur E. Mann, writing in the "Daily Express" of the German advance in Russia, says on Oct. 9th that as he was returning from a motor-car journey to the Latvian-Russo-German front at St. Olai on the main road from Riga to Mitau, he witnessed an attack by German aeroplanes which he describes as follows :—

An artillery duel was in progress. After a few moments four German aeroplanes, with the Iron Cross painted on them, came over the lines and began bombing the Lettish gun emplacements and directing the German fire. I retreated to my motor-car and started back.

Suddenly an aeroplane swooped down until it was only about a hundred yards overhead, and put four bursts of machine-gun fire into the road ten yards ahead of my motor-car, which was racing ahead at 50 miles an hour. The German airman would undoubtedly have obtained our range in a moment or two, but, as we came round a bend, a Lettish armoured car with a machine gun opened fire and drove him off.

Aeroplanes under Admiral Koltchak.

It is reported that a number of French aviators have arrived at Krasnoyarsk with their machines. These aviators are to operate with the forces of Admiral Koltchak.

Aeroplanes on the Tsaritsyn.

The "Times" correspondent, writing from Rostoff-on-Don on Sept. 30th, stated that on the Tsaritsyn front, where the Bolshevists continue to attack in force, General Wrangel's inferiority in man-power is compensated by the use of tanks and aeroplanes and the mobility and dash of his cavalry.

U.S.A.

Aircraft in the U.S. Navy.

It was officially announced on Sept. 13th that all U.S. warships are to be equipped with seaplanes. This policy is in connection with that of building a large fleet of airships, and is part of the U.S. Navy's scheme of coastal defence.

A Mexican Apology.

On Sept. 2nd, while flying on border patrol duty along the Rio Grande, Capt. McNabb and Lt. Johnson, U.S. Army, were fired on by a detachment of about twenty-five Mexican soldiers concealed in the brushwood near Santa Isabel Creek. Capt. McNabb, the pilot, was wounded in the head, and the observer had to bring the machine down on American territory. The State Department made a formal protest to the Mexican Foreign Office, which has now expressed regret and promises an exhaustive inquiry into the incident.

Military Training in Aeronautical Engineerigg.

The following piece has been extracted from the "Congressional Record" (the American "Hansard"), for Sept 8th :—

The Bill (S.2733) to provide for the training of officers of the Army in aeronautic engineering and the issue of equipment and materials therefor was considered as in Committee of the Whole.

The Bill had been reported from the Committee on Military Affairs with an amendment, on page 2, line 1, after the word "appropriated," to strike out "and he is authorised to furnish to institutions to which officers are so detailed such equipment and material belonging to the War Department for use in connection with courses in aeronautic engineering as he may deem advisable, subject to such rules for use, compensation for use, accounting, report, and return as he may prescribe," so as to make the Bill read :

Be it enacted, etc., That the Secretary of War be, and he hereby is, authorised to detail such officers of the Army as he may select, not exceeding 25 at any one time, to attend and pursue courses of aeronautic engineering or associate study at such schools, colleges and universities as he may select.

Sec. 2. The Secretary of War is authorised to pay tuition for the officers so detailed and to provide them with necessary textbooks and technical supplies from any moneys available for the Air Service of the Army not otherwise specifically appropriated.

The amendment was agreed to.

The Bill was reported to the Senate as amended, and the amendment was concurred in.

The Bill was ordered to be engrossed for a third reading, read the third time, and passed.

The title was amended so as to read : "A Bill to provide for the training of officers of the Army in aeronautic engineering."

U.S. Army Airships.

Great attention is now being paid to airship training in the U.S. Army, particularly at Langley Field. There is at present only one airship at this station, but two or three more will shortly be commissioned. One of these may be the airship built by the Zodiac Company for the U.S. Navy in wartime. Its dimensions are :—Capacity, 219,000 cubic ft., length 236 ft., width, 49.2 ft., and height, 65.5 ft. Ten or twelve passengers can be carried and the cabin is a bower of luxury in accordance with the latest American taste.

Three officers are required for the proper navigation of this class of airship. One is in charge of the altitude controls and the maintenance of correct pressures in gasbags and ballonets. Another has control of the ship's course, and the third exercises general supervision as commanding officer.

In addition to this ship it is intended to send to Langley Field one or more of the "C" type airships which are used by the American Navy over coastal waters. These are of 175,000 cubic feet and made by the Goodyear Tire and Rubber Company.

A large hangar has been constructed which will house the Zodiac and two or three of the "C" class.

Thirty-two balloon and airship companies are being maintained on a peace establishment in the U.S. Army. Two officers are visiting aeroplane stations to induce volunteers to transfer to the "lighter than air" branch in order to make up the existing deficiency of 800.

Three Mullion type airships and three portable airship hangars bought from the British Navy arrived in the U.S.A. about one month ago.

Organisation of Air Service Units.

The following order is extracted from "Air Service News Letter" dated Sept. 30th, 1919 :—

The following Air Service units will be organised at the stations indicated, under Tables of Organisation, 1919, for the Air Service :—

Units.	Stations.
First Wing	Kelly Field, San Antonio, Tex.
Second Wing	Langley Field, Hampton, Va.
1st Day Bombardment Group	Ellington Field, Houston, Tex.
1st Surveillance Group	Kelly Field, San Antonio, Tex.
1st Pursuit Group	Selfridge Field, Mt. Clemens, Mich.
1st Army Observation Group	Park Field, Millington, Tenn.
1st Photo Section	Fort Bliss, Tex.
2nd Photo Section	Langley Field, Hampton, Va.
4th Photo Section	Langley Field, Hampton, Va.
6th Photo Section	Langley Field, Hampton, Va.
7th Photo Section	Langley Field, Hampton, Va.
11th Photo Section	Langley Field, Hampton, Va.
12th Photo Section	Canal Zone
14th Photo Section	Langley Field, Hampton, Va.
15th Photo Section	Langley Field, Hampton, Va.

The 1st Wing will consist of all groups and organisations engaged on work in connection with border duty. The 2nd Wing will exercise supervision of all units on the Atlantic Coast. The 1st Day Bombardment Group will consist of the 11th Day Bombardment Squadron, 20th Day Bombardment Squadron, 96th Day Bombardment Squadron, and 166th Day Bombardment Squadron. The 1st Surveillance Group will consist of the 8th, 90th, and 104th Surveillance Squadrons. The 1st Pursuit Group will consist of the 27th, 94th, 95th, and 147th Pursuit Squadrons. The 1st Army Observation Group will consist of the 1st, 12th, and 258th Army Observation Squadrons. The squadron organisations of these groups have been previously authorised.

The commanding generals of the Philippine, Hawaiian, and Panama Canal Departments will organise units in their departments as follows :—

Units.	Stations.
1st Observation Group	Philippine Department
2nd Observation Group	Hawaiian Department
3rd Observation Group	Panama Canal Department

The 1st Observation Group will consist of the 2nd and 3rd Observation Squadrons.



Telephone : WILLESDEN 2455.

Telegrams : "NIEUSCOUT, CRICKLE, LONDON."

The 2nd Observation Group will consist of the 4th and 6th Observation Squadrons.

The 3rd Observation Group will consist of the 5th and 7th Observation Squadrons.

By order of the Secretary of War :—

PEYTON C. MARCH,
General, Chief of Staff.

AN AMERICAN GRANT.

A Reuter message from Washington states that the Senate Military Committee recommended an appropriation of $15,000,000 on Oct. 10th. This sum of money is for the construction of Army aircraft in connection with the establishment of air routes to Panama, Alaska, and probably Asia.

Early in August of this year the Navy and Army asked Congress for a grant of $129,000,000 for the current year. The grant given was only $50,000,000.

THE DESIGNER OF THE LIBERTY ENGINE.

Mr. J. G. Vincent, vice-president of the engineering section in the Packard Motor Car Co., and one of the many designers of the Liberty motor, has been given a commission as Colonel in the Officers' Reserve Corps in the U.S. Army. His unit is the Aviation Section of the Signal Corps.

On joining the U.S. Army in 1917 he was given a commission as Major, and was later promoted Lt.-Col. He was pressed after the Armistice to accept a commission in the Officers' Reserve Corps as a Major—then the highest rank available for first appointment. Since that time an Enabling Act has made it possible for him to be given a higher rank.

THE TRANSCONTINENTAL AIR RACE.

A great military air race of 5,400 miles from New York to San Francisco and back and vice versa started on Oct. 8th. One of the chief objects of the contest is to arouse the United States Congress to interest itself in the desperate position of American aviation, and to inspire Congress to pass legislation providing funds to develop a distinct Department of Aviation.

Sixty-seven machines were entered for the Westward flight and back, and 16 at San Francisco for the Eastward flight and back. The competition rules stated that all flying was to be done between sunrise and sunset only, and would be suspended on Sunday.

The majority of the machines entered are D.H.4s with 400 h.p. Liberty engines. One of that type is expected to win the race, as, in addition to the number in the contest, spare parts can be obtained for the Liberty engines at any of the 21 stopping places or control stations on the route. An Italian S.V.A. was entered for the race, and said to have a speed of 135 m.p.h. A captured Fokker was also expected to fly.

The course of the race was very severe. The machines started from sea-level, and had to cross the Rocky Mountains at 6,600 ft., where all varieties of weather and temperature were expected.

The first starter from Mineola, New York, was to have been Air Commodore L. E. O. Charlton, Air Attaché at the British Embassy, Washington. He was accompanied by Flying Officer T. Traill, R.A.F. Their machine was a Bristol Fighter, with a 275 h.p. Rolls-Royce engine. They were given the place of honour as an international courtesy.

The Bristol Fighter developed petrol supply trouble at the last moment. This was eventually remedied, and the machine was the eleventh to ascend at 9.34 a.m. Air Commodore Charlton crashed into a fence near Ithaca, New York, at 2.20 p.m , owing to engine failure from carburetter trouble, and so was put out of the race.

Some 48 machines started from Roosevelt Field, Mineola, at intervals of two minutes, the first leaving at 9 a.m. At the same time, 15 aeroplanes left San Francisco for the flight eastward.

Three aviators were killed and six machines crashed on the first day, Oct. 8th. Major D. H. Chrissey, who started from San Francisco, was killed with his observer, when their machine fell near Salt Lake.

Serjeant W. H. Neavitt, the observer in a De Havilland, piloted by Colonel Gerald C. Brant, was also killed when their machine crashed by Deposit, New York. Colonel Brant was badly bruised.

Another machine, piloted by Capt. D. B. Gish, burst into flames in mid-air. He was carrying as a passenger, Capt. Delavergne, the French Air Attaché. Capt. Gish succeeded in landing safely despite the fire, but his machine was destroyed.

Air Commodore Charlton and the French Air Attaché were the only representatives of the Allies in the race. Capt. Delavergne returned to Mineola intending to re-enter the contest in another machine.

Lieut. Belvin Maynard, the winner of the recent New York to Toronto flight, had covered the furthest distance on the night of Oct. 8th. That night he landed at Chicago and was 155 miles ahead of his nearest competitor. He was flying a De Havilland 4 with a Liberty engine, and had not had the slightest trouble en route.

The distance from New York to Chicago is 710 miles. Lieut. Maynard covered the distance at an average speed of 120 miles per hour. None of the aviators who started from San Francisco equalled the distance covered by the leaders in the Western flight on the first day. The machines which flew furthest only reached Salt Lake City, Utah.

On Oct. 9th, Lieut. Maynard left Chicago at 7.10 a.m., and hoped to reach San Francisco on that day at sunset. Rain and high winds were reported from New York to Illinois.

Two further accidents occurred on Oct. 9th. An aeroplane going westwards fell into Lake Erie in the morning. The pilot, Lieut. Hynes, and his observer, were rescued. Another machine was wrecked at Lockport, New York.

In all, nine machines were put out of the race on Oct. 8th.

On Oct. 9th Lieut. Maynard met Capt. Lovell Smith, who was then the leading aviator, flying eastward at North Platte, Nebraska. At that point Lieut. Maynard had 1,210 miles to fly to reach the Pacific, and Capt. Smith had 1,497 miles to reach the Atlantic. After hearty greetings and a brief rest, the pilots flew on, and Lieut. Maynard continued 205 miles to Cheyenne, Wyoming, where he spent the night.

A Reuter message from Chicago stated that he was delayed there by a broken airscrew, but no further confirmation of the report has been received.

Almost every kind of weather was encountered on the route, snow, rain, winds in various strengths, and also ideal flying conditions. One military pilot, Lieut. E. V. Wales, died on Oct. 10th, after crashing into a mountain in a D.H.4 near Saragota, Wyoming, in a blinding snowstorm. His observer escaped with minor injuries.

Lieut. Maynard reached San Francisco at 4.12 p.m. (New York time) on Oct. 11th, and completed the flight one way across the Continent. His time is given unofficially as 72 hrs. 47 min., and his actual flying time is esitmated at 24 hrs. 58 min. 55½ sec. Lieut. Maynard's flight was made with clockwork regularity and without any exciting incident.

The rules of the race require a stay at the halfway furthest point of the flight for two days before starting on the return journey, and also that no flying shall take place on Sunday. Lieut. Maynard hoped to beat his competitors by including Sunday as one of the two days he is required to stay in San Francisco.

But two other competitors completed half their journeys on the Saturday by arriving at New York practically simultaneously at 6.35 p.m. They are Major C. Spatz and Lieut. E. C. Kiel, whose total times respectively are given unofficially as 83 hrs. 41 min. and 83 hrs. 44 min.

Major Spatz stated that he crossed the Rocky Mountains at 12,000 ft. It was so cold that he feared that the carburetter would freeze. At other times dense snowstorms prevented him from seeing more than 50 ft. ahead, and he narrowly escaped dashing into the side of a mountain.

All the machines which finished half the course on Oct. 11th were flying D.H.4 biplanes, fitted with 400 h.p. Liberty engines. One control station at Green River, Wyoming, had to be cut out of the course, because heavy snows made landing there dangerous. One S.E.5 was included among the 43 other competitors scattered along the course.

Capt. L. H. Smith, the fourth aviator to complete the Transcontinental flight, reached Mineola from San Francisco on Oct. 13th. According to the Exchange Telegraph Co. the actual time taken by Capt. Smith was 24½ hours, nearly half an hour faster than that of Lieut Maynard. Capt. Smith lost his airscrew just before reaching Cleveland, and thus lost the lead of the eastward bound competitors.

Major Spatz has announced that if he can obtain the permission of the War Department he will abandon the flight back to San Francisco. He wishes to experiment on a Texas flying ground

A Reuter message from New York on Oct. 12th stated that notwithstanding the fact that Army Air Service authorities at Washington announced that the return flight across the Continent would begin on Oct. 20th, it is now intimated by the American Flying Club that the race may be discontinued, or, if continued, the route may be changed to the southern part of the United States, in order to avoid the severe weather encountered on the northerly route.

THE CHINESE LOAN.

It was announced on Oct. 13th that Vickers, Ltd., are shortly offering for sale the Chinese Government Eight per Cent. Sterling Treasury Notes repayable between 1925 and 1929. Vickers, Ltd., hold these Notes as payment for a number of commercial aeroplanes built by them for the Chinese Government.

MORTGAGES AND CHARGES.

HANDLEY PAGE, LTD.—Satisfaction in full on June 3rd, 1919, of £100,000 debenture, dated Feb. 4th, 1918.

COMMERCIAL AERONAUTICS & CIVIL AERIAL TRANSPORT

GREAT BRITAIN.

CIVIL AERODROMES.

The Air Ministry made the following announcement on Sept. 27th :—

The following lists of aerodromes are issued as an addition to the lists already published. It will be seen that some of the aerodromes can only be considered as possible emergency landing-grounds. These lists are purely provisional and subject to alteration or amendment from time to time.

LIST D (d).

Aerodromes licensed as suitable for "Avro (504 K) and similar types of aircraft" only. Except in very few instances, accommodation does not exist. The licences have also in the majority of cases been issued for limited periods only.

Aerodrome.	Location of Aerodrome.	Nearest large town.
Blackburn	Finniscliffe Bridge, Blackburn	Blackburn.
Cathcart	Adjoins Kennishead Junction	Glasgow.
Cheltenham	Between villages of Swindon & Uckington	Cheltenham.
North Berwick	Adjoins Railway Station	North Berwick.
Walsall	Millish Rd., nr. Rushall Canal	Walsall.
Wolverhampton	Bridgnorth Road, Perton	Wolverhampton.

LIST E (b).

STATIONS NO LONGER IN USE BY THE R.A.F.

These stations have been passed to the Government Surplus Property Disposal Board. They will be relinquished as soon as the Government property thereon has been disposed of. In many cases the aerodromes are now under cultivation, but it is probable that the sites still form the best emergency landing-grounds in the immediate neighbourhood.

Aerodrome.	Nearest Rly. Stations and distance in miles.	Nearest Town and distance in miles.
Beverley	Beverley, N.E.R. (1)	Beverley (1).
Chattis Hill	Stockbridge, L.S.W.R.(2)	Winchester (10).
Doncaster	Doncaster, N.E. and G.N.R. (1¼)	Doncaster (1).
Elsham	Barnetby, G.C.R. (2¾)	Barton-on-Humber (6).
Penston	Macmerry, N.B.R. (1)	Haddington (5).

THE CONTINENTAL AIR SERVICES.

A PRIVATE LONDON-PARIS AIR SERVICE.

The honour of being the first firm in Great Britain apart from those directly in the Aircraft Industry to start their own commercial aeroplane service has fallen to S. Instone and Co., Ltd., steamship owners and ship-brokers, etc. As stated in THE AEROPLANE of October 1st, they have bought from the Air Ministry a D.H.4 biplane fitted with a 350-h.p. Rolls-Royce Eagle VIII engine.

The machine was to have made its first crossing to Paris on October 2nd, but it was then not quite ready, and the pilot, Lieut. F. L. Barnard (late R.A.F.), was called up for service during the railway strike.

The original offices of the firm are at Cardiff. In order that the employees there might see it, the machine was flown there recently. On the morning of October 13th, Lieut. Barnard flew it back to Hounslow. S. Instone and Co. state that the journey was completed in 56 minutes. The distance from Cardiff to Hounslow is at least 130 miles. As would be expected, the machine is capable of very considerable speed.

The machine left Hounslow for Le Bourget aerodrome (Paris) at about 12.30 p.m. on the same day (Oct. 13th). Samples and other light goods were carried and also letters from Mr. Stanley Machin, of the London Chamber of Commerce, to the chairman of the British Chamber of Commerce in Paris, and of the French Chamber of Commerce.

If they find that the aeroplane service pays, the company will buy other machines and perhaps start a daily service to Paris. They also hope to connect up by air with their offices in Italy. The one machine will fly from London to Paris whenever it is required, but it can hardly be expected to do the return journey more than three times a week.

THE AIRCO SERVICE

The service to Paris run by Aircraft Transport and Travel, Ltd., continued during the past week without interruption, although the weather on some of the days was not very favourable for flying. Owing to the demand for the transport, an additional machine was put on the service on four days out of the six on which the service ran.

Seven weeks of continuous flying has now been successfully completed with an approximate mileage of 24,750 miles, 232 hours in the air and at an average speed of 106½ m.p.h.

Date.	Type.	Pilot.	Left Hounslow	Arr. Paris.	Left Paris.	Arr. Hounslow.	Pass.
Oct. 5th	D.H. 4a	Lt. Powell	12.33 p.m.	2 48 p.m.			1
	D.H. 16	Lt. McMullin			12.30 p.m.	2.55 p.m.	4
Oct. 7th	D.H. 4a	Lt. Chattaway	12.38 p.m.	3 00 p.m.			1
	D.H. 4a	Lt. Powell			12.30 p.m	2.50 p.m.	1
Oct. 8th	D.H. 16	Lt. McMullin	12 50 p.m.	3 20 p.m.			4
	D.H 4a	Lt. Shaw	12 50 p.m.	3.00 p.m			1
	D.H. 9	Capt. Baylis			12.30 p.m.	2.43 p.m.	0
Oct. 9th	D.H. 16	Lt. Powell	12 43 p.m.	2.50 p.m.			4
	D.H. 9	Lt. Armstrong	1 00 p.m	3 10 p.m.			1
	D.H. 4a	Lt. Chattaway			12.30 p.m.	2.58 p.m	0
Oct. 10th	D.H. 16	Capt. Baylis	12.43 p.m.	3.00 p.m.			4
	D.H. 4a	Lt. Shaw			11.06 a.m.	12.55 p.m.	1
	D.H. 16	Lt. McMullin			12,30 p.m.	3.15 p.m.	3
Oct. 11th	D.H. 4a	Lt. Chattaway	1 07 p.m.	3 30 p.m.			2
	D.H. 4a	Lt. Lindley	1.04 p.m.	3.35 p.m.			1
	D H. 16	Lt. Powell			12.30 p.m.	2.50 p.m.	2

The weather conditions during the week were not good over the Channel. On October 6th there was drifting fog; on October 9th there was a 40 m.p.h. wind, and on the next day also there was a strong wind over the Channel.

Prospective passengers are now booking seats as far as a month ahead. The improvements in the organisation now make it possible for passengers to be picked up by motor-car for Hounslow at any point within a mile of Piccadilly Circus.

Going by air there is only one ticket and one vehicle. Irritating delays are avoided. The business man in a hurry saves more than four hours on the journey in actual time. Assuming he only values his time at a few pounds per hour the difference between the twenty guineas fare by air, and that of the ordinary land and sea route is no extravagance: it is a sound business proposition.

THE HANDLEY PAGE SERVICE.

Owing to the policy of Handley Page Transport, Ltd., it is difficult to obtain any information as to their services to Paris and Brussels. But one assumes that they are proceeding as usual.

The Company's latest innovation is the provision of luncheon baskets for passengers. The "basket" is really a carton in which are to be found six sandwiches, and fruit and chocolate. Orders for the baskets, which cost 3s., should be given in advance. Wicker holders for bottles and glasses are to be fixed to the walls of the cabins of their cross-Channel machines.

THE LONDON-AMSTERDAM AIR SERVICE.

On Tuesday, Oct. 7th, the British Aerial Transport Company dispatched a saloon passenger machine, piloted by Mr. Cyril Turner, to Amsterdam, at 12.50 p.m. This machine carried 600 lb. of merchandise and returned from Holland on Friday afternoon, 10th instant, with the full complement of passengers (i.e., four)

On Tuesday morning, Oct. 14th, the British Aerial Transport Company, Limited, dispatched a passenger saloon machine to Amsterdam from Hounslow, piloted by Mr. C Turner. Passengers and merchandise were carried. The return journey will be made from Holland on Thursday.

LONDON.

HOUNSLOW.—On Friday morning, 10th instant, Major C. Draper, D.S.C. (late R.N.A.S.) left Hounslow piloting a saloon passenger machine of the British Aerial Transport Company for Paris. The journey was completed in 2 hours 20 min. This machine was specially chartered, the passengers being Sir Percival Perry, Colonel Warwick Wright, D.S.O., Major Lennard, and Mr. Van den Bergh. It is expected that the party will return to-day (Wednesday, 15th instant).

NORTHOLT.—The Central Aircraft Company did their usual flying during the week ending Oct. 4th. Flights were made, with newspapers as cargo, to several towns on the East Coast. Post Office mails were carried to Bristol. Apart from the flights made over London, passengers were carried to Paris and Amsterdam

BRIGHTON.

On Saturday, 11th inst., the Avro Company organised an aerial carnival at Brighton on a scale not previously witnessed, at least in the South of England. At 10 a.m. eight Avros started from Hounslow in close formation under the command of Major McMinnies and Major A. G. Taylor. The mist was thick in the morning, but they flew comparatively low across country, and at Brighton joined forces with the Avros already there under the charge of Capt. Kennard. The other pilots who took part in the display were Capts. Davis and Le Blanc Smith and Messrs. Park, Sadler, Sullock, Broad, Pitt, Sparks, and Weeks

The Ladies' Mile at Patcham had not proved a very convenient aerodrome, so a much better one had been secured at West Blatchington Farm, which is easily reached by road or rail from both Brighton and Hove. Admission to the ground was free, and a large crowd had collected to witness the performance.

Displays were given on Oct. 11th and 12th by these aviators. Several parachute descents were made by a woman. The crowd showed great interest.

WINDERMERE.

The Avro seaplane season has now finished on Lake Windermere. On Oct. 4th Capt. Pixton flew a machine over to Douglas to escort Mr. Moxon back on his land machine. He made two journeys from Windermere to Douglas and also alighted at Blackpool to pick up Mr. Moxon and take him back to fetch the second machine. The weather was perfect except for a thick mist, which made it difficult to find the way.

On Oct. 8th Capt. Pixton called at Blackpool by car and brought Mr. Moxon back from Windermere to fly one of the seaplanes to Blackpool, where it was to be fitted with a land chassis. On arrival at Blackpool it was found to be impossible to fit the land chassis without a lot of alterations, so Mr. Moxon flew the machine back to Windermere the next day, having to take off in a very rough sea.

NEW ZEALAND.

Apropos of the use of aeroplanes for submarine spotting during the war, it has been found that most of the larger species of fish can be easily seen from the air if the bottom of the sea over which they are swimming is suitable in colouring, and if the sea is not choked with seaweed. A good-sized mullet can be seen from an altitude of two or three hundred feet when it is swimming over sand. Smaller fish in shoals are easily visible.

Professor Joubin, of Auckland, proposes the establishment of regular patrols by seaplanes over the fishing grounds. These machines should be equipped with radio-telegraphic apparatus, and would notify the fishermen in the neighbourhood whenever a shoal of fish was "spotted."

The use of seaplanes would result in a great saving of the fishermen's time. It would also ensure a more economical use of expensive bait. One believes that even the British trawl-owners might add a little to their great wealth if they used aircraft for shoal "spotting."

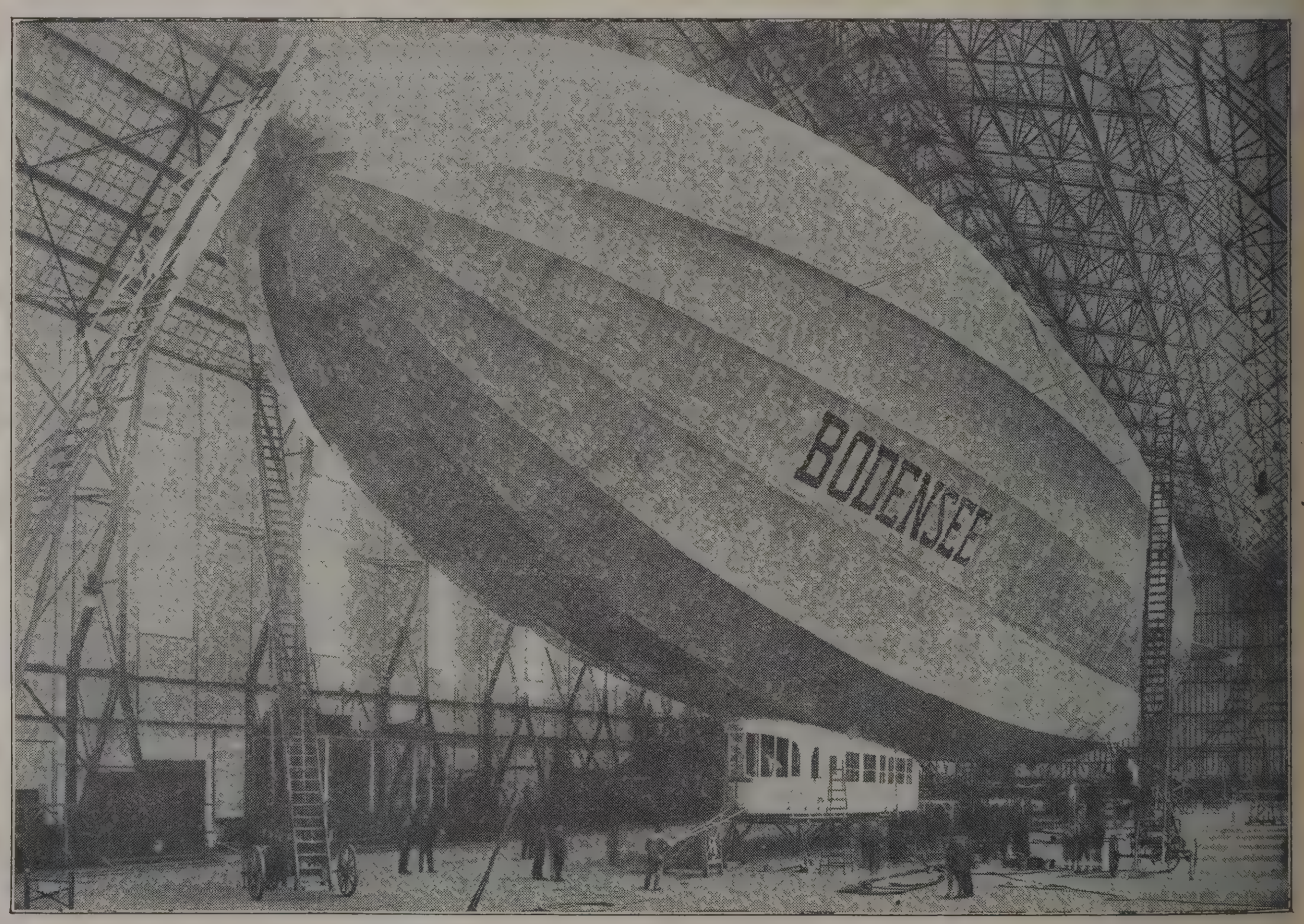
FRANCE.

MM. GASTAMBIDE AND LEVAVASSEUR.

MM. Gastambide and Levavasseur, the former of whom was the original Chairman of the Antoinette Company, and the latter of whom was responsible for the design of the graceful Antoinette monoplane, have now produced an aeroplane with variable surface. Two satisfactory flights have been made, but no details are as yet available.

The world, with historic memories of the Antoinette, superb in its beauty, will welcome M. Levavasseur's return to aeronautics.

(*Continued on page* 1408A.)



The Hamburg-Amerika liner "Bodensee" in her shed.

AERONAUTICAL ENGINEERING

SUPPLEMENT TO "THE AEROPLANE"

INCORPORATING AIRCRAFT ENGINEERING, AERODYNAMICS, AIRCRAFT FINANCE AND COMMERCIAL AERONAUTICS AND MATTERS PERTAINING TO THE AERONAUTICAL ENGINEER AND THE AIRCRAFT TRADER.

THE WEEKLY COMMENTARY.

The views of a number of aircraft manufacturing firms as to the future prospects of the Aircraft Industry and the policy which they propose to meet their estimate thereof will be found below.

Naturally all agree that there is no prospect of keeping their works fully employed on the construction of aircraft, but with two notable exceptions all the firms which have so far stated their views have sufficient faith in the future of aviation to have decided to keep their connection with the Industry and to carry on with experimental and development work.

This is as it should be, and the Industry will suffer little by the decision of large money-making concerns to close down their aircraft works for the time being as soon as the immediate prospect of profits therefrom vanishes.

Flying-boats originating from the Supermarine Aviation Works at Woolston are illustrated and described in "Modern British Aeroplanes" this week. The medium and small sized flying-boat presents a very interesting problem, and its exact sphere of usefulness is not yet conclusively settled.

The flying-boat in really large sizes has its own field undisputed, but it is still doubtful whether for small sizes the boat type will supplant the float seaplane or *vice-versa,* or whether each type will find its own uses.

In this connection the description of the Oertz flying-boats—the only German machines of the boat type which have persisted through the war—is distinctly interesting.

THE AIRCRAFT INDUSTRY'S VIEWS OF THE FUTURE.

In the present state of affairs the future policy of those firms who have been occupied during the war with the manufacture of aircraft on a large scale cannot fail to be of very great interest to all readers of THE AEROPLANE.

Letters of inquiry on this subject have been addressed to a number of such firms, and the following replies thereto, together with certain notes as to the firms' past activities, should prove illuminative.

SIR W. G. ARMSTRONG, WHITWORTH & CO., LTD.

Armstrong, Whitworth & Co., Ltd., entered the Aircraft Industry before the war in 1913. The A.W. F.K.3 with the 90 h.p. R.A.F. and the F.K.8 with the 160 h.p. Beardmore engine designed by Mr. Koolhoven and produced very early in the war both gave excellent results and were extensively used. Later Armstrong experimental designs, particularly the "Armadillo" and the "Ara," showed that the firm were capable of maintaining the high standard of their earlier productions.

Beside their aeroplane activities, Armstrong Whitworth successfully undertook the manufacture of rigid airships for the Admiralty.

In response to an inquiry as to their future policy this firm says:—

"In reply to your letter we would inform you that it is our intention to close down both our aeroplane and airship departments, owing to the curtailment of the Government aircraft programme.

"The stoppage of aircraft contracts and lack of policy as regards civil aviation has necessitated the discharge of our experienced staff and personnel.

"Inquiries made both in England and abroad as to the aircraft business to be obtained or contemplated show that it is so small as not to justify our going on with aircraft manufacture for some years to come."

BOULTON & PAUL, LTD.

Boulton & Paul, Ltd., of Norwich, were before the war well-known manufacturers of steel and wooden buildings and other types of structural engineering. Their entrance into aircraft manufacture was a result of war conditions. In addition to the production of large numbers of machines to official specification, the firm have, under the management of Mr. Geoffrey ffiske and with the assistance of Mr. J. D. North as chief designer, produced excellent machines of their own design. In particular the Boulton & Paul "Bourges" twin-engine fighter-bomber must be considered to be one of the most efficient large machines yet produced. It is therefore cheerful to hear that the firm are to keep their experimental department working on the development of new types.

Mr. ffiske says:—

"My company are amongst the fortunate ones that can turn their aircraft shops into their pre-war business, and I am pleased to say that the whole of our shops are nearly settled down to commercial work, which includes horticultural and agricultural appliances, wooden bungalows and cottages.

"We are keeping our experimental department fully employed on the development of new types and improvement of aircraft. We hope by this means to help, with others, in keeping British aircraft to the fore."

THE CENTRAL AIRCRAFT COMPANY.

This firm, founded during the war, was employed till the Armistice on the manufacture of machines to official specifications. Since then they have designed and built a number of machines for post-war purposes, and have put a flying school into operation at the Northolt Aerodrome.

They propose to continue the manufacture of their

machines for use at their school, for "joy-rides," and for passenger services which they run, and for sale at home and abroad.

As, however, the demand for machines is not expected to keep their works fully occupied at present, they have taken up a number of other classes of work, and are busy on the construction of furniture, toys, motor-lorry bodies, car repairs, and general engineering and woodwork.

The Gnôme and Le Rhône Engine Company.

There is little need here to dilate upon the services rendered to the Aircraft Industry generally by the Gnôme and Le Rhône engines. The Gnôme and Le Rhône Engine Company, who own the British rights in these engines, say that at present their works are chiefly occupied with work in connection with the automobile industry, and that they are devoting attention to the development of engines for such work.

The aero-engine and the experimental departments are being maintained, however, though naturally the aero-engine output has been greatly reduced.

D. Napier & Son, Ltd.

The makers of the famous Napier cars were one of the first of the firms who diverted their normal activities to assist in the construction of aircraft.

In addition to the construction of actual aeroplanes to Government order and specification, the firm turned its equipment onto the production of engines, turning out large numbers of engines of R.A.F. design, and also developing, under severe difficulties, their own now famous three-row 12-cylinder engine of 450 h.p.

Since the advent of peace D. Napier & Son, Ltd., have ceased to build aeroplanes, but they have been enabled convincingly to demonstrate the qualities of their engine.

Their works are mainly employed in the manufacture of private and business motor vehicles.

As to the aeronautical side of their business the firm state :—

"We have every confidence in the ultimate success of commercial aviation, and are continuing with our programme to manufacture the 450-h.p. Napier aero-engine, which has already proved itself thoroughly reliable and airworthy, with the result that we have every reason to anticipate business resulting in due course."

The Sopwith Aviation & Engineering Company, Ltd.

The Sopwith Company, under the direction of Mr. T. O. M. Sopwith, are of the earliest of the pioneer aeroplane constructors. The work which they have done towards securing the ascendancy of the British aircraft for war purposes is familiar to everyone, and an attempt to catalogue their achievements here is quite unnecessary.

In response to an inquiry as to their views of the future, Mr. Sopwith has supplied the following statement :—

"The civil aviation situation, as it presents itself at the moment, is, I suppose, one of the most difficult problems that the Aircraft Industry has ever had to tackle.

"The era of peace has hardly yet really dawned, as aeroplanes cannot be exported to certain countries (and some of them are the most interesting from a civil aviation standpoint) without special permission, which in some cases it is impossible to grant, owing to the disturbed state of these countries. Apart from this, however, it would seem that the future progress of civil aviation resolves itself into three main heads :—

"(1) The obtaining of data as to costs, the averages of days flown during the year, and definite information as to reliability and consistency of any given service.

"(2) The education of the non-flying public by propaganda, etc., showing the possibilities of aerial transport, educating them as to the danger aspect—*i.e.*, that it is not nearly as high as the lay Press very often puts it—and generally actively to impress on the non-flying world the high practicability that aerial transport has reached.

"(3) The establishment at the earliest possible moment of aerodromes and emergency landing grounds on all the main routes, and organisation generally in much the same way as the railways have had to build up an organisation.

"In a word, the situation is very similar, so far as the non-flying public are concerned, to the institution of railway travel. Until these three main heads have been adequately dealt with, I do not see any prospect of commercially remunerative activities for aviation firms.

"So far as the policy of my company is concerned, we propose actively to engage on experimental and competition work, and to follow the developments as facilities increase, but I think that, for the next several months, it is only reasonable to regard the civil aviation side of any aircraft business as in a state of semi-suspended animation.

"It is of vital importance that the chief designing firms should maintain, at any rate, a nucleus of their aviation staff and factory personnel, so that the *métier* may not be lost and the Industry become moribund. It is only possible to do this by, in the meantime, taking up the manufacture of products outside aviation, and of such a nature as to keep as far as possible the *status quo* as an aviation firm.

"As to the military side, this is at present wrapped in mystery. It is therefore impossible to estimate what prospect there will be for aviation firms having Government support in order to maintain an industry for military requirements.

"Of this I am sure that the aviation future, be it soon or late, is certain, but the only way to ensure its security is to hasten slowly."

J. Samuel White & Company, Ltd.

This well-known Isle of Wight firm of shipbuilders entered the Aircraft Industry some time before the war, and under the management of Mr. Howard T. Wright their aviation department produced the notable series of "Wight" seaplanes, an early example whereof was purchased by the German Government, and appears to have produced a permanent effect upon German seaplane float design.

In answer to a request for their views as to the future of the Aircraft Industry, J. Samuel White & Company, Ltd., say :—

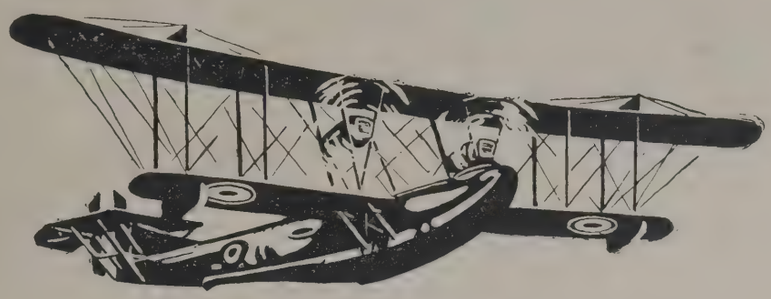
"We regret we are not in a position to give you our views upon the future of Aircraft Industry, as we have definitely closed down our aviation department, and at present have no intention of reverting to aeroplane construction."

THE STANDARDISATION OF CHAINS.

The Association of British Driving Chain Manufacturers announce that they have now completed the standardisation of roller chains up to ¾-in pitch. For the convenience of chain users, and to insure complete interchangeability, they have also standardised chain wheel tooth forms. These new tooth forms, while not being identical with any of the existing forms, incorporate the essential features of each.

Particulars of the standards set up by the Association of British Driving Chain Manufacturers are to be published in pamphlet form, which will be obtainable from the Secretary of the Association of British Driving Chain Manufacturers, Bassishaw House, Basinghall Street, London, E.C.

The Association comprises the following well-known firms : Alfred Appleby, Ltd., Birmingham; Brampton Bros., Ltd., Birmingham; Perry and Co., Ltd., Birmingham; "The Coventry" Chain Co., Coventry; Hans Renold, Ltd., Manchester.



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THE BOULTON & PAUL—P. 9.

An Aeroplane which is a Sound Commercial and Private Proposition

In this P. 9 Machine we have, we feel, solved the problem of providing an Aeroplane which is a sound business proposition—and which combines with low cost the great essentials for Commercial and Private use. All our great resources of material and craftsmanship have been utilised. Scientific Research and Experiment by a staff associated with flying from its beginnings coupled with the great Experience gained through the building of thousands of Aeroplanes during the War, have been concentrated in the production of this P. 9 Model.

It is a Two-Seater—Single Engine Tractor—which has attained on test a speed of over 100 miles per hour.

Its outstanding features are :—

CHEAP AND EASILY HOUSED. The Initial cost is extremely low—£700—and the cost of running for a machine of this type and performance is reduced to a minimum. Owing to its small size it is easy to handle on the ground and requires but little accommodation. The principal dimensions are: Span, 27 ft. 6 in.; Length, 25 ft.; Height, 10 ft.

EASY TO FLY. The P. 9 has a big speed range, and low landing speeds, and this combined with Stability at all trimming speeds and well-balanced controls, allows the machine to be flown for long periods without undue fatigue. It also gives the maximum of Safety possible.

COMFORT AND CONVENIENCE. The comfort of the Pilot and Passenger has been specially considered. Each Cockpit is roomy and fitted with our special Seats. Controls for both Flying and Engine are fitted in the fron and rear Cockpits to enable the machine to be flown from either position. The exhaust from engine is discharged behind the rear Cockpit giving a silencing effect and freedom from fumes. Two standard cases are provided for luggage and form part of the fairing immediately behind the rear Cockpit.

The uses to which this compact and efficient machine can be put are wide and various, and will suggest themselves to those who have been awaiting the stage of Aeronautical Development now reached by the P. 9. It can be used for dozens of Commercial Purposes. The same type carried photos from R. 34 direct to London. It has been sent to Australia for Sheep-runs—and will soon be in use in various parts of the world for Exploring Uncharted Territory, Examining Timber Tracts, Fighting Forest Fires, Carrying Mails to Distant Mines, Transition of Colonial Mails to Mail Steamers, and for General Patrolling and Police Purposes.

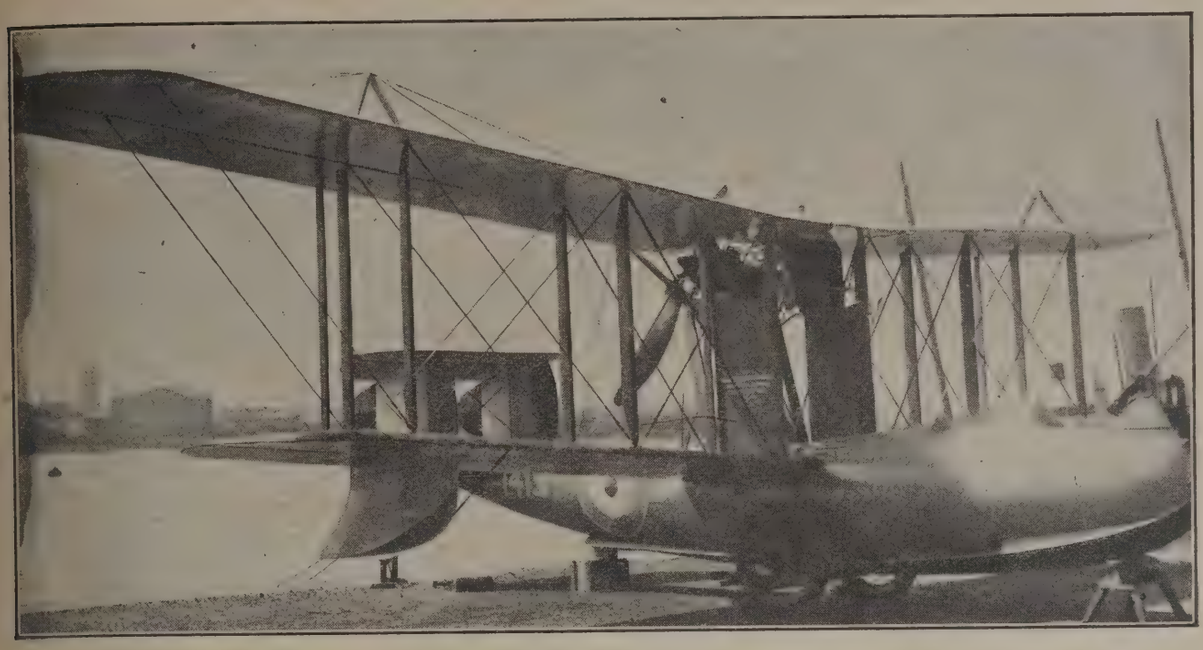
£700 **If you are interested—write for full particulars. State your needs or purpose, and our engineers will consider every detail closely—to advise soundly.**

Boulton & Paul Ltd.
NORWICH

LONDON OFFICE ADDRESS: 135-139, QUEEN VICTORIA STREET, E.C.4.

MODERN BRITISH AEROPLANES.

XIX.—The Supermarine Aviation Works, Ltd.



Three-quarter Front View of a Supermarine A.D. Type two-seater (200 h.p. Hispano-Suiza engine).

The Supermarine Aviation Works, Ltd., were founded in 1912 by Mr. Noel Pemberton Billing as Pemberton Billing, Ltd. In those early days the firm produced some very interesting experimental flying-boats.

During the war Squadron Commander—as he then was—Pemberton Billing gave up all his interests in the firm and its title was changed to the present one, and Mr. Hubert Scott-Paine assumed control.

The firm produced during the period of hostilities many interesting machines, including the "Night Hawk" quadruplane, a machine doomed to insuccess by the absence of suitable engines, and the "Push Proj," a small, single-seat pusher fighter with an extraordinarily good all-round performance, which was built in some number to the order of the Admiralty.

In 1916 the firm were given orders to build an experimental flying-boat of Admiralty design. After many alterations and modifications introduced by the firm this machine—generally known as the A.D. boat—became a distinct success.

THE SUPERMARINE A.D. TYPE BOAT.

This machine was designed for sea patrol and reconnaissance work, and was a tandem two-seater, with a gunner-observer in the bow of the hull, with the pilot behind.

The hull was of the type associated with the name of Major Linton Hope, in that it was built up on a framework of approximately circular sections, composed of a number of fairly light longitudinal members tied together by very light and flexible rings of elm. This main skeleton is completely planked over with thin mahogany, and forms a tubular body which is extremely stiff against either bending or torsion.

At the same time it is not a rigid structure, in that all the ring elements of which it is built are flexible and capable of distortion into an oval section without damage—a quality



A Pusher Seaplane built by the Supermarine Works in 1916. Owing to the radial engine with which it was fitted not providing sufficient power the type was not reproduced.



Side View of the Supermarine "Baby" (200 h.p. Hispano-Suiza) with wings folded.

which acts as a very effective springing against "taxying" and alighting shocks.

Projecting fins which form the planing surfaces, also built on a framework of flexible timberings, are built onto the main tubular body to complete the hull. In practice this type of hull has given extremely good results on the water, and stands up well to the very worst weather.

The wing structure is of the usual biplane type, with a large overhang braced above from a pylon. The upper centre section is carried from four vertical struts, with a separate structure supporting engine and radiator between them.

The wings are arranged to fold forward, hinging on the front spar, an arrangement which adds somewhat to the overall length folded. Folding to the rear in the ordinary way would have meant a longer hull to carry the tail clear of the wing bracing, with a considerably increased hull weight and an impaired manœuvrability.

The power plant consisted of a 200 h.p. Hispano-Suiza engine, a type of engine which never gave great satisfaction in these machines on account of continual trouble with the reduction gear and the propeller hub.

The tail unit was a biplane, with twin fixed fins enclosing the intertail struts, each having a rudder. The tail is curious in that the upper and lower surfaces were of wing profile in section, but the upper was inverted—*i.e.*, was concave upwards—whilst the under surface was in the usual position. The upper inverted surface working in the slipstream carried a heavy down load when the engine was running, and supplied a moment balancing that caused by the high thrust of the airscrew.

The machine was fitted with tanks for 4½ hours' full-power flight, Lewis gun and ammunition, and wireless.

With this load the machine gave an excellent all-round performance with a top speed in the neighbourhood of 85 knots.

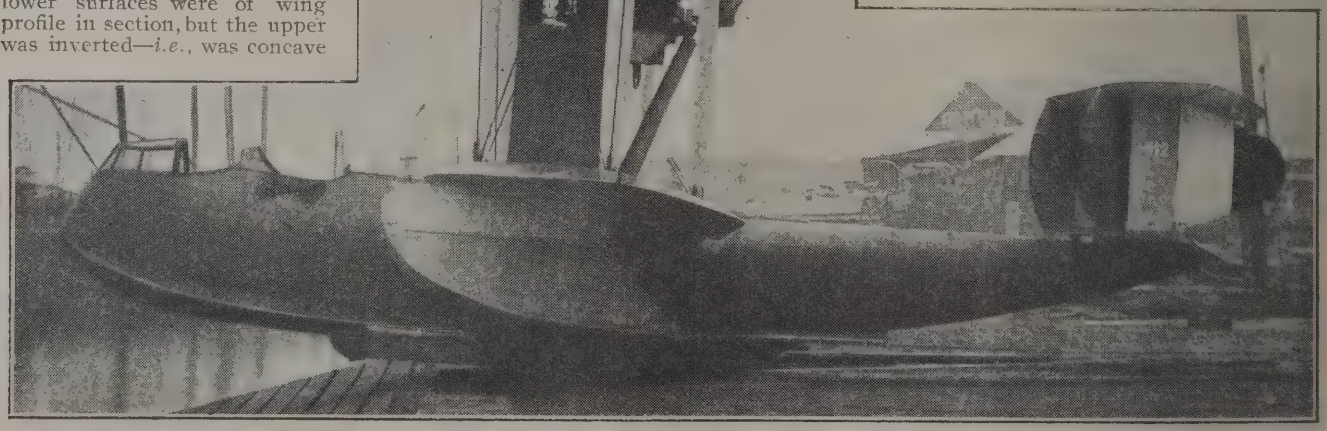
Machines of exactly similar type, fitted with 160 h.p. Beardmore engines, and with increased passenger accommodation, are being used with great success by the Supermarine firm for their South Coast passenger services. No detailed specification of this type is available.

THE SUPERMARINE "BABY."

This was a small single-seater fighter boat designed upon lines somewhat similar to those of the previously described two-seater.

The hull was of the same type and construction as in the A.D. boat, though somewhat smaller.

The wings were of reduced span, with a single row of struts on either side, and were made to fold in the normal way—backwards.



Side View of the Supermarine A.D. type boat (200 h.p. Hispano-Suiza engine).

"CELLON"

The Dope Of Proved Efficiency.

The "BRISTOL" FIGHTER Type F2.B.



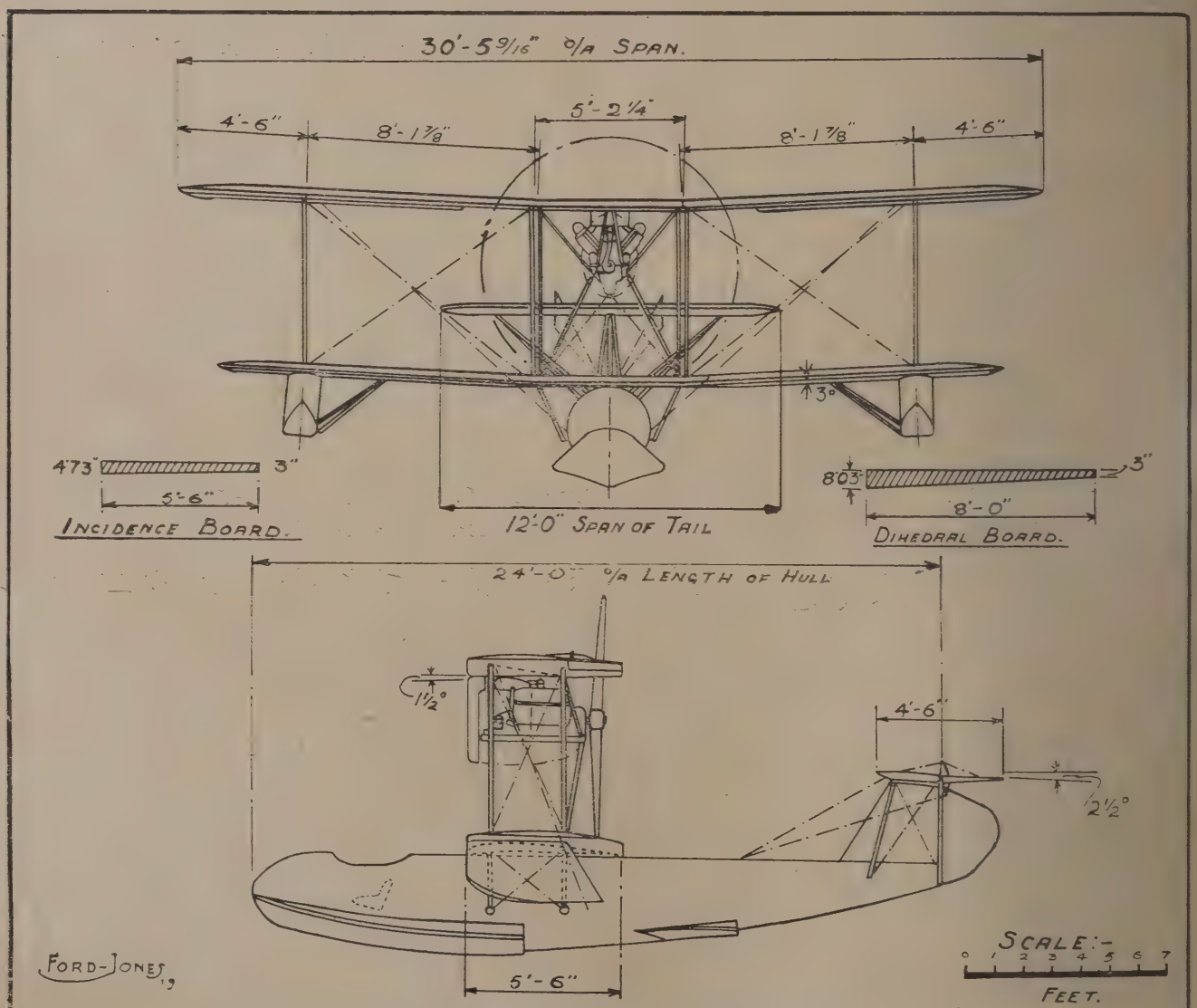
In September, 1917, a Bristol Fighter was delivered from the "Bristol" works and put into commission in the fighting area. It was unfortunately landed in Holland and soon afterwards was acquired by the Dutch Government. From that time until now, though in continuous use by the Dutch Pilots, the **"CELLON DOPE"** has never been renewed and is still in perfect condition. The machine has never been repaired or renovated in any way, every unit being exactly as when it left the "BRISTOL" works.

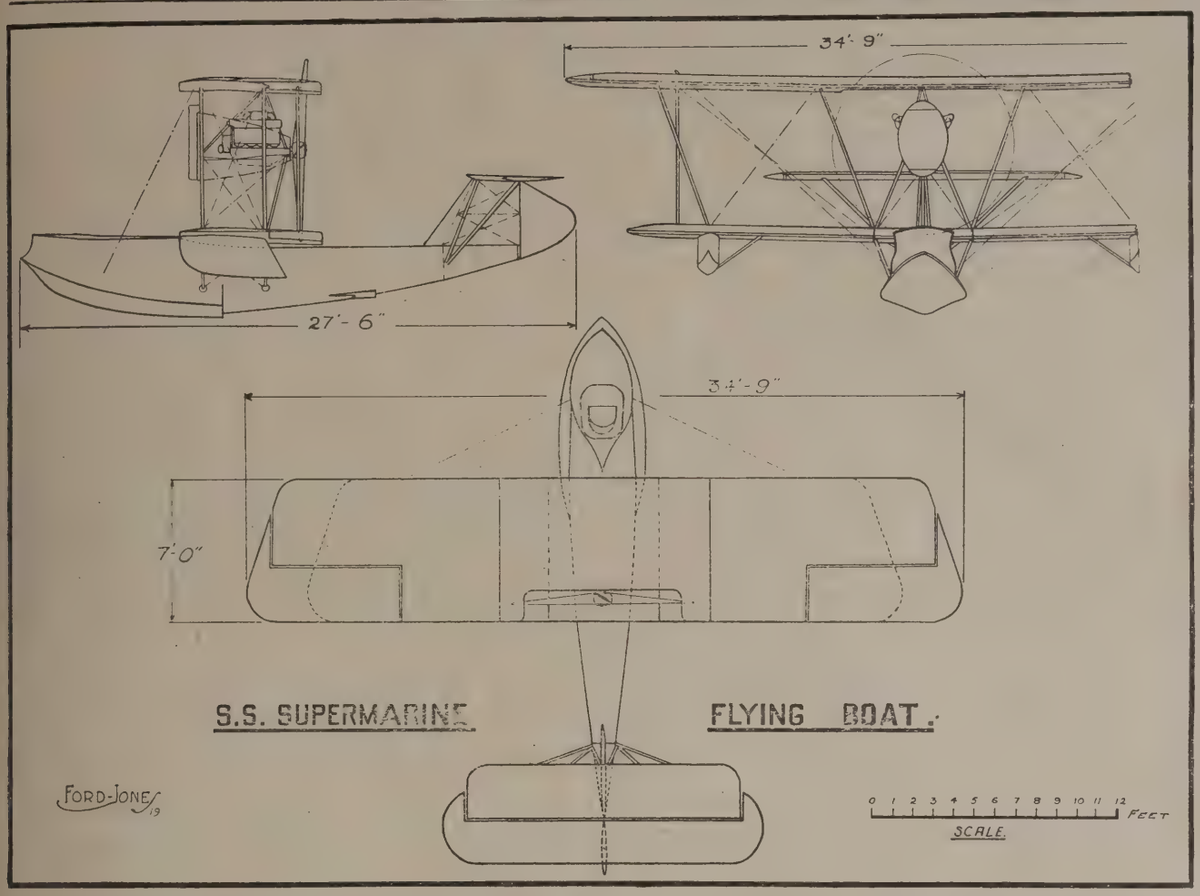
CELLON (Richmond) LTD.,
22, Cork Street,
London, W.1.

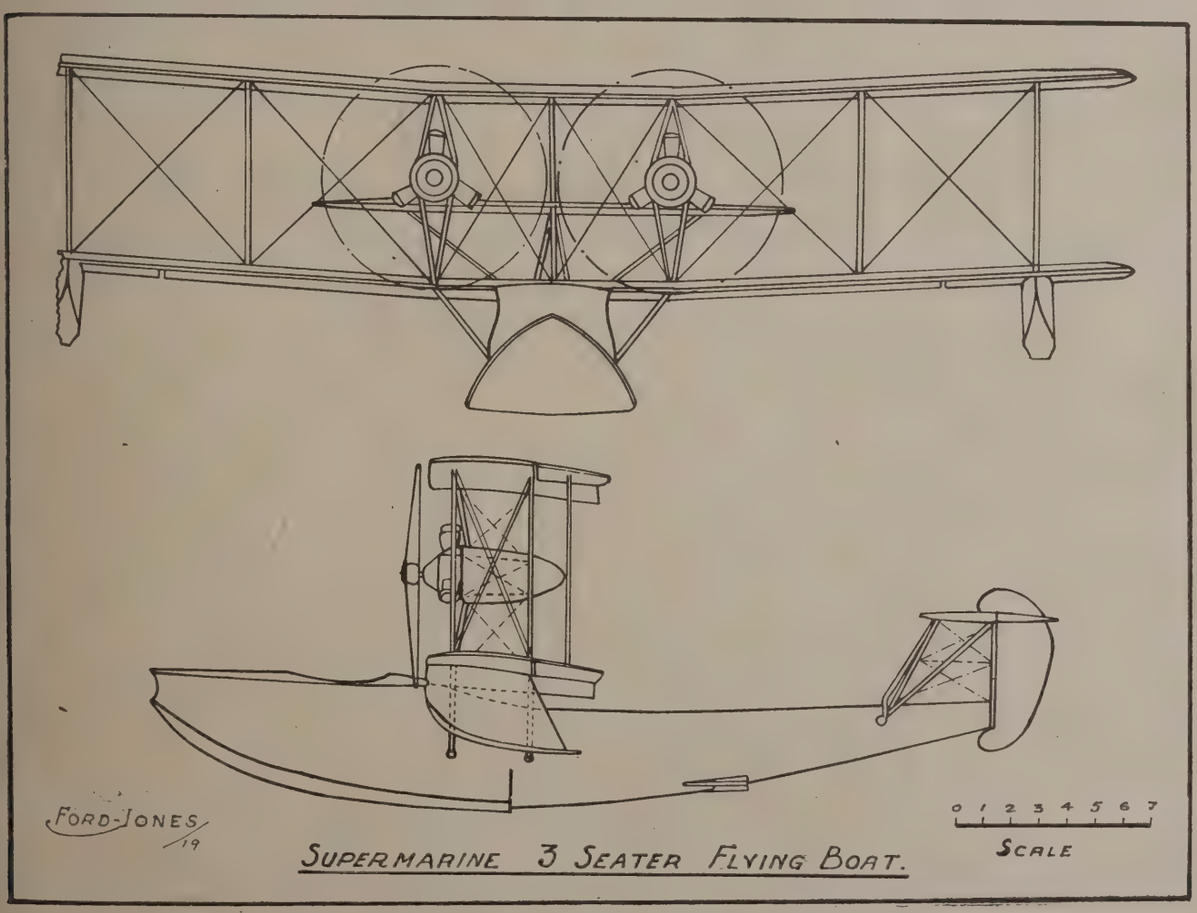
Telegrams: AJAWB, REG, LONDON.
Telephone; GERRARD 440 (2 lines.)



Front View of the Supermarine "Baby" (200 h.p. Hispano-Suiza), of which drawings are given below.




34'-9"
27'-6"
34'-9"
7'-0"
S.S. SUPERMARINE FLYING BOAT.
FORD-JONES /19
0 1 2 3 4 5 6 7 8 9 10 11 12 FEET
SCALE.


FORD-JONES /19
0 1 2 3 4 5 6 7
SCALE
SUPERMARINE 3 SEATER FLYING BOAT.

Specification :—

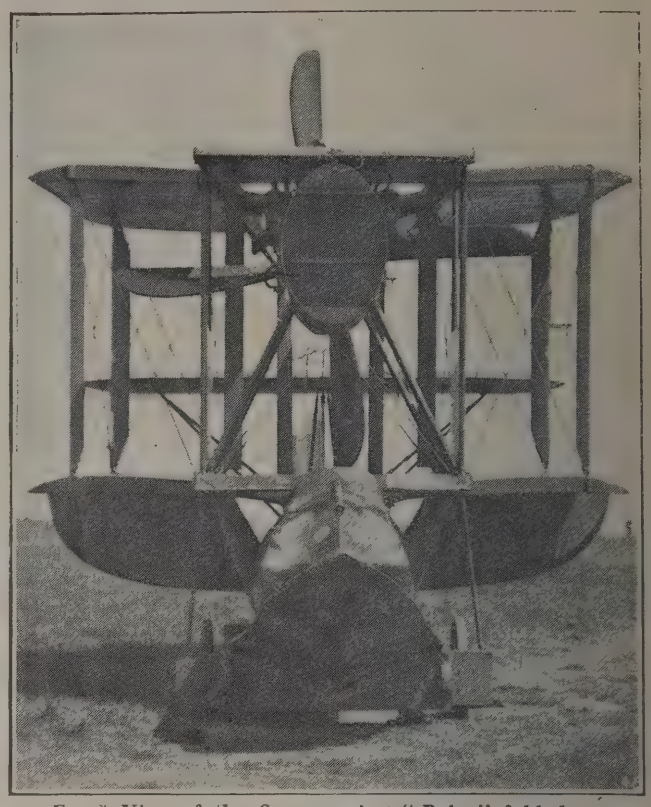
Type of machine	Single-seater Flying-boat.
Name of machine	Supermarine "Baby."
Purpose for which intended	Single-seater Seaplane Fighter.
Span	30.5 ft.
Overall length	26.3 ft.
Maximum height	10.6 ft.
Chord	5.5 ft.
Total surface of wings	309 sq. ft.
Engine type and h.p.	Hispano-Suiza 150-h.p.
Weight of machine empty	1,699 lb.
Load per sq. ft.	7.5 lb.
Weight per h.p.	15.5 lb.
Tank capacity in hours	3 hr.
Performance—	
Speed low down	117 m.p.h.
Landing speed	57 m.p.h.
Disposable load apart from fuel	627 lb.
Total weight of machine loaded	2326 lb.

In addition to these machines the firm have the following designs in hand :—

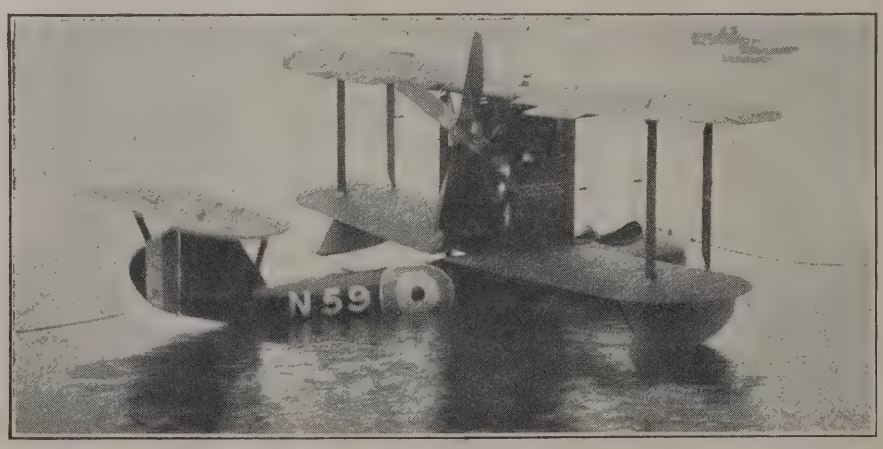
Type A.—Small single-seater high-performance machine designed for a speed of 130 m.p.h. and a climb to 10,000 ft. in 8 min. The attached scale drawing shows that this machine is in general arrangement very like the machine which, fitted with a 450 h.p. Napier engine, was entered for the Schneider Cup Race.

Type B.—A twin-engined training flying-boat, shown in a scale drawing. The machine is fitted with dual control in two side-by-side seats, with an additional seat for passenger. Two 100 h.p. three-cylinder Cosmos "Lucifer" engines form the power plant, which should give a maximum speed of 90 m.p.h. With minor modifications this type becomes a three-seater sporting model.

Type C.—A small passenger or mail flying-boat for one pilot and three passengers or their equivalent. To be fitted with a Beardmore engine of 160 h.p.



Front View of the Supermarine "Baby" folded.



The Supermarine "Baby" on the water.

Type D.—A long-distance passenger, mail and commercial flying-boat of the tripiane variety, to be fitted with three Cosmos "Jupiter" engines of 500 h.p. each. Accommodation is to be provided for navigator, two pilots, and 24 passengers, or 1½ tons of mail or goods. A speed of 98 m.p.h. and a radius of 4 hours at that speed are hoped for.

Mr. Hubert Scott Paine, the Managing Director of the Supermarine Company, is firmly convinced of the practical utility of the boat type of seaplane, both for naval and for commercial purposes.

It may therefore be expected that Supermarine developments of the future will be at least as interesting as those of the past.

20 YEARS' PROGRESS.

Mann, Egerton and Co., Limited, have issued a souvenir booklet entitled "20 Years' Progress in Pictures," which gives a very complete history of that esteemed firm from their inception as electrical engineers to their present-day position as one of the largest motor and electrical engineering concerns in Great Britain.

Practically fifty per cent. of the illustrations show the various types of aircraft this firm built to their own and outside design.

Founded in 1899 as electrical engineers, the motor-car department was inaugurated shortly afterwards; and in 1905 the present company was floated with the object of amalgamating the motor and electrical departments under one management.

From that date until August, 1914, progress was steady and rapid, with the result that on the outbreak of war the company was one of the largest and best-known motor agency and electrical engineering concerns in the country, with branches at Norwich, Ipswich, Bury St. Edmunds, and London.

Naturally, on the outbreak of war the company undertook a considerable amount of war work, principally in connection with the motor industry, but with the increasing demand for aircraft, the firm were requested by the Admiralty to set up an organisation for the manufacture of seaplanes.

In order to cope with this work, the whole of the extensive coachbuilding factory as well as a large proportion of the motor repair and engineering works were handed over for the manufacture of aircraft. Additional works and shops were constructed in Norwich and an aerodrome of 60 acres was laid down.

In all, ten different types of aircraft were built for Service purposes, the total horse-power turned out being over 175,000.

Now that hostilities have ceased, the company have completed a comprehensive scheme of reconstruction, keeping their original business as motor engineers and coachbuilders first and foremost, but the aircraft branch will still be maintained with a view to future development in connection with civil aviation as well as their electrical departments and the manufacture of the "Willett Air Gas" system of lighting, of which they are the proprietors and sole manufacturers.

One feels sure that the firm of Mann, Egerton and Co., Ltd., will maintain the reputation they hold throughout Great Britain and the Colonies as agents of every make of car of repute, and also with regard to the system of service and repairs, the large repair depôts in Norwich, Ipswich, Bury St. Edmunds, and London being equipped with the latest machinery, and the completeness and efficiency of its organisation enables them to carry out repairs to any make of car promptly, skilfully and at strictly competitive prices.



First London to Madrid non-stop Flight

made by an aeroplane fitted with Napier Engine and B.T.H. Magnetos was completed in 7¾ hours. From the moment of leaving Acton to the landing in Madrid, engine and magnetos functioned perfectly, and never caused the pilots to have a single moment of anxiety.

The British Thomson-Houston Co., Ltd.,
Lower Ford Street, Coventry.
Member of the British Ignition Apparatus Association.

B T-H

To "Aeroplane" Subscribers.

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The subscription list of the AEROPLANE, both at home and abroad, is steadily increasing: an eminently satisfactory movement which we are anxious to encourage.

Of the many books published on the war on the Western front, none conveys a more realistic impression of the work of a particular arm than FLYING COLOURS by Captain H. M. S. Saundby, M.C., A.F.C., R.A.F., published at **£2 2s.** net (Edition de luxe) and **15/-** net (Popular Edition).

Among the art books published in the last year or two, none can claim to be a more faithful reproduction of the artist's colour scheme and that indefinable thing, atmosphere.

FLYING COLOURS is a permanent memorial of the life of "the pilot in action," as Major-General C. B. Ashmore calls him. It was very costly to produce, and necessarily the price to the public had to be high.

Many would like to possess it who do not feel disposed to put down Two Guineas for the larger edition or Fifteen Shillings for the smaller.

How to meet their views? We make a special offer to any subscriber for one year to the AEROPLANE: namely to give him the right to purchase either edition at half price.

All he need do is to send us the accompanying order form with cheque for one year's subscription, plus **£1 1s.** or **7s. 6d.** according to the Edition he wishes to have.

In order to be fair to current yearly subscribers we extend the half-price concession to them also. If a subscriber has paid a quarterly or half-yearly subscription, then to secure the right to participate he should send the balance for the year.

Subscribers who have given their orders through the trade, and not direct to the AEROPLANE Office, must sign the form below or a copy thereof, and hand it with the balance on account of the book to their retailer for transmission to the AEROPLANE.

If the subscriber already has a copy of FLYING COLOURS, and would wish to take advantage of this offer, then he may secure McCudden's "Five Years in the R.F.C." **(7s. 6d.)**; Richthofen's "Red Air Fighter" **(3s. 6d.)**, and Gill's "The Aerial Arm" **(6s. 6d.)** at half price, *i.e.* **8s. 9d.** the three, plus the year's subscription to the AEROPLANE.

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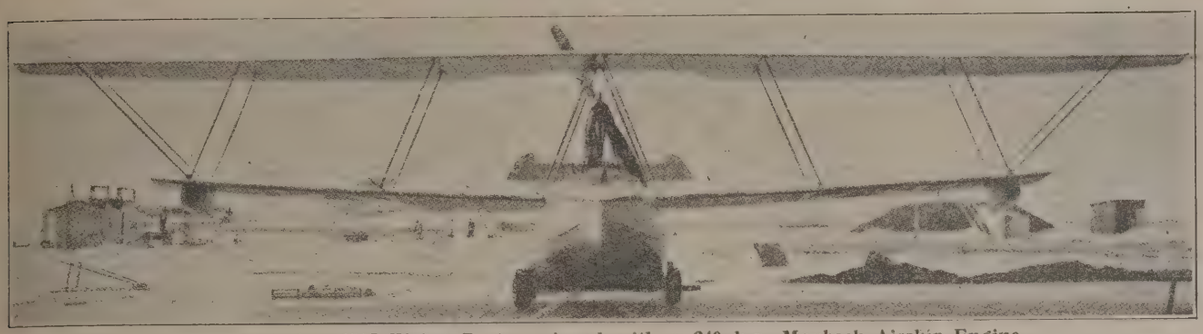
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THE GERMAN OERTZ FLYING BOATS.

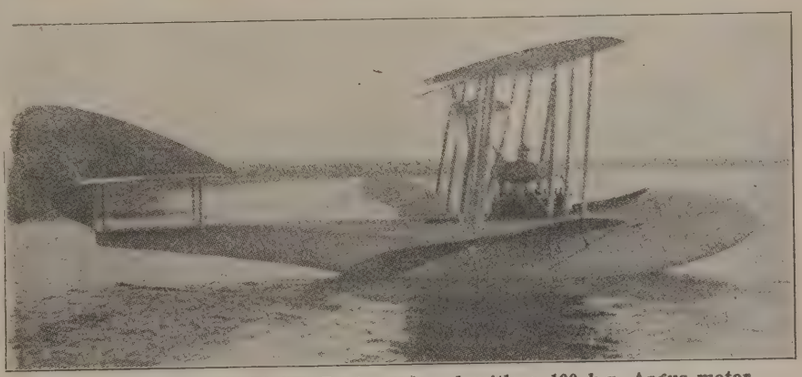
By ERIK HILDESHEIM (Copenhagen)



Oertz late 1915 Flying Boat, equipped with a 240 h.p. Maybach Airship Engine.

During the war the Germans stuck as exclusively to the use of seaplanes for their Naval Air Service as did the Austrians to flying-boats in the Adriatic, and the only practical German flying-boats, so far, were turned out by the yachting yard of Max Oertz at Hamburg, known as the designers of the ex-Emperor's racing craft "Meteor" and "Honenzollern."

The German view, apparently still unsettled, seems to be that as weights of seaplanes and flying-boats come out almost equal for horse-powers from 150 to 240 the former are more suitable up to 300 h.p., while both types will be employed in conjunction up to 700 h.p. Above that the weights are to the advantage of the flying-boats, so that big aircraft will always be of the latter type, showing, for instance, a saving of about two tons, compared with a 2,000-h.p. seaplane.



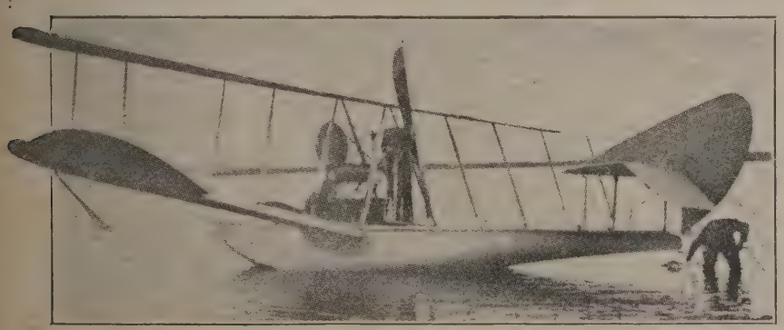
The first 1913 Oertz Flying Boat, equipped with a 100 h.p. Argus motor.

The first aeroplanes turned out by Oertz in 1910 were three-ply-wood clean bodied 70-h.p. Gnôme-engined monoplanes, piloted at a weight of 350 kilos. at speeds of 130 kilometres per hour, by the present director of the Dutch Trompenburg aircraft works, H. Wijnmaalen and the late Vollmoller, killed in experimental work with the Staaken multiple-engined giant biplanes.

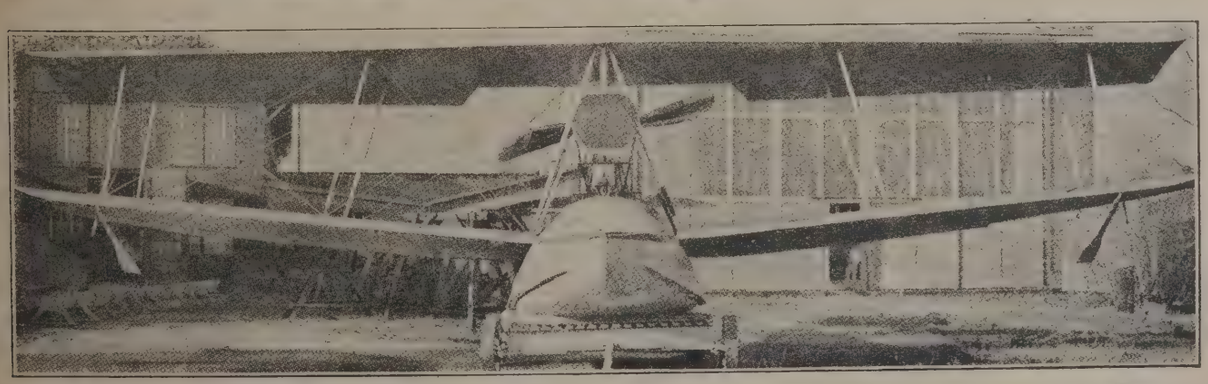
When the firm's Deperdussin-trained engineer, Dax, was killed in a landing accident, aircraft work was stopped and not again resumed till 1913, when the Imperial Naval Office ordered a flying-boat, driven by a 100-h.p. Argus motor through spur-wheel gear.

The engine was mounted in the boat and the planes divided in the middle and combined by inclined struts, the lower ones being larger to avoid pendulum movements from the low-placed motor by keeping the centre of pressure as low as possible.

The hull had no steps, and owing to engine troubles no duration flights were carried out.



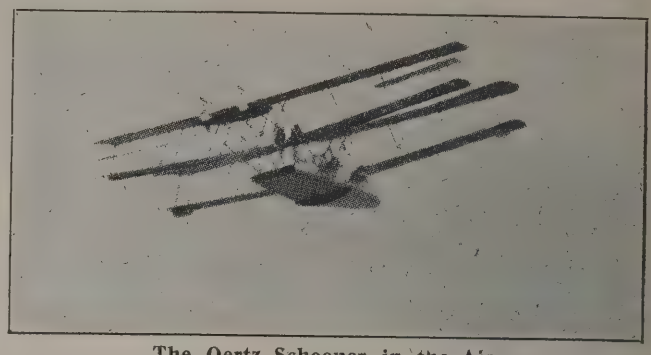
Two Oertz flying-boats of different models, both with engines in the hull and a gear-drive to the airscrew. Note the wing tip splashboards used in place of wing floats, and the upturned ailerons on the upper example. The upper picture is a 1914 type with 160 h.p. Daimler engine, the lower dates from 1917, and is fitted with the 240 h.p. Maybach engine.



The second flying-boat, provided with the first 160-h.p. Daimler-built aero engine, was turned out for the Warnemünde naval flying competition, abandoned owing to the outbreak of war.

Oertz Specifications.

An evidence of the Germans experiencing difficulties in engine manufacture both with regard to keeping production time and performance is to be found in the German Admiralty order for a series of Oertz flying-boats, to be equipped with 260 h.p. Argus engines, which got delayed in supply and turned out excessive in weight. So Maybach 240-h.p. airship motors, with reduction gears, were employed in autumn, 1915, and a flying-boat turned out especially for this engine model being presented to the navy by the Krupp proprietors von Bohlen and Halbach. The original wing-tip hydroplanes were replaced by ordinary wing floats. The main dimensions of the first Oertz boats were: hull length, 10.7 m.; beam, 2.5 m.; maximum span, 18 m.; total area, 77 sq. m. Useful load, 620 kg. The speed was 120-125 km.p.h. The main dimensions of the 1917 Oertz flying-boat, designed for the 240-h.p. Maybach motor were as follows: Length of hull, 9.96 m.; beam, 2.21 m.; span of top planes, 19.6 m., of lower planes, 15.6 m.; total area, 70 sq. m.; useful load, 641 kilos.; speed 140 km.p.h.



The Oertz Schooner in the Air.



The Oertz twin-engine Tandem (Schooner) Flying Boat taxi-ing.

The Oertz Schooner.

The last Oertz development was the twin-engined flying-boat along tandem lines, which on completion in 1916 was officially termed "flying schooner." The design was based upon model tests by Professor Prandl at Goettingen, and the speed obtained was 115 kilometres per hour with motors mounted side by side. The Sopwith "Bat-Boat" influence in hull design and tail support will be noted. To improve the banking capacity, ailerons of Curtiss fashion were later mounted between the rear planes. The dimensions of this aircraft were: hull length, 102 m.; beam, 3.16 m.; span, 20 m.; surface area, 163 sq. m.; useful load, 1.25 tons; maximum speed, 118 km.p.h. The drive was by two propellers resting on separate bearers.

The appearance of the large British and American flying-boats in the North Sea caused, on their own statement, the Germans to start work on similar aircraft, two such flying-boats for twin 300-h.p. propulsion being commenced by the Brandenburg works in co-operation with Oertz, who had completed the hulls of 16.5 metres' length at the time of the armistice being signed.

PRATT'S SPIRIT.

At the A.C.U. trials held recently, which were run from Llandrindod Wells, 10 gold medals and the Principality Cup were won by riders using Pratt's motor spirit.

J. SAMUEL WHITE & COMPANY, LTD.

It is officially announced that Mr. Frank Shearman, chairman and managing director of the Mount Stuart Dry Docks, Ltd., Cardiff, has been appointed to a seat on the Board of Messrs. J. Samuel White and Co., Ltd., the well-known shipbuilders and engineers of Cowes, Isle of Wight. Mr. Shearman is connected with several engineering and ship repairing establishments in South Wales, and is also chairman of the Times Shipping Co., Ltd., of Cardiff.

BARIMAR FOOTBALL CLUB.

The secretary of the Barimar Football Club requires fixtures for the coming season—both home and away—from October 11th onwards. Secretaries of medium teams with open dates are asked to communicate with Mr. W. Pritchard, care of Barimar, Ltd., 10, Poland Street, Oxford Street, W.1. Barimar ground adjoins Sudbury Town (Harrow) Station.



The 1916 Oertz Flying Schooner with two 240 h.p. Maybach engines.

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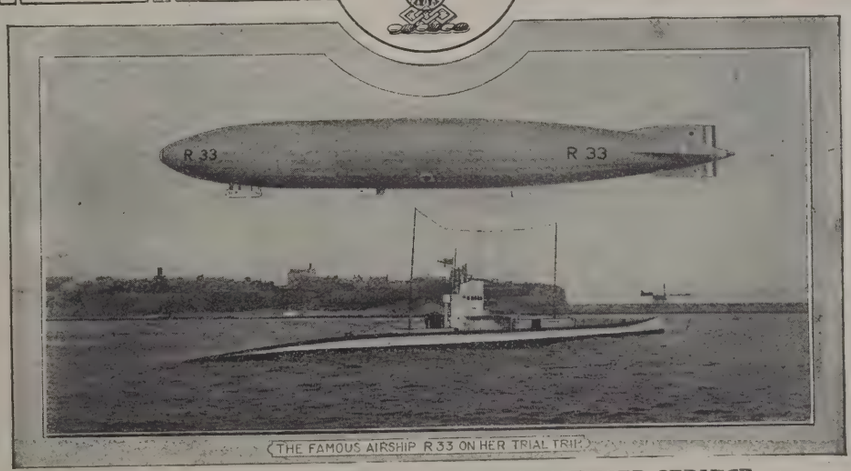
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PATENTS INDEX

The subjoined list of recent inventions has been specially compiled by The Aeroplane from the current Official Patents Records.

Patents Applications.

Banks, E. C. Apparatus for transferring mails, etc., to aircraft whilst in flight. No. 18431. July 24th.
Ellis, F. A. Quilted aero fabric. No. 18506. July 25th.
Farren, W. S. Hinges for control surfaces of aircraft. No. 18328. July 23rd.
Gilbert, J. Propelling-mechanism for aeronautical machines, etc. No. 18121. July 21st.
Guest, J. B. H. Means for stabilising and controlling flight of aerial machines. No. 18440. July 24th.
Hathaway, A. H. Clinometers, etc., for aircraft No. 18562. July 26th.
Lang, A. A. D. Hydroplanes, etc. No. 18401. July 24th.
Law, E. A. Aircraft. No. 18386. July 24th.
McKellar, A. Means for ascertaining angle at which aeroplane, etc., is flying. No. 18564. July 26th.
Marter, C. Aeroplanes. No. 18603. July 26th
Roe, A. V. Seat supports. No. 18072. July 21st.
Roe, A. V. Hinge joints. No. 18073. July 21st.
Roe, A. V. Aeroplane fuselages. No. 18460. July 24th.
Roe, A. V. Aeroplanes. No. 18461. July 24th.
Sage and Co. Aircraft. No. 18232. July 22nd.
Sage and Co. Aircraft. No. 18344. July 23rd.
Saunders, S. E. Flying-boats. No. 18423. July 24th.
Schneider, J. J. M. A. E. Hinge for connecting warping-planes to wings or fixed planes in aircraft. No. 18240. July 22nd.
Sutherland, R. J. B. Aircraft for spraying purposes. No. 18332. July 23rd.
Swan, P. S. Frames for airships of the rigid type. No. 18662. July 21st.
Taylor, J. Landing-stages or decks for aircraft. No. 18661. July 21st.
Bennett, H. Model aeroplane and seaplane. No. 18732. July 29th.
Bernini, A. Recognising aircraft by acoustic means and acoustic telegraphy between aircraft and earth. No. 18711. July 28th.
Dickie, R. M. Equilibrium indicators for aircraft. No. 18762. July 29th.
Green, J. F. Means for propelling aircraft. No. 18995. July 31st.
Higginbottom, J. Aeroplane and marine screw propellers. No. 18768. July 29th.
Hughes, E. B. Lighting-conductor for aircraft. No. 18751. July 29th.
Jeboult, W. A. Aerial and nautical navigation lights. No. 19004. July 31st.
Munyard, A. R. Balancing devices for aircraft. No. 18689. July 28th.
Raymond, J. A. L. Boats, hydroplanes, etc. No. 18702. July 28th.
Smith, J. Indicating-devices for aircraft. No. 18788. July 29th.
Spreekmeester, E. Propellers for ships, aeroplanes, etc. No. 19150. Aug. 2nd.
Vickers, Ltd. Aircraft. No. 18833. July 29th.

Complete Specifications Accepted, prints of which can be obtained on and after July 24th, 1919

128,659. Aug. 28th, 1917. Groves, S. E., and Ward, T. W. H. Dopes or varnishes used in aeroplane construction.
128,663. Aug. 29th, 1917. Brown, E. E., and Mooney, D. J. Metal construction for aircraft.
128,669. Aug. 30th, 1917. Calthrop, E. R. Parachutes.
128,671. Aug. 31st, 1917. Bramwell, F. H. and Sunbeam Motor Car Co. Observation apertures for aircraft.

Complete Specifications Accepted, prints of which can be obtained on and after August 7th, 1919.

129307. Oct. 5th, 1907. Macgregor, A. A. Gyroscopic indicating-apparatus for use in steering aircraft.
129315. Oct. 3rd, 1917. Parnacott, A. E. Means for lowering captive stationary balloons or airships.
129316. Oct. 11th, 1917. Fowler, H., Wilkinson, G. S., and Pitt, A. G. Lubrication arrangements for internal combusition engines for aeronautical and other purposes.
129317. Oct. 12th, 1917. Blackburn Aeroplane and Motor Co., Booth, H., and Copley, J. W. Deck flying wheels, trucks, or trolleys for aeroplane flying-machines and other aircraft.
129318. April 21st, 1917. Soc. du Carburateur Zenith. Carburetters more particularly intended for aircraft motors.
129319. Oct. 13th, 1917. Blackburn Aeroplane and Motor Co., Booth, H., and Mills, A. E. Improvements in or connected with aircraft particularly relating to carrying guns thereon.
129320. Oct. 15th, 1917. Saunders, H., and Alexander H. Petrol and oil tanks particularly suitable for aeroplanes and other aerial machines.
129322. Oct. 17th, 1917. Sopwith Aviation Co., and Sopwith, T. Radiators for the water-cooling systems of internal combustion engines employed on aircraft.
129329. Oct. 19th, 1917. Calthrop, E. R. Means for destroying aerial craft.
129332. Oct. 23rd, 1917. Nieuport and General Aircraft Co., Hall, H. L., and Sharp, C. A. Method of and means for applying dope or the like to the surfaces of parts of aircraft.
129335. Oct. 24th, 1917. Blackburn Aeroplane and Motor Co., Booth, H. and Copley, J. W. Controlling-mechanism of aeroplane flying-machines.
129338. July 2nd, 1918. Page, F. H. Means for driving the pumps and other auxiliary services on aircraft.
129353. Oct. 29th, 1917. Bloxam, A. G. Aircraft propeller.
129359. Oct. 31st, 1917. Blackburn Aeroplane and Motor Co., and Booth, H. Carrying weights, such as merchandise, petrol, and the like, on aeroplane flying-machines.
129362. Nov. 1st, 1917. Constantinesco, G. Means for transmitting impulsive forces, especially for actuating gun-triggers on aircraft.
129369. Nov. 6th, 1916. Pelterie, R. Esnault. Tanks of aircraft.
129378. Nov. 10th, 1917. Boyle, E., and Payze, A. Means for mounting guns on aeroplanes.
129416. July 5th, 1918. Mears, F. C. Parachutes for use with aeroplanes.
129436. July 10th, 1918. Blackburn Aeroplane and Motor Co., and Thornton, A. C. Controlling devices primarily intended for internal-combustion engines, and particularly applicable for use on aircraft.
129441. July 11th, 1918. Blackburn Aeroplane and Motor Co., Booth, H., and Petty, G. E. Control devices for aircraft.
129457. July 17th, 1918. Little, J. R. Locking or supporting means for doors or partitions for aircraft sheds and like structures.
129528. Oct. 3rd, 1918. Fesselet, A. E., Bonnot, J., Belot, A., Vassallo, J., Emery, R. Multiplane heavier-than-air flying-machines.
129530. Oct. 3rd, 1918. Clowes, G. Apparatus for adjusting or testing the inclination or incidence of aeroplane wings.
129555. Dec. 14th, 1918. Woodward, J. W. W. Aeroplane toy.
129586. May 8th, 1918. Barbarou, M. J. B. Carburetters for aviation engines.
129596. March 1st, 1919. Mooney, D. J., and Emby, D. H. Construction of metal cross-members, ribs, and the like for aviation.

Complete Specifications Accepted, prints of which can be obtained on and after August 14th, 1919.

129666. Nov. 19th, 1917. Boyle, R., and Payze, A. Fin and like operating surfaces of aeroplanes.
129672. Nov. 20th, 1917. Rapson, F. L. Means for propelling aeroplanes and other aircraft.
129673. Nov. 20th, 1917. Highgate Aircraft Co., and Hellers, F. Spars for aircraft.
129682. Aug. 14th, 1916. Letford, E. Means for supporting radiators on aeroplanes.
129681. Aug. 12th, 1916. Letford, E. Controlling gear for aeroplanes.
129683. Aug. 17th, 1916. Letford, E. Connecting members for assembling and mounting aeroplane parts.
129684. Sept. 18th, 1916. Letford, E. Control mechanism for motors for aviation apparatus.
129687. Nov. 26th, 1917. Avery, W. and T., and Bolas, H. Planes of aircraft.
129688. Nov. 26th, 1917. Avery, W. and T., and Bolas, H. Seaplanes or aeroplanes.
129696. Nov. 28th, 1917. Roe, E. A. V., Parrott, R. J., and Roe and Co., A. V. Hinged stabilising planes on aerial craft.
129698. Nov. 28th, 1917. Cellon, Ltd., and Barr, A. J. A. W. Means for doping aeroplane and like fabrics.
129705. Nov. 30th, 1917. Saunders, S. E. Alighting gear for aircraft.
129711. Oct. 22nd, 1915. Soc. Anon. des Ateliers d'Aviation, L. Bréguet. Ropes, wires, or shrouds of airships, aeroplanes, and the like.
129713. Feb. 1st, 1917. Aircraft Manufacturing Co., Havilland, G. de, and Chapman, J. S. Fuel supply pumps for aeroplane engines and the like.
129714. Dec. 5th, 1917. McGruer, E. Manufacture of aerial propellers.
129719. Dec. 7th, 1917. Blackburn Aeroplane and Motor Co., and Booth, H. Apparatus for indicating deviation in the direction of travel of aircraft.
129723. Dec. 8th, 1917. Mayrow, J. J. Frame members of aeronautical machines.
129727. Dec. 10th, 1917. Lanchester, F. W. Lateral plumb indicator for aircraft.
129732. Dec. 13th, 1917. Adams, H. E. F. Goold, and Collins, S. L. Balloons and the like.
129781. July 12th, 1918. Boulton and Paul, and North, J. D. Control devices for aircraft.

On Sept. 30th M. Sadi Lecointe, fresh from his brilliant attack on the speed records, made the first trials of the Blériot giant biplane at Buc. So far as is known the trials were satisfactory. This "aerobus" is designed to carry twenty-eight passengers, and is fitted with four 300-h.p. engines. The speed is said to be roughly 90 miles an hour. The engines are started by a compressed-air device.

THE PARIS-MELBOURNE FLIGHT.

M. Poulet, who intends to attempt a flight from Paris to Melbourne on a twin-engined Caudron biplane, left Issy-les-Moulineaux on Oct. 12th at 9 a.m. on the first stage of the flight. The prevalence of fog made him return half an hour later. At 10.30 a.m. he again made a start, but after flying 30 miles decided that the weather conditions were entirely unfavourable and so returned to Issy.

THE HOMOLOGATION OF RECORDS.

The Commission Sportive Aeronautique of the Aero Club de France has homologated the following height records for submission to the Fédération Aeronautique Internationale.

Pilot alone. Issy les Moulineaux, June 14th, 1919. By Lieut. Casale. Height, 31,230 ft.

Pilot and one passenger. Issy les Moulineaux, Aug. 8th, 1919. By Maurice Walbaun. Height, 24,836 ft.

Pilot and one passenger. Villacoublay, Aug. 13th, 1919. By Jacques Weiss. Height, 29,528 ft.

This last record was made on a Breguet biplane, the engine of which was fitted with a Rateau turbine.

THE COUPE DEUTSCH.

The third and last prize (amounting to 20,000 francs), under the terms of the Coupe Deutsch de la Meurthe (Circuit de Paris) is now open to competition between Oct. 13th, 1919, and Oct. 13th, 1920. The following entries have already been received by the Aero Club de France.

Sadi Lecointe on a Spad-Herbemont biplane (300 h.p. Hispano-Suiza).

Maurice Rost on a Gourdon Leseurre monoplane (180 h.p. Hispano-Suiza).

Soc. des Etab. Nieuport. Two entries. Bernard de Romanet on a Nieuport biplane (300 h.p. Hispano-Suiza), and M. Jansen on a Nieuport monoplane (180 h.p. Le Rhône).

The course over which the contest will take place is the Chateau de Saint Germain—Senlis—Meaux—Melun—Chateau de Saint Germain.

A WOMAN AIRSHIP PILOT.

Mlle. Gaby Morlay, a well-known actress, has now passed the tests for her certificate as an airship pilot. She is the first woman to whom an airship certificate has been issued.

THE PARIS SALON DE L'AERONAUTIQUE.

From a correspondent :—

The greater number of British firms exhibiting at the Salon have applied so late for space that they are more likely to be given stands in the annexe than in the main building.

THE PRIX PEUGEOT.

On Sept. 8th M. Poulain made another attempt to win the Prix Peugeot on his "Aviette," but as the Nieuport firm in rebuilding the machine had in mind the previous accident and made the later edition far too heavy, the inventor failed in his attempt. As in France it is necessary to be successful if one is to commit illegalities with impunity, M. Poulain has now been summoned to appear in court on a charge of riding his machine to the public danger in a park.—J. S

A M. Baligant has entered an aviette of his own design for the Prix Peugeot. It is pedal driven with a large body and a tractor airscrew.

A MEMORY OF M. GARROS.

On Oct. 4th, Fréjus, Saint Raphael, and Nice held ceremonies in memory of M. Roland Garros, the anniversary of whose death in action it was. He had been educated principally in the Lycée at Nice. A wreath was laid by the Nieuport Company at the foot of the statue of Garros in Fréjus. At Saint Raphael the Aero Club de Nice placed a wreath on the statue which marks the point of departure of Garros' cross-Mediterranean flight. At both these places the school children took part in the ceremonies.

THE DEDICATION OF A CHAPEL TO AVIATORS.

A chapel dedicated to aviators, and to be called "Notre Dame de l'Air," was consecrated on Oct. 6th at Val d'Or, near Paris, by the Bishop of Versailles.

M. de Chardonnais represented the Aero Club de France at the ceremony.

GERMANY.

A FLIGHT IN THE "BODENSEE."

Mrs. George Renwick recently made a flight in the Zeppelin "Bodensee" from Berlin to Friedrichshafen. The following extracts from her account of the flight are taken from the "Daily Chronicle" of Oct. 10th :—

"Mrs. Renwick reached the Staaken aerodrome at 8.30 a.m. in a motor-car. The journey took about 40 minutes from Unter den Linden

"Each of the 24 passengers is allowed 30 lb. of free luggage and as much over at 2s. per lb. as they care to take. This luggage is drawn up by ropes into the hold amid-ships. The passengers have to climb up a step-ladder, set against the cabin under the fore-part of the airship, and on entering the cabin find themselves in a car similar to a Pullman but of greater width. There are mica windows, armchairs upholstered in velvet, and red wicker basket chairs.

"When Mrs. Renwick reached the shed, a motley crowd of some 50 men and boys were hanging on to the ropes of the airship, which was held down by these ropes and could be manœuvred about very easily.

"At 9 o'clock the 'Bodensee' was backed out into the open. After some whistling a figure in a sort of naval uniform waved his arms, and shouted 'Hoch,' which, in that case, meant 'Let go.' The airship rose slowly and got under weigh; the forward motion could hardly be felt, although the flying speed was 70 or 80 miles an hour. At 10.30 a.m. they arrived over Leipzig.

"Lunch was served on the journey and consisted of various savouries and cold meats at from 12s. to 15s. per head. Rhine wine and champagne were to be had to drink. Altogether, the luncheon cost rather more than two guineas

"The journey takes place over lovely country, which, from the land, looks very much like parts of the Sussex Downs and Devon.

"Lake Constance was reached in seven hours at an average speed of 65 miles an hour. Another motley crowd pulled the



A View of the Passenger Cabin of the new Zeppelin Commercial Airship "Bodensee," which has recently been touring Northern Germany and Scandinavia. The ship was built at the Zeppelin Works at Friedrichshafen for the Hamburg-Amerika Steamship Company, which thus becomes the first steamship line in the world to own an airship. As usual, Germany sets the example of enterprise to British commercial firms, for, so far, no British steamship firm has acquired an airship, and only one or two have had the foresight to investigate the possibilities of aircraft of any kind.

airship down by its ropes on arrival, and the figure in naval uniform took visible and very audible command. The 'Bodensee' was then lightly manœuvred into a vast shed until the time came for the return voyage to be made."

THE "BODENSEE SERVICE.

The Italian correspondent of THE AEROPLANE writes :—

The Zurich papers announce that a wireless telephone station is now working at Nuremberg, and has given interesting results, keeping in communication with the passenger airship "Bodensee," which carries on a regular service between Friedrichshafen and Berlin, and vice versa, for a distance of 140 kilometres. This is surely the first one has heard of German progress in this direction.

A new airship in construction by the Zeppelin works is to improve the present time taken on this trip to four hours each way, very convenient for Swiss business men.—T. S. H.

THE AIR SERVICE TO SWEDEN.

"Bodensee 2," the first airship belonging to the German Luftreederie, arrived at Stockholm from Berlin on Oct. 9th, with 16 passengers. The machine returned on the same day with a further party of people.

HOLLAND.

THE HAGUE AVIATION GROUND.

The Rotterdam correspondent of the "Times" stated in their issue of Oct. 9th that many applications have been received from Germany to arrange the aviation ground which is to be established at The Hague. British firms ought not to neglect the opportunity to compete.

MEMORIES OF E.L.T.A.

Some notes by Mr. Kenworthy appeared under the above heading last week. One inadvertently omitted to state that the whole of the work done by the Blackburn "Kangaroos" was carried out under the control of the North Sea Aerial Navigation Co., Ltd., a company which is in close relation to the Blackburn Aeroplane and Motor Co., Ltd. The arrangements were organised by Major Veal, who has for some time been manager of the former company.

ITALY.

The Italian correspondent of THE AEROPLANE writes :—

A TRANSATLANTIC FLIGHT.

One hears tales of a shortly-to-be-attempted crossing of the South Atlantic from Dakar to Brazil by aeroplane. Olivero, who was attached to the Baracca Squadron, is said to be organising the flight.

A FLIGHT TO POLAND.

Poland is receiving many visits from Italian flying men on business bound. A few days back the Ansaldo Co.'s Ing. Brezzi was flown to Warsaw on a "300," piloted by Stoppani, taking four hours and 40 minutes to reach that capital from Turin. Lieut. Mainardi escorted the "300" on a Balilla. The return trip is planned *via* Posen, Berlin, Prague, and Vienna.

AN IMPORTANT DINNER.

The Aero Club of Italy, backed up by the Association of Aviators and Aeronauts, who are very much alive at their headquarters in the Galleria Nazionale at Turin, were to feast several of the directors of the Fiat and Ansaldo flying-machine departments, also the pilots, Brack-Papa and Stoppani, on 10th inst. Decorations were to be conferred. Decisions as to the line of action of the Italian trade at the Brussels Conference were likely to be arrived at during the evening.—T. S. H.

JAPAN.

H.I.M. the Emperor of Japan has presented 500,000 yen (£50,000) to the Imperial Aero Club for the purpose of civilian aviation, and a like amount has been raised by the Club. An American, who requested that his name might be kept confidential, has also given 180,000 yen for the training of Japanese aviators.

The officers of the Club are as follows : Honorary President, Prince Kuni; President, Count Okuna; first Vice-President, Baron Sakatani; second Vice-President, General Nagaoki.

An aerial mail service between Tokio and Osaka, a distance of 300 miles, will be operated under the supervision of the Club.

There is a great interest in aeronautics among the Japanese, but the difficulty in obtaining machines is proving a handicap.

SWEDEN.

A GERMAN SEAPLANE SERVICE.

The Svensk Lufttransport Bolaget, which possesses a German Sablatnig seaplane, which is in the harbour at Barkarby, are advertising passenger flights and goods transport from Stockholm to Finland. Their machine flew over the city on Oct. 2nd dropping bills to that effect. A Swedish gentlemen interested in the concern is on his way to England to purchase a few English machines with which to carry out this service

PROMISE AND PERFORMANCE.

The German, Lieut. Ebner, who has a machine at Gothenburg which is owned by Direktor Rammf, started out to fly to Malmo on Oct. 2nd, but was forced to land on the way. Everyone is getting very sick of Mr. Ebner, as he never succeeds in getting anywhere and seldom starts at all.

WOULD-BE AGENTS.

A representative of a British aviation firm has recently left Sweden. Several more or less bankrupt flying companies tried to persuade him to make them the firm's agents.

The Nordioka Aviatik Bologet has two machines fitted with 90 h.p. Mercédès engines in a shed on the Barkarby Aerodrome. They have not been flown for over a year, and look to be only fit for "reduction to produce."

SWITZERLAND.

The Italian correspondent of THE AEROPLANE writes :—

FLYING-BOAT ACTIVITY.

Flying-boat stations at Lugano and at Locarno, in the Swiss waters of the Lakes Lugano and Maggiore, are now in working order. At the former station the Swiss pilot, Taddeoli, who was for a long time working for the Italian S.I.A.I. firm, is giving exhibitions and organising flights with passengers.

Switzerland, with only about 100 pilots, and many of them abroad, ought to be a good place for hydro-aeroplane joy-rides, the country being mostly water and mountains.

FLYING PERMIT DIFFICULTIES.

From Lausanne on Lake Geneva some noise has been made over the appointment of (Capt.) Eric Bradley as manager of that flying school. The Swiss Military Authorities seem to have been unable to grant him a flying permit without recognising him as an officer of a foreign Power.

Some fear of establishing a precedent which would mean an influx of German and Italian ex-military pilots into Switzerland appears to have been behind it all.

AERIAL POSTAGE STAMPS.

A special 50-centime stamp is now issued to frank letters on the Zurich-Berne-Lausanne-Geneva aeroplane service.—T. S. H.

UNITED STATES OF AMERICA.

THE AERIAL MAIL SERVICES.

The Washington-New York air mail service obtained 100 per cent. efficiency for the month of August. Although many bad storms were encountered during the month, every machine made its scheduled flight each day.

Twenty-six flights were made each way. An average of 350 lb. of mail was carried on each flight, or a total of 18,200 lb. for the month.

The average speed made was 90 m.p.h., and the average flying time between the two cities was 2 hr. 25 min.

The fastest flight was made Aug. 13th, when Pilot Merrill K. Riddick carried 342 lb. of mail from New York to Washington in 1 hr. 55 min., at an average speed of more than 113 m.p.h.

Mr. Otto Praeger, the Second Assistant Postmaster-General, recently sailed from New York to Cuba. During his visit he hoped to make the preliminary arrangements for a flying-boat mail service between Florida and the West Indies.

The Cuban Government is anxious to see the aerial mail communication started. Mr. Praeger is considering proposals from several private enterprises which are now operating between Key West and Havana.

While at New York Mr. Praeger visited the plant of the L.W.F. Engineering Co., where a number of mail aeroplanes are being built to carry 3,000 lb. of cargo for the New York-Chicago service.

The Post Office Department are adopting a synthetic fuel and developing a fire extinguishing liquid which can be injected into the tank in case of fire. Tests have proved that industrial alcohol can be obtained for the same price as high grade petrol, and that it will prove to be 20 per cent. more efficient.

[One takes leave to doubt the chemistry of this statement. —Ed.]

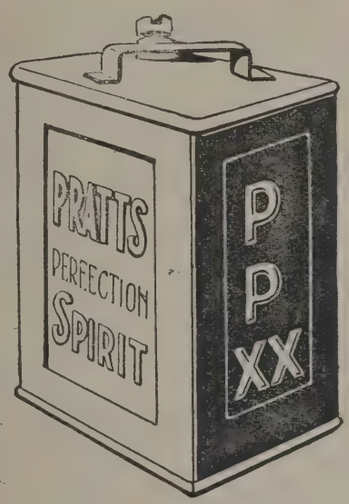
Mr. Praeger said that within the next few weeks they expected to fly the mail between Cleveland and New York without making an emergency stop at Bellefonte, Pa.

Fourteen big cargo aeroplanes are under construction in New York, Cleveland, and Ithaca, and are expected to be in the service early this winter. The L.W.F. mail machine will have sleeping quarters for the crew of three men, besides the 3,000 lb. of letter mail. The other machines are being built by the Glenn L. Martin Co. and Thomas-Morse. They will be slightly smaller than the L.W.F. aeroplanes.

With these machines in operation it is said that the Post Office Department will save one and a half million dollars a year over the present cost of first-class mail transportation.

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London-Paris Air Express

Summary of First Seven Weeks' Flying.

August 25th, 1919, to October 11th, 1919.

Flights Scheduled	102
Flights accomplished	99
Prevented by weather	1
Interrupted by weather	1
Interrupted by mechanical defect	1
Number of Miles flown	24,750

The following is an official summary of the weather flown through during these seven weeks.

Days favourable for flying	11
„ unfavourable for flying	21
„ noted officially as "unfit" for flying	10

The attention of Bankers, Merchants, and firms which have houses both in London and Paris is again drawn to the unique facilities afforded by this service, which permits urgent documents, express goods, or passengers to be transported the 250 miles between London and Paris in an average time of 2¼ hours. The service, which has been operating daily since August 25th, has been started in order to demonstrate that, with the use of skilled pilots and fast machines, such an express air service can now be run with sufficient reliability to afford a definite, daily convenience to the business world.

LONDON:
AIRCRAFT TRANSPORT & TRAVEL, LTD.,
27, Buckingham Gate, S.W.1.

Full particulars regarding Rates and Freights can be obtained from Aircraft Transport & Travel, Ltd., 27, Buckingham Gate, S.W.1, or from the American Express Co., Queen Street and Haymarket; Thos. Cook & Son, Ludgate Circus, E.C. and 38-39, Piccadilly, W.; General Transport, Ltd., 52, Crutched Friars; J. Jackson & Sons, 7-8, Charing Cross, and King William Street, E.C.; Henry Johnson & Sons, 18, Byward Street and Beak Street, W.; Lepaerial Travel, Piccadilly Circus (Criterion corner); Carter, Paterson & Co., 6, Maddox Street, W., and 3, Cannon Street, E.C.; and Hernu, Peron & Co., 98-100, Queen Victoria St., E.C.

PARIS:
COMPAGNIE GÉNÉRALE TRANSAERIENNE,
118, Champs Elysees.

THE AUSTRALIAN FLIGHT.

On Wednesday, October 15th, Capt. George Campbell Matthews, Aust. F.C., and Sergt. Tom Kay, Aust. F.C., both Australians, hope to leave Hounslow, weather permitting, for Australia. The flight will be made in accordance with the rules of the Australian Government's competition.

The machine is a Sopwith "Wallaby" fitted with a Rolls-Royce "Eagle VIII" 375-h.p. engine. This machine has a maximum speed of 121 m.p.h., a cruising speed of 107 m.p.h. at 5,000 ft., and a cruising range of 1,500 miles. No wireless is fitted as this was not considered a necessity.

Captain Matthews, who is thirty-six years of age, has spent twelve years at sea in the mercantile marine as a practical navigator, and holds an extra-master's certificate.

On the outbreak of war he was acting as chief officer of a passenger steamer off the Australian coast, but he at once left and joined the Australian Light Horse as a trooper. He received his commission in Gallipoli, and subsequently served 2½ years with that force at the Dardanelles and also in Egypt. He joined the R.F.C., and took his pilot's certificate in February, 1917, afterwards proceeding out to France with the 1st Australian Scout Squadron, No. 68, in September. After three months in France he returned to England and was promoted to Flight Commander in No. 4 Australian Scout Squadron, which was then flying Sopwith "Camels." When the Australian Training Wing was formed in England Captain Matthews went to it as Wing Examiner.

He has flown some twenty-one different types of machines, his long maritime experience having proved of the greatest value to him in the air. It is interesting to note that he expects to navigate his aeroplane on this long voyage exactly as though it were a ship. For this purpose he has had his own navigation instruments made for him by Hughes, and is employing his own methods of compass correction. Captain Matthews has an intimate knowledge of the Malay Archipelago, the Celebes Island, and other islands of the Pacific.

Sergeant Kay, Aust. F.C., who is accompanying Capt. Matthews, is not himself a qualified pilot, but whilst waiting to start Capt. Matthews has trained him in the management of the Sopwith "Wallaby," so that he can act as a relief pilot.

The route which Capt. Matthews and Sergeant Kay are to take is roughly as follows:—

Over France, Italy, Greece, then across the Mediterranean to Egypt; through Mesopotamia, along the north coast of the Persian Gulf to Karachi; then across India to Calcutta; down the Malay Peninsula, landing at Rangoon and Singapore, and on to Batavia; then along the Dutch East Indian Islands to Timor, and finally to Port Darwin, which is one of the most northerly coast towns in Australia. The distance totals about 12,000 miles. The longest sea passages are the 300 miles across the Mediterranean and the 400 miles from Timor to Australia.

Under favourable conditions, Captain Matthews hopes to average about 90 miles an hour whilst in the air, but he will not fly more than about five hours per day.

The Air Ministry have given all possible facilities in connection with their establishments on the route to India, and beyond that point dumps of fuel have been established at 500-miles intervals by the Shell Marketing Co., and the Wakefield Oil Co.

According to the terms of the Australian Government £10,000 Prize, the maximum time allowed is 30 days, but, as Captain Matthews points out, he is, as a member of the Larkin-Sopwith Company of Australia, far more interested in demonstrating the utility of the single-engined aeroplane for long distance flights of this character than in winning the cash prize, although he will do his best to win it.



Captain Matthews and Serjeant Kay.

A GERMAN FATHER'S REQUEST.

The following letter has been received:—

Sir,—I appeal to the chivalrous feeling of the British Royal Flying Corps, or of other persons in putting forward the following request:—

If any readers of THE AEROPLANE should be able to give me some information regarding the fate or the whereabouts of my son and only child, as up to now I cannot obtain any news or hear anything about him.

My son, Albert Hets, born on March 5th, 1896, at Hamburg, Lieutenant of the Reserve, belonging to the German Air Squadron 37, is missing. He participated in an air-fight on Sunday, Aug. 11th, 1918, about midday near Chaulnes (west of the Somme, France), between the German Air Squadron 34 and 10 English De Havilland two-seaters, and it is supposed that he came down behind the English lines.

It is very likely that he has been wounded or killed in or after this action, or became prisoner of war, and with the possibility that he may have lost his mind.

My son was flying on a one-seater Fokker marked by a red ring round the black body and by a black and white striped tail. The number of his Fokker was 712/18 Fokker D.VII. The number of the motor was 41,960. The number of the machine-guns were 7,381 and 6,341.

I shall feel very grateful to receive any information whatever about my son.

(Signed) ALBERT HETS.

Holtystrasse, 14 (Uhlenhorst), Hamburg (Germany).

A FORTHCOMING DINNER.

The dinner for officers of D Squadron, No. 2 Wing, R.N.A.S., which was postponed owing to the strike, will be held at the Restaurant Frascati on Friday, Oct. 24th. For further particulars please apply to Captain J. A. Yonge, D.F.C., The Eastbourne Aviation Co., Eastbourne.

THE CASE OF MISS DOUGLAS-PENNANT.

The committee appointed by the House of Lords to inquire into the dismissal of Miss Douglas-Pennant from the command of the W.R.A.F. met on Oct. 14th at the House of Lords. Sir Edward Carson, K.C., has given up his brief for Miss Douglas-Pennant owing to his political engagements. Mr. J. A. Hawke, K.C., will now lead for her, with Mr. Stuart Bevan, K.C., and Mr. Buchanan.



The Sopwith "Wallaby" Biplane (375 h.p. Rolls-Royce) built for the England-Australia Flight

EXTRACTS FROM "THE LONDON GAZETTE."

GREAT BRITAIN.

MILITARY.

War Office, September 26th.

Regular Forces.—Royal Regiment of Artillery.—R.H. and R.F.A.—Col. E. B. Ashmore, C.B., C.M.G., M.V.O., is placed on the h.p. list, Sept. 1st.

Infantry.—Ches. R.—Lt. S. A. Harper, M.C. (attd. R.A.F.), resigns his commn., July 27th.

R. Suss. R.—Lt. A. W. Simon (attd. R.A.F.) resigns his commn., Sept. 27th.

Durh. L.I.—Lt. J. B. Tait (attd. R.A.F.) retires, receiving a gratuity, Sept. 27th.

Overseas Forces.—Canada.—2nd Cent. Ont. R.—Temp. Capt. A. C. Peace relinquishes his commn. in the O.M.F. of C. on appt. to a permanent commn. in the R.A.F., July 31st.

Manitoba R.—Temp. Capt. E. R. Williams ceases to be secd. for duty with the R.A.F., Sept. 8th.

Brit. Columbia R.—Temp. Lt. (actg. Capt.) L. de S. Duke, D.F.C., ceases to be secd. for duty with the R.A.F., June 21st.

1st Central Ontario R.—The following temp. Lts. cease to be secd. to the R.A.F.:—J. J. Bennett, W. B. Ferrier, Sept. 10th.

Territorial Force.—Infantry.—16th Bn. Lond. R.—Sec. Lt. L. C. Pallett to be Lt., and to remain secd., R.A.F., March 26th.

War Office, September 27th.

Regular Forces.—Infantry.—Ches. R.—The date of the resignation of his commn. by Lt. S. A. Harper, M.C. (attd. R.A.F.), is Sept. 27th, and not as in "Gazette" of Sept. 26th.

Memorandum.—Temp. Hon. Lt.-Col. A. H. Burgoyne relinquishes his commn. on completion of service, July 1st, and retains hon. rank of Lt.-Col.

War Office, September 29th.

Regular Forces.—Establishments.—R.F.C.—Mil. Wing.—Equipment Officer, 3rd Class.—Temp. Sec. Lt. C. F. Bushnell, Serv. Bn., R. War. R., and to be transferred to R.F.C., Gen. List, Sept. 4th, 1917 (substituted for notification in "Gazette" of Sept. 13th).

War Office, Sept. 30th.

Regular Forces.—Royal Engineers.—Field Coys.—Capt. R. H. Parkinson (Hon. Maj., R.A.F.) relinquishes his commn. on account of ill-health contracted on active service, Oct. 1st, and retains rank of Capt.

Overseas Forces.—Canada.—Canadian Cavalry.—Temp. Lieutenant R. S. Mackenzie ceases to be secd. for duty with R.A.F., Sept. 21st.

Brit. Colombia R.—Temp. Maj. F. J. S. Murray, ceases to be secd for duty with the R.A.F., Sept. 21st.

War Office, Oct. 2nd.

Territorial Force.—Hampshire Aircraft Parks.—Lt. C. L. Cleburne resigns his commission, March 9th.

War Office, Oct. 3rd.

Regular Forces.—Establishments.—R.F.C.—Mil. Wing.—Schools of Instrn.—School of Mil. Aeronautics.—Instr. (Graded as an Equip. Officer, 1st Class.)

The notification regarding Lt. (temp. Capt.) R. O. C. Bush, R. Dub. Fus., in the "Gazette," May 17th, 1918, is cancelled.

Infantry.—S. Wales Bord.—Lt. C. Patteson, M.C., A.F.C. (attd. R.A.F.), resigns his commn., Oct. 4th.

K.R. Rif. C.—Lt. C. H. S. Ackers (attd. R.A.F.) resigns his commn., Oct. 4th.

Service Batts.—High. L.I.—Temp. Capt. J. H. N. H. Burke resigns his commn. on appt. to R.A.F., May 1st, 1918.

Territorial Force.—Infantry.—5th Bn., R. Suss. R.—Capt. F. W. Napper is secd. with the R.A.F., April 24th, 1918.

War Office, Oct. 4th.

Territorial Force.—Infantry.—4th Bn., Gord. Highrs.—Sec. Lt. G. Thomson (Sec. Lt., R.A.F.) to be Lt., and to remain secd. R.A.F., Dec. 27th, 1918.

War Office, Oct. 7th.

Regular Forces.—Overseas Forces.—Canada.—Manitoba R.—Temp. Lt. J. Whitford relinquishes his commn. in the O.M.F.C. on being granted a permanent commn. in the R.A.F., Aug. 15th.

War Office, Oct. 9th.

Territorial Force.—Infantry.—13th Bn. Lond. R.—Qrmr. and Capt. A. Ridley resigns his commn. on transfer to the R.A.F., May 13th, 1918.

General List.—Infantry.—Qrmr. and Capt. A. T. Hughes resigns his commn. on transfer to the R.A.F., April 1st, 1918. Qrmr. and Lt. D. A. Childs resigns his commn. on transfer to the R.A.F., April 1st, 1918. Qrmr and Lt. G. A. Hutchinson resigns his commn. on transfer to the R.A.F., April 1st, 1918.

Territorial Force Reserve.—Infantry.—Qrmr. and Lt. P. J. Burns resigns his commn. on transfer to the R.A.F., April 1st, 1918.

AIR FORCE.

Air Ministry, September 30th.

R.A.F.—Permanent Commissions.—The following are granted permanent commns in the ranks stated with effect from Aug. 1st:—Sqdn. Leader E. J. C. Roberts, Flt. Lt. R. G. Parry.

The notifications which appeared in "Gazette" of Aug. 1st appointing the following officers to permanent commns. are cancelled:—Maj. R. F. Stapleton-Cotton (T.), Capt. G. Allen (A.), Capt. E. P. Hardman, D.F.C. (A.), Capt. A. L. McFarlane (A.), Capt. L. H. T. Sloan (A.), Capt. R. B. Tomlinson (T.), Lt. D. G. McGregor, A.F.C. (O.), Lt. G. S. Peffers, D.F.C. (A).

The surname of Maj. W. A. McClaughry, D.S.O., M.C., D.F.C. (A.), is as now described, and not "McLaughry," as in "Gazette," Aug. 22nd.

The rank of Sqdn. Leader W. C. Hicks, A.F.C., is as now described, and not "Wing Commander," as stated in "Gazette," Sept. 26th.

The following temp. appt. is made:—Staff Officer, 3rd Class.—(Air).—Flt. Lt. C. F. Gordon, O.B.E., M.C., Sept. 18th.

Group Capt. (Staff).—Group Capt. A. M. Bent, C.M.G., C.B.E., relinquishes grading for purposes of pay and allowances as Air Commodore, Sept. 15th.

Flying Branch.—Sec. Lts. to be Lts:—F. de M. Hyde, April 13th; D. O. Onslow-Carleton, May 8th.

H. V. N. Bankes (Lt., R.E.) is granted a temp. commn. as Sec. Lt. (O.), April 24th, 1918, and to be Hon. Lt.

The following relinquish their commns. on ceasing to be empld.:—Sec. Lt. J. C. Bowstead, D.C.M., M.M. (Lt., Norf. R.), April 9th; Lt. H. B. Mason (Lt., R.A.), April 30th; Lt. D. P. F. Uniacke (Lt., R. Irish Rif.), May 12th; Sec. Lt. P. J. A. Fleming, June 3rd (substituted for notification in "Gazette," June 13th); Lt. T. M. Draper, June 12th; Lt. A. W. Davison (Lt., Wilts R.), June 13th (substituted for notification in "Gazette," Aug. 5th), Sec. Lt. (Hon. Lt.) H. W. Blakeney, M.C. (Lt., R.E.), Sept. 5th; Lt.-Col. E. T. R. Chambers, A.F.C. (Lt.-Comdr., R.N.), Sept. 8th; Capt. J. G. Selby, M.C. (Capt., R.H. and R.F.A.), Sept. 15th; Lt. G. D. Gillie (Lt., E. Ont. R.), Sept. 21st (substituted for notification in "Gazette," May 27th); Lt. E. J. H. Douch (Lt., R.G.A.), Sept. 22nd; Lt. A. W. Frazer (Sec. Lt., S. Wales Bord.), Sept. 23rd.

The following are transferred to the unempld. list:—Capt. C. W. Baldwin, Jan. 24th; Capt. E. P. Will, A.F.C., Jan. 31st; Sec. Lt. W. E. Cane, Sec. Lt. W. V. Creaghan, Sec. Lt. E. S. Grant, Sec. Lt. H. McC. Morden, Feb. 1st; Lt. F. Crossley, Feb. 7th (substituted for notification in "Gazette," July 1st); Capt. C. E. S. Lusk, Feb. 24th; Lt. J. Bursey, Feb. 25th; Sec. Lt. G. A. F. Prentice, Sec. Lt. F. E. Smith, March 1st; Lt. M. H. Winkler, March 10th; Lt. A. S. Mills, March 19th; Sec. Lt. R. G. Walton, March 21st; Lt. T. L. McConchie, March 23rd; Sec. Lt. H. H. Wilson, March 30th; Lt. L. P. McHugh, March 31st; Lt. (actg. Capt.) E. S. Coler, D.F.C., April 1st; Sec. Lt. T. H. Wright, April 6th; Sec. Lt. J. Mackintosh, April 13th (substituted for notification in "Gazette," June 24th); Lt. C. R. Duggan, April 25th; Sec. Lt. (Hon. Lt.) G. A. R. Slimming, May 3rd (substituted for notification in "Gazette," July 15th); Lt. N. C. Dixie, May 4th; Sec. Lt. J. B. Whitehouse, May 9th; Lt. W. Anderson, Sec. Lt. D. P. Jones, May 10th; Sec. Lt. F. C. Hinksman, Lt. G. F. Thompson, May 15th; Lt. K. Johannesson, Sec. Lt. W. R. Thomson (substituted for notification in "Gazette," June 20th), May 20th; Lt. J. H. Cathcart, May 22nd; Lt. W. S. Jenkins, D.F.C., Sec. Lt. D. B. Johnstone, May 23rd; Sec. Lt. H. W. Coverley, Lt. C. C. McDonald, June 1st; Lt. G. A. Drewitt, June 3rd; Capt. E. B. Harvey, June 11th; Lt. F. P. Magoun, June 13th (substituted for notification in "Gazette," Jan. 11th); Sec. Lt. O. C. Jensen, June 16th; Sec. Lt. W. Bradley, Sec. Lt. K. C. Brown, July 10th; Sec. Lt. L. G. Bolton, Sec. Lt. J. I. Buirski, Sec. Lt. A. D. Butler, July 11th; Sec. Lt. D. F. Barber, Sec. Lt. C. F. Bennett, Sec. Lt. G. H. Bond, Lt. J. S. Boult, Sec. Lt. G. F. Boulton, Sec. Lt. G. E. Bradley, Sec. Lt. L. T. Bradley, Sec. Lt. E. Brady, Sec. Lt. J. C. B. Brady, Sec. Lt. J. D. Brine, Sec. Lt. D. H. Brown, Lt. F. E. Brown, M.C., Sec. Lt. W. R. Buchanan, Sec. Lt. D. F. Burr, Sec. Lt. D. L. Butchart, Sec. Lt. K. K. Johnson, Sec. Lt. G. A. Johnston, Sec. Lt. T. F. Sanderson (substituted for notification in "Gazette" of July 29th), Lt. J. Sangster (substituted for notification in "Gazette" of July 29th), Lt. D. W. Saunders (substituted for notification in "Gazette" of July 29th), Sec. Lt. A. B. Smith (substituted for notification in "Gazette" of July 25th), July 12th; Lt. W. J. Barber, July 17th; Sec. Lt. P. J. Bayly, July 23rd; Sec. Lt. L. Buckley-Bridge, July 25th; Sec. Lt. C. Beviss, Lt. E. L. Johnson, July 29th; Pilot Officer E. Brandt, Aug. 12th; Flying Officer M. à B. Boyd, Aug. 15th; Pilot Officer J. L. Bowie, Aug. 16th; Flying Officer R. S. De-Bruyn, D.F.C., Pilot Officer J. S. Shannon, Aug. 19th; Pilot Officer W. MacInnes, Aug. 20th; Pilot Officer J. B. Jamieson, Aug. 25th; Flying Officer V. L. Sage, Aug. 27th; Flying Officer L. Harper, Aug. 28th; Flying Officer J. G. Bertrand, Pilot Officer C. C. Briggs, Flying Officer H. Hillier, D.F.C., Pilot Officer O. A. Johnson, Pilot Officer G. B. Noble, Aug. 29th; Pilot Officer E. T. F. Brown, Flt. Lt. J. A. Yonge, D.F.C., Sept. 3rd; Flying Officer E. Birch, Sept. 4th; Pilot Officer C. L. Hurst, Sept. 6th; Pilot Officer J. N. Bitton, Pilot Officer E. Cooke, Sept. 5th; Flying Officer F. F. Bramwell, Flying Officer A. J. Fricker, Pilot Officer C. W. C. Peene, Sept. 10th; Flying Officer J. Durston, Flying Officer A. Newman, M.C., D.F.C., Flying Officer A. E. Woodbridge, Sept. 11th; Pilot Officer A. B. McDonald, Sept. 12th; Flying Officer F. G. Harlock, Flying Officer G. W. R. Pidsley, Sept. 13th; Flying Officer G. Budden, Flying Officer J. W. Rhodes, Sept. 14th; Pilot Officer W. H. Basker, Flying Officer T. A. Byers, Flying Officer W. E. Clarkson, Flying Officer J. F. T. Fenn, Flying Officer F. B. Ford, Flying Officer C. H. J. Holden, Flying Officer E. Martyr, Pilot Officer (Hon. Flying Officer) C. J. Rhind, Flying Officer W. F. Robertson, Pilot Officer W. R. Wolsey, Pilot Officer R. T. E. Wood, Sept. 15th; Flying Officer (Hon. Flt. Lt.) F. C. Barrell, Pilot Officer L. E. Headley, Pilot Officer W. J. Highnett, Flying Officer T. H. Mercer, Pilot Officer H. O. Williams, Flt. Lt. F. R. R. Woodward, Sept. 16th; Pilot Officer E. Barker, Sept. 17th; Flying Officer G. T. C. May, Sept. 19th; Flying Officer G. H. Willows, A.F.C., Sept. 24th; Pilot Officer C. A. Campbell, Flying Officer H. G. Jackson, Flying Officer G. W. Northridge, Flying Officer J. Officer, Pilot Officer G. S. J. Payne, Flying Officer G. A. Wrigglesworth, Sept. 29th.

Lt. R. Coop relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain his rank, Aug. 9th (substituted for notification in "Gazette" of Aug. 8th).

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—H. P. Brumell (caused by wounds), July 7th; A. B. MacDonald (caused by wounds), Aug. 13th; W. M. Hall, J. Rhodes (W. Yorks R.), Oct. 1st.

The surname of Sec. Lt. A. F. Belyea is as now described, and not "Beyles" as stated in "Gazette" of July 2nd, 1918.

The notification in "Gazette" of Sept. 3rd, 1918, concerning H. T. Daniel is cancelled.

The notification in "Gazette" of Nov. 29th, 1918, concerning J. W. Lavoie is cancelled.

The notification in "Gazette" of Dec. 31st, 1918, concerning Sec. Lt. H. Clarke is cancelled.

The notification in "Gazette" of Jan. 28th concerning Sec. Lt. J. S. Ford is cancelled.

The notification in "Gazette" of March 11th concerning Sec. Lt. D. A. Jones is cancelled.

The notification in "Gazette" of April 1st concerning Sec. Lt. (Hon. Lt.) A. Mills, D.F.C., is cancelled.

The notification in "Gazette" of May 9th concerning Sec. Lt. J. E. H. Chadwick is cancelled.

The notification in "Gazette" of May 27th concerning Sec. Lt. W. Anderson is cancelled.

The notification in "Gazette" of June 13th concerning Sec. Lt. P. J. A. Fleming is cancelled.

The notification in "Gazette" of July 1st concerning Lt. C. C. Miller is cancelled.

The notification in "Gazette" of July 29th concerning Sec. Lt. H. A. Thompson is cancelled.

The notification in "Gazette" of Aug. 5th concerning Lt. A. W. Davison is cancelled.

Administrative Branch.—Sec. Lt. H. Clarke to be Lt., June 19th, 1918.

The following relinquish their commns. on ceasing to be empld.:—Lt. O. Dunkerley (Paymr. Sub-Lt., R.N.), Sept. 29th, 1918; Lt. J. A. V. Duff (Lt., Rif. Brig.), May 20th; Lt.-Col. J. W. L. Hunt (Lt.-Comdr., R.N.), Sept. 5th.

To All Users of Motor Spirit

There are adequate stocks of Motor Spirit in the country to meet ALL requirements.

In the absence of railway transport the difficulty is to get the motor spirit into the hands of those that need it for food distribution and other essential national needs.

The Distributing Companies are confident that this can be done with the co-operation of the public and the trade.

The distribution by motor spirit transport to garages, etc., must be discontinued, all such motor transport being required for the purposes already indicated.

Dealers and commercial consumers requiring motor spirit must therefore call at the local depots of the Distributing Companies and bring with them all empty packages available, as supplies of full packages will be limited to the number of empties returned.

The hoarding of motor spirit, or the use of it by those who do not really require it during the railway strike, is contrary to the public interest.

The Distributing Companies much regret the inconvenience caused, which they hope will not be of long duration.

WAKEFIELD

Castrol R



The Cosmos Engineering Co., Ltd.—builders of the 14-cylinder, 315 h.p. "Mercury" engine—exclusively use and recommend Castrol "R" for lubrication of the above engine and also with their 450 h.p. "Jupiter."

Lubricated with Castrol "R" a "Mercury" engine fitted to a Bristol Scout, achieved the best climbs in the official tests—10,000 feet in 5 mins. 25 secs.; 20,000 feet in 16 mins. 15 secs. These figures, checked by official barograph records, constitute British records.

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The following are transferred to unempld. list :—Lt.-Col. (actg. Col.) J. Attenborough, C.M.G., Lt. I. McL. Black, Feb. 24th; Lt. (actg. Capt.) J. B. Love, April 15th; Sec. Lt. W. A. Youngman, April 17th; Lt. G. A. Mitchell, May 16th; Sec. Lt. L. B. Raymond, June 12th; Sec. Lt. H. F. Bezeau, Lt. B. S. Johnston, July 12th; Lt. B. J. Kirchner, July 24th; Pilot Officer A. E. Webb, Sept. 3rd; Pilot Officer H. W. Croft, Sept. 9th; Flying Officer N. T. Berrington, Flying Officer A. E. Gill, Sept. 12th; Pilot Officer J. G. Ramsay, Sept. 13th; Flt. Lt. L. E. Innes-Baillie, Sept. 14th; Pilot Officer H. Clayton, Sept. 15th; Flying Officer A. H. Hepworth, Sept. 16th; Pilot Officer H. B. Bull, Sept. 17th; Flying Officer H. W. E. Smith, Sept. 19th.

The following Lts. relinquish their commns. on account of ill-health contracted on active service, and are permitted to retain their rank :—H. C. R. Milward, Sept. 17th; A. H. Lancaster, Sept. 19th.

Sec. Lt. G. M. M. Clune relinquishes his commn. on account of ill-health, and is granted rank of Lt., Aug. 7th.

Lt. M. J. J. G. Mare-Montembault, M.C. (N. Som. Yeo.), relinquishes his commn. on account of ill-health contracted on active service, April 10th.

Lt. J. B. Tait (Lt., Dur. L.I.) resigns his commn., Oct. 1st.

Sec. Lt. W. J. Washer relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Aug. 7th.

TECHNICAL BRANCH.—Lt. R. S. Haward to be Lt., Grade (B), from (A), April 4th, 1918.

Sec. Lts. to be Lts. :—(Hon. Lt., actg. Capt.) L. W. Allen, and to retain actg. rank of Capt. until April 30th; (Hon. Lt.) C. Bishop (without pay and allowances prior to Feb 15th), April 2nd.

Sec. Lts. to be Lts. without pay and allowances of that rank :—W. Hallet-Carpenter, Aug. 2nd, 1918; A. S. G. Smith, June 12th, 1918; A. H. Varian, Nov. 22nd, 1918 (substituted for notification in "Gazette" of July 29th); J. E. McCrea, July 28th.

Sec. Lt. (Hon. Lt.) W. J. G. Barnes (Lt., R. Scots Fus.) relinquishes his commn. on ceasing to be empld., Sept. 11th.

The following are transferred to unempld. list :—Sec. Lt. (Hon. Lt.) F. C. Butler, M.B.E., May 15th; Sec. Lt. B. K. Sagar, May 17th; Pilot Officer H. E. Brain, Squdn. Ldr. A. V. Thompson, Sept. 3rd; Wing Comdr. C. A. Kirby, Sept. 8th; Flt. Lt. B. M. Iles, Sept. 11th; Flying Officer H. J. Barwick, Sept. 12th; Flying Officer W. E. Lowe, Sept. 13th; Flying Officer W. Gawkrodger, Sept. 14th; Flying Officer J. G. Harriott, Flying Officer G. S. Wood, Sept. 15th; Flying Officer J. E. R. Avery, Flying Officer R. T. Murchison, Sept. 16th; Pilot Officer N. H. Knock, Flying Officer C. G. Walton, Sept. 17th; Flying Officer (actg. Flt. Lt.) A. W. Brittain, Sept. 18th.

Sec. Lt. J. S. Forde relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Jan. 29th.

The notification in "Gazette" of May 24th, 1918, concerning Lt. R. S. Haward is cancelled.

MEMORANDA.—Lt. W. J. E. Owen is granted the hon. rank of Capt., Aug. 31st, 1918.

The following Overseas Cadets are granted temp. commns. as Sec. Lts., with effect from Feb. 15th, and relinquish such commns. with permission to retain the rank from the day following termination of the standardised voyage in the case of those claiming immediate repatriation, and from the day following demobilisation in England in all other cases :—105349 C. A. Kenway, 273005 H. R. Scott.

The following Cadets are granted hon. commns. as Sec. Lts. :—181440 S. W. Stevens, 181529 A. E. L. Spacie, Jan 18th; 182476 G. A. Bloomfield, Jan. 21st; 87865 E. R. George, 106319 G. D. Pratt, Jan. 30th; 183175 H. E. Bosworth, Feb 8th; 28054 E. Gartside, Feb. 11th; 97149 E. W. Hylton, Feb. 15th; 255194 L. S. Morris, March 1st; 175064 W. N. Lister, March 3rd; 45890 A. Mitton, March 20th; 175040 F. G. Bull, April 8th; S/6666 J. H. Payne, April 11th; 250617 J. L. Fletcher, April 23rd; 175284 J. L. Makin, May 1st; 175579 E. E. Clarke, 176932 A. J. C. Cordery, May 4th; M2/032856 C. H. Stant, May 9th; 538319 C. Hitchings, May 23rd; 24034 C. R. Bealey, May 30th; 78119 H. W. Lane, May 27th; 240766 F. E. Brooks, June 12th; 159388 C. A. Woollett, July 1st; 56143 T. E. Simmons, July 22nd.

Lt.-Col. R. G. Cherry, M.C. (Maj., R. Regt. Art.), relinquishes his commn. on ceasing to be empld., Sept. 25th.

The following temp. Hon. Lts. relinquish their commns. on ceasing to be empld. :—F. W. Hedgecock, Aug. 20th; H. Bedson, Sept. 16th.

The following are transferred to unempld. list :—Flying Officer S. T. Smith, from (S.O.), Sept. 13th; Flt. Lt. L. Henshall, M.B.E., from (S.O.), Sept. 15th; Flying Officer C. T. Inman, from (S.O.), Flying Officer T. T. Pickup, from (S.O.), Sept. 16th.

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank :—E. Earl, P. E. B. Holliwell, Oct. 1st.

The notifications in "Gazette" of Sept. 23rd concerning Lt. F. W. Hedgecock are cancelled.

The notifications in "Gazette" of Sept. 23rd concerning Lt. H. Bedson are cancelled.

The notifications in "Gazette" of June 10th concerning the following Overseas Cadets are cancelled :—177683 W. H. Bushe, 184151 J. Cavill, 184005 T. N. Clarke, 184516 S. R. Harrison, 183859 F. H. Harford, 183653 L. P. Lyne, 180499 C. L. Melbye, 183886 T. W. Mills, 182236 M. D. Miller.

AIR MINISTRY, Oct. 3rd.

R.A.F.—PERMANENT COMMISSIONS.—The undermentioned are granted permanent commns. in the ranks stated, with effect from Aug. 1st :—Wing Comdr. W. D. Beatty, O.B.E., Sqdn. Ldr. B. H. N. H. Hamilton, D.S.O., Flt. Lt. R. D. Oxland. The initials of Flt. Lt. P. E. Maitland are as now described and not "P. E. M." as stated in "Gazette" of Sept. 26th.

The following temp. appt. is made :—Staff Officer, 2nd Class (P.).—Sqdn. Ldr. E. M. Murray, D.S.O., M.C., Sept. 25th.

FLYING BRANCH—Sec. Lt. C. C. Loretto is granted the hon. rank of Lt., Sept. 19th, 1918.

The following relinquish their commns. on ceasing to be empld. :—Sec. Lt. J. E. H. Chadwick (Sec. Lt., Manch. R.), Feb. 21st; Lt. J. B. P. Phillips (Lt., R. West Surr. R.), Sept. 8th; Lt. R. C. Hartland-Rowe (Lt., Leinster R.), Sept. 12th; Sec. Lt. (Hon. Lt.) C. E. C. Penny (Lt., R. Fus.), Sept. 16th; Sec. Lt. (Hon. Maj.) F. J. S. Murray (Maj., Brit. Col. R.), Sept. 21st.

The following are transferred to unemplid. list :—Sec. Lt. F. W. F. Turner, Jan. 14th; Sec. Lt. A. W. Rowe, Jan. 25th; Sec. Lt. L. P. Ashley, Sec. Lt. J. L. Baird, Sec. Lt. R. L. H. Barber, Sec. Lt. J. J. Batchelor, Sec. Lt. L. C. R. Batten, Sec. Lt. E. E. Buckerfield, Sec. Lt. E. De Lorme, Sec. Lt. P. R. Dunn, Sec. Lt. V. A. Grant, Sec. Lt. R. T. Jackman, Sec. Lt. C. A. D. Jennings, Sec. Lt. S. F. S. Jones, Sec. Lt. E. P. Kelly, Sec. Lt. M. L. F. Lawrence, Sec. Lt. D. J. M. Leck, Sec. Lt. E. W. T. Lee, Sec. Lt. G. E. Lloyd, Sec. Lt. N. P. Lockwood, Sec. Lt. V. W. Shaughnessey, Sec. Lt. L. E. Snowden, Feb. 1st; Lt. C. H. Archer, Feb. 15th; Sec. Lt. E. T. Brownscombe, Feb. 24th; Sec. Lt. R. L. Stevenson, Feb. 27th; Sec. Lt. W. E. Lewis, March 1st; Sec. Lt. A. E. Pordham, March 6th; Sec. Lt. P. W. Scott, March 7th; Sec. Lt. A. G. Colvin, March 15th; Lt. M. F. Peiler March 24th; Sec. Lt. E. G. Ralph, April 2nd; Lt. W. R. Eastman, April 15th; Sec. Lt. J. S. Ford, Sec. Lt. W. W. R. Watson, April 20th; Lt. J. H. Jenning, April 25th (substituted for notification in "Gazette" of July 22nd); Capt. G. E. Nash, May 1st; Sec. Lt. L. MacK. Johnston, Sec. Lt. (Hon. Lt.) A. Smith, May 8th; Sec. Lt. R. N. Webster, Sec. Lt. M. J. H. Weir, Sec. Lt. R. V. Weston, Sec. Lt. E. A. Westwood, May 20th; Lt. G. W. Doolittle, May 30th; Lt. W. G. Westwood, June 13th; Lt. F. W. Wells, June 14th; Sec. Lt. J. M. Loggie, June 30th (substituted for notification in "Gazette" of July 1st); Lt. J. B. White, D.F.C., July 3rd; Lt. E. C. Johnston, D.F.C., July 7th; Sec. Lt. P. H. Bernard, Sec. Lt. G. H. Campbell, Sec. Lt. B. M. Carter, Sec. Lt. E. D. Valiant, Sec. Lt. J. W. Vaughan, Sec. Lt. F. W. Weatherdon, Sec. Lt. J. L. White, Sec. Lt. W. E. White, July 12th; Sec. Lt. A. R. Miles, July 17th (substituted for notification in "Gazette" of Aug. 12th, wherein this officer was described as Sec. Lt. A. B. Miles); Sec. Lt. H. C. W. Weston, July 25th; Lt. W. A. W. Carter, July 31st; Pilot Officer J. Brown, Flying Officer F. C. Scott, Aug. 1st; Flying Officer W. J. B. Nel, Flying Officer R. W. Weatherby, Aug. 7th; Pilot Officer J. E. E. Owens (substituted for notification in "Gazette," Aug. 12th, wherein this officer's initials were shown as "E. E."), Pilot Officer S. B. Trites, Pilot Officer L. Weinburg, Aug. 10th; Flying Officer G. D. Tod, Aug. 11th; Pilot Officer G. V. Wales, Aug. 12th; Pilot Officer M. L. P. Chapman, Aug. 16th; Flying Officer G. A. Wells, M.C., Pilot Officer E. Wilson, Aug. 20th; Flying Officer N. H. Barlow, Aug. 21st; Pilot Officer J. T. Brown, Pilot Officer P. V. Dobby, Pilot Officer B. E. J. D. Tuke, Aug. 22nd; Flying Officer C. G. H. Wadleigh, Flt. Lt. H. F. Wright, Aug. 23rd; Pilot Officer G. L. Kaye, Pilot Officer H. Simon, Pilot Officer E. A. Slater, Pilot Officer C. H. B. Stevenson, Flying Officer F. Tymms, M.C., Flying Officer B. S. Wilcox, D.F.C., Aug. 26th; Pilot Officer H. D. Butler, Pilot Officer F. J. Shrive, Aug. 27th; Pilot Officer C. K. Carter, Flt. Lt. E. D. Crundall, Flying Officer W. G. Woods, Aug. 28th; Flying Officer V. R. Brown, Pilot Officer H. Tornquist, Flying Officer G. B. Whitney, Flying Officer N. A. Thompson, Aug. 29th; Flying Officer F. A. Ayrton, Aug 31st; Flying Officer E. M. Henderson, Flying Officer L. H. Short, M.C., Flying Officer P. Wilson, M.C., Sept. 1st; Flying Officer E. E. Ward, Flying Officer H. Whitworth, Sept. 3rd; Flying Officer J. H. Shaw, Flt. Lt. A. F. E. Warner, Flying Officer G. R. Whitaker, A.F.C., Sept. 4th; Flying Officer D. S. Anderson, Flying Officer D. C. Davies, Flying Officer D. P. Walter, Pilot Officer W. K. Wright, Sept. 5th; Pilot Officer (Hon. Flt. Lt.) E. F. Ambler, Flying Officer H. A. Whishaw, Sept. 6th; Pilot Officer (Hon. Flying Officer) A. C. Cook, Flying Officer A. Hutcheson, Sept. 7th; Pilot Officer E. G. Stevens, Pilot Officer A. G. Waite, Flying Officer F. V. Way, A.F.C., Sept. 9th; Pilot Officer J. Hyde, Flying Officer C. Morries, Sept. 10th; Flying Officer C. A. B. Beattie, Flying Officer G. Bliss, Pilot Officer (Hon. Flying Officer) R. Davie, Flying Officer J. E. Day, Flying Officer E. K. W. Denton, Flying Officer W. F. J. Harvey, D.F.C., Flying Officer P. F. Hassett, Flying Officer A. C. Heaven, M.C., Flying Officer M. B. Joseph, Flying Officer H. D. Lewis, Flt. Lt. J. E. Scott, D.S.C., A.F.C., Flt. Lt. T. M. Southorn, Flying Officer R. A. Tarleton, Pilot Officer T. S. E. Whittaker, Pilot Officer W. L. Widgery, Sept. 12th; Flying Officer C. S. Goodfellow, M.C., Pilot Officer W. A. Saffery, Pilot Officer R. F. Tomlinson, Pilot Officer A. R. Webster, Sept. 13th; Pilot Officer W. L. Tuck, Flying Officer F. H. E. Woollett, Sept. 14th; Pilot Officer A. C. Bellinger, Flying Officer (actg. Flt. Officer) C. W. Bostock, Flt. Lt. A. E. Charlwood, Flying Officer H. V. Clark, Flying Officer J. Dymond, Flying Officer P. K. Glazebrook, Pilot Officer W. J. Goodey, Flying Officer C. N. Haines, Flying Officer G. I. Hole, Flying Officer E. E. Howard, Flying Officer E. R. Kerrison, Flying Officer P. A. H. Lalouette, Pilot Officer S. H. Mabbott, Pilot Officer T. L. Rose, Pilot Officer W. D. Sambrook, Pilot Officer G. B. Shillaker, Flying Officer J. R. Smith, Pilot Officer R. K. Stinson, Flying Officer K. G. Styles, Pilot Officer F. W. Syer, Pilot Officer W. E. Titchmarch, Flying Officer W. L. Woodman, Sept. 15th; Flying Officer W. W. Inglis, Flying Officer J. McB. V. Sillars, Flying Officer J. T. Turner, Pilot Officer J. Warren, Sqdn. Ldr. H. O. A. Westendarp, Sept. 16th; Flying Officer C. L. Adamson, A.F.C., Flying Officer R. E. Bright, Pilot Officer G. W. Butcher, Flying Officer H. L. Madge, Flying Officer R. M. Marsh, Flt. Lt. J. A. Pattern, Sept. 17th; Flying Officer J. L. W. Bacon, D.F.C., Flying Officer E. J. Crichton, Pilot Officer J. T. Newton, Pilot Officer G. N. P. Oates, Sept. 18th; Flying Officer D. D. Campbell, Pilot Officer (actg. Flying Officer) H. G. Pratt, Sept. 19th; Pilot Officer H. G. Warburton, Sept. 20th; Flying Officer F. P. Little, Pilot Officer H. C. Sherlock, Pilot Officer H. Stamp, Sept. 26th; Pilot Officer O. D. Alward, Flying Officer J. K. Blair, Pilot Officer H. G. Fraser, Flying Officer E. S. Meek, Pilot Officer R. T. Thacker, Sept. 28th.

The following Lts. relinquish their commns. on account of ill-health and are permitted to retain their rank :—J. F. Hughes, Aug. 22nd; C. B. H. Lefroy (contracted on active service), Sept. 27th.

The following Lts. resign their commns. :—C. N. S. Ackers (Lt., R.F.R.C.), P. W. Rutherford, M.C. (Lt., W. Yorks. R.), Oct 4th.

Sec. Lt. J. A. Peterson relinquishes his commn. on account of ill-health and is permitted to retain his rank, Oct. 4th.

Sec. Lt. D. C. Fraser is removed the Service for absence without leave, June 4th.

The initials of Sec. Lt. G. C. Robinson are as now described and not "J. C." as stated in the "Gazette" of June 28th, 1918.

The initials of Sec. Lt. R. R. H. Taylor are as now described and not "R. H." as stated in the "Gazette" of July 1st.

The surname of Sec. Lt. H. T. Barrett is as now described and not "Barnett" as stated in the "Gazette" of June 24th.

The surname of Lt. E. C. Burtin is as now described and not "Burton" as stated in the "Gazette" of June 24th.

The surname of Lt. A. Thomson is as new described and not "Thompson" as stated in "Gazette" of July 15th.

The notification in "Gazette" of June 18th, 1918, concerning Cadet W. F. Grainger is cancelled.

The notification in "Gazette" of April 18th concerning Lt. J. J. Lanctot is cancelled.

The notification in "Gazette" of May 30th concerning Capt. E. R. H. Pollak, M.C., is cancelled.

The notification in "Gazette" of July 25th concerning Sec. Lt. (Hon. Lt.) G. F. A. Lewin, M.C., is cancelled.

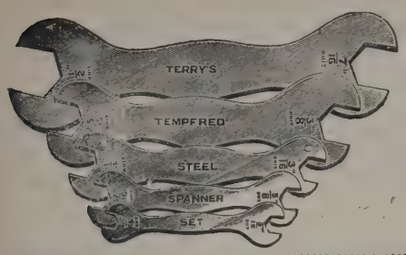
The notification in "Gazette" of July 29th concerning Sec. Lt. H. F. Skelton is cancelled.

The notification in "Gazette" of August 15th concerning Lt. H. C. Leavers is cancelled.

ADMINISTRATIVE BRANCH.—Following Sec. Lts. are graded for purposes of pay and allowances as Capts. whilst empld. as Capts. :—(Hon. Lt.) W. H. Hills, (Hon. Capt.) H. Milman, O.B.E. (to July 7th), (Hon. Lt.) S. U. Dent (to July 28th), May 1st; Sec. Lt. G. R. Biggs is graded for purposes of pay and allowances as Capt. whilst specially empld., from (A.), April 1st; Sec. Lt. T. Bathurst to be actg. Lt. whilst empld. as Lt., Oct. 10th, 1918, to April 30th.

Following Sec. Lts. are graded for purposes of pay and allowances as Lts. whilst empld. as Lts. :—H. Auliff, J. E. Elliott, R. W. Stoner, T. H. Youens, May 1st; C. P. Andrews (to May 13th), E. H. Hebden-Phillips (to June 18th), L. P. Kirk (to June 26th), Sec. Lt. A. H. Jones relinquishes the grading for pay and allowances as Capt. on ceasing to be empld. as Capt., July 11th.

Sec. Lts. (A.) to be Sec. Lts. :—G. R. Biggs, April 10th; G. B. Demaine, H. W. F. Rendall, April 17th.



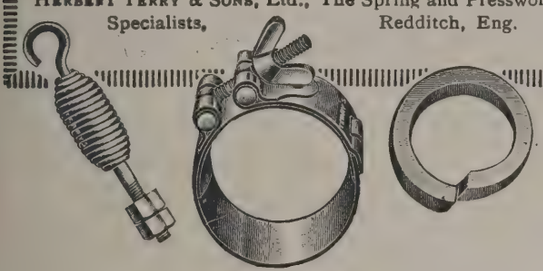
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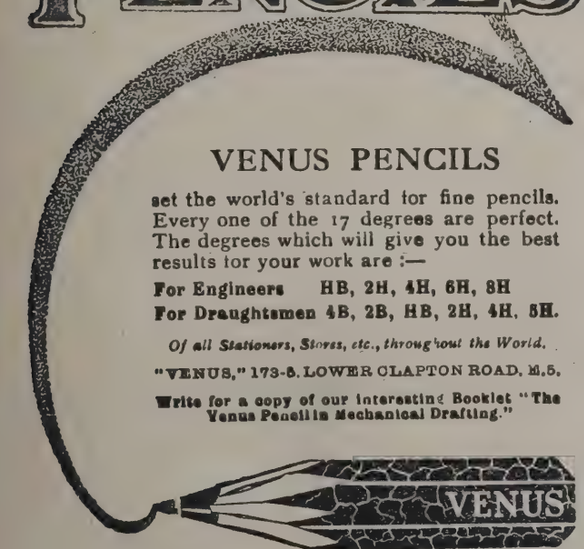
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Pilot Officers (A.) to be Pilot Officers :—F. G. Clarkson, Aug. 26th; J. M. Dandy, Sept. 1st.

Pilot Officer P. Gent to be Pilot Officer, from (S.O.), Aug. 27th.

Sec. Lts. (O.) to be Sec. Lts. :—C. H. White, Jan 23rd; J. R Brown, Oct. 12th; (Hon. Lt.) W Miller, D.F.C , June 12th, and to be Hon. Lt

The following relinquish their commns. on ceasing to be empld. :—Lt. E. A. Aldhelm-White (Lt., Scots Guards), April 17th; Lt. C. F. C. Turner (Lt., Middlesex R.), Sept. 12th.

The following are transferred to unempld. list :—Sec. Lt. W. Smith, Jan. 15th; Capt. T. MacLeod, O.B.E., March 11th; Lt. G. Dolley, May 29th; Lt. J. R. M. Tweddell, June 14th; Sec. Lt. G. H. Weir, July 29th; Maj. J. G. A. Baillie, July 30th; Flying Officer R. G. R. Townsend, Aug. 25th; Pilot Officer J. C. Walker, Aug. 27th; Pilot Officer W. L. Wade, Aug. 31st; Pilot Officer J. S. Hill, Flying Officer F. J. R. Weaver, Sept. 3rd; Flying Officer A. E. Alderton, Sept. 4th; Flying Officer (Hon. Flt. Lt.) R. S. J. Bond-Andrews, Sept. 6th; Flying Officer J. A. Mackie, Flt. Lt. J. S. Shaw, Sept 9th; Flying Officer (Hon. Sqdn. Leader) A. J. Battine, Sept. 10th; Flying Officer J. R. Verel, Sept. 11th; Flying Officer (actg. Sqdn. Ldr.) F. V. Bell, Pilot Officer G. E. Shipp, Sept. 12th; Pilot Officer E. H. Brading, Pilot Officer C. J Sharles, Pilot Officer F. H. Tippett, Sept. 15th; Flying Officer A. H. Redfern, Pilot Officer J. A. Shipton, Sept. 16th; Pilot Officer (Hon. Flt. Lt.) A. K. O. Cochrane, Flying Officer C. R. Pilcher, Pilot Officer H. O. Richards, Sept. 17th; Flying Officer A. L. Findlay, Flying Officer E. B. Selby, Sept. 18th; Flying Officer (Hon. Flt. Lt.) J. R. Croxford, Sept. 21th; Pilot Officer F. J. Prevost, Sept. 28th; Flying Officer N. E. S. Simon, Oct. 1st.

Capt. G Mitchell (Capt. and Qrmr., Rifle Bde.) relinquishes his commn. on account of ill-health contracted on active service, Oct. 1st.

Lt. R. L. G. May (Lt., R. Fus.) resigns his commn. and is granted rank of Capt., Aug. 27th (substituted for notification in the "Gazette" of Aug. 26th).

Sec. Lt. (Hon. Lt.) R. Worton relinquishes his commn. on account of ill-health and is permitted to retain the rank of Lt., Sept. 25th.

Surname of Sec. Lt. (Hon. Lt.) C. A. Luce is as now described and not "Lace" as stated in the "Gazette" of June 24th

Notification in the "Gazette" of May 9th concerning Sec. Lt. C. W. Slarke is cancelled

The notification in the "Gazette" of Aug 29th to stand.

Notification in the "Gazette" of July 8th concerning Sec Lt. F. C. Hilbert is cancelled

TECHNICAL BRANCH.—Capt. E. P. Smyth to be actg. Maj. whilst empld. as Maj., Grade (A), from Aug. 1st, 1918, to Feb. 27th (substituted for the notification in the "Gazette" of Aug. 1st, wherein this officer's name was described as Capt. E. P. Smith).

Following Sec. Lts. are graded for purposes of pay and allowances as Capts. whilst empld. as Capts., Grade (A) :—W. E. Townsend, May 1st; A E. Faver, June 1st.

Following Sec. Lts. are graded for purposes of pay and allowances as Lts. whilst empld. as Lts., Grade (A) :—C. R. Brown, from Feb. 3rd to July 21st; A. V. Baker, C. H. Bell, J. A. Joyce, E. Taylor, May 1st.

The following Sec. Lts are graded for purposes of pay and allowances as Lts. whilst empld. as Lts., Grade (B) :—J. Dow, from March 4th to July 21st; (Hon. Capt.) F. O. Sonderbye, (Hon. Lt.) H. A. L. Way, W. Liniker (to July 31st), May 1st.

Sec. Lts. relinquish the grading for pay and allowances as Capts. on ceasing to be empld. as Capts., Grade (A) :—E. F. Thorpe, June 30th; N. B. Hemsley, July 10th; Sec. Lt. (Hon. Lt.) G. F. Antell relinquishes the grading for pay and allowances as Capt. on ceasing to be empld. as Capt., Grade (B), July 21st.

Pilot Officer D. M. Rees relinquishes the grading for pay and allowances as Flt. Lt. on ceasing to be empld. as Flt. Lt., Grade (A), Sept. 29th.

Pilot Officer J. Sutherland relinquishes the grading for pay and allowances as Flt. Lt. on ceasing to be empld. as Flt. Lt., Grade (B), Sept. 22nd.

Sec. Lts. relinquish the grading for pay and allowances as Lts. on ceasing to be empld. :—Lts., Grade (A) :—C. H. N Nunn, May 13th; T. J. E. Thornton, June 30th; H. Williams, July 13th.

Pilot Officer W. St. J. Littlewood relinquishes the grading for pay and allowances as Flying Officer on ceasing to be empld. as Flying Officer, Grade (A), Sept. 17th.

Pilot Officers relinquish the grading for pay and allowances as Flying Officers on ceasing to be empld. as Flying Officers, Grade (B) :—(Hon. Flying Officer) H. Allsebrook, Sept. 5th; R. Fell, Sept. 8th; W. Walmsley, Sept. 13th.

Pilot Officer (actg. Flying Officer) C. Littlejohn relinquishes the actg. rank of Flying Officer on ceasing to be empld. as Flying Officer, Grade (B), Sept. 18th.

Sec. Lts. (Ad.) to be Sec. Lts., Grade (A) :—A. A. M. Durrant, April 10th; (Hon. Lt.) G. F. A. Lewin, M.C., July 22nd, and to be Hon. Lt.; H. B. Brown, July 17th (substituted for the notification in the "Gazette" of Sept. 5th).

Pilot Officers (Ad.) to be Pilot Officers, Grade (B) :—E. J. Newman, Sept. 18th; (Hon. Flying Officer) J. J. Galvin, Sept. 22nd, and to be Hon. Flying Officer.

Pilot Officer R. M. Thomas to be Pilot Officer, Grade (B), from (K.B.), Sept. 18th.

Sec. Lts. (Ad.) to be Sec. Lts., Grade (B) :—H. J G. Male, Feb. 25th; (Hon. Capt.) F. O. Sonderbye, May 1st, and to be Hon Capt.

Sec. Lts. (late Gen. List, R.F.C., on prob.) are confirmed in rank as Sec. Lts., Grade (B) :—R. A. Sibun, April 1st, 1918; T. M. O'Neill, Aug. 17th, 1918; Sec. Lt R. A. Sibun to be Sec. Lt., Grade (A), from Grade (B), June 23rd.

The following relinquish their commns on ceasing to be empld. :—Sec. Lt. E. B. Flanagan, Jan. 11th; Lt. L. R. Staddon (Warrant Shipwright, R.N.), Sept. 11th.

The following are transferred to unempld list :—Lt. E H. Jones, April 1st; Capt. J. Jensen, June 24th; Sec. Lt. H. Whittaker, July 12th; Flying Officer A Shelley, Aug. 2nd; Flt. Lt. H. R. C. Adams, Aug. 3rd; Pilot Officer B. P. K. Walsh, Aug 5th; Flying Officer A. V. Jones, Aug. 25th (substituted for notification in "Gazette" of Sept. 9th); Pilot Officer R. G. Hogg, Aug. 28th., Flying Officer F L. Steben, Aug. 29th; Pilot Officer J. Stewart, Sept. 1st; Flt. Lt. M. W. W. Cross, Flying Officer S. G. Elliott-Smith, Flying Officer V. H. C. Gayford, Flying Officer L. J. Pellatt, Sept. 8th; Flying Officer F. L. Barnett, Pilot Officer G. W. Denmark, Flying Officer F. L. Fletcher, Flying Officer J. C. Holmes, D.F.C., Flying Officer V. F. Spureon, Pilot Officer O. N. H. Watson, Sept. 9th; Flying Officer R. P. Coulter,, Flt. Lt. A. R. Howard, Pilot Officer W. H. Spargo, Flying Officer F. H L. Varcoe, M.C., Pilot Officer C. G. Whitmore, Sept 10th; Flying Officer F. W. Beard, Flying Officer R O. Mullinger, Pilot Officer H D. Olson, Sept. 13th; Flt. Lt. J. J. James, Flying Officer J. W. Lawlor, Sept. 15th; Pilot Officer D. Scrimgeour, Sept. 16th; Pilot Officer W. G. Browne, Pilot Officer E. J. Cox, Flt. Lt. B. G. McCormick, Sept 17th; Sqdn. Ldr. C. F. Abell, O.B.E., Flt. Lt. E. J. Castell, Pilot Officer (Hon. Flying Officer) F. H R. Law, Flt. Lt K. R. Paterson, Sept. 20th; Flt Lt. J. W. C. Dobbyn, Sept. 21st.

Notification of Sept. 10th, 1918, concerning Lt. T. M. O'Neill is cancelled.

Notification of Jan. 10th concerning Sec. Lt. E. B. Flanagan is cancelled.

MEDICAL BRANCH.—Lt.-Col. N. H. Harris (Surgn. Comdr., R.N.) relinquishes his commn. on ceasing to be empld., Sept. 19th.

The initials of Capt. J. I. Russell are as now described and not "J. R." as stated in "Gazette" of Nov. 26th, 1918.

DENTAL BRANCH.—Flying Officers to be Flt. Lts. :—A. C. S. Cottam, Sept. 21st; H. O. Salt, Sept. 23rd.

MEMORANDA.—H. W. Morgan (Capt., ret. pay, Army), late Capt. (actg. Maj.), R.A.F., is granted the rank of Maj., Oct. 4th.

The following Overseas Cadets are granted temp. commns. as Sec. Lts., with effect from Feb. 15th, and relinquish such commns. with permission to retain the rank, from the day following termination of the standardised voyage in the case of those claiming immediate repatriation, and from the day following demobilisation in England in all other cases :—226515 E. A. Allan, 535952 E. Anderson, 535414 W. J. Angrove, 435823 F. C. Atkinson, 200061 H. Aish, 50441 A. Barlow, 65008 J. E. Berkin, 180437 J. A. Burchett, 706783 E E. Butler, 226209 W. W. Callam, 129614 T. Carmichael, 874096 W. Cassop, 687633 H. M. Cassidy, 911811 C. C. Cave-Brown-Cave, 524083 E. J. Church, 5071 R. A. Clark, 502764 E. T. Cockrell, 739324 N. Cole, 166158 A. R. Coleman, 4692 W. A. Corbett, 142187 A. H Couse, 507603 R. S Crowell, 315868 R. A. Crysler, 540406 E. H. Cotterell, 475425 R. C S. Davenport, 1003355 C. Depew, 91539 F. C. Dinner, 2004306 J. H. Doige, 109316 G. V. Drewbrook, 75029 J. A. Driscoll, 427706 R. Ellis, 242 O. R. Evans, 154 M. J. Feeheery, 1078043 J. Flockton, 507363 W. H. Floyd, 166765 W. H. Fox, 303062 L. S. Fraser, 65346 P. Fuller, 243067 J. J. Gauthier, 922728 L. B. Gibson, 2368376 C. P. Grizelle, 430974 D. M. Goudie, 77040 C. A. Gill, 77097 F. E. Guest, 110215 G. W. Hadrill, 174054 W. R. Hendry, 529579 W. Hill, 75149 F J. Hale, 114579 E. R. Hall, 503165 J. K. Hamilton, 207677 C. H. Hendry, 880772 A. Herbert, 690363 W. B. Jeakins, 760215 F. Jones, 3106323 H. I. Kellond, 177247 M. J. Kelly, 2353313 E. C. Larose, 2517332 E. R. Lloyd, 117354 R. Lewis, 1045056 G. Y. Masson, 504285 W. E. Masters, 2178 H. A. Moate, 505903 J. V. McAllister, 904168 E. G. McArthur, 461268 C. A. McCrae, 107063 J. A. McDonald, 766034 R. R. McIntosh, 475599 F. J. McLean, 192053 P. G. Newall, 240175 H. A. Parker, 1003389 N Pawson. 2327439 McKay E. Pritchard, 18681 G. Range, 628572 C. M. Richards, 540245 J. Robertson, 500460 S Rowles, 84182 F. W. Rogers, 14887 R A. Russell, 5754 P. McAllister Simms, 402198 W. Sapsworth, 622800 C. I. Stewart, 37220 P. Shiels, 1434483 C. R. Seal, 429713 W. C. Strang, 302965 A. Scott, 466632 G. Taylor, 200187 G. C. Terpenning, 349163 S. A. Terroux, 226090 L. E. Thompson, 66216 K. Tyrie, 2003592 N. F. Usher, 264180 M. Van Gene, 41662 G. C. Waite, 797543 J. F. C. Wark, 2498452 C. J. Wilkins, 7807 A. Winslow, 706835 G. T. Winter, 681211 A. Warnes, 109182 G. O. Williams, 2134943 W. A. Woodman.

Cadets granted hon commns. as Sec. Lts. :—534951 J. J Ashton, 44269 F. Bennett, 41255 L. J. M. Burgess, 4692 S. Ball, 55805 M. Block, 393990 T. Beckett, 767491 A. A. Booth, 7547 O. T. Curtis, Feb. 24th; 240554 L. W. Alexander, M/176695 E. Booth, S/014637 S. Boyce, 515528 J. A. C. Brown, S/255236 F. F. Ball, 42909 A T. Brown, 81310 E. M. Clarke, 40943 H. V. Cook, S/126597 C. Curtis, 12652 J. Carey, 145170 S. Cox, H/310367 G. Cross, 835996 F. Cotten, 3708 J. H. Davis, M2/034589 G. Dickin, 143204 R. L. Doidge, 76788 G. H. Drewry, 25679 J. Davenport, 305225 R. A. Davis, 220350 R. E. Davis, Feb. 25th; 3618 H. F. Barrett, MS/4570 H. Brown, 91604 R. Badger, 203793 C. E Carter, 110630 A. Crawford, 206745 R. C. Cook, 3/10478 B. Coy, M2/036021 D. J. Codey, 113067 R. L. Cogan, 60453 B. Caswell, 303173 R. B. Dufton, 19678 D. E. Durwood, 424059 G. B. Dickson, M/202175 R. W. F. Dean, Feb. 26th; 102020 S. B. R. Bearder, 12/345 V. Cuthill, 17748 L. P. D. Cross, 17021 N. P. Court, 33141 J. A. Duff, 177685 H. T. Davis, Feb. 27th; 140385 D. H. Brand, 62457 C. H. Bullen, 101887 A. W Blenkin, March 1st; 553740 H. Beer, March 3rd; 51644 W. G. Cross, March 8th; 124966 W Ainsworth, 51753 C. Anscombe, 47708 F. E. Bryant, 34753 W. R. Cooper, March 13th; 316921 J. Bradt, March 20th; 767148 W. J Burns, March 27th; 156109 J. R. Chandler, April 1st; 3019 E. Croley, April 6th; 317949 E. Barker, 200195 A. P. Cloherty, 805057 A. S. Deaville, 17478 H. M. Dawson, April 30th.

The following are transferred to the unempld. list :—Flying Officer G. A. Tilly (from S.O.), Sept. 2nd; Pilot Officer G. L. Smith (from S.O.), Sept. 13th.

Sec. Lt. A. F. Cook relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Aug. 13th.

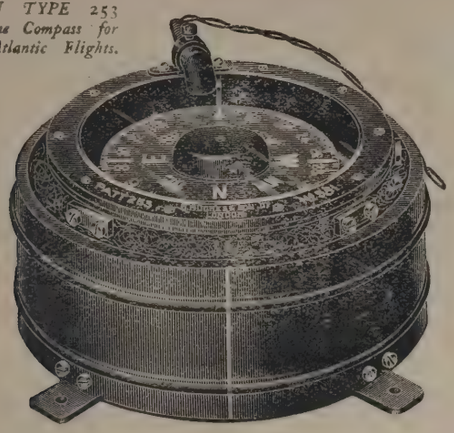
AIR MINISTRY, Oct. 7th.

R.A.F.—FLYING BRANCH.—Sec. Lts. to be Lts. :—(Hon. Lt.) W. V. Tyrrell, Aug. 30th, 1918; O. P. Gosling, April 13th.

The following relinquish their commns. on ceasing to be empld. :—Lt. W. J. Hooke, Feb. 13th (substituted for notification in "Gazette" of April 1st); Lt. C. C. Miller (Lt., W. Rid. R.), May 28th; Lt.-Cl. R A. Bradley, C.M.G. (Maj., N Staffs R.), Aug. 27th; Lt. D. B. Aitken, D.F.C. (Lt., Sea. Highrs.), Sept. 8th; Lt. L. C. Tims (Lt., R. War. R.), Sept. 9th; Capt. C C. Haynes (Capt., Devon R.), Sept. 15th; Capt. G. A. Turton (Lt., Yorks R.), Sept. 23rd.

The following are transferred to the unempld. list :—Lt. J. D. Canning, Jan. 6th; Sec. Lt. W. Ehmke, Sec. Lt. A. G. G. Greene, Sec. Lt. F. M. Gulland, Sec. Lt. F. H. Howard, Sec. Lt. L. V. Lane, Sec. Lt. L. Lennau, Sec. Lt. A. G. Lewis, Sec. Lt. M. B. Macaulay, Sec. Lt. W. H. McKeigan, Sec. Lt. F. C. Manderson, Sec. Lt. K. W. Mayhew, Sec. Lt. J. Milton, Sec. Lt. C. Moyer, Sec. Lt. J. W. Persons, Sec. Lt. W. C. Rigg, Sec Lt H. V. Woolidge, Feb. 1st; Lt. J. R. Wilford, March 6th; Lt. W. R Glenney, March 7th; Sec. Lt. C. R. McInnes, March 15th; Sec Lt S. S. Rackowe, March 17th; Sec. Lt. H. D. H. Williams, March 29th; Lt. R. H. Williams, March 31st; Lt. A. B. Whaley, April 13th; Lt. A. A. Webster, April 5th; Sec. Lt. M. C. Abrams, April 19th; Sec. Lt. H. C. Weese, May 9th; Lt. F. Young, May 15th; Lt. C Ross, May 17th; Sec. Lt. N. Jones, Sec. Lt. T. A. Johnston, May 20th; Sec. Lt. J. F. R. Johnstone, June 13th; Sec. Lt. E. C. Jones, June 14th; Lt. D. Maclean, June 15th; Sec. Lt. A. J. Jones, Sec. Lt. H. Jamieson, Sec. Lt. P. M. Keary, July 12th; Lt. W. E. C. Coombs, July 25th (substituted for notification in "Gazette" of Sept. 16th); Sec. Lt. C. M. Sherlock, July 30th; Flying Officer P. J. Knox, Aug. 2nd; Flt. Lt. J C. Brooke, D.S.C., Aug. 7th; Flying Officer S. A. Gilray (substituted for notification in "Gazette" of March 7th); Pilot Officer (Hon. Flying Officer) H. Thickett, Aug. 14th; Pilot Officer J. Terry, Aug. 19th; Flying Officer C. R. Titus, Aug. 22nd; Flying Officer B. E. Berrington, Aug. 26th; Flying Officer R. Kilpatrick, Pilot Officer R. W. Roberts, Pilot Officer J. Tate, Aug. 29th; Flying Officer P. H. Sadler, Aug. 30th; Flying Officer H. J. Bristoll, Aug. 31st; Flying Officer F. J. Bull, Sept. 1st; Flying Officer T. W. Banks, Flying Officer E C. Booker, Flying Officer J. W. Simpson, Sept. 2nd; Flying Officer A. S. Anderson, Flying Officer H. V Buckenham, Sept. 3rd; Flt. Lt. D R. Baylis, Flying Officer W N. Bussell, Flying Officer J. F. Ellor, Flt. Lt. H. L. Satchell, Sept. 4th; Flt. Lt. A. F. Buck, Sept. 5th; Flying Officer H. A. Allhack, Flying Officer J. G. Argles, Flying Officer E. F. Bensly, Flying Officer G. A. Binning, Flying Officer T. Brandon, M.C., Pilot Officer G. W. Smart, Flying

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Officer H. F. Nicholls, D.F.C., Sept. 6th; Flying Officer J. G. Murray, Pilot Officer E. A. C. Watts, Sept. 8th; Flt. Lt. R. G. Gardner, D.S.C., Pilot Officer W. G. Hines, Flying Officer F. H. Hiscock, Flying Officer J. Marsden, Pilot Officer P. C. Thurnau, Flying Officer C. S. White, Sept. 9th; Flt. Lt. R. Blatherwick, Pilot Officer A. V. Bollins, Pilot Officer (Hon. Flying Officer) W. Hamley, Pilot Officer P. D. Mitton, Pilot Officer A. H. Winnam, Flying Officer W. S. Wright, Pilot Officer O H. Young, Sept. 10th; Flying Officer G. N. Anderson, Pilot Officer A. D. M. Edwards, Flt. Lt. M. Nares, Flying Officer E. J. Smart, Pilot Officer V. S. Winchester, Pilot Officer T. B. Young, Sept. 11th; Pilot Officer E. G. Banham, Pilot Officer F. W. Byrne, Flying Officer J. C. Seccombe, Pilot Officer E. H. Whitmore, Sept. 12th; Flying Officer C. O. Bean, Flying Officer J. J. Boyd-Harvey, Flying Officer F. W. Evans, Pilot Officer E. C. Rutter, Flying Officer A. D. Shannon, Flt. Lt. G. H. B. Streatfield, M.C., Pilot Officer R. J. Weaver, Sept. 13th; Pilot Officer P. A. Cox, Flying Officer G. J. Glazier, Flying Officer H. R. Goss, Pilot Officer (Hon. Flying Officer) C. C. Loretto, Pilot Officer E. O. Rutherford, Pilot Officer R. K. Stinson, Sept. 15th; Flying Officer H. J. Andrews, Flying Officer J. O. Durham, Sept. 16th; Flt. Lt. A. C. Ferguson, Pilot Officer G. A. Thompson, M.B.E., Flying Officer H. H. Wood, Pilot Officer W. T. Wrathall, Sept. 17th; Pilot Officer S. K. Fey, Flying Officer I. A. D. Mead, Pilot Officer W. Narburgh, Pilot Officer J. E. Richards, Pilot Officer J. W. Tallin, Sept. 18th; Pilot Officer F. M. Purcell, Sept. 19th; Pilot Officer D. G. Bailey, Pilot Officer J. W. Birkenshaw, Flying Officer R. C. Pigott, Sept. 20th; Pilot Officer E. B. Fielden, Sept. 21st; Pilot Officer G. C Charlton, Sept. 22nd; Flt. Lt. E. E. Barnard, Flying Officer W. D. McKeown, Flying Officer A. R. Spurling, D.F.C., Sept. 23rd; Flying Officer B. M. F. Albanese, Flying Officer A. Alcorn, Pilot Officer C. M. Arias, Pilot Officer E. Lofquist, Pilot Officer A. E. W. Middleton, Flying Officer L. M. Mathewson, Flying Officer J. A. Watson, Flying Officer L. Yerex, Sept. 26th; Flt. Lt. T. A. Gladstone, Sept. 27th; Flying Officer H. F. Crowe, Pilot Officer C. I. Foote, Pilot Officer A. J. Lacasse, Flying Officer A. A. Leitch, M.C., D.F.C., Pilot Officer R. N. Patterson, Pilot Officer W. E. Purdy, Flying Officer G. S. M. Warlow, Pilot Officer S. K. Young, Sept. 28th; Flt. Lt. G. A. Giles, Pilot Officer I. G. Morrison, Oct. 6th.

Capt. C. P. O. Bartlett relinquishes his commn. on account of ill-health, and is granted rank of Maj., Sept. 3rd (substituted for notification in "Gazette" of Sept. 16th).

Lt. H. A. Reid relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Oct. 4th.

Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—J. R. Johnson, May 20th (substituted for notification in "Gazette" of June 27th); C. W. Savignac, July 12th (substituted for notification in "Gazette" of April 15th); J. S. McGeown (contracted on active service), Sept. 28th; W. Woods (contracted on active service), Sept. 29th.

The initials of Sec. Lt. J. R. D. Goadsby are as now described, and not "G. R. D." as stated in "Gazette" of Aug. 13th, 1918.

The notification in "Gazette" of April 1st concerning Lt. W. J. Hooke is cancelled.

The notification in "Gazette" of May 23rd concerning Sec. Lt. W. T. Ward is cancelled.

The notification in "Gazette" of May 30th concerning Sec. Lt. H. B. Mills is cancelled.

The notification in "Gazette" of July 11th concerning Sec. Lt. C. R. Abell is cancelled.

The notification in "Gazette" of Sept. 5th concerning Sec. Lt. (Hon. Lt.) R. Bowman is cancelled.

Administrative Branch.—Sec. Lts. to be Lts.:—(Hon. Capt.) A. J. Dawes, April 2nd, 1918; G. J. Maunsell, April 25th, 1918.

R. White is granted a temp. commn. as Pilot Officer, Sept. 10th.

The following relinquish their commns. on ceasing to be empld.:—Maj. I. A. S. Cooke, O.B.E. (Capt, Conn. Rang.), Sept. 30th; Lt. C. E. Crowne (Lt., E. Yorks R.), Oct. 4th.

The following are transferred to unempld. list:—Sec. Lt. V. Lockey, March 17th (substituted for notification in "Gazette" of April 1st); Lt. A. R. Shepperd, April 14th; Pilot Officer P. T. Shepherd, Flying Officer W. A. Knight, Aug. 21st; Pilot Officer (Hon. Sqdn. Leader) S. A. Snatt, Aug. 31st; Flying Officer E. O. L. Bell, Flying Officer R. Bradford, M.C., Sept. 4th; Flying Officer W. H. Botterill, Sept. 6th; Flying Officer P. L. Harris, Sept. 8th; Flying Officer (Hon. Flt. Lt.) T. E. Gentles, Flying Officer J. Metcalfe, Sept. 10th; Flt. Lt. J. H. N. H. Burke, Pilot Officer H. T. Ecob, Sept. 11th; Pilot Officer I. McIvor, Flying Officer C. H. Witty, M.B.E., Sept. 12th; Flt. Lt. H. E. Craymer, Pilot Officer L. F. Joyner, Sept. 15th; Flying Officer P. Cairns, Sept. 16th; Flt. Lt. R. L. Allport, Flying Officer T. Gill, Sept. 20th; Flt. Lt. A. E. Irvin, Sept. 27th; Pilot Officer P. H. Leigh, Flying Officer H. L. Northey, Pilot Officer J. Skinner, Pilot Officer E. P. Woodman, Sept. 28th.

Lt. (actg. Maj.) D. G. Northam relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain rank of Maj., Sept. 27th.

Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—F. C. Hilbert, June 13th (substituted for notification in "Gazette" of July 15th); N. B. Edwards, Aug. 7th (substituted for notification in "Gazette" of Dec. 13th, 1918); H. C. Thomas, Sept. 26th (substituted for notification in "Gazette" of Aug. 1st).

The notification in the "Gazette" of Sept. 5th concerning Lt. B. Burton is cancelled.

Technical Branch.—Lt. A. G. Ridgon is graded for purposes of pay and allowances as Capt whilst empld. as Capt., Grade (A.), May 1st.

Sec. Lt. R. M. Weaver to be Lt. without pay and allowances of that rank, June 6th.

Sec. Lt. O. B. Paton to be Sec. Lt., Grade (B.), from (Ad.), Oct. 29th, 1918.

The following relinquish their commns. on ceasing to be empld.:—Lt. F. R. Davis (Lt., R.E.), Oct. 13th, 1918; Sec. Lt. (Hon. Lt.) G. P. Harding (Lt., Ches. R.), Sept 19th; Capt. M. D. McFarlane (Capt., Mddx. R.), Sept. 25th.

The following are transferred to unempld. list:—Capt. J. F. G. Fitzgerald, May 14th (substituted for notification in the "Gazette," June 3rd); Flying Officer F. Briggs, Aug. 27th; Pilot Officer (Hon. Flying Officer) H. F. Jupp, Aug. 29th; Flying Officer H. Bristow, Pilot Officer B. Freeman, Aug. 30th; Sqdn. Leader E. J. Howard, O.B.E., Sept. 3rd; Flying Officer R. J. Saunders, Sept. 4th; Pilot Officer J. Winslow, Sept. 5th; Flying Officer J. L. Hill, Flt. Lt. W. C. Lambert, O.B.E., Sept. 6th; Flt. Lt. E. E. Adams, Pilot Officer T. R. Barlow, Sept. 8th; Pilot Officer W. Amor, Pilot Officer H. S. Barton, Flt. Lt. A. Merrick, Flying Officer N. Penty, Flt. Lt. J. H. Smith, Sept. 9th; Flying Officer G. M. Erroll, Pilot Officer (Hon. Flying Officer) F. W. Wright, Sept. 10th; Flying Officer G. R. Simms, Pilot Officer H. Weakley, Pilot Officer H. R. White, Sept. 11th; Flying Officer F. G. J. Didden, Sept. 12th; Flying Officer H. J. Gallagher, Sept. 13th; Flt. Lt. W. C. Broadhead, Pilot Officer W. J. Burley, Flt. Lt. (Hon. Sqdn. Leader) L. N. G. Filon, Sept. 15th; Pilot Officer J. Bremner, Sept. 17th; Flt. Lt. (actg. Sqdn. Leader) W. W. Hall, O.B.E., Sqdn. Leader G. E. Woods-Humphrey, Pilot Officer H. G. Williams, Sept. 18th; Pilot Officer W. J. Harries, Sept. 19th; Pilot Officer (Hon. Flying Officer) S. G. Robinson, Flt. Lt. H. E. Smith, Pilot Officer R. M. Weaver, Sept. 20th; Flying Officer E. R. Blount, Sept. 22nd; Pilot Officer F. H. Lake, Sept. 27th; Flying Officer W. S. Jamieson, Sept. 29th.

Capt. (actg. Lt.-Col.) L. B. Cook, O.B.E., relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain the rank of Lt.-Col., Sept. 29th.

Capt. J. Stewart, O.B.E., relinquishes his commn. on account of ill-health caused by wounds, and is granted the rank of Maj., Sept. 27th.

Sec. Lt. G. R. Rankine relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, Sept. 27th.

The surname of Pilot Officer (Hon. Flying Officer) J. C. Graddon is as now described, and not "Graydon" as stated in the "Gazette" of Sept. 12th.

The notification in the "Gazette" of Sept. 12th concerning Sec. Lt. A. G. Rigdon is cancelled.

Medical Branch.—Flying Officer A. E. Collie to be Flt. Lt., Sept. 28th.

Flt. Lt. F. H. Wallace is transferred to unempld. list, Sept. 6th

Memoranda.—The following Cadets are granted Hon. Commns. as Sec. Lts.:—182964 G. W. B. Bruford, Jan. 7th; 181442 H. P. Soundy, Jan. 9th; 179190 F. W. Dixon, Jan. 14th; 179540 D. L. Evans, Jan. 17th; 180850 F. C. Rankin, Jan. 18th; 178517 L. L. Barnard, 316644 H. R. Withers, Jan. 20th, 44987 J. W. Griffiths, Jan. 25th; 300084 H. G. Paterson, Feb. 5th; 175771 C. E. Lippiatt, Feb. 7th; 58511 F. A. Gellan, Feb. 10th; 29380 E. I. Treasure, Feb. 15th; 200578 F. C. Stone, Feb. 21st; 23041 C. M. Penly, Feb. 23rd; 767587 F. D. H. Green, 31132 R. Gladwin, 24629 F. Holmes, 350996 E. Hardman, 55147 H. H. Hall, Feb. 24th; WR/310752 A. L. Fossey, 12767 M. M. Finch, S/3194 G. E. Gatling, 20729 W. E. Grace, 11410 C. F. Gurdlestone, M/20831 L. J. Garland, 35671 J. Green, 41056 C. F. Gregory, 8040736 J. T. Hopper, 374313 E. Hollands, 128389 F. L. Hanner, 31310 K. L. G. Hart, 2089 O. C. Hooper, 54193 W. R. Holland, 76008 C. F. Howard, 81208 S. T. Hurst, 196065 N. S. A. Humphries, 2960 J. Haines, 196065 J. C. Jones, M/17729 A. Kerrigan, 2913 F. Lee, 105958 F. A. Longman, Feb. 25th; 110630 W. G. Elliott, 18629 C. E. Fitzgerald, 35185 W. H. Fisher, 152334 N. B. Fuidge, 19810 A. Fieldsend, 240212 J. H. Griffiths, 55964 A. R. Gardiner, 53534 H. Gibbs, 105622 C. F. Grainger, 265855 C. F. Greaves, 51258 R. F. Granet, 202997 S. T. Hunt, 322113 J. Hastings, M/31545 A. T. Hurle, 9799 W. F. Howard, 90259 H. Jeffries, M/130223 W. E. James, 134883 G. S. Jones, 91823 H. W. Knight, 12593 T. W. Kennedy, 19379 C. K. Fenn Smith, 176039 S. H. White, Feb. 26th; 17722 W. Gregory, 44506 J. Griffiths, Feb. 27th; 93512 J. M. Hayes, March 3rd; 183103 H. J. Powell, March 5th; 29125 J. M. Failkner, March 7th; 317555 T. G. Daniels, March 9th; 25949 G. L. Grace, March 13th; 408390 T. Banks, April 4th; 30311 J. Hariow, April 6th; 178079 J. B. Hanner, 21612 J. C. Haydon, 318430 G. G. McLardie, April 11th; 175652 G. M. King, April 17th; M2/033116 C. Disney, F/41832 F. W. Dines, 70505 M. P. Gurney, 169107 S. Hird, 6628 S. G. Hallett, 203757 W. C. King, April 30th; 128344 J. E. Bessell, May 2nd; 175499 A. A. Bovey, May 4th; 12633 G. E. W. Tye, May 23rd; 251867 J. Kennedy, June 24th; 137624 E. Andrews, July 7th

The following Overseas Cadet is granted an Hon. Commn. as Sec. Lt.:—183653 L. P. Lyne, Feb. 13th.

Lt.-Col. (actg. Brig.-Gen.) J. A. Houison-Craufurd, C.M.G., C.B.E. (Lt.-Col., retired pay), relinquishes his commn. on ceasing to be empld., and is granted hon. rank of Brig.-Gen., June 1st.

The notifications in "Gazettes," July 25th and Sept. 12th, concerning Lt.-Col. (actg. Brig.-Gen.) J. A. Houison-Craufurd, C.M.G., C.B., are cancelled.

Capt. R. R. L. Thom (Capt., Bedford R.) relinquishes his commn. on ceasing to be empld., Oct. 2nd.

Temp. Hon. Lt. (Hon. Capt.) H. T. Wright relinquishes his commn. on ceasing to be empld., Sept. 16th.

The following are transferred to unempld. list:—Lt. (actg. Capt.) C. W. Hogg, from (S.O.), April 23rd (substituted for notification in "Gazette" of July 1st); Flying Officer J. A. D. Wallis, from (S.O.), Sept. 4th; Pilot Officer H. K. Fairbrother, M.B.C., from (S.O.), Sept. 10th; Flt. Lt. H. F. Anns, from (S.O.), Pilot Officer E. A. Stratton, Sept. 17th; Flying Officer L. V. Boxer, from (S.O.), Sept. 20th; Flying Officer J. H. Evans, from (S.O.), Oct. 5th.

The notification in "Gazette," June 10th, concerning 182267 Cadet A. H. Marsh is cancelled.

The notification in "Gazette," Oct. 3rd, concerning the following Overseas Cadets are cancelled:—200061 H. Aish, 540406 E. H. Cotterell, 242 O. R. Evans, 65346 P. Fuller, 110215 G. W. Hadrill, 174054 W. R. Hendry, 177247 M. J. Kelly, 475509 F. J. McLean, 302965 A. Scott. 349163 S. A. Terroux, 228090 L. E. Thompson, 6616 K. Tyrle, 681211 A. Warnes, 109182 G. O. Williams, 2134943 W. A. Woodman.

Air Ministry, Oct. 10th.

The King has been pleased to give orders for the following appointments to the Most Honourable Order of the Bath in recognition of distinguished services rendered during the War:—

C.B. (Military Division).

Group Capt. P. R. C. Groves, C.M.G., D.S.O., R.A.F.
Wing Comdr. A. J. L. Scott, M.C., A.F.C., R.A.F.

The King has been pleased to give directions for the following appointments to the Most Distinguished Order of Saint Michael and Saint George in recognition of distinguished services rendered during the War:—

C.M.G.

Group Capt. R. H. Clark-Hall, D.S.O., R.A.F.; Maj. (actg. Lt.-Col.) R. D. Waterhouse, R.A.F.

The King has been pleased to give orders for the following promotions in and appointments to the Most Excellent Order of the British Empire in recognition of distinguished services rendered during the war:—

C.B.E. (Military Division).

R.A.F.—Wing. Comdr. (A./Air Commodore) F. G. Willock, D.S.O.; Chaplain-in-Chief Rev. H. D. L. Viener, M.A.; Wing Comdr. (A./Group Capt.) A. D. Cunningham, O.B.E.; Hon. Col. L. Munro, O.B.E. (Col., Retd. List, Hants R.); Wing Comdr. W. D. Beatty, O.B.E., A.F.C.

Squdn. Leader (A./Wing Comdr.) J. L. Birley, O.B.E.; Wing Comdr. F. L. M. Boothby; Wing Comdr. I. T. Courtney, O.B.E; Wing Comdr. E. H. Griffith, O.B.E.; Wing Comdr. J. Mead, M.C.; Wing Comdr. H. W. S. Outram; Wing Comdr. R. C. M. Pink; Wing. Comdr. F. H. G. Playfair; Wing Comdr. H. L. Woodcock; Lt.-Col. W. E. S. Burch (R. Ir. Regt.); Maj. (Hon. Lt.-Col.) A. H. Cheatle, O.B.E.; Lt.-Col. G. Dreyer, O.B.E.; Lt.-Col. E. R. Peal, O.B.E., D.S.C.; Lt.-Col. A. E. J. Reiss, O.B.E.; Dr. Miss J. L. D. Fairfield, M.D.; Maj. A. H. Hogarth, O.B.E., D.C.M.

(To be continued.)

OCTOBER 22, 1919.

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ON BLAZING THE TRAIL.

Though at the moment, considering all the difficulties under which the Aircraft Industry is labouring, the progress of Civil Aerial Transport may be regarded as moderately satisfactory, it cannot be said that this country is doing all that it might do to obtain a command of the air in the realm of Commercial Aeronautics analogous to that which is held on the sea by our Mercantile Marine. The following notes are therefore published in the hope that they may provide food for thought by the Aircraft Industry, by such members of the British Public as have the intelligence to take an interest in aeronautical affairs, and by the Department of Civil Aviation—about whose generous contributions to the traditional Great Pavement of Hell we have heard so much.

Some time ago certain R.A.F. flying-boats made a tour of the Baltic Sea, presumably with the intention of impressing on the numerous indeterminate, though nominally self-determining, Slav tribes which were lately the subjects of His Imperial Majesty the Tsar the might of British Air Power. At any rate that would appear to have been their proper function. In the course of their journey these boats visited certain friendly nations which were benevolently neutral in the recent brief war which has somewhat discommoded part of Europe and has afforded the United States an excuse for becoming a military Power of importance.

One of the countries visited was the Kingdom of Sweden, and in consequence the Information Department of the Air Ministry, so ably conducted by Major-General Swinton, issued a graphic account of the way in which one of these boats had impressed on the inhabitants of Stockholm the superlative excellencies of British hydro-aeroplanes. Naturally those concerned with the Aircraft Industry were elated at the good work thus done by a Government Department in aid of British trade, and began to think that after all the Department of Civil Aviation was justified in its claim that it was "blazing the trail" for the Industry.

One does not for a moment doubt the accuracy of the "news story"—to use a Fleet Street *cliché*—as issued by the Air Ministry from information received, but it would seem that some of the inhabitants of Stockholm failed to avail themselves of the opportunity so kindly provide by the R.A.F. of seeing Britain's best and latest method of transport. The following letter will explain itself, and perhaps the Information Department of the Air Ministry will vouchsafe an explanation of the discrepancies between its communiqué of September 2nd and the affairs hereafter related:—

The Swedish Aspect.

Sir,—With reference to the issue of THE AEROPLANE dated Sept. 10th—On page 971 particulars of the visit of the F.5 boat here are given. The boat arrived here in the evening of the 3rd ulto., and, avoiding flying over any part of the city, landed in the large lake outside Stockholm. I was unable to ascertain whereabouts in the harbour it was to be moored, and although we flew round on an Avro we were unable to find it.

The following day the boat left for Gothenburg without having made any demonstration flight or doing passenger-carrying at all. Certainly nobody in Stockholm saw the boat either in the air or on the water, except representatives of the British Legation who went down in a motor-boat to see it, and it is difficult to see how any impression, good or bad, was created in this capital.

With several German flying boats and seaplanes continually flying about the city, and owned by Swedish individuals or newly-formed air-traffic companies, it is easily seen that any business created by the need of Swedish merchants is going to Germany. Once German machines are utilised in any numbers it will become practically impossible for any British aviation concern to sell any machines. It is a thousand pities the F.5 boat did no propaganda work here, as the Press is quick to attribute anything of this kind to unsuitability of the machine.

A Point for the S.B.A.C.

I do not think English aeroplane manufacturers quite appreciate the development of aviation in Sweden. There is an air traffic company now organising which has a capital of over three million kroner, and is sending its representatives to different countries to inquire about machines and to place orders. Swedish people have seen nothing but German type machines up to now, and having regard to the accessibility of Germany compared with England, the English firms are handicapped at the start.

A wealthy Swede has just presented the Flying Corps here with two modern German land machines, one scout and a two-seater, and these were expected here to-day at our aerodrome, where they will be thoroughly demonstrated to the city before being handed over. But do you think a British firm would dream of sending a machine over? Not a hope!

The Air Traffic Company by whom I am at present employed are shortly placing orders for land machines and seaplanes, and naturally I am pushing the advantages of British machines all I know. But unless the British companies can go ahead with some advertising and offer reasonable prices and quick deliveries I fear my efforts will be unavailing.

A week or so ago I received replies to my inquiries for a small single-seater to demonstrate and exhibit, as our Avros and D.H.6s are otherwise employed, and the best offer I got was an 80 Le Rhone Scout for £500, second-hand. The cost of transit would be half as much again!

Last night I attended a lecture by invitation of the Aeronautiska Sällskapet given by two German doctors on the medical aspects of aviation. The lecture was illustrated by lantern slides and much apparatus was used to demonstrate various tests, the members of the audience being invited to undergo each.

Swedish manufacturers are alive to the possibilities of aerial advertisement of their goods. Last week I was paid 1,500 krs. (about £88) to take a bag of coffee and some leaflets from Gelfe to Falun, a distance of about 40 miles, where I happened to be going to give an exhibition.

An aeroplane purchased by the Government from Germany on its arrival at the south of Sweden was inspected on landing by representatives of the Flying Corps and on account of its age and condition was not accepted.

At the Thulin flying school passenger flights may be had for 30 or 40 krs., and the newspapers ask why we charge 100 or 150 for flights with our Avros. Our reply is that we are a paying concern, whereas Messrs. Thulin can hardly be said to be unduly rushed with aircraft business, moreover, our pilots and machines are still "serviceable"

What Did Happen?

It will be remembered that, according to the aforesaid communiqué the boat flew over Stockholm and took up sundry passengers. The writer of the letter is a British pilot now working with the "P. O. Flygkompani" in

Sweden, so one naturally assumes that he would be more interested in the arrival of a British machine than would the non-flying inhabitants of Stockholm, and so would be more likely to see it in the air and to find its mooring place when at rest.

Just why representatives of the British Legation should themselves trouble to go and see it is not very clear, except that presumably they were gratifying a little mild personal curiosity. But the action proper to the British Legation under the circumstances is very clear indeed. The Commercial Attaché at the Legation, if such a mere person is tolerated in that august establishment, should have given a banquet, or at least a lunch, in honour of the crew of the F-boat, and should have bidden to the feast the leading business men of Stockholm, after which the guests should have been taken in motor-boats to see the flying-boat, and should have been offered passenger flights therein.

If our Legation at Stockholm is actually interested in serving British interests in Sweden, the Minister himself should have presided at such an entertainment, and the Naval and Military Attachés should have invited the Swedish Naval and Military chiefs, or at any rate the chiefs of the Swedish Flying Service, to view and test the British craft. So far as one can gather, nothing of the sort was done, and so a very fine opportunity seems to have been lost of impressing the Air Power of the British Empire and the excellence of British aircraft on a people whose country is by nature peculiarly suited to the uses of seaplanes, and especially of flying-boats of the larger kinds.

Germany's Enterprise.

It will be seen that the writer of the letter refers to the continual flying of German hydro-aeroplanes about the city of Stockholm. Also it will be remembered that for months past—in fact since a time before the war was finished—this paper, thanks largely to the excellent information sent by its Scandinavian correspondent, Mr. Erik Hildesheim, himself a pilot trained at the Thulin school in Sweden, has constantly drawn attention to the efforts made by the German Aircraft Industry to capture Swedish business. So the Department of Civil Aviation and the British Aircraft Industry cannot complain that they have not had fair warning of what to expect.

Yet, as this letter shows, nothing active has been done to impress on Scandinavia in general and on Sweden in particular the multifold virtues of British aircraft. As has been said, Sweden offers a magnificent market for hydro-aeroplanes of all sorts, and the value of this market has been materially increased during the past week or so by the formal cession of the Aaland Islands to Sweden.

A Strategic Stronghold.

These islands form a continuous chain across the Gulf of Bothnia between Sweden and Finland, and there is between the islands ideal water for seaplanes. The people are typical Scandinavians, hard-working and intelligent in spite of a hundred years of Slav misrule.

They are worth cultivating not only from a business point of view, but for military reasons, for in the Great War against the Slavs they will be the North-Eastern outpost of Teutonic civilisation against the yellow men. And, because—unless all one's hopes and labours come to nought—British Air Power in the Great War will play even a greater part than British Sea Power played in this recent affair, it will be well that the people of this outpost of our civilisation shall be made familiar with British aircraft and with British aviators.

That perhaps is looking too far ahead, and such considerations can hardly be expected to weigh with our politicians or with our business men. But the commercial possibilities of Sweden and the Aaland Archipelago should certainly appeal to our cupidity, if to no higher quality.

Self-Help and Self-Preservation.

It is becoming more and more evident that the Department of Civil Aviation is without value to the Aircraft Industry, and is in fact—as will be seen later in these notes—doing positive harm, in its stupid attempts to advertise itself, by failing to perform journeys which to a mere commercial air-line would be all in the day's work. Which is quite apart from the harm it is doing by holding up progress at home by the actions or inactions of its incompetent inspectors and licensing officials.

Therefore it is evident that the Aircraft Industry must proceed to help itself. And if it is to help itself it must do so far more effectually than any British Industry has done in the past. One recognises that rival manufacturers would cheerfully cut one another's throats in the sacred cause of commerce, but this is a case of all hanging together lest they should hang separately.

Wanted: Genuine Propaganda.

With our usual lack of political foresight we—instigating our Allies—have prohibited Germany from making aeroplanes of war. Which means that the German Aircraft Industry is forced at once to turn all its designing genius onto the production of commercial aeroplanes, instead of sitting up on end begging for Government orders and doing nothing while the orders are not coming. Consequently, the German being about the best business man in the world, and his workpeople being already at work like niggers to capture the world's trade—despite the astounding nonsense poured forth by Sir Auckland Geddes a week or two ago—Germany is, as this letter from Stockholm shows, already in a fair way to capture the Swedish trade in aircraft.

The only sane course for the British Aircraft Industry to take is for the S.B.A.C. to form a Propagandist Department of its own, and to form a regular squadron of demonstration aircraft, to which each live aircraft firm will contribute a unit. This S.B.A.C. squadron will then tour the world and demonstrate beyond argument to all foreign countries that British aircraft, whether for war or commerce, are incomparably the best. If the S.B.A.C. has the pluck and the common sense to combine in such a scheme it can, inside twelve months, sweep all competitors from its path.

Serving Two Masters.

There is the highest possible authority for the maxim that no man can serve two masters. Therefore it should be obvious that the units of the Royal Air Force cannot serve at one and the same time the Military (including the Naval) branch of the Air Ministry and the Civil Aviation Department. So far as the attempt has been made it has been an abject failure.

It would be well if the Air Council would realise that an R.A.F. unit must be either a purely military force, and must be used and stationed as such, or that it must be a purely civilian affair, in which Service ranks and customs are abolished and the whole thing runs entirely as a civil service—like the Post Office. It would be better still if the Air Council would make up its mind to cut loose its connection with civil aviation and let the Aircraft Industry work out its own salvation. For at present it is doing far more harm than good, and one can see no reason why its methods or its effects should ever change for the better.

Official Parasites.

It is not that one has any objection to a number of officials—deserving or otherwise—holding jobs under the Civil Aviation Department. Officials of some kind

must exist to inspect and license aircraft. It is their clumsy methods which are so objectionable.

There is a story of an Irish servant who, complaining of a plague of fleas left in her room by an unclean predecessor, remarked :—"It isn't the little bit they'd eat that I'd begrudge them, but their constant tramplin' has me annoyed."

Similarly it is not their little salaries that one would begrudge the officials who profess to control Civil Aviation; it is their constant trampling about in wrong directions and with wrong methods which disturbs the progress of Commercial Aeronautics. One has already given an example, or alternatively has asked for an explanation, of official methods in Northern Europe. Let us now consider another case in the South.

Blazing the Trail.

Here then is a letter from one of the most skilful pilots and most experienced aerial navigators in this country concerning the much-boomed route from England to Egypt—which latter country has been prematurely labelled "the Clapham Junction of the World's Air Traffic."

Just why any civilian should want to go to Egypt when on the way to either India or the Cape passes comprehension, seeing that by far the best way to India is *via* Germany, Hungary, and Turkey, and the best way to the Cape is down the West Coast of Africa by seaplane. There is good military reason for making Egypt an important centre of Service aviation, but none for making it important from a civil aviation point of view, except as a holiday resort. Which merely illustrates the folly of mixing up the two sides of aeronautics.

Be that as it may, the Air Ministry decided to "blaze the trail" to India and the Cape *via* Egypt. And this is how it is done, according to the letter before mentioned :—

The Route to Cairo.

The Air Force expenditure has been a subject of considerable comment during 1919, and at a time when unnecessary expenditure of all sorts should have been curtailed there has been a particularly flagrant instance of disregard of economy by the Air Ministry. It is one of the most pitiful scandals of its kind, involving enormous expenditure, colossal waste, and severe loss of life, and has been going on unchecked and hitherto unnoticed during the past few months.

The origin of the scheme to move three squadrons of Handley Page machines to Egypt is traceable to the decision to make Egypt a world's air traffic junction. The scheme itself seems sound, but its inception hopelessly premature. The attempt to put it into being under existing conditions is merely consistent with the incompetence which has reigned in high places in the Air Ministry since its birth.

It is necessary in the first place, therefore, to condemn the decision to send machines to Egypt. It illustrates the utter lack of full understanding by highly-placed officials of the conditions of the flight and of their lack of sympathy in the difficulties and dangers of such a route.

The most disgraceful part of the whole matter is that the machines themselves were in a totally unfit condition in many cases to undertake the flight. Many of them had been standing out in the open almost since the Armistice—at any rate, for some months. Their condition was nothing less than hopeless, and cases have occurred in which machines have been ordered off at ridiculously short notice, with all rubber connections and perishable parts rotted by the weather. The figures given below of the percentage of unsuccessful flights prove the total unfitness of the machines themselves.

The nature of the route is entirely unsuitable, after Marseilles, for land machines, and in advocating or authorising flights on land machines over 200, 300, or 400 miles across the water the Air Ministry is guilty of total disregard of the first principles of safety and economy.

That there have not been more than two or three machines lost in the sea is merely luck, and I maintain that it should become a set principle—for the present—that journeys over the water on land machines should be limited to fifty-mile crossings at the longest.

It was on my recent tour to Nice that I was first made aware of the state of affairs. Various Handley Pages stranded *en route* gave me a clue. Skeleton fuselages from crashes on aerodromes further enlightened me.

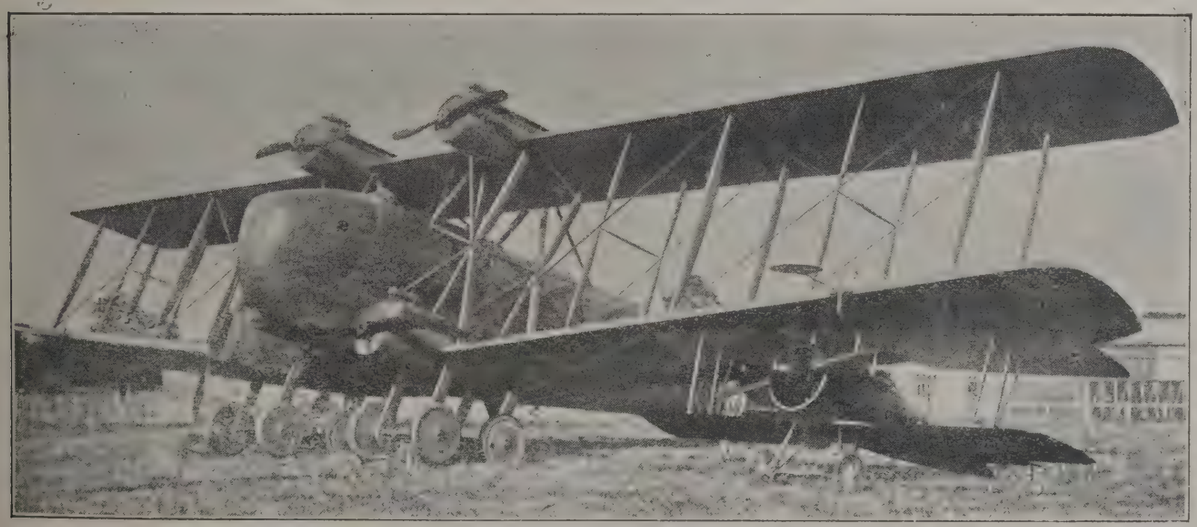
I must here pay a tribute to the loyalty of the officers of the Royal Air Force to the route. I could get nothing out of them whatsoever, great or small, old or young, but that they were carrying on—the usual quiet type, some my own pupils, full of the sense of duty—silently determined and refusing to complain. I gleaned a few personal anecdotes, that was all. I found them working under impossible conditions with perseverence and skill, without assistance.

One heard of one officer and three men going out to a stranded machine stuck on its nose in a ditch, without tackle or mechanical means of assistance, and setting about restoring the machine to its normal condition, a feat that seems almost impossible under such disadvantages. For briefness, I enumerate various points below which I consider should be the subject of an inquiry. No comment is necessary in most cases.

Points for Inquiry.

(1) Machines.—Worn out by weather and exposure, rubber joints perished, pumps giving constant trouble. Machines in this condition ordered out on the most difficult and impossible of routes. Result—a great percentage of forced landings, and continual engine trouble. I am naturally vague on figures, but I am of opinion that the percentage of failures to reach the journey's end is as high as 30 per cent., and I believe that the Air Ministry will find this figure difficult to refute.

After much trouble and inquiry, generally from French in-



The Blériot "Aerobus" (four 300 h.p. Hispano-Suiza engines), which has recently undergone its trials at Buc. This machine is designed to carry 28 passengers. A standard Spad biplane is seen alongside it.

habitants, I believe I have traced ten totally wrecked Handley Pages between Paris and the farthest corner of Italy. Had I had time to journey to Athens myself I might have discovered more. (This colossal waste of about £100,000 would have fully covered the cost of shipping the whole lot intact to Alexandria.) The condition of the machines robbed the pilots of all confidence and made success seem almost impossible.

(2) Ten lives have, I believe, been lost on the route, not including Capt. Darley's death, just recorded on the same route.

(3) Officers and men have been stranded for weeks in Italy without pay, and I understand that but for private means there would have been nothing to support them, or their men. Meanwhile the men have lived on the charity of their pilots.

(4) A complete absence of Handley Page riggers or Rolls-Royce engine fitters was noticed in more than one instance. By riggers and fitters I mean men fully skilled in re-rigging or engine repairs on those types. Such a state of affairs is quite inexcusable and has, without doubt, led to many of the accidents. Such a route should have been particularly well equipped in every way, and the absence of really skilled men at bases is typical of R.A.F. methods.

(5) One pilot was saved from drowning by an Italian, while his fellow pilot drowned, and was sent straight back for another machine. He was found by me, *en route*, stranded with trouble of sorts. His attitude was wonderful, but one could feel what it cost him—a boy of about 23—to retain his nerve.

(6) Absolutely no special preparation was made in the way of anchorage for machines, with the result that three Handley Pages were blown over, to my knowledge. The terrific force of the "mistral" should have been well known to the Air Ministry, and the few miserable picker pins supplied proved hopelessly inadequate. I spent part of a night holding my own machine down, while R.A.F. officers helped to secure their Handley Pages, meditating on the greater comfort of the Ritz or the Carlton as compared with the "mistral," pouring rain, and a field of mud!

(7) Journeys of over 250 miles across the sea on land machines in doubtful conditions seems wickedly dangerous. The route from Istres onwards is unsuited to land machines, and the sooner the Mediterranean mails are taken by seaplane the better.

(8) I noticed that a good deal of the flying was done by officers not permanently commissioned. The dangers of the route were such that I think that only officers intending to make flying their career should have been compelled to undertake them.

(9) A complete absence of higher authority or even of interest was noticed. I could find no trace of superior control or inspection, certainly not in such close contact as should be desirous in dealing with such difficult conditions.

A Public Duty.

In stating these points I feel a certain obligation to the public in that I think that the facts stated by me should be verified. It is naturally impossible by private inspection or private inquiry to obtain full details. If I am wrong in some cases it is because of official information being most naturally withheld. If my facts are in any way approximately true, I consider that the official responsible for the dispatch of the machines in question should be removed from his post.

Alternatively I consider that any decision involving colossal expenditure should be submitted to the Treasury and that the practice of a grant to the Air Force giving discretion in millions is a mistaken policy. *No commercial firm would ever undertake to move machines to Egypt by air under conditions such as have been described.*

If any notice is taken of these statements there may be some useful result.

A General View.

I should like to record my opinion that the route to India is such that the design of engines and machines has not yet reached a pitch which can render the undertaking paying as a commercial enterprise, and I think that this test should regulate any such enterprise undertaken by the Air Ministry in the future, apart from experimental work, and I should like to see the principle adopted that land machines shall not be used for oversea work.

There is an ideal point of exchange from aeroplane to seaplane at Istres, using the Etang de Berre. This is adjacent to Marseilles and is an inland lake of considerable size. International troubles would thus be largely overcome, as our Mediterranean bases would then be used without consulting other Powers.

Unless and until the principle of using seaplanes over the sea is adopted I can foresee nothing but trouble and loss.

I further see that aerial travel is not sufficiently restful to enable passengers to make continuous day and night journeys until improvements are effected, and I think rather that the trip to India may be extended to six days with comfortable rests at nights, combined with sight-seeing and about ten hours' flying in the day. This should make travel by air ideal and, though it would reduce the speed over the distance, would leave the remaining attractions of flying unimpaired.

The Need for Inquiry.

In publishing the foregoing statement one wishes it to be clearly understood that it conveys no reflection on the purely military side of the Air Ministry. That side has been more than well occupied in reorganising the R.A.F. on a peace footing and in cutting down unnecessary expenditure on air stations at home and abroad. One only wishes that it were possible to make public the excellent work which has been done in this respect.

But it certainly does seem that there is reason for a very strict inquiry into the departments which are responsible for this tragic fiasco on the route to Cairo. If this is an example of the official idea of "blazing the trail," one cannot congratulate a department which seems to have succeeded only in marking the route with a series of pylons composed of the pathetically protruding tails of multiple-engined aeroplanes at £10,000 apiece.

Particular notice should be taken of the fact that while the writer of the letter casts no reflections on the machines themselves he is righteously indignant at the condition in which they were dispatched on their perilous journey. And in the kindness of his heart he makes no allusion to the ridicule cast upon British Aviation throughout the Latin world by our lamentable exhibition of seeming incompetence either to build or fly aeroplanes.

The Hendon Scandal.

In this connection one desires to recall the inquiries in this paper, and in the House of Commons, early this year respecting a number of Handley Page machines which were left standing out on the Hendon Aerodrome week after week in the worst of weather. When those awkward questions were made public orders were sent to Hendon to get those machines away at once, and they were distributed to various stations about the country—some of which, one is told, were not only without sheds suitable to house Handley Pages, but were without personnel who knew how to handle big machines.

In some cases the stations to which they were sent refused to take them on charge, and the machines were bandied about from one station to another, left exposed to the weather, damaged by inexperienced handling, and generally deteriorated by ill-treatment. It would be interesting to know how many of those machines which were first damaged by exposure at Hendon (for they were damaged in spite of General Seely's fluent denials) were sent on this jaunt to Egypt.

Will somebody in authority demand the log-books of the ten or more machines which have thus been lost, and make known definitely whether their record was such as to justify their having been selected for such an adventure as an unorganised flight to Egypt.

A Word to the Supply Department.

One is under the impression that an affair of this nature comes within the scope of the Supply Department rather than into the Technical Department's affairs. So perhaps, if an inquiry be instituted, it might be extended to include the state of sundry four-engined machines which are said to have been delivered to the air station at Hawkinge during the past four or five months, and perhaps earlier.

If one is not altogether misinformed there is a scandal of almost equal financial magnitude in this case. No blame attaches to any of the officers or men at Hawkinge, for one is told that while these four-engined machines were being delivered there was no adequate accommodation for them, and that the personnel had no experience in handling or housing big machines. Con-

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18, GURNER STREET, ST. KILDA, MELBOURNE.

sequently they were damaged in hauling them about and in folding the wings, and by not chocking-up the wings when folded. Also they had perforce to be left exposed to the weather and so suffered considerably.

It seems very probable that proper inspection of these machines—which have now perhaps been distributed again to other inadequate stations—may disclose the fact that they, like those which were hustled away from Hendon, are unfit to fly. And if they are, in consequence, logged as unfit, some lives and a considerable sum of money may be saved by preventing people from flying them.

The Supply Department has no reason for being proud of its work during the last year of the war, and still less of its work since the Armistice. It has now, at any rate, an opportunity of justifying its existence.

The Evils of Spoon-Feeding.

Taking it all round, therefore, one is convinced that the less the Air Ministry has to do with Civil Aviation the better. And of all its efforts it is particularly desirable that it should give up that particular form of amusement which it is pleased to call "blazing the trail."

We are now beginning to see the mess it has made of the Australian Government's offer of £10,000 for the first Australian to fly to Australia by butting in and in conjunction with the equally futile Committee of the Royal Aero Club making a straight "go as you please" flight into a cut and dried competition, hedged round by rules and regulations, delayed beyond the proper starting time, and saddled with a time-limit which in itself is bound to force competitors to fly when disinclined and so is more than likely to cause loss of life.

One can recall no other activity in which a Government department has endeavoured to do pioneer work. In exploration, in mining, in steamship transport, in the development of railways, in the installation of telephones, and so forth, in fact in all the activities in which this country has led the way, the trail has been blazed by private or commercial enterprise. Only when Government departments have butted in and tried to take control have we fallen behind other nations.

Government control of adult industries has been sufficiently disastrous. How much more is Government spoon-feeding of an infant industry likely to bring disaster? Judging by the examples recorded hereinbefore, it seems rather as if the Air Ministry resembles an inexpert nurse who, instead of conveying the food to the infant's mouth, merely succeeds in jabbing the spoon into the infant's eye and permanently distorting its outlook on the future.—C. G. G.

AN ANCESTOR OF AVIATION.

It must be a cause of some considerable wonder to many of those who have of late years come to consider themselves as amongst the pioneers of aviation when they are brought face to face with the works of some of the really early students of aeronautics. Unfortunately many of those who are to-day amongst the leaders of aeronautical science are apt to ignore the works of those who laid the foundations of that science.

Thus Mr. Leonard Bairstow, C.B.E., D.Sc., F.R.Ae.S., etc., bears a sufficient reputation of this type to have been selected by the Royal Aeronautical Society to deliver the 1919 Wilbur Wright Memorial Lecture.

In that lecture Mr. Bairstow in a preliminary historical survey of his field credits Sir Hiram Maxim with producing a steam plant weighing half a pound per horse-power, whereas the true figure was 5 lbs. per h.p. He then proceeds to state that the Langley full-size monoplane was wrecked at its launch, probably because it lacked stability, and that it was later flown by Mr. Glenn Curtiss after the original steam plant had been replaced by a modern aero-engine.

In actual fact the Langley monoplane was wrecked on two occasions by fouling its launching gear, and on its flight over Lake Keuka, piloted by Mr. Curtiss, eleven years later, its stability was entirely satisfactory, and the power plant used was that designed for it by Mr. Manley in 1903, and consisted of a 5-cylinder air-cooled radial petrol engine of the type which our enlightened Technical officials are now claiming to have done so much to develop.

With this as an indication of the extent and accuracy of the acquaintance of our leading aeronautical authorities with the history of the achieved facts of past days, there can be no grounds for surprise that the name of Mr. Horatio Phillips should only survive in one, and that a misapplied, case.

Most people know the term "Phillips' Entry" as applied to the formation of the leading portion of an aerofoil, and understand thereby that form of entry which results from beginning the under surface of the aerofoil by a curvature convex downwards, which shortly changes into a curvature in the opposite sense, and now is a standard feature of all modern British high-speed aerofoils.

It is interesting here to recall that in 1911 the N.P.L. authorities pronounced this type of entry to have no appreciable effect on the aerodynamic properties of an aerofoil, whilst in this year of grace we find Lord Weir, on the authority, one presumes, of the same N.P.L. and its offspring, holding up German designers to mild contempt because they never employed an aerofoil section with that characteristic.

The cream of the particular jest, however, is that Mr. Phillips himself disclaims all responsibility for this particular feature, and has himself always considered that the Phillips entry properly so called consisted merely in a leading edge to an aerofoil formed by the junction of a convex upper surface with a flat or concave lower surface.

The early experimental work carried out by Mr. Phillips deserves to be widely known and appreciated.

Mr. Phillips began his experiments some time in the seventies, but so far as can be discovered no account of his results was published before 1885.

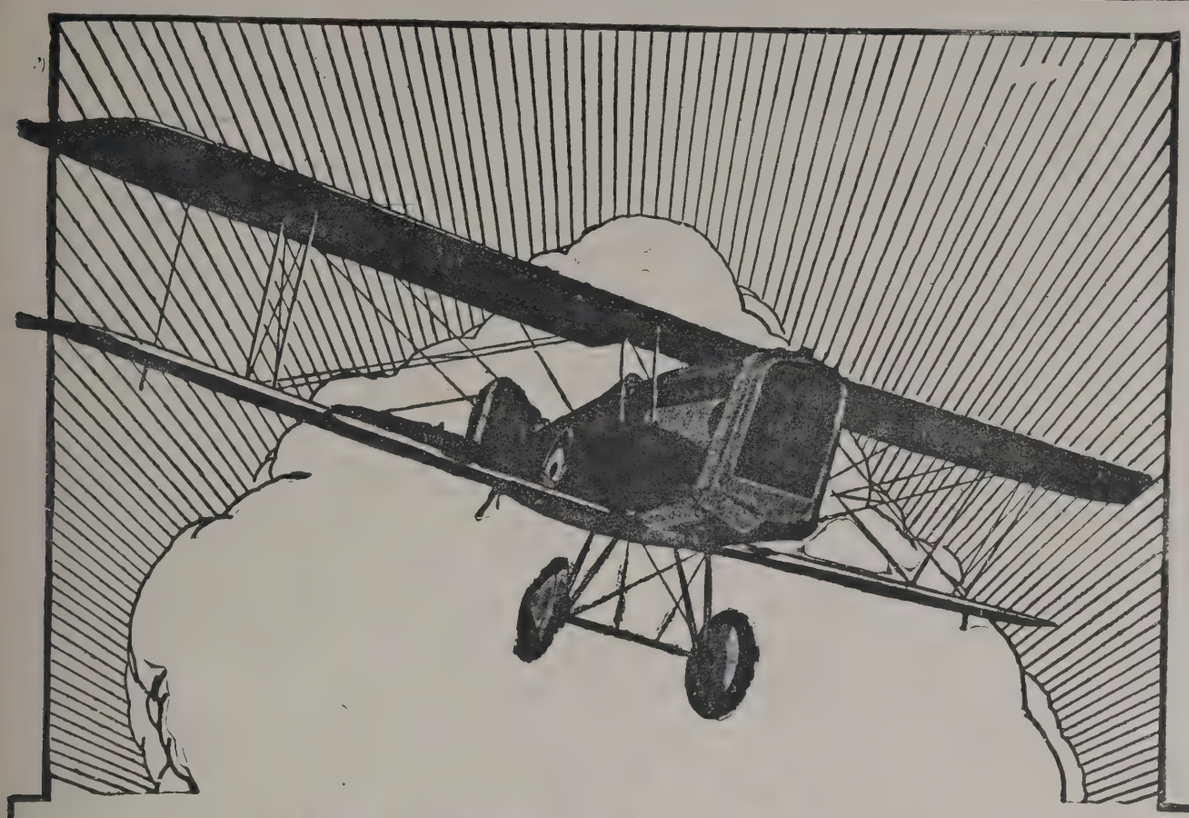
In that year was published the complete specification of a patent (No. 13768 of 1884) entitled "Apparatus for Aerial Navigation," wherein are shown the figures of wing sections which are reproduced here, together with Mr. Phillips' original complete specification.

A.D. 1884.—No. 13,768.—APPARATUS FOR AERIAL NAVIGATION.

COMPLETE SPECIFICATION.

I, Horatio Frederick Phillips, of 31, Chapel Street, Park Lane, in the County of Middlesex, engineer, do hereby declare the nature of my said invention for "Apparatus for Aerial Navigation" and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

My invention relates to means to be used in conjunction with suitable propelling apparatus for raising and supporting an aerial machine or vehicle in the air. For this purpose I provide the machine with a series of narrow blades arranged at suitable distances apart so that air may act independently upon each without disturbance by the others. The object of these blades is to deflect upward air that comes in contact with their forward edges or portions in such a way as to cause a partial vacuum to be created over a portion of the upper surface of the blade thus aiding the air below to support the weight. To this end the blades are made with doubly curved or inclined upper surfaces. The under sides of the blades may be flat or concave in cross sectional form; whilst the upper surfaces may be convex in cross section or of a form bevelled towards each edge. The curvature of the convexity or the degrees of angularity as the case may be will depend upon circumstances.



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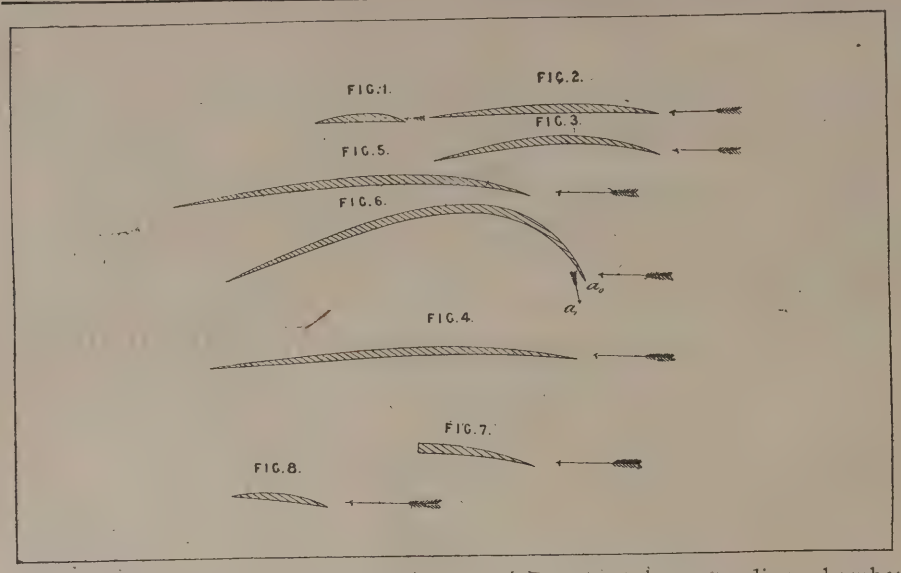
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The propellers employed may with advantage be constructed with blades to operate on the same principle.

Upon the annexed sheet of drawings there are shown in cross section various forms of blades according to my invention. Some of these are comparatively narrow, and some are broader, but all are characterised by having doubly curved or inclined upper surfaces, with flat or concave under surfaces. In Figs. 1 and 2 the under surfaces are flat or very nearly so, while the curvature of the upper surface is not great. In Fig. 3 the curvature is more marked. Figs 4 and 5 are broader examples with a moderate degree of curvature both above and below. Fig. 6 shows an extreme case in which the distinguishing features of the invention are probably carried to excess. It, however, serves admirably to demonstrate the phenomenon which it is the object to produce, for if a current of air be made to impinge upon it in the direction of the arrow a_0, it can be shown by means of a delicate gauge, such as a ribbon or thread that an induced current flows in the direction of the arrow a_1. Figs 7 and 8 are also sections of forms used to demonstrate the action of the air upon the blades, and to show that the air is deflected upwards by the forward part of the upper surface and a vacuum is formed on the after-part. If blades of this section be pivoted at their front edges, or at a point in advance of their front edges, and be exposed to a current of air of sufficient velocity coming in the direction of the arrow they will rise into the position shown (with relation to the direction of the current) in the drawings.

It is advantageous that the greatest depth of hollow should be one-third of the total width from the forward or leading edge, and the amount of concavity of the lower surface and convexity of the upper surface should bear a relation to the speed of the air current, when this is possible.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is

1. The use for raising, supporting and propelling aerial machines or vehicles, of blades of the form substantially as deviewed in cross-section, are bounded by one or more curved lines, or by two or more straight lines, or by curved and straight lines, so arranged that a current of air striking the forward edge of the blade at an acute angle is deflected upwards by the forward part of the surface, and a vacuum (or partial vacuum) is formed on the after surface substantially as described.

2. The use for raising, supporting and propelling aerial machines or vehicles, of blades of the form substantially as described with reference to and illustrated in the drawings annexed.

Dated this 11th day of July, 1885.

H. F. Phillips,
W. Lloyd Wise,
46, Lincoln's Inn Fields,
London, W.C.,
Applicant's Agent.

In the same year ("Engineering," August 14th, 1885) there appeared a description of Mr. Phillips' experiments and results, including descriptions of the wind tunnel which he used for tests.

In this tunnel an air flow was secured by the use of a steam jet in an expanding chamber which formed the exhaust end of the wind tunnel itself. This jet and expanding chamber acted in effect as does an injector, and air speeds up to 60 ft. per second were obtained.

A very simple form of balance permitted measurements of lift and resistance to be made.

Mr. Phillips' Discoveries.

As the result of these experiments Mr. Phillips arrived not merely at the essential section necessary for a reasonably efficient aerofoil, but discovered the fact that a serious loss occurred at the tip of a wing which could be reduced by increasing the aspect ratio.

Mr. Phillips also realised at a very early date that the lift of an aerofoil was due to the fact that air was deflected downwards by the aerofoil, and that therefore tandem surfaces were inefficient because the after surfaces ran in the down wash of the forward one.

These considerations led to the adoption of a multiplane construction, which has been aptly likened in form to a Venetian blind, wherein each lath was an aerofoil of the type of section described in his 1884 patent.

On May 5th, 1893, "Engineering" illustrated the machine built on these lines, and described a test made with it running round a circular track, on which occasion the machine lifted a weight of over 400 lbs. to some two or three feet.

In the same article Mr. Phillips' whirling arm, used for making tests at higher air speeds than those possible in the wind tunnel, was described.

It will thus be seen that, although Mr. Phillips has no connection with the so-called Phillips entry, he did discover the essential features of the cambered aerofoil, and measured their qualities with the aid of wind tunnel and whirling arm before most of our present wind tunnel experts were breeched—if they existed at all.—W. H. S.

THE AIR CONVENTION.

Thirteen Allied Powers signed the International Aerial Navigation Convention at Paris on Oct. 13th. Japan and the United States did not sign. The latter would not because in the opinion of their Patent Office certain American patents would not be protected. The United States has six months in which to accept or reject the Convention.

The official "white paper" containing the full text of the Convention can be obtained for 9d. from any law bookseller.

THE DOUGLAS-PENNANT CASE.

The inquiry into the dismissal or retirement of Miss Douglas-Pennant opened on Oct. 14th, 1919, under the presidency of the Lord Wrenbury in a committee-room of the House of Lords. In view of the great length and entire irrelevancy of the opening speech and the first minutes of evidence it is not proposed to summarise the case until the committee has concluded its sittings.

THE ENGLAND TO AUSTRALIA FLIGHT.

Capt. Matthews and Serjeant Kay on a Sopwith biplane, "Wallaby," began their flight to Australia on Oct. 21st, 1919. They left Hounslow at 11.44 a.m.

THE R.N.A.S. AGAIN.

Since the coming of Sir David Beatty (as he is still, for the present) to the Admiralty there has been a persistent revival of the rumour current some time ago that the Admiralty intends to have its own Naval Air Service.

As is fairly well known, Lord Jellicoe's intelligence never quite grasped the possibilities of aircraft for naval purposes, whereas Sir David Beatty was probably the first officer of his seniority in the Navy to appreciate what aeroplanes could do and to encourage the down-trodden and almost discredited R.N.A.S. to renewed efforts.

The revival of the rumour may be merely a case of "the wish being father to the thought," but recent happenings have certainly impressed even the most case-hardened of naval men with the futility of a Fleet which is not strongly equipped with aircraft as part of its own organisation, and though the rumour may have been revived by ex-R.N.A.S. people it is certainly being strongly backed by officers of the Royal Navy.

CONGRATULATIONS.

MANNING.—On Oct. 15th, at Park House, Thrackley, the wife of W. O. Manning, Esq.—a son.

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NAVAL & MILITARY AERONAUTICS

[The "Official Gazette" notices will be found on page 1486].

GREAT BRITAIN.

FROM THE COURT CIRCULAR.

St. James's Palace, Oct. 18th.

By command of The King Lieut.-Colonel Prince Arthur of Connaught held an Investiture in the Throne Room, St. James's Palace at 11.30 o'clock this morning, on His Majesty's behalf.

The following was invested with the Insignia of The Most Excellent Order of the British Empire:—Officer.—Military Division.—Capt. George Rogers, R.A.F.

His Royal Highness then conferred decorations as follows:—

The Military Cross.—Capt. Cecil Marchant, R.A.F.; Lieut. Leonard Dodson (S. Staffordshire Reg.), attd. R.A.F.

NAVAL.

Admiralty Appointment.

Oct. 20th.—R.A.F.—Flt. Lieut.—D. S. Earp, to "Pegasus" (Aug. 1st).

* * *

From a Supplement of the "London Gazette" of Oct. 7th, 1919, dated Thursday, Oct. 9th, 1919.

Admiralty, Oct. 9th, 1919.

The following dispatch has been received from the Rear-Admiral, Black Sea, on the action in the Caspian Sea off Fort Alexandrovsk on May 21st, 1919:—

July 5th, 1919.

I have the honour to submit the following dispatch on the action off Fort Alexandrovsk on May 21st, 1919, with an account of the circumstances leading up to it and all subsequent operations:—

At the beginning of May reports were being received from various sources that the Bolsheviks had occupied, or intended to occupy, Fort Alexandrovsk. From reports of refugees, prisoners, etc., it was also apparent that the Naval Authorities at Astrakhan were desirous of carrying out an attack on Petrovsk or Baku with the object of obtaining oil, of which they were in urgent need. . . . .

2.—Commodore Norris determined, therefore, to visit Fort Alexandrovsk and to carry out a reconnaissance by means of the coastal motor-boats and by the seaplanes of "A. Yusanoff," supported by the ships of the Caspian Squadron. .

4.—On May 17th the wind had gone round to west, so that no lee was obtainable on the eastern shore of the Caspian. Consequently (after an unsuccessful attempt to get the seaplanes away) the seaplane carrier had to return to Petrovsk, escorted by "Emile Nobel," who was running short of fuel. By this time Commodore Norris had news of reinforcements in the shape of "Venture," and he cruised off the eastern shores of the Caspian to the southward to await her arrival.

5.—In addition to "Venture" he was joined by "Windsor Castle" and "Emile Nobel," and on the morning of May 21st was cruising in position lat. 44.57 N., long. 50.02 E. Course S.E., speed 5 knots. Detached squadron, consisting of the C.M.B. carriers and seaplane carrier, had parted company on May 20th, with orders to rendezvous off Fort Alexandrovsk. . . .

19.—Later . . . the detached squadron of C.M.B. and seaplane carriers had arrived at rendezvous, and a seaplane had been sent up to bomb Alexandrovsk. Unfortunately, he had to return owing to engine trouble, and was out of action for 12 hours. He again went up at 15.35, and returned two hours later. Bombs were dropped, but no direct hits were obtained. He reported that a large oil steamer was burning as a result of the bombardment of the afternoon. . . . .

21.—At 05.25 the seaplane again started for Fort Alexandrovsk and dropped bombs on the shipping in the harbour and small craft machine-gunned. During May 22nd five raids were carried out by this one seaplane with the following results:—

First Raid.—Shipping and Eastern Pier bombed and machine-gunned. No direct hits, but probably some damage done as bombs fell close.

Second Raid.—Shipping bombed. Direct hits obtained on large destroyer of "Finn" class, which sank. One hit on armed merchant cruiser. Ships and piers machine-gunned.

Third Raid.—Barges at eastern and western piers bombed. No direct hits, but bombs fell very close, and damage was probably inflicted.

Fourth Raid.—Shipping bombed. No direct hits. T.B.D. bombed in second raid now completely sunk.

Fifth Raid.—Southern pier bombed. Bombs fell very close. Shipping machine-gunned.

A sixth raid was attempted, but machines failed to rise. Photographs were taken on second and fifth raids.

22.—On the evening of 22nd and on the morning of 23rd a deserted appearance of ships and town was noticed, no one being seen in streets nor on decks of ships. No armed forces or encampments were seen in vicinity. On the first day heavy A.A. fire was experienced, but on the evening of 22nd and morning of 23rd there was none. . . . .

24.—On May 23rd, after a night of thick fog, "Kruger" and "Venture" were attacked by two enemy destroyers, who had the range and speed of them, so that they were forced to withdraw. The carriers were informed of the presence of the enemy by W./T., a seaplane was again got out to attack the enemy. Unfortunately the seaplane was unable to locate the enemy destroyers, and finally carried out another raid on Fort Alexandrovsk.

It is probable that the enemy sighted the carriers, as they suddenly turned towards "Kruger" and then made off to the northward. The seaplane ran into a fog on her way back from Fort Alexandrovsk and fell in the water. The officers were not picked up until 32 hours later (see par. 25 below).

25.—On May 24th Commodore Norris in "Kruger," who was short of fuel, with "Sergie" and "Edinburgh Castle," parted company and proceeded to Petrovsk, leaving Capt. Washington in charge of the squadron, which now consisted of "Windsor Castle," "Asia," "Venture," "Bibi-Abat," and "A. Yusanoff," with orders to cruise to the northward and search for the missing seaplane, to ascertain that Chechan was safe, and, when the carriers returned, to make an extended reconnaissance of Port Alexandrovsk. The seaplane was picked up on the evening of May 24th, after which the squadron cruised between Port Alexandrovsk and Chechan until the carriers arrived.

28.—I have the honour to call particular attention to the services rendered by the following officers of the Royal Air Force who between them carried out five raids in one seaplane on the same day with excellent results, and attempted a sixth, and also the services of Lieut. Chilton, R.N.R., commanding "A. Yusanoff," for his able handling of the ship and organisation which allowed this to be done.

Pilots—
Sec. Lieut. Howard Grant Thompson.
Capt. John Archer Sadler.
Sec. Lieut. Robert George Kear Morrison.

Observers—
Lieut. Frank Russell Bicknell.
Sec. Lieut. Frank Leslie Kingham.
Sec. Lieut. Henry Godwin Pratt.

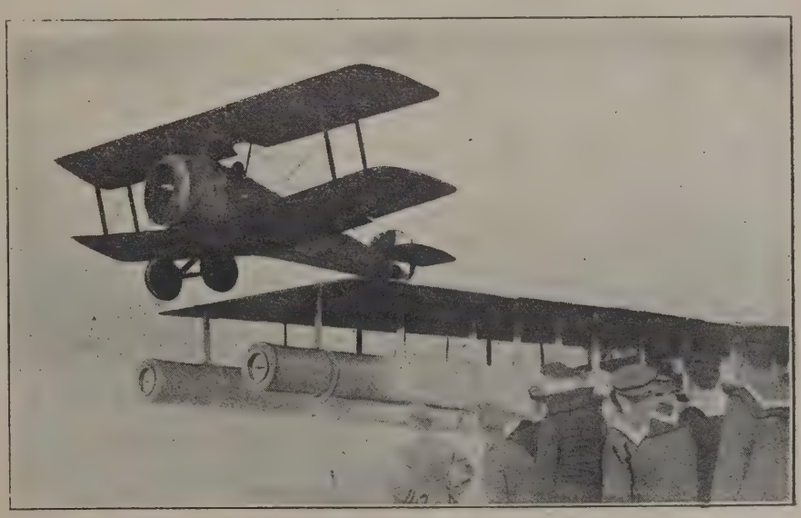
(Signed) M. SEYMOUR, Rear-Admiral.

* * *

According to the "Times" Naval correspondent it is the intention of the Admiralty to allow a number of the surplus junior Naval officers to transfer from the Royal Navy to the Royal Air Force. No official confirmation has been received, but the article in the "Times" gives the following particulars:—

"The junior officers of whom the Air Ministry are prepared to take a certain number must have passed through Osborne and Dartmouth, and must be over the age of 18½ years and under the age of 20 on Feb. 1st next. They will be admitted to the Royal Air Force College without examination and without being called upon to pay fees, apart from the cost of books and instruments. Each applicant for admission under the new arrangements will be required to pass a

AVIATION IN THE ROYAL NAVY.—A Sopwith Camel (130 h.p. Clerget engine) getting off from a platform laid over the guns of one of the larger battleships. The machine apparently has her tail down when she leaves the platform. At the best this method of using ship-planes is unsatisfactory, as the platform, being only a temporary affair, must be removed when the flight is finished. One wonders when the Admiralty will awake to the possibilities of other methods of launching ship-planes.



medical test prescribed by the Air Council, and to appear before an interviewing board.

In the event of an accepted candidate being found unsuitable for flying within six months of the date of entry into the college, he will return to the Naval Service, but it must be understood that with this exception candidates leaving the Royal Air Force for any reason will have no claim to be taken back into the Navy.

Those who become cadets at the Air Force College will be required to undergo instruction there for only one year, instead of the two years required of ordinary cadets, and they will receive pay at the rate of 10s. a day.

The successful candidates will enter upon their new studies probably next February, but it is not stated whether this avenue of transfer from the Navy to the Air Force will remain open after that date. The written consent of the officer's parent or guardian to his transfer, if selected, has to be given before his application can be entertained.

MILITARY.

The Casualty List.

Reported on Oct. 16th.

Previously reported Missing, now reported Killed.—Abbott, Sec. Lt. T. W., R.F.C

Cooksey, Sec. Lt. K. B., R. W. Kent R., attd. R.F.C.

Williams, Sec. Lt. C. P., R.F.C.

GREAT BRITAIN.

East Fortune.

It is rumoured in the daily Press that the Air Ministry are about to abandon the aerodrome at East Fortune, Haddingstone, and that all plant and material will be moved to another aerodrome in Yorkshire. It is also said that H.M.A. R.29 is to be broken up.

In connection with this the Edinburgh "Evening News" of Oct. 14th says :—

"A great deal of fuss is being made regarding the removal of the East Fortune Aerodrome. The County Council of East Lothian has passed a resolution of protest. We are all for giving Scotland a share of the Services. Scotland in pre-war times never was well-treated by the Army or the Navy, but the period has come when we must put our likes and dislikes aside, and only spend money where it is necessary.

"One of the strategists of the Council, a Baronet, said it was of essential importance that such a defensive air station should remain—not only for the protection of the Fleet, which had one of its most important bases at the Firth of Forth—but also for the safeguarding of Edinburgh and the east of Scotland generally. This expert might have been a little more definite in his opinion. Who is the enemy we are now preparing against? Is it Germany? We thought the German Fleet was at the bottom of Scapa Flow. We thought the German Army was to be reduced to a few ten thousands of men.

"Air stations, Fleets, and Armies are all based on policy, and assuredly to-day there is no likelihood whatever of war in the North Sea in our time. The scene may be farther afield in the Atlantic or the Pacific, but that is an eventuality which we may sincerely hope will not trouble this generation or the next. It is no use calling on the Government to economise if every step they take is bitterly criticised by interested public bodies."

A Permanent Commission.

It is stated unofficially that the Royal Air Station at Howden, Yorks, is to remain as a permanent base for airships, principally in connection with the Coast Defences. It is also said that much of the personnel and matériel from the East Fortune Aerodrome will be taken to Howden, including H.M.A. R.29. Another unofficial statement of this kind announced the immediate break-up of R.29.

A new shed is in the course of erection at this station, and is now approaching completion. It has a length of 750 ft. and a height of 120 ft., and is built of corrugated steel. The shed will be capable of housing such airships of the R.34 and others of that size.

Milton, Berks.

The Milton (Berks) R.A.F. Depot is expected to close down during November. Civilian labour is to cease and notices to this effect have been posted. One-seventh of the men employed there will be discharged weekly.

A "Business" Flight.

Mr. N. St. J. Philby, a British Political Officer, being ordered to Arabia to settle the dispute between two native chiefs, flew from Folkestone to Cairo, a distance of 2,100 miles, in 123 hrs.

A Misplaced Landing.

A Vickers "Vimy" bomber made a trial flight at Farnborough recently. The pilot intended to land on the Common, but he landed on the top of a taxicab instead. The cab was somewhat crushed, but neither the pilot, the cab-driver, or his passengers were injured. It is stated that the aeroplane escaped damage, but one cannot infer that the machine flew off the taxicab.

Souvenir Hunting.

Twelve residents of Hildenborough, near Tonbridge, were charged at the local police court on Oct. 21st with being in unlawful possession of equipment taken, it is alleged, from a Service aeroplane, which after making a descent in the neighbourhood was left unattended in a field.

The Freedom of Carnarvon.

The Town Council of Carnarvon have decided to confer the freedom of the borough on Wing. Cmdr. Lionel B. Rees, V.C., O.B.E., M.C., A.F.C., R.A.F., and to present him with a sword of honour, as a mark of appreciation of his distinguished services in the war.

CHILE.

According to the "Times" of Oct. 21st, the Chile Aerial Forces Department has decided to accept the offer of a British house to establish works for the construction of aeroplanes in Chile.

DENMARK.

The Danish correspondent of The Aeroplane writes :—

On board the Danish cruiser "Heimdal," which has just left Copenhagen for England, the commanding officer of the Naval air station at Copenhagen, Lieut. Grandjean, travels together with two Navy officer pilots, Lieut. Victor and Lieut. Abrahamsen, of the Reserve, with the object of studying Allied Naval aviation. Having introduced the two last-mentioned officers, who are to undergo further instruction of some months' duration at British Naval air stations, Lieut. Grandjean continues to France to learn of the French Naval air stations.

At the same time a number of Army pilots are to go for further instruction to France on Nov. 1st, being the chief pilot, Lieut. Forslev, who is to study aeronautic science for two years at "L'Ecole Superieur d'Aeronautique à Paris," while the practical training shall last three to four months of Lieuts. Folkmar and Botved, Lieuts. of the Reserve Herschend and Sætter-Lassen, and Serjts. Erlind, Bjarkow, Johansen, and Larsen, as well as the chief of the aircraft workshops department of the Army Technical Corps, the Army pilot Nielsen and his assistant Christoffersen.

FRANCE.

General Duval, Director of Military Aeronautics, has decided that Nimes will be an aero station in the future network of aerial services in France.

An Exploit of Captain Hirschauer.

Captain Hirschauer, commanding the technical branch of Military Aeronautics, piloted on Oct. 1st an airship, an aeroplane, and a free balloon in a period of four hours. At 8.30 a.m. he left Villacoublay on an aeroplane and landed again at 9.0 a.m. An hour later he left Saint Cyr alone in a spherical balloon, which he brought down at Saint Nom-la-Bretèche at 10.30 a.m. He arrived at Saint Cyr by motor-car at 11.30 a.m. and took to the higher atmosphere again in a Zodiac airship, type V.Z 10, at noon, taking the wheel himself. This flight concluded at 12.30 p.m.

Captain Hirschauer took his three certificates on the following dates :—Spherical balloon, 1911; airship, 1912; and aeroplane, 1915. It is curious that no other pilot has made a similar effort in piloting as was done by Captain Hirschauer in the above-quoted case.

A Skirmish in Morocco.

On Oct. 3rd a food convoy proceeding to Menitra was attacked to the west of Djebel Aarar by a party of about 1,000 insurgents commanded by Ou el Amdi and Fets Ali Ataouch. The French levies fought well and drove off the enemy, causing them to leave 102 dead on the field. The French casualties were 11 levies killed and 27 wounded. French military aeroplanes assisted and contributed largely to the complete rout of the enemy.

The Start of the War.

In October of last year a French court martial sentenced an engineer named Unné to five years' imprisonment and a fine of £1,300 for having given money to officers and non-commissioned officers charged to superintend the trials of aviation engines. M. Unné was in America when the sentence was passed, but he afterwards appeared before the court martial which acquitted him after hearing his appeal.

He told the strange story that towards the end of July, 1914, an aeroplane belonging to the Salmson Co., piloted by a M. Laporte, started on a journey from Paris to Constantinople. The machine had a breakdown in Bavaria, and M. Unné was sent to repair the damage.

The German authorities prevented M. Laporte from con-

SPEED

A racing Airco Machine, piloted by Capt. Gathergood, leaving for Paris at 12.30 p.m. with specially urgent dispatches, completed the flight from Hounslow to Le Bourget in 1 hour 20 minutes; a rate of 180 miles an hour, the greatest speed attained so far on the London-Paris route.

Extract from the "Times," Friday, Oct. 17, 1919.

AIRCO

THE AIRCRAFT MANUFACTURING CO., LTD.,

Chairman (and Founder, 1911): G. HOLT THOMAS.

London Office: 27, BUCKINGHAM GATE, LONDON, S.W.1.

Works: THE HYDE, HENDON, N.W.9.

tinuing his journey, and after a lapse of two days gave him permission to return to France on August 1st, specifying the route he should follow. As he was flying over Nuremburg, guns opened fire on him, but he succeeded in reaching France.

The German Embassy said that the town had been bombed by a French aeroplane, which was an act of war. This was given as Germany's reason for declaring war on France.

The story seems worthy to set alongside some of the stories which have been told at British official enquiries.

HOLLAND.

A Bristol Fighter in the Dutch Army.

A Bristol fighter belonging to the Dutch Army is now at Hendon. It was flown from Holland to England some time ago by Lieut. Versteegh, Royal Netherlands Army, with an officer-observer as passenger. The machine has been flown to various parts of England during its stay in the country. One of these visits was to its birthplace at Bristol. In view of the common arguments as to the durability of aircraft it should be here stated that this Bristol fighter is two years old and has been in continuous use both on the Western Front and in Holland.

A red cock has been painted on the sides of the fuselage by those in whose charge it is.

RUSSIA.

Operations in Russia.

Many and conflicting are the reports of the fighting in the Petrograd district, some accounts even stating that the town has been taken from the Bolshevists. The more reliable reports state that on Oct. 17th the British Royal Air Force attacked the fortress town of Krasnaya Gorka in force, while Kronstad was practically neglected, being visited by a solitary aviator. On Oct. 16th British aviators reported that the Bolshevists were retiring in disorder from Krasnaya Gorka on Petrograd, but, as will be seen, the Bolshevists were still in the former town on the 17th. On Oct. 19th British aviators reported the Red flag was again flying over Kronstad.

SWITZERLAND.

The Italian correspondent of The Aeroplane writes :—

This country would appear to possess six Military aerodromes in full equipment. They are Berne, Dübendorf, Neuchatel, Geneva, Zurich, and Montana, which is also one of the highest health resorts. Lausanne and Bellingona are also coming centres. A regular series of propaganda tours is to start shortly under military control.

Flying at less than 3,000 ft over big towns is to be avoided in case of disasters. A feeling similar to the anti-motor rabies is said to exist towards aeroplanes, though no accident seems ever to have occurred.

The Haefeli seems the most liked of Swiss machines. It is an 8-metre span by 6 metres long Farman type, with a 150 M.F.W. (Winterthur), with which it can do 180 kilos. per hour. The weight is put at 1,100 kilograms fully loaded with two on board.

U.S.A.

A Criticism.

The correspondent of the "Daily Telegraph" writes from New York on Oct. 16th as follows :—

"Some criticism is being heard, both in the newspapers and in Congress, over the fact that the aeroplane race across the Continent and back, which, it is expected, will be won to-morrow evening by Lieut. Maynard, 'the flying parson,' has so far resulted in nine deaths and many more or less serious injuries.

"According to Brig.-General Mitchell, chief of operations and training in the Army Air Service, all the aviators killed were flying De Haviland Fours, which, he declared, were faulty and a type of plane not wanted by the Service.

"He criticised the De Haviland as a compromise between a bomber and an observation plane, and said the pilot was placed in an unnecessary dangerous position between the unprotected petrol tank and the engine, while the plane altogether was too delicate near the ground. Out of 53 De Havilands entered, only 31 now remained in the race."

[The correspondent of the "Telegraph" might have explained, if he had known, that the D.Hs. used were American-built, to designs altered (or, as some people say, mangled) in America to take the Liberty engine. The result, one gathers, is a machine which is thoroughly nasty to fly, being heavy on its controls, and very much faster in landing than the original machine as designed by Capt. de Havilland. Therefore, one can safely say that there is nothing in General Mitchell's criticisms which reflects adversely on the Aircraft Manufacturing Co., Ltd, or its talented chief designer.—Ed.]

The Trans-Continental Air Race.

Despite a Reuter message from New York on Oct. 12th stating that the return flight across the Continent would start on Oct. 20th, unless the race was discontinued, Lieut. B. W. Maynard left San Francisco for his return flight to New York on Oct. 14th at 1.22 p.m. That night he landed at Battlemountain, in Nevada, having crossed the Sierra Nevada Mountains, his worst obstacle, and covered 356 miles.

Capt. Delavergne, the French air attaché, has had more bad luck. He started the race on Oct. 8th in a machine piloted by Lieut. D. B. Gish, which caught fire in the air. Afterwards he started again as a passenger in a Martin bomber.

This machine carried four passengers and was piloted by Capt. Roy N. Francis. In Nebraska they ran into some telegraph wires and wrecked the machine. It is reported that none was seriously hurt.

A Reuter message from New York dated Oct. 14th stated that three more competitors had arrived at San Francisco and three more at Mineola.

Lieut. B. Maynard, the first aviator to complete the return journey across the continent, landed at Mineola at 1.50 p.m. on Oct. 18th. The unofficial computation of his flying time from San Francisco is 25 hours, which is 15 minutes less than the time he took to fly from Long Island to San Francisco.

On his arrival at Mineola he was greeted by a large crowd and had to shake hands with about a thousand persons before the aerodrome officials were able to get near him to obtain his log book. At Omaha Lieut. Maynard lost 19 hours while obtaining a Liberty engine from the wrecked Martin bomber of a competitor, his own engine having given out.

Lieut. Maynard has stated that now the race is over he intends to leave the Army and return to his country parish.

TO NO. 8 NAVAL SQUADRON.

A Reunion Dinner of No. 208 Squadron R.A.F. (No. 8 Naval Squadron) will be held on Nov. 1st. This dinner, as distinct from Squadron dinners held hitherto, is a re-union of officers and men, and is not for officers only. Already over 100 of the former personnel of No. 8 Naval Squadron have signified their intention of being present, and it is hoped that at least as many more will be present on Nov. 1st.

The price of the dinner, without drinks, is seven and sixpence. Those who wish to attend are invited to communicate immediately with Mr. F. Hammond (late of the Transport Section, No. 8 Squadron), at No. 10, Ashbourne Grove, East Dulwich, S.E.

The Chair will be taken by Wing-Commander Bromet, D.S.O., O.B.E., the first Commanding Officer of No. 8 Squadron, supported by Major Christopher Draper, D.S.C., and Squadron-Leader Compston, D.S.C., D.F.C., Captain Jordan, and other present and former officers of the Squadron.

A GRAIN DINNER.

The first annual dinner of officers who were stationed at the Isle of Grain Air Station during the war is to be held at the Café Royal Restaurant, Regent Street, on Saturday, Nov. 8th.

Will all officers who formed part of the Grain complement, and who wish to attend, but who have not received direct notification of the event, communicate with Capt. L. A. T. Pritchard at Wadham College, Oxford?

Tickets are 15s. each, exclusive of wine, and applications must be made not later than Oct. 29th. Dress, dinner jacket or uniform.

It is hoped that the traditions of Grain Mess on festival occasions will be fully maintained on this occasion, and that its old members will turn out in full force to do their bit.

[The heading of this paragraph refers to the place and not to the menu.—Ed.]

THE CRY OF THE DEMOBILISED.

The following letter has been received :—

Sir,—We were all demobbed six months ago; our average age is 36; we all gave up everything and joined in 1915. We have all been hurt in some way; some of us have wooden legs. We all registered at St. Ermin's, Horrex's, and Dashwood House for jobs; nothing doing. Now, the Air Ministry advertise in the "Morning Post" for ex-Officers.

What's the use of St. Ermin's, Horrex's and Dashwood House? We give it up, but we want JOBS.

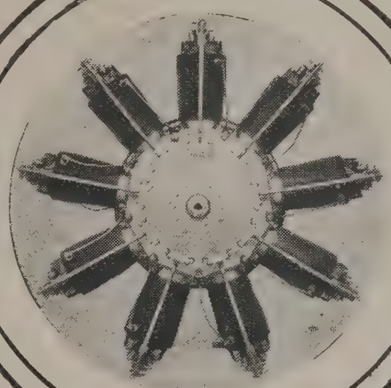
(Signed) "Six Ex-Officers."

[Though it is not customary to take any notice of anonymous letters, this is published in the hope that one or more of the Six will communicate personally with the Editor of The Aeroplane. The answer to the question has still to be discovered.—Ed.]

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ROYAL UNITED SERVICE INSTITUTION.

Among the lectures to be delivered at the Royal United Service Institution during the autumn and winter is the following :—

Dec. 3rd.—"The Air Force." By Air Commodore H. R. Brooke-Popham.

This lecture will begin at 3 p.m.

THE ROYAL AERONAUTICAL SOCIETY.

The following programme of lectures has been arranged for the 65th Session of the Royal Aeronautical Society. The meetings occur in each case at the rooms of the Royal School of Arts, 4, John Street, Adelphi, London, W.C., at 8 p.m..

Wednesday, Oct. 29th.—"The Static Head Turn Indicator for Aeroplanes," by Sir Horace Darwin, K.B.E., M.A., F.R.S. Chair to be taken by Brig.-Gen. R. K Bagnall Wild, C.M.G., C.B.E., R.E.

Wednesday, Nov. 12th.—"Some Physical and Psychical Effects of Altitude" by Chas. Atkin Swan, L.R.C.P., M.R.C.S., M.B., Ch.M. Chair to be taken by Sir W. Arbuthnot Lane, Bart., C.B., F.R.C.S.

Wednesday, Nov. 26th.—"Some Kite Balloon Experiments," by Griffith Brewer. Chair to be taken by Brig.-Gen. E. M. Maitland, D.S.O.

Wednesday, Dec. 10th.—"Aircraft Undercarriages," by J D North. Chair to be taken by Lieut.-Col. M. O'Gorman. C.B.

Visitors may attend the ordinary meetings on the introduction of a member of the Society. Applications for tickets should be made to the Secretary at the offices of the Society, 7, Albemarle Street, London, W.1.

ROYAL AERO CLUB NOTICES.

SOCIETY OF BRITISH AIRCRAFT CONSTRUCTORS AND THE ROYAL AERO CLUB.—A meeting of the Joint Standing Committee of the Society of British Aircraft Constructors and the Royal Aero Club was held at the Royal Aero Club, 3, Clifford Street, London, W.1, on Wednesday, Oct. 8th, 1919, when there were present :—Royal Aero Club : Lieut.-Col. F K. McClean, in the Chair, Lieut.-Col. Alec Ogilvie and Harold E. Perrin, Secretary (Representing Royal Aero Club), Society of British Aircraft Constructors : Capt. P. D. Acland, Mr. Hamilton Fulton. In attendance : Mr G. Holt Thomas and Charles V. Allen, Secretary (Representing Society of British Aircraft Constructors).

AUSTRALIAN FLIGHT.—It was reported that the alighting ground at Singapore was on the Race Course and from the information received from General Borton, who had surveyed the route, it was considered suitable.

ROYAL AERO CLUB SEAPLANE COMPETITION.—It was decided to recommend that the Competition which had been postponed owing to the Railway Strike, be further postponed till next year.

[It will be noticed that none of the representatives of the S.B.A.C. at this meeting were members of any of the firms which had entered for the Schneider Cup competition, or of firms which have been associated in the past with the design or construction of seaplanes other than big flying-boats. Also it will be noted that none of the representatives of the Royal Aero Club has been closely associated with modern seaplane work.—ED.]

SPECIAL COMMITTEE MEETING.—A Special Meeting of the Committee was held on Wednesday, October 15th, 1919, when there were present : Brig.-Gen. Sir Capel Holden, K.C.B., F.R.S., in the Chair, Mr. Ernest C. Bucknall, Lieut.-Col. F. K. McClean, Lieut.-Col. J T. C. Moore-Brabazon, M.P., Lieut.-Col. Alec Ogilvie, Group Captain C. R. Samson, C.M.G., D.S.O., R.A.F., and the Secretary.

ROYAL AERO CLUB SEAPLANE COMPETITION.—The recommendation of the Joint Standing Committee of the Royal Aero Club and Society of British Aircraft Constructors was received, and it was decided to postpone the Competition till next year.

THE FLYING SERVICES FUND COMMITTEE.

A meeting of the Flying Services Fund Committee was held on Friday, October 17th, 1919, when there were present : Group Captain C R. Samson, C.M.G., D.S.O., R.A.F., in the Chair, Mr. Chester Fox, Squadron-Leader T. O.'B Hubbard, M.C., R.A.F., and the Secretary.

GRANTS AND ALLOWANCES.—The following Grants and Allowances were made :—(33) An allowance of £2 a month for six months to the widow of a 2nd Class Air Mechanic in the Royal Flying Corps killed on active service. (89) An allowance of £2 a month for six months to the widow of a Private in the Royal Flying Corps killed on active service. (119) An allowance of £2 a month for six months to the widow of a Flight Sergeant in the Royal Air Force who died on active service. (122) The School Fees up to £10 of the sons of the widow of a 2nd Class Air Mechanic in the Royal Flying Corps killed on active service. (159) An allowance of £2 a month for six months to the mother of a 2nd Class Air Mechanic in the Royal Air Service killed on active service. (168) An allowance of £3 a month for six months to the mother of a Private in the Royal Air Force who died on active service.

(173) An allowance of £2 a month for three months to the widow of a 3rd Class Air Mechanic in the Royal Air Force who died on active service. (190) An allowance of £2 a month for six months to the mother of a 2nd Class Air Mechanic in the Royal Air Force who died on active sevrice. (254) An allowance of £2 a month for six months to the father of a 1st Aircraftsman in the Royal Air Force who died on active service. (261) A grant of £14 12s. 6d., an allowance of £3 a month for six months, and the school fees of the son of the widow of a Corporal in the Royal Air Force killed on active service. (266) An allowance of £1 a month for six months to the widow of a 2nd Class Air Mechanic in the Royal Air Force who died on active service. (267) A grant up to £31 10s. to a Flight Cadet in the Royal Air Force incapacitated on active service.

(269) An allowance of £2 a month for six months and the school fees of a daughter of the mother of a Sergeant in the Royal Air Force killed on active service (270) An allowance of £2 a month for six months to the mother of a Corporal in the Royal Air Force who died on active service. (271) A grant of £5 and an allowance of £4 a month for six months to the widow of a Sergeant in the Royal Air Force who died on active service.

COUPE DEUTSCH DE LA MEURTHE.

The Aero Club de France has provisionally awarded the Coupe Deutsch de la Meurthe to M. Sadi Lecointe, who completed the circuit of about 200 kilometres embracing Terrasse de St. Germain, Senlis, Meaux, Melun, Terrasse de St. Germain, on October 15th, 1919, at an average speed of 249 kils. 719 m. an hour. In order that a new Competitor may become the provisional holder of the Cup, it is necessary for this speed to be beaten by one-tenth.

[The speed is equal to about 155 m.p.h., so that to become the holder of the Cup the next competitor must do at least 170½ m.p.h. —ED.]

GREAT BRITAIN TO AUSTRALIA FLIGHT.

The following are the entries for the £10,000 Prize offered by the Australian Government for a flight from Great Britain to Australia :—

Pilot & Navigator	Crew.	Machine.	Engine.
Capt. Cedric Ernest Howell, D.S.O., M.C., D.F.C.	Henry Fraser (Mechanic)	Martinsyde	275 h.p. Rolls-Royce Falcon
Capt. George Campbell Matthews	Srgt. Tom Kay (Mechanic)	Sopwith	350 h.p. Rolls-Royce Eagle 8
Capt. Ross Macpherson Smith Pilot.	Lieut. Keith M. Smith, R.A.F. (2nd Pilot) Sergt. J. M. Bennett Sergt. W. H. Shiers (Mechanics)	Vickers-Vimy	Two 350 h.p. Rolls-Royce Eagle 8
Lieut. Valdemar Rendle	Lieut. D. R. Williams (2nd Pilot) Capt. G. H. Wilkins (Navigator) Lieut. G H. Potts (Engineer)	Blackburn Kangaroo	Two 250 h.p. Rolls-Royce Twin Falcon
Lieut. Roger Douglas, M.C., D.C.M., A.F.C.	Lieut. J. S. L. Ross, A.F.C. (Navigator)	Alliance	450 h.p. Napier Lion

Captain Matthews, on a Sopwith, commenced his flight to Australia on an attempt to win the Prize of £10,000 offered by the Australian Government, on Tuesday, October 21st, 1919. Prior to the start, the machine was marked by the officials of the Royal Aero Club, and his official starting time was 11.44 a.m., taken by Mr. Stevenson of the Royal Aero Club.

PRESENTATION TO THE CLUB.

The following book has been presented to the Club by Major C. C. Turner :—"The Struggle in the Air, 1914-1918." By Major C. C. Turner. (Published by Edward Arnold.)

TO 98 SQUADRON.

Can any member of 98 Squadron, R.A.F., give any definite information concerning the fate of Capt. E. B. G. Morton, "A" Flight, 98 Squadron (formerly of 49 Squadron)?

On the afternoon of July 28th, 1918, Capt. Morton, who was flying a D.H.9 No. 1717, with Lieut. Frank Shaw, M.C., as his observer, left to carry out a special bombing raid, but his machine did not return. The formation was attacked by 15 enemy scouts shortly after crossing the line, and Capt. Morton's machine was observed flying at about 500 feet and doing a slow spiral into a small wood, or clearing between woods, S.W. of Dormans on the Marne. Probably in the southern half of a circle described at a radius of five miles with Dormans on the Marne as a centre. Probably near Soilly and probably within two miles of the south bank of the river. The observer who saw Capt. Morton's machine descending says that about 10 seconds after landing the machine burst into flames.

If there are any officers or men of 98 Squadron who can furnish any further particulars as to the subsequent fate of Capt. Morton such information will be most gratefully received by his parents. Any communications may be addressed to the Editor, at 175, Piccadilly, W 1.

POLICE PERMITS AND THE PARIS SHOW.

Those who have had experience of the interminable delays and annoyances of getting police permits in Paris and other foreign cities will be interested to hear that M. André Granet, the Commissaire Général of the Paris Aero Show, which opens on Dec. 19th, 1919, has made arrangements with the Prefect of Police that exhibitors at the Aero Show and technical journalists visiting the Exhibition will be given special facilities for obtaining the necessary police-passes.

It will be remembered that at the Amsterdam E.L.T.A. Exhibition, the Chief of the Police in Amsterdam very kindly installed a special police office in the Exhibition grounds at which foreign visitors to the Exhibition on business were able to obtain the necessary permits without more than a few minutes' delay. It has been found impossible to do precisely the same thing in the case of the Paris Aero Show, but the Committee of the Show has at any rate succeeded in obtaining a very considerable concession from the Prefect of Police in Paris

Instructions as to the method of utilising the facilities afforded can be obtained from the office of M André Granet at the Show itself.

AERONAUTICAL ENGINEERING

SUPPLEMENT TO "THE AEROPLANE"

INCORPORATING AIRCRAFT ENGINEERING, AERODYNAMICS, AIRCRAFT FINANCE AND COMMERCIAL AERONAUTICS AND MATTERS PERTAINING TO THE AERONAUTICAL ENGINEER AND THE AIRCRAFT TRADER.

THE WEEKLY COMMENTARY.

In a leading article "Strasbourg" discusses the alleged energy and enterprise of the British Races, and draws therefrom a comforting conclusion.

In spite of that inverted attitude of mind which characterises so many of this writer's utterances, there is an appreciable groundwork of truth beneath his arguments.

The machine built and designed by the Sopwith Aviation and Engineering Company for the Australian flight is described and illustrated in this issue.

The Westland Aircraft Company's products form the subject of this week's instalment of "Modern British Aeroplanes."

An interesting instrument of American design which automatically stops the engine of an aeroplane in the event of the airscrew breaking is described on page 1472.

An important letter from Prof. G. H. Bryan, dealing with the status of the newly formed Institute of Aeronautical Engineers, is printed on page 1454.

ENERGY AND ENTERPRISE.

By "STRASBOURG."

There exists a legend to the effect that the British as a nation are generally afflicted with the qualities of energy and enterprise. This legend appears to be generally believed, not only by the British themselves but even more emphatically by a fair proportion of the world at large, and it must therefore be assumed that it has some foundation in fact.

Actually, if the facts are examined carefully, it will be found these two qualities—very carefully concealed—are largely present in the British races. A casual consideration of the habits of the Londoner in the passages of an Underground Railway station under normal conditions would suggest that, if the Electric Railway Companies provided plentiful sleeping accommodation at their stations, they might well dispense with one-half their train services. Similarly, the habits of the average London pedestrian suggests as a simple solution of the street traffic congestion troubles the slinging of hammocks between all lamp-posts.

On the other hand, the sight of these same sleep-walkers attempting to board an already full 'bus, or to insert themselves into a Tube carriage whose sides are already bulging from the excess pressure of their human content, appears entirely to contradict the conclusions to which the preceding phenomenon seem to point.

The recent railway strike again affords instances innumerable of those who found it practically impossible to reach their place of business punctually when transport was in normal order, but who turned up smiling and punctually when the whole transit arrangements were dislocated.

In exactly the same way the manners and customs of the Englishman in the wild and desolate ends of the earth, and those of that same Englishman after he has successfully made the desert to bloom like the rose and has thereby amassed a fortune sufficient to maintain him in comfort at Cheltenham, seem to suggest that the British generally are afflicted with a Jekyll-and-Hyde-like duality of character.

In this connection an early memory arises. My father was discussing, with the head of a well-known Glasgow engineering firm, the choice of a works whereat I was to be apprenticed. The Glasgow engineer offered introduction to a firm he considered suitable, but added, "If he were my son, I'd tear the seat out of his trousers and tell him not to come home till he'd got a job."

This touches the essential fact that the Britisher, confronted with a real difficulty, is spurred to action and is then capable of great things. An enterprise which calls for nothing more than a little industry and attention bores him stiff and he sleeps over it. This is the explanation of the fact that that same Englishman who habitually loses his way in an Underground Railway station invariably successfully locates the right platform at Liverpool Street, even if he has never seen the place before.

This peculiarity extends much farther than to the purely personal habits of the members of our race. It is strikingly reflected in the business methods of our great industrial corporations.

Thus the appalling inefficiency of our railway system is easily accounted for when it is remembered that even a British Government successfully improvised a reasonably adequate substitute during the late strike. It is obviously so simple an affair to run such a service that no one in this country will trouble to do it unless some serious and abnormal difficulties are introduced into the problem.

When, therefore, one comes to consider the present state of aerial transport in this country and the condition of the Aircraft Industry, one is forced to the conclusion that the operation of commercial air services as a paying proposition must be extraordinarily simple. If there were real difficulties in the way, British air would certainly be full of commercial aircraft.

So far, the only real efforts in aerial activity since the Armistice in this country have been devoted to the extraction from the pockets of the comfortably unemployed of excessive fees for conveying them in extreme discomfort to places they certainly have no reason to visit.

It is highly probable that even the apparent impossibility of this performance would scarcely have stimulated the activity which has actually been displayed had not a benevolent Government instituted a Department of Civil Aeronautics to make the process even more difficult.

This peculiarity of the British temperament shows up almost as clearly when one considers the future programme of certain of those firms who have during the late war taken up the work of aircraft manufacture.

The development of aircraft for serious transport work on a large scale presents quite a number of interesting problems—problems which involve the surmounting of numerous difficulties and the expenditure of much labour, material, and money upon experimental work.

Now, of the firms who have given any serious attention to aircraft, there are two main varieties. One is of the type of the large industrial corporation with immense resources and innumerable outlets for its operations who have taken up aircraft work as a war-time side-line. To this class the continuance of experimental work presents no real difficulty. They already own the necessary plant, tools, staff, and personnel to carry out such work, and they can well afford to invest the necessary cash in running their experimental work against the time when an ample return will arrive almost automatically.

The other main class consists of those few pioneers who spent their all in experimental work before the war, have been deprived—*via* the Excess Profits Duty—of any reasonable return during its continuance, and who, to all appearances, have no earthly chance of successfully bearing the burden of the next few years.

The first class, being British, have mostly decided that it is too easy, and are very generally shutting down their aircraft departments completely.

The second class—equally British—without exception appear determined to carry on.

Fortunately the immediate difficulties in their way seem to be sufficient to ensure a really fine display of energy on their part, and therefore there is no real fear for the future of the British Aircraft Industry.

AN AERONAUTICAL MOLESWORTH.

Handbook of Modern Aeronautics. By Arthur W. Judge, A.F.R.Ae.S. (The Library Press, Limited, London. Price 30s. net.)

Mr. A. W. Judge has already contributed a number of very useful compilations to the technical literature of aviation. In those books he has shown a capacity for collecting into an easily accessible form aeronautical data from all the ends of the earth.

In a "Handbook of Modern Aeronautics" Mr. Judge has collected a vast amount of information relating to aeronautical engineering into a kind of "Super-Molesworth" for the aeroplane designer, consisting of 1,040 pages, containing 350 tables and nearly as many illustrations.

The first two sections, totalling 110 pages, are devoted entirely to tables of weights and measures, conversion tables, logarithms, squares and square-roots, etc., screw threads, wire gauges, and like painful necessities of such a work.

Thereafter the book gets to rather closer grips with its subject and deals with the weights, the properties, and the treatment of materials used in aircraft manufacture, the theory of the strength of materials, and thence, with an interjected interlude dealing with mathematical rules and mechanics, to aerodynamics, the design of aeroplanes, the calculation of aeroplane performance, stability and control of aeroplanes, aeronautical instruments, meteorology, aerial navigation, aircraft engines, airscrews, with a final chapter on flying-boats and seaplanes.

The amount of information which it contains is enormous, and the greater part of the information is useful information. It must be regarded as a monument to Mr. Judge's industry in collecting and tabulating facts and to his judgment in choosing the facts to tabulate.

Upon the whole, however, it may be doubted whether Mr. Judge and his publishers have been well advised in issuing the volume at this date.

During the five years of war technical aeronautical information was necessarily kept secret, and most of the contributions to the art are not yet available for publication.

Hence Mr. Judge's immense labour has produced a tome which contains practically no aerodynamical statistics which had not been published before the outbreak of war. For instance, the latest N.P.L. wing section test recorded is that of R.A.F.6—a section for which no modern designer is ever likely to have any use.

In a similar way the method outlined for determining wing stresses in aeroplanes is that published by the R.A.F. circa 1913, and long since abandoned in favour of more accurate methods by practically all British designers.

The labour of compiling such a book and the time occupied in printing and in checking proofs makes it impossible to include information of very recent date, more particularly in a first edition, but in this case a delay of a few months or perhaps a year would have made a great difference.

One can entirely sympathise with Mr. Judge's desire to put the work on the market and establish his footing before anyone else compiled a similar volume, and one can quite appreciate the trial to his patience which would be involved in waiting for the Air Ministry to allow the publication of modern technical data; but the result is that in many respects the book is five years out of date—a rather serious matter in this case.

For the rest the book is well and clearly printed, and on the whole well arranged. A number of typographical errors have escaped the notice of the proof-readers—an almost inevitable occurrence in the first edition of such a work—but in the majority of cases the errors are obvious and are not liable to mislead any intelligent reader.

Altogether the book should prove extremely useful to all aeronautical engineers, and is well worth its price.

LIBERTY ENGINES.

The Liberty Engine and Foundry Company, Ltd., of Seymour, Connecticut, U.S.A., announce that they have completed their plans for the manufacture of Liberty engines for commercial purposes and that orders for early delivery of these engines can now be accepted by them.



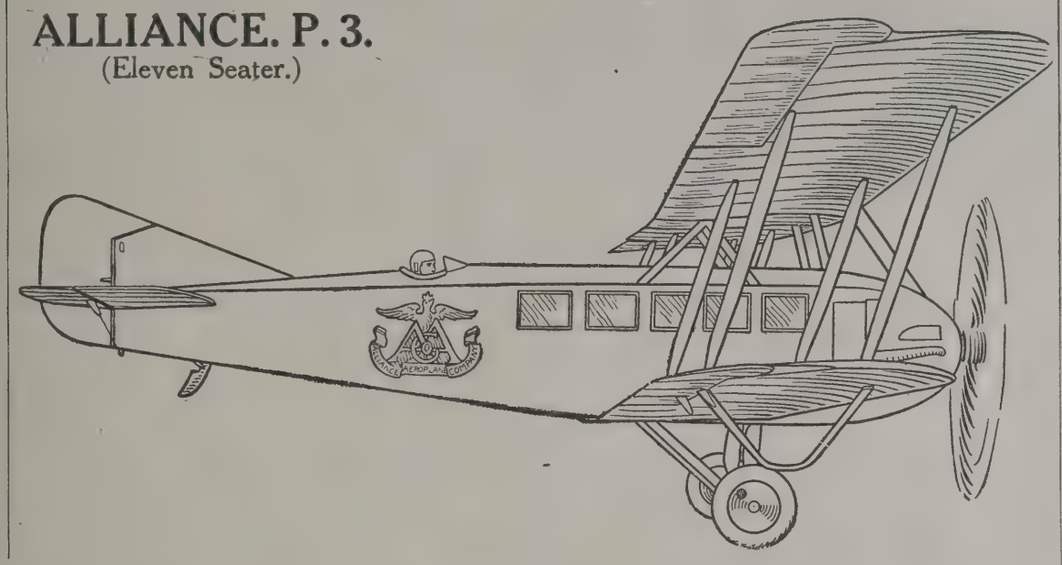
A NEAT JOB.—The business end of the B.A.T. Sporting two-seater (170 h.p. "Wasp" A.B.C. engine).

Longest Commercial Flight in the World

LONDON TO MADRID NON-STOP—

900 MILES IN $7\frac{3}{4}$ HOURS

ALLIANCE. P. 3.
(Eleven Seater.)



THE above is a sister machine to the one which flew to Madrid. These machines have been adopted by Messrs. Waring & Gillow for their Intercommunication Services between their various Houses in London, Paris, Brussels, Madrid, Buenos Aires, etc. The first flight between London and Madrid was made on July 31st :—a distance of 900 miles in $7\frac{3}{4}$ hours. It is to be noted that the actual fuel cost on this flight was $7\frac{1}{4}$d. a mile.

On a service of this length these machines are capable of carrying a TON of goods or mails or TEN passengers, in addition to the pilot and fuel for the non-stop flight. The passengers are very comfortably seated in a totally enclosed cabin, free from noise and draughts and provided with ample window area, affording a clear view of the country below.

For terms and particulars of this and other types, and appointments for demonstrations apply to :—

The ALLIANCE AEROPLANE Co., Ltd.

Registered Offices :
45 EAST CASTLE STREET, LONDON, W. 1.

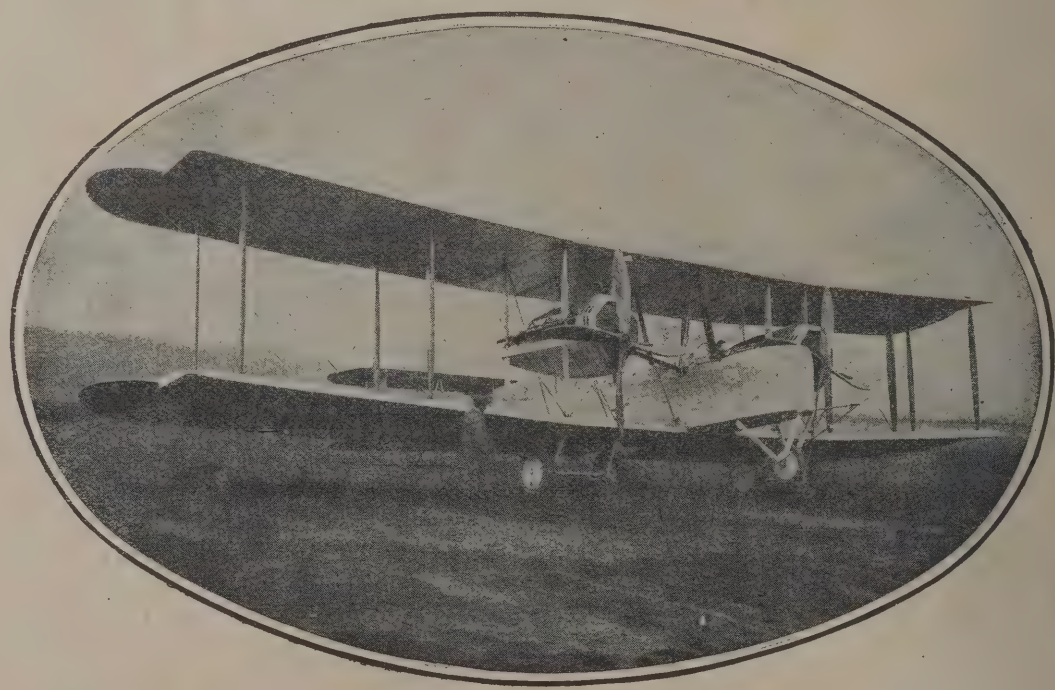
Works :
CAMBRIDGE ROAD, HAMMERSMITH.

Works & Aerodrome :
NOEL ROAD, ACTON.



THE TRANSATLANTIC FLIGHT

"VICKERS - VIMY - ROLLS"



The first direct Flight from Newfoundland to Ireland (1,900 miles) was accomplished by this Aeroplane in 15 hrs. 57 mins. 4 tons of Petrol and Oil were used.

Aviation Department,
Imperial Court, Basil Street,
KNIGHTSBRIDGE, S.W.3.

Telegraphic Address:
Vickerfyta, Knights, London.
Telephone
Kensington 6520 (4 lines).

THE SOPWITH "WALLABY."

The Sopwith "Wallaby" has been designed primarily to attempt the Australian flight and is a two-seater single-engined tractor biplane. In general lay-out it resembles the Sopwith "Atlantic" machine, but it embodies many improvements and modifications, which suggested themselves as a result of the first attempt at direct flight across the Atlantic.

The fuselage is constructed in the ordinary way and carries in its nose a 375 h.p. Rolls-Royce "Eagle" Mark VIII engine. The main petrol tanks are carried in rear of the engine and extend aft to a point directly under the trailing edges of the main planes. A gravity petrol tank and water tank are carried in the centre section. The gravity tank is fitted with a flow-meter, which indicates the consumption of petrol per hour.



Side View of the Sopwith "Wallaby" (378 h.p. Rolls-Royce engine).

The pilot's and navigator's cockpit is fitted with Triplex side windows and a floor window in front of the pilot, who sits in front. Normally, the seats allow the crew to sit in the usual position with their heads just clear of the cockpit, but provision is made by means of which the cockpit may be converted into an enclosed cabin.

The seats are fitted with clips which allow them both to drop about a foot, and sliding doors are pulled across the openings. Four of the side windows are made to open, and a pipe running from the front of the radiator supplies fresh air to the crew.

Dual control is fitted throughout, and the pilot has two rudder-bars, one above the other, for the two seat positions. A tail-plane operating gear is fitted, the control wheel being situated on the left side in a position which is convenient to both pilot and navigator. The cockpit arrangements have been beautifully worked out and are fitted with every convenience for the crew.

The pilot has a system of pull-out tables for charts, etc., together with slots and receptacles to take parallel rulers and instruments. The circular opening for the pilot's head is fitted with an aluminium beading which is graduated off into degrees for use in conjunction with a sextant. In rear of the navigator are cupboards and lockers for carrying foodstuffs and any other odds and ends necessary for the journey.

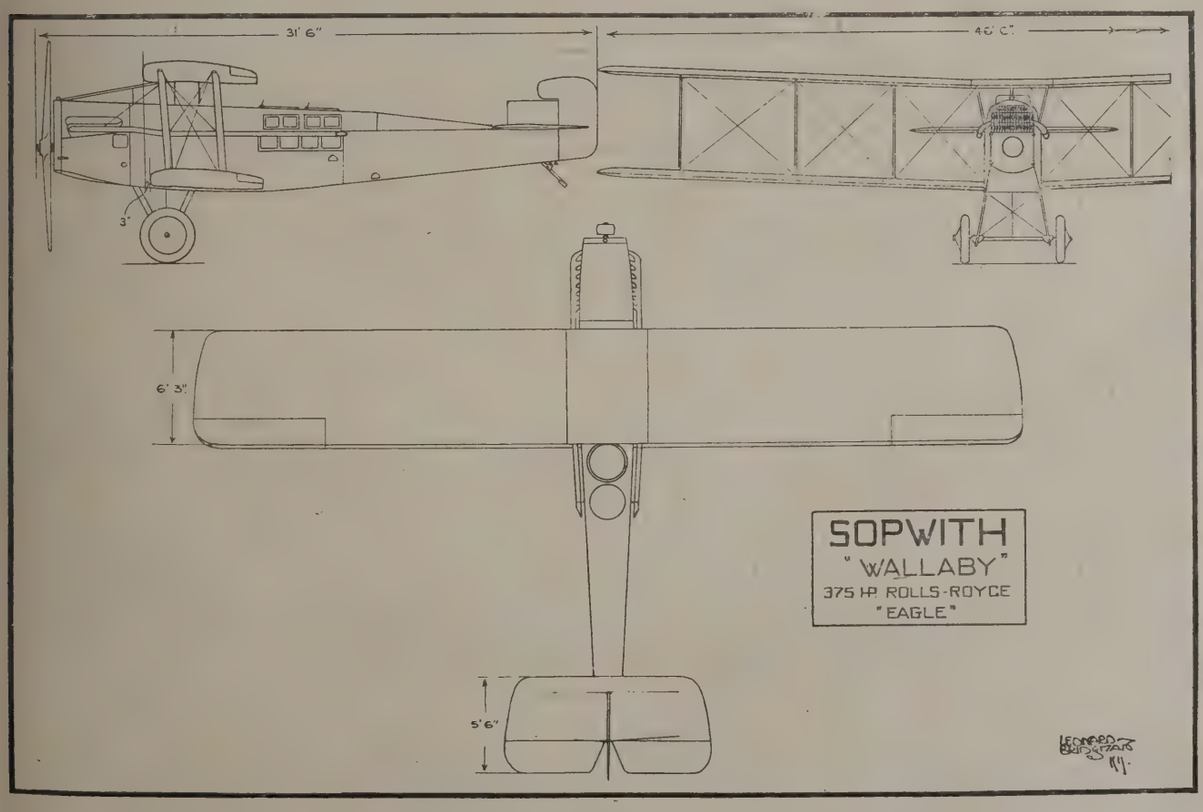
The fuselage fairing tapers down to the small rectangular fin carried above the tail-plane to which is hinged a balanced rudder.

The main planes of 46 ft. 6 in. span are staggered forward three inches and have three sets of struts on either side of the fuselage. Unbalanced ailerons are fitted to all four planes.

The undercarriage is an ordinary steel-tube Vee-type affair and carries two large size Palmer Aero wheels suspended in the usual Sopwith manner, that is, on a divided axle which is hinged in the centre to the cross-tubes at the apices of the Vees, and slung on shock absorbers in the usual manner.

The whole machine is a very clean job and is finished off in the typical Sopwith style, which strikes one not only as being thorough, but carefully thought out and well finished.

The machine handles very well in the air, and the fact that it has a ratio of useful load to total weight of 46.5 per cent. shows that it possesses the efficiency that one might connect with the names "Sopwith–Rolls-Royce."



SPECIFICATION.

Type of machine.....
Single-engined tractor biplane
Name .....Sopwith "Wallaby"
Purpose for which intended.....
Australian flight, passenger carrying, etc.
Span .....46 ft. 6 in.
Length .....31 ft. 6 in.
Chord .....6 ft. 3 in.
Gap .....6 ft.
Total surface .....550 sq. ft.
Span of tail .....11 ft. 6 in.
Chord of tail .....5 ft. 5 in.
Engine type and h.p.....
Rolls-Royce "Eagle" Mark VIII 375-h.p.
Weight (empty) .....2,780 lb.
Weight (fully loaded) .....5,200 lb.
Useful load .....2,420 lb.
Ratio of useful load to total weight .....46.5 per cent.
Load per sq. ft. (fully loaded) .....9.45 lb.
Load per sq. ft. (light) .....5.05 lb.
Load per h.p. (fully loaded) .....14.5 lb.
Load per h.p. (light) .....7.75 lb.
Speed (maximum) .....121 m.p.h.
Speed (slow) .....48 m.p.h.
Speed (cruising at 5,000 ft. at 15 gal. per hr.) .....107 m.p.h.
Flight range .....1,500 miles
As passenger carrier :—
8 people at cruising speed (107 m.p.h.).....500 miles



Three-quarter Front View of the Sopwith "Wallaby."

THE INSTITUTE OF AERONAUTICAL ENGINEERS.

The following is a copy of a letter addressed to a membe of the Council of the Royal Aeronautical Society by Professor G. H. Bryan, F.R.S., in reply, apparently, to an objection to the formation of the Institute of Aeronautical Engineers :—

North Wales, Oct. 8th, 1919.

My dear Sir,—I have to thank you for yours of the 6th inst., and while regretting that such is the case, I can only say that I fully anticipated opposition on the part of the Royal Aeronautical Society towards the proposed Institution of Aeronautical Engineers.

My reason for wishing to take this movement up is that I find that a duplication of societies exists in nearly every other branch of science, even where the subject-matter is far more limited in scope than it is in aeronautics, and I feel the time has come for extending the practice to the interests of aerial navigation.

We have a Chemical Society and an Institute of Chemistry, a London Mathematical Society and a Mathematical Association, and I could draw up a long list of other cases in none of which does any clashing of interests exist. In the mathematical case the "Association" is entirely devoted to the interests of teachers in schools, most of whom would never think of joining the London Society, although many of the leading men in that subject belong to both bodies. But I have been partly guided in my decision by the recent proposal to found an Institute of Physics, although I should have considered this to be the case in which duplication was least necessary and the requirement adequately met by the London Physical Society.

The present requirements of aerial navigation cover a far wider field of activity, both theoretical and practical, than falls within the scope of any of these other "societies" and "institutions," and I do not consider that it is any longer possible for a single body to attempt to cope with all these varied interests without weakening itself by attempting too much.

Personally I consider that the foundation of such an institution devoted mainly to the interests of mechanics and pilots, and holding examinations similar to those of the Institute of Chemistry, is calculated to strengthen instead of weaken the position of the Royal Aeronautical Society as the paramount authority on scientific and technical matters connected with aviation. The circumstance that the parent society has so recently acquired the title "Royal" seems a fitting opportunity for the change.

I think you will see from this that I have acted entirely on my own responsibility in taking up the I.Ae.E., and have not been influenced in any way by personal considerations. I am not concerned with the motives which Captain Shaw had in starting the Institute, but I consider it to be a move in the right direction which is bound to meet with some opposition at first, but which will find its proper level after a short time.

It is partly for this reason, and partly because for the next year I have an opportunity of interesting myself in aeronautical matters such as I have not previously enjoyed, and which may not continue, that I accepted Captain Shaw's nomination to an office which will bring me into close touch with the whole working of the movement.

I am sorry you wrote so quickly, for I was just on the point of writing in this spirit to the Royal Aeronautical Society when yours arrived, and I should have been better pleased had I been first in the field in approaching its Council.

In conclusion I can only repeat that I have given the matter very careful consideration before taking this step. If it involves any risks they are mere trifles in comparison with the risks that have been incurred in building up modern aviation.

Whether you are right in thinking this Institute wholly unnecessary or I am right in thinking that it will ultimately prove a valuable auxiliary to the Royal Aeronautical Society, time will show. But it has been my experience that where my opinions differed from those of other people they have ultimately, though not immediately, proved to be right.

I am keeping a copy of this letter which I wish to make use of for circulation, and I shall be exceedingly grateful if you will submit it to the Council of the Royal Aeronautical Society and make any further use of it in showing it to friends that you think fit.

With kind regards, yours sincerely,

(Signed) G. H. BRYAN.

[It will be remembered that Professor Bryan is the leading authority upon the mathematics of aeroplane stability in this country.

Professor Bryan was invited to become the first President of the Institute of Aeronautical Engineers and he has accepted that invitation.—Ed.]

THE GOVERNMENT AEROPLANE COMPETITION.

Apropos the ridiculous rules for the Government competition for commercial aeroplanes, it has been computed by an authority with a wide acquaintance with practical aeroplane testing that a scoring sheet about 48 in. by 60 in. will be required to record the marks for each machine entered, and that at least two months will be required to test each machine.

BRITISH AVIETTES.

Apropos the revival of interest in man-propelled aeroplanes, it is of interest to hear that certain well-known and experienced British aeronautical engineers are concerning themselves with the subject.

Particular interest attaches to certain experiments with a machine of the flapping-wing type, which, although it has not yet flown, has given very promising results which show that the flapping wing is by no means a despicable propulsive agent.

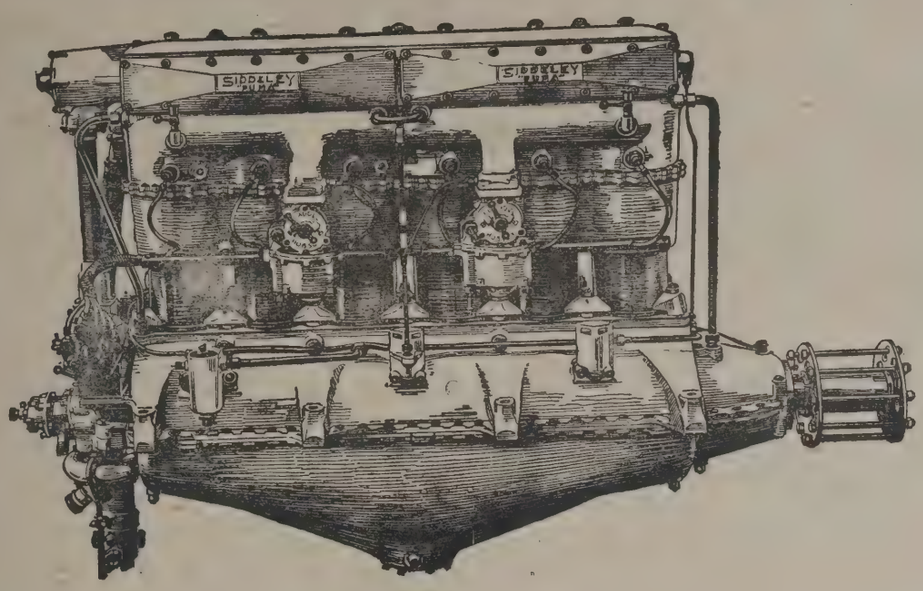
BARIMAR, LTD., AT OLYMPIA.

The stand of Barimar, Ltd., scientific welding engineers, at the Olympia Motor Show affords conspicuous evidence of the enterprise of this company in the field of metal-fusion.

Immense progress has been made within the last five years, and, indeed, there has been such a perfecting of the processes that what was impossible years ago is now a matter of everyday occurrence.

Barimar is this year showing machinery which is now being pressed into use by the firm in connection with the efficient handling of repair work. In this, Barimar is believed to be the only firm in the universe that has so far taken advantage of the new apparatus, by means of which scientists are bringing to the aid of man unerring instruments calculated to be of the greatest possible use.

Barimar will show some excellent samples of welded metals of every description. In addition, there will be numerous photographs of repair jobs put in hand for customers in all parts of the kingdom, and an adequate display of new radiators and general sheet-metal work, together with Barimar steel domed mudguards and accessories, and cast aluminium number-plates. They will also show examples of Barimar machine work, such as crankshafts, valves, pistons, and other replacement parts.



The **SIDDELEY** AIRCRAFT ENGINE

The Folkestone to Cologne Air Mail

THE Aerial Mail Service from Folkestone to Cologne (recently discontinued) was carried out by two squadrons of the Royal Air Force, one of which was equipped with D.H.9 aeroplanes fitted with 230 h.p. Siddeley Aircraft Engines. The journey was performed in an average of 3 hours 22 minutes. The average weight of mail carried per journey was over 160 pounds.

That the service was efficient is proved by the fact that during the week ended August 16th over 7,000 pounds of postal matter was safely carried from this country to the troops in Germany. Of 45 journeys commenced only one was not completed.

Write for Brochure "Three Announcements."

The SIDDELEY-DEASY MOTOR CAR CO., LTD., COVENTRY.
(Allied with Sir W. G. Armstrong Whitworth & Co., Ltd.)

MODERN BRITISH AEROPLANES.

XX.—The Westland Aircraft Works.



The Westland Folding Seaplane N.16 (150 h.p. B.R.1. Engine).

The Westland Aircraft Works is the aircraft branch of Petters, Ltd., the famous engineering firm of Yeovil, Somerset, and is under the management of Mr. R. A. Bruce, M.I.M.E., A.M.I.C.E., M.Sc., formerly of the British and Colonial Aeroplane Co., Ltd., and previously connected with the Brennan torpedo and the Brennan Gyroscopic Monorail.

During the period of hostilities the firm built numerous machines to the specifications of the Air Department, Admiralty, and the Air Ministry, and have in addition produced several interesting machines of their own design.

THE WESTLAND SEAPLANE N.16.

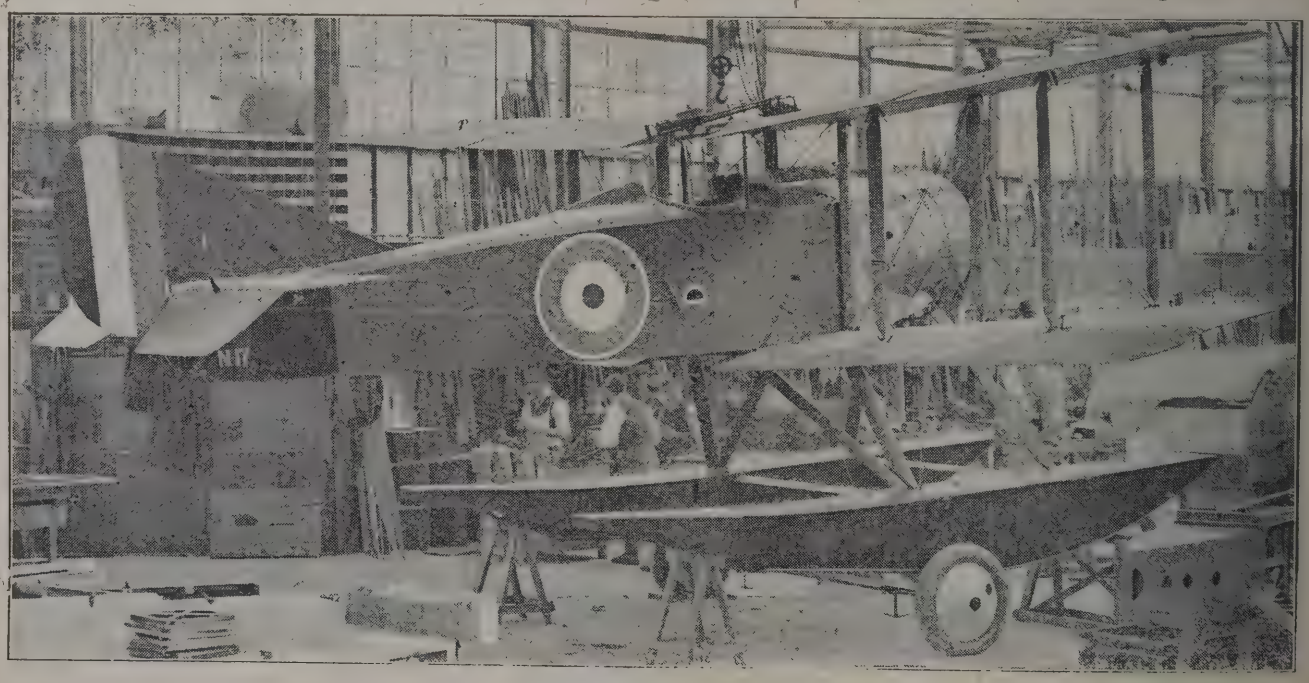
The Westland seaplane N16 is a small single-seater seaplane fitted with two pontoon floats and a large single tail float, and was designed as a fighter and light bomber for use from seaplane carrier ships.

The fuselage is of normal type, with a pronounced bump in the fairway ahead of the pilot's seat. In this bump is fitted a fixed synchronised Vickers gun.

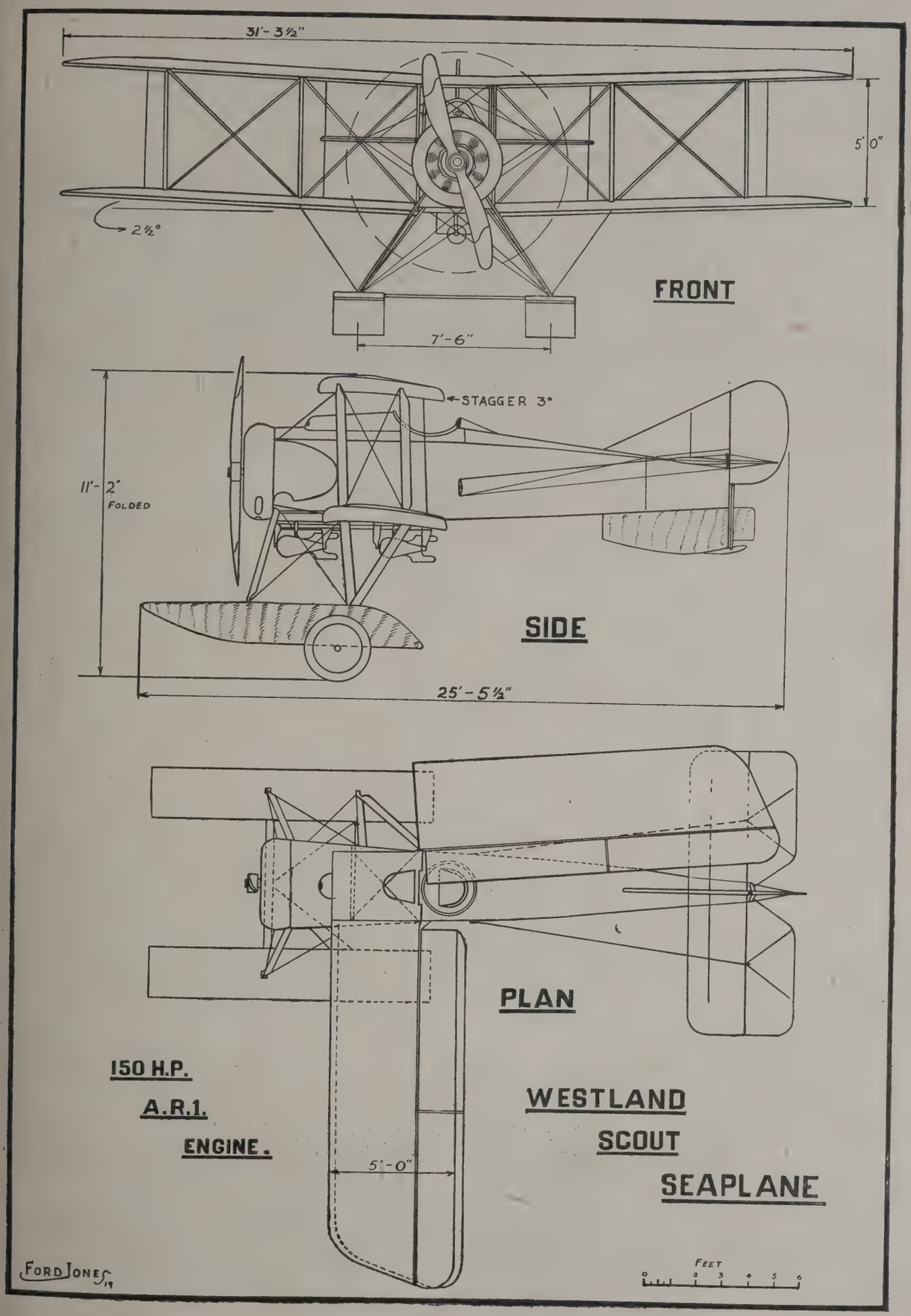
In order to reduce the space for stowage on board ship, the main planes are made to fold. Both upper and lower planes are of equal span, and two sets of interplane struts are fitted on each side.

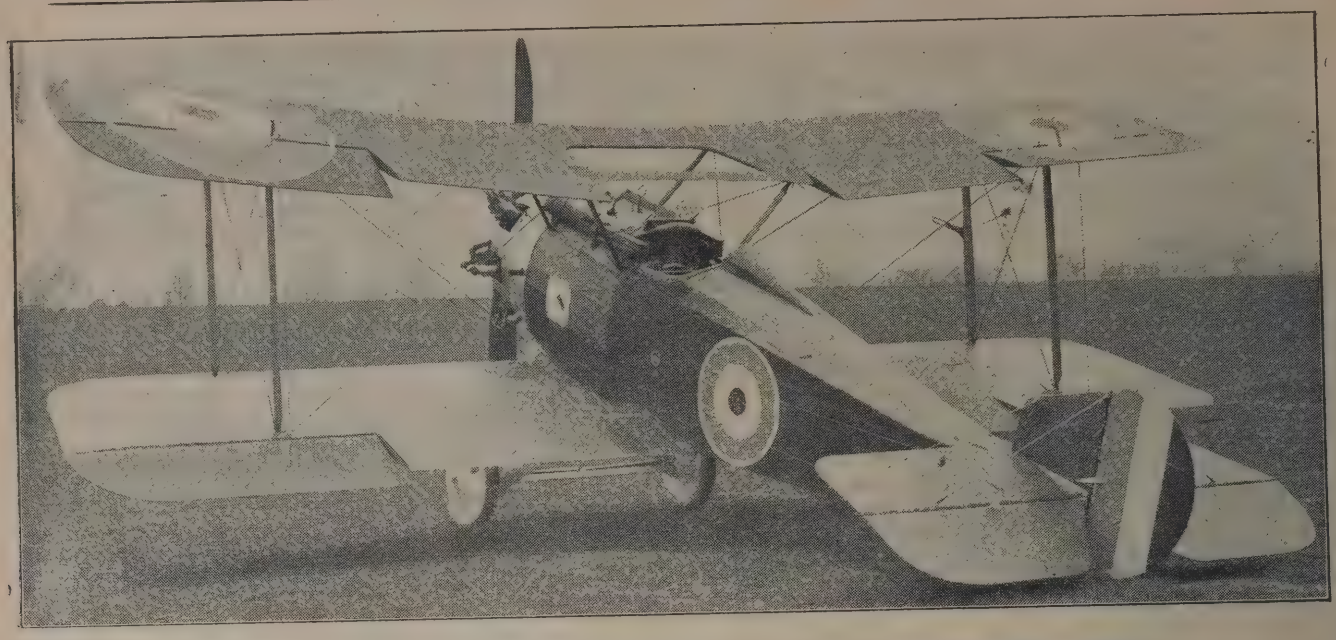
The wings are fitted with trailing edge flaps along the whole span, giving a variable camber, which is controlled from the pilot's seat.

Ailerons are fitted to both upper and lower wings.



The Westland Seaplane N.17. Note the curious form of main float and the absence of a tail float. Otherwise this machine is identical with N.16.


31'-3½"
5'-0"
2½°
FRONT
7'-6"
STAGGER 3°
11'-2"
FOLDED
SIDE
25'-5½"
PLAN
150 H.P.
A.R.1.
ENGINE.
WESTLAND
SCOUT
SEAPLANE
5'-0"
FORD JONES '19
FEET
0 1 2 3 4 5 6

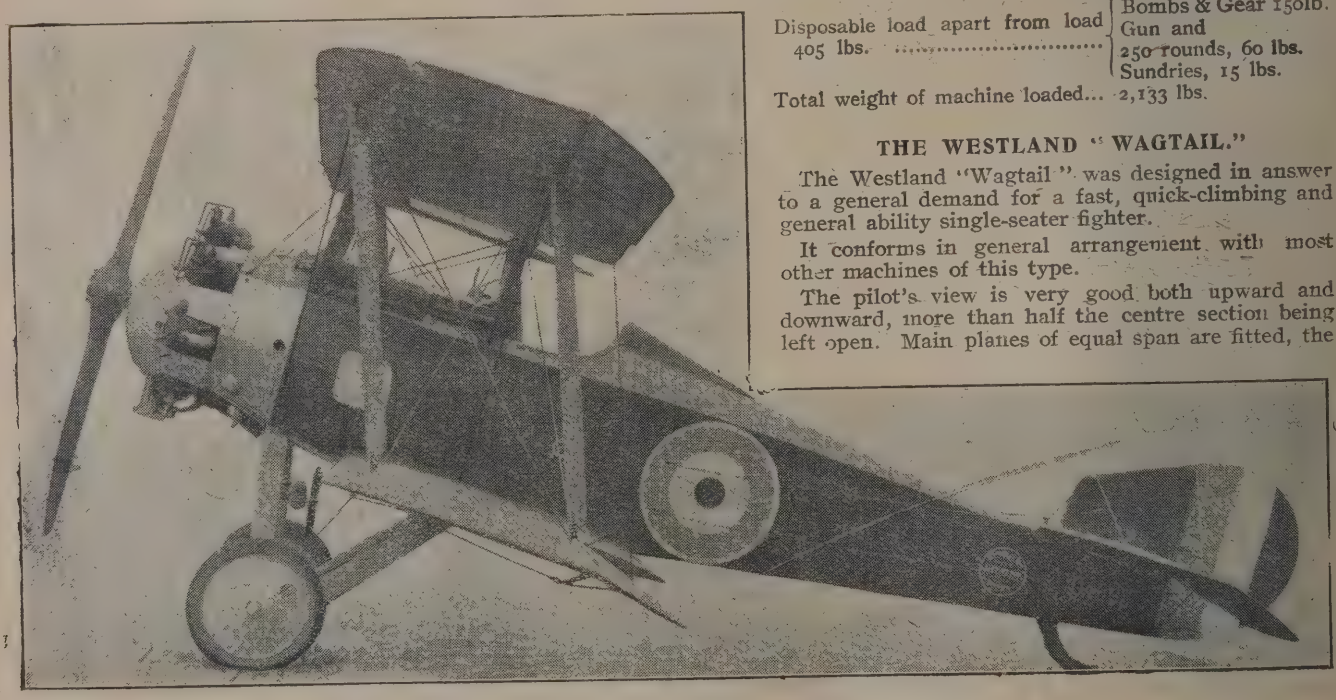


Three-quarter rear View of the Westland "Wagtail" (170 h.p. "Wasp" A.B.C engine).

The Westland N17 seaplane is exactly the same except that the main floats are increased in length, slightly turned up at the rear, and no tail float is fitted.

SPECIFICATION.

Type of machine	Single-seater Tractor Seaplane Scout.
Name of type of machine	Westland Seaplane N. 16.
Purpose for which intended	Fighter Scout, capable of getting off deck of ships.
Span	31 ft. 3⅜ in.
Overall length, fuselage horizontal	25 ft. 3⅛ in.
Overall length resting on tail float	26 ft. 5⅛ in.
Maximum height resting on tail float	11 ft. 2 in.
Chord	5 ft.
Total surface of wings, includes centre sections	278 sq. ft.
Span of tail	11 ft.
Area of tail plane	24.5 sq. ft.
Total area of tail, incldg. elevator	42 sq. ft.
Area of elevators	17.5 sq. ft.
Area of rudder	7.5 sq. ft.
Area of fin	6.8 sq. ft.
Area of each outer aileron	9.9 sq. ft.
Total area of ailerons	39.6 sq. ft.
Maximum cross section of body	10¾ sq. ft.
Horizontal area of body	44 sq. ft.
Vertical area of body	55 sq. ft.
Engine type and h.p.	Air-cooled rotary A.R. 1; 150 b.h.p.; 1,240 r.p.m.
Airscrew, diam., pitch and revs.	Diam. 2,650 mm., pitch 2,650 mm., 1,240 r.p.m.
Wing section	R.A.F. 14. Variable camber device.
Weight of machine empty, without fuel and oil	1,460 lb.
Weight of machine empty, but with 268 lbs. for fuel and oil	1,728 lb.
Load per sq. ft.	7.7 lb. sq. ft. fully loaded.
Weight per h.p.	14.2 lb.
Tank capacity in hours	2½—3 approx. ground level.
Tank capacity in gallons	Petrol 30 galls.; oil 5 galls.
PERFORMANCE—	
Speed low down	108 m.p.h.
Landing speed	50 m.p.h. with no flaps; 45 m.p.h. with flaps.
Climb—	
To 5,000 feet	10 minutes.
To 10,000 feet	28 minutes.
Disposable load apart from load 405 lbs.	Pilot 180 lbs.; Bombs & Gear 150lb.; Gun and 250 rounds, 60 lbs.; Sundries, 15 lbs.
Total weight of machine loaded	2,133 lbs.



Side View of the Westland "Wagtail" Single-seat Fighter.

THE WESTLAND "WAGTAIL."

The Westland "Wagtail" was designed in answer to a general demand for a fast, quick-climbing and general ability single-seater fighter.

It conforms in general arrangement with most other machines of this type.

The pilot's view is very good both upward and downward, more than half the centre section being left open. Main planes of equal span are fitted, the

SUNBEAM-COATALEN
Aircraft-Engines

C.Sec.S. 12093/19

8th August 1919.

Gentlemen,

I am commanded by My Lords Commissioners of the Admiralty to express to you, on the occasion of the safe return of H.M. Airship R.34 from her voyage across the Atlantic, their cordial appreciation of the skill and energy which your Firm devoted to the construction of the machinery.

My Lords would be glad if you would convey their sincere congratulations to all concerned.

I am, Gentlemen,
Your obedient Servant,

W. M. Braddell

Messrs Sunbeam Motor Car Co.,
WOLVERHAMTPON.

ADMIRALTY. S.W.

upper plane having a dihedral of 5 degrees, whereas the lower plane is flat, i.e., no dehedral.

SPECIFICATION.

Type of machine	Single-seater Tractor Scout Aeroplane.
Name and type No. of machine	Westland "Wagtail."
Purpose for which intended	High altitude fighting.
Span	23 ft. 2 in.
Gap	At outer strut 4 ft. 6 in. max Centre section 4 ft. min.
Overall length	18 ft. 11 in.
Maximum height	8 ft.
Chord	4 ft. 6 in.
Total surface of wings	190 sq. ft.
Span of tail	7 ft. 10¾ in.
Total area of tail, inclg. elevators	25 sq. ft.
Area of elevators	9.5 sq. ft.
Area of rudder	4.4 sq. ft.
Area of fin	2 1 sq. ft.
Area of each aileron	6 sq. ft.
Total area of ailerons	24 sq. ft.
Maximum cross section of body	7.1 sq. ft.
Horizontal area of body	29.3 sq. ft.
Vertical area of body	36.5 sq. ft.
Engine type and h.p.	173 b.h.p. "Wasp" Fixed Radial.
Airscrew, diam., pitch and revs.	Pitch 2070 mm., dia. 2590 mm., revs. 1,900.
Weight of machine empty	965 lbs. (including 219 lbs for fuel and oil).
Weight of machine empty (without fuel and oil)	746 lbs.
Load per sq. ft.	7 lbs.
Weight per h.p.	7.7 lbs.
Tank capacity in hours	2½ hours at 15,000 ft.
Tank capacity in gallons	Petrol 26 galls.; oil 3 galls.
PERFORMANCE—	
Speed at 10,000 feet	125 m.p.h.
Landing speed	50 m.p.h.
Climb—	
To 5,000 feet	3½ minutes.
To 10,000 feet	7½ minutes.
To 17,000 feet	17 minutes.
Disposable load apart from fuel, 365 lbs.	Pilot 180 lbs. Two guns, gear and 1,000 rounds 160lbs. Oxygen 25 lbs.
Total weight of machine loaded	1,330 lbs.



The Westland "Limousine" (Rolls-Royce "Falcon") in the Air.

In addition to the machine described above the Westland Aircraft Works have designed and built the Westland "Weasel," a high-performance single-seater on somewhat similar lines to the "Wagtail," but fitted with the 320-h.p. "Dragonfly" A.B.C. engine, and the Westland "Limousine" four-seater commercial machine.

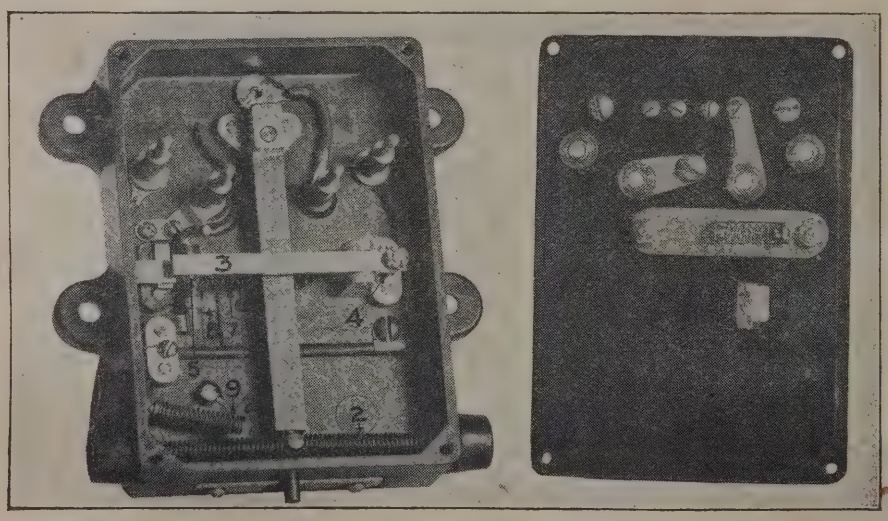
The "Weasel" is still undergoing tests by the Royal Air Force, and no details of the machine are as yet available.

The "Limousine" was fully described in The Aeroplane of August 13th last.

AN AMERICAN SAFETY DEVICE.

The result of an airscrew breaking either in flight, getting off, or landing is usually in itself unimportant. The indirect effect of the engine to which it is attached racing with the badly out of balance fragments of the damaged airscrew attached may range from a wrecked engine to a complete crash followed by fire.

Effectively to prevent damage from such an event it is necessary to cut off the engine-power before the engine actually races, which means that the engine must be stopped almost immediately. Switching off the engine by hand is rarely a sufficiently rapid process, as there is a definite time lag between the actual breakage, the pilot's recognition of the cause or seat of the trouble, and the physical action of switching off, and in this interval very considerable damage may occur.



The Internal Economy Device of the Douglas Interrupter.

The Douglas Interrupter, devised by Mr. Theodore Douglas, of the Duplex Engine Governor of Brooklyn, N.Y., was developed, under the auspices of the United States Advisory Committee for Aeronautics, to provide against accidents of this kind by automatically cutting off the ignition of an engine immediately on the production of any abnormal vibration occurring.

The design of the instrument is extremely simple, and it may be briefly described as consisting of a suitably pivoted metal bar, so mounted as to swing in a plane transverse to the axis of rotation of the propeller. By means of tension springs 2—2 the free movement of this bar is confined, under normal conditions, to a very limited arc in its plane of movement. The amplitude of this movement is determined by the weight of the bar, the intensity and frequency of the transverse vibrations

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CONSTRUCTING ENGINEER,
INVENTOR AND PATENTEE
CONTRACTOR TO H.M. AND ALLIED GOVERNMENTS.
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Terms: PROMPT CASH

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of the engine, and the strength of the springs. The extended end of the trigger 3 is constantly pressed towards the floor of the instrument by the compression spring 4, and engages the latch 5. On the under side of the trigger 3 there is an inclined surface 6, by which the trigger is raised. A ball-pointed hardened steel screw is fitted into the bar directly beneath the trigger, and engages an inclined surface and thus lifts the trigger when the swing of the bar is sufficient. When the trigger is lifted the latch 5, held under tension by the spring 7, is released and moves out of engagement with the trigger. The cam 8 is for the resetting of the latch through rotating it back into position by means of the push-button 10, from the outside of the instrument.

The compression spring 9, presenting an unbalanced force, is designed to prevent the bar from disengaging the latch 5 as a result of cylinder misses coinciding with bad vibration periods of the engine, etc., thus increasing the amplitude of the swing of the bar through synchronism, or from lateral shocks to which the plane may be subjected in landing. An intense oscillating shock transverse to the axis of the engine, such as an unbalanced engine-propeller torque reaction resulting from the breaking of a propeller at speed, are the types of shock from which the instrument is designed to operate, and to which it will immediately respond. Under such conditions the bar will swing through its full amplitude, raise the trigger, which releases the latch, and thus interrupts the ignition by earthing the magnetos. From the interrupter terminals 11 and 12 wires are connected to the earth terminals of the magnetos, and from the terminal 13 of the interrupter a wire is connected to the engine earth. On the disengagement of the latch 5 a triple contact is made between the interrupter terminals 11, 12, and 13.

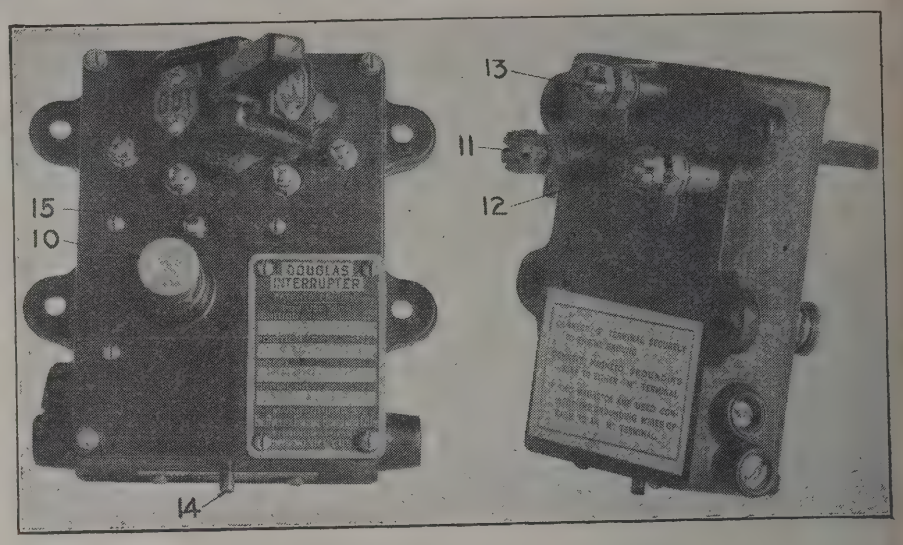
Provision is made for testing by the pilot before each flight of the operation of the interrupter. Such a test can be conducted in ten seconds. The handle 14, which projects through a slot in the end of the instrument, is pushed gently to the left until the red spot 15 of the tell-tale, which bears a luminous cross for night flying, appears. Before the engine stops the instrument may be re-set by pressing down on the button 10 until the red spot of the tell-tale disappears. Should the engine not stop it would indicate that either the interrupter switch is in the wrong position or that its wiring system, etc., is defective.

A manually operated switch is provided with each instrument, by which the interrupter may be thrown into and out of the grounding circuit as desired.

Interrupters are furnished of two general types, maker and breaker instruments, and in several models to best suit various engine and aeroplane conditions.

MAKER-instruments, such as the one just described, are intended for magneto-ignition engines, in which cases there is no flow of current through the instrument, excepting at the moment of interrupting the ignition.

BREAKER-instruments are intended for Liberty engines using the Delco system, where the flow of the current is constantly through the instrument, and where two separate current channels are provided, because of the double distributor system used on these engines. The interruption of the ignition results from breaking these channels.



The Exterior of the Douglas Interrupter.

The interrupter is manufactured in five models to suit the ignition system employed and the requirements of the engine installation.

When the engine is on the wings the interrupter is mounted on a weather-proof casing attached to an engine-bearer.

The weight of the instrument is under ten ounces.

American naval pilots who have flown interrupter-equipped machines for over six months state that during that period the ignition of the Liberty engines has at no time been adversely affected. The operation of the instrument has been most satisfactory in every way, and has fully met all of the claims which have been made for it.

Various tests of the interrupter made by the United States Navy Department have shown in general the following results :—

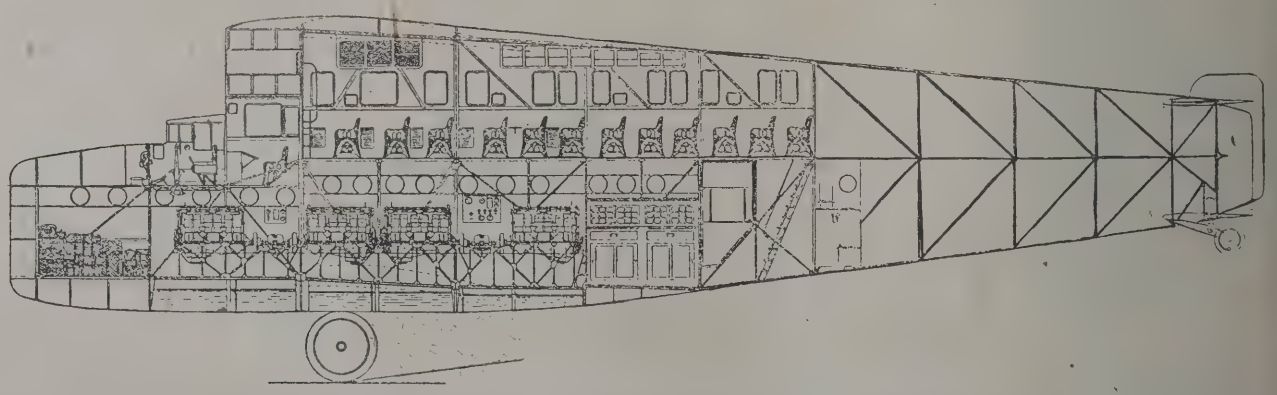
(a) As nearly as it has been possible to determine the instrument will operate within one complete revolution of the engine following the propeller breakage, or within a time interval of one twenty-third of a second.

(b) It may be depended upon to do this every time that such a breakage occurs, as shown by tests in the air and on the ground.

(c) It will not interfere with the efficiency of the ignition system, nor has it caused complications therein of any kind.

(d) The electrical resistance of the interrupter on Liberty engines has been determined by a representative of the Delco Company as being less than 0.03 to 0.05 ohm, representing a loss of potential in the primary current to the distributors of 0.33 to 0.55 of one per cent., a value which is entirely negligible.

The design, workmanship, and materials employed in the construction of the interrupter are of high quality. The latches and triggers of the instruments are of hardened steel heavily silver-plated to minimise electrical resistance, to provide better contacts, and to prevent corrosion. Other contact parts are of hard brass silver- or nickel-plated. All of the springs employed are of phosphor-bronze. The electrical connections between the instrument base and its cover are by means of substantial screws which act not only as binding posts, but as attachment members holding the cover in place. These are all protected by castelled nuts and cotter pins. Insulating parts consist of bakelite castings.



AN AMBITIOUS DESIGN.—The interior arrangements of a proposed 2,400 h.p. Central Power Plant Siemens-Schuckert Passenger-carrier.

Firth's STEELS

FOR MOTOR ENGINE CONSTRUCTION
WITH SPECIAL REGARD TO
STRESS, VIBRATION & WEAR.

THOS. FIRTH & SONS, LTD. SHEFFIELD.

GWYNNES
LIMITED.

CONTRACTORS TO H.M. GOVERNMENT

MANUFACTURERS AND SOLE LICENSEES IN THE BRITISH EMPIRE

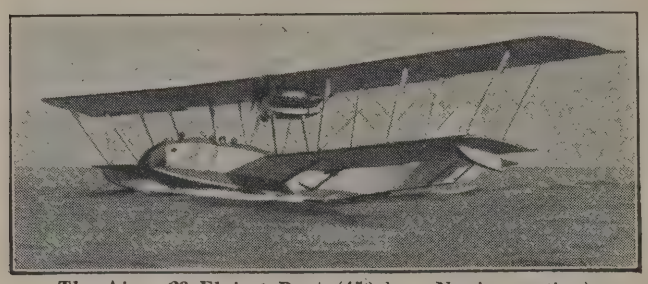
"CLERGET" PATENT AERO ENGINES

S.B.A.C. THE SOCIETY OF BRITISH AIRCRAFT CONSTRUCTORS

ENGINEERS, LONDON.

"GWYNNE, LONDON." "HAMMERSMITH 1910."

THE AIRCO FLYING BOATS AND SEAPLANES.



The Airco 23 Flying Boat (450 h.p. Napier engine).

As far back as 1912 the Aircraft Manufacturing Company was delivering Henri and Maurice Farman seaplanes to the British Government and was, therefore, among the pioneers of British seaplane construction. The Company can claim, also, to be the earliest exponents of launching torpedoes from seaplanes and flying-boats.

When the war came, the Company, in collaboration with Commander J. C. Porte, carried out the detail designs and construction of the famous Porte flying-boat. This boat—the first large development of the original American or Curtiss machine—was at that time the biggest flying-boat in the world.

After the production of the first of these machines—officially known in the Services as the Porte "Baby" and the forerunner in this country of all big aeroplanes and seaplanes—orders were received for a large number, which necessitated the provision of a seaplane base. Whereupon the Company acquired the works at Southampton and Hampton Wick of Messrs. May, Harden, and May.

The hulls of the first experimental Porte boats were built at the works at Southampton, and the wing construction, engine installation, and controls made and finished at the Company's works at Hendon. The machine itself was designed in the seaplane drawing office of the Aircraft Manufacturing Company, under the supervision of Commander Porte.

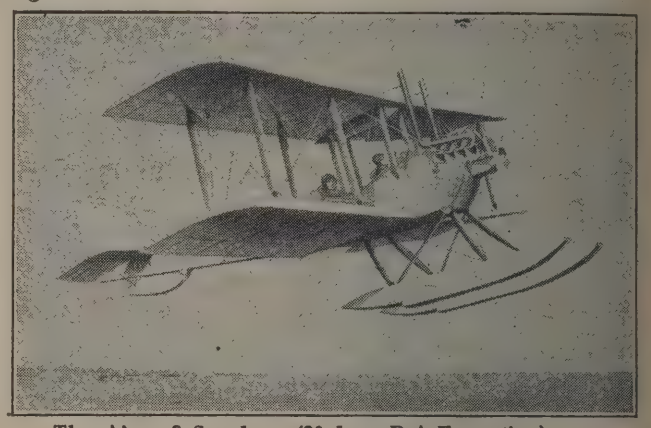
Orders were received subsequently for a number of F.2A. flying-boats, which were direct developments of the Porte boat, a good deal of detail design and refinement being left to the seaplane drawing office. The result, indeed, of the Company's acquiring this seaplane base was that, in addition to designing the hulls for the Company's own productions, the hulls of many types of flying-boats, experimental or otherwise—with the exception of those designed by Commander Porte, at Felixstowe—emanated either from Southampton or Hampton Wick.

Where the special skill lies in designing a flying-boat hull is in the knowledge of how to make it strong enough and, at the same time, to keep the weight down to a minimum; and in this regard it is interesting to note that each hull produced by the firm has been lighter than its predecessor, whilst actually possessing an increased strength. Each, though beautifully streamlined, thereby reducing head-resistance to a minimum, has ample accommodation for its purpose, as well as room for the disposal of its main petrol tanks.

Based on its large experience of seaplane and boat construction the Company have now designed commercial-type machines which represent the fruit of all this experience, and which embody the most up-to-date ideas.

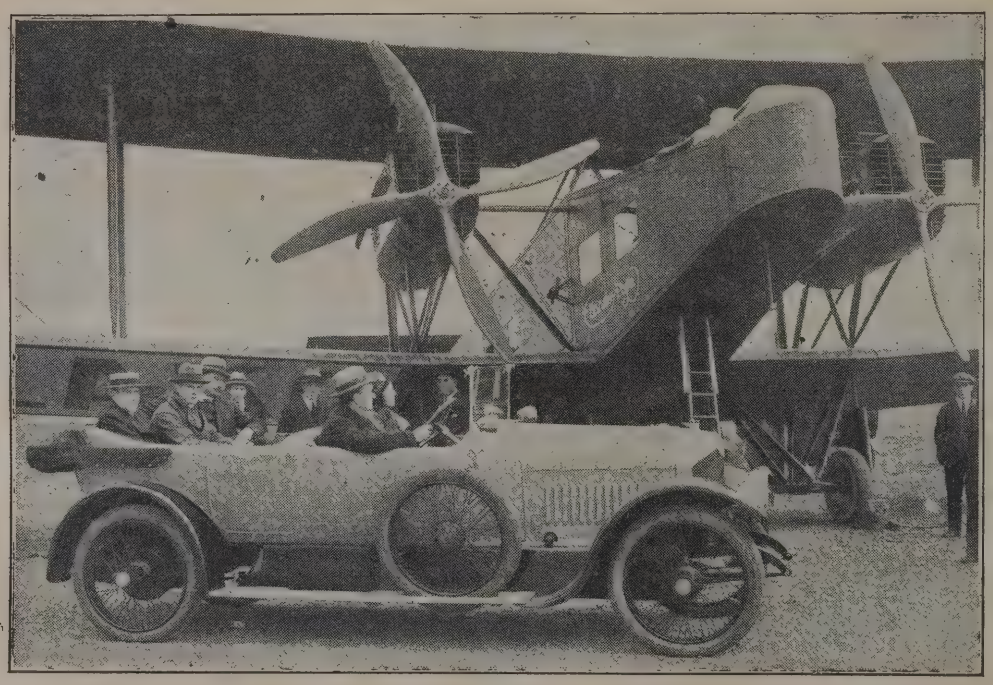
The Airco 23, of which a preliminary drawing is reproduced on this page, is a flying-boat designed to accommodate two pilots and six passengers. The engine is a 450-h.p. Napier "Lion." The speed of the machine is estimated to be 100 miles an hour at 5,000 feet, while it will have an endurance of 500 miles. Its useful load, comprising two pilots and passengers, represents 1,440 lb.

The Airco 6 seaplane—of which a drawing is also given—is constructed on the lines of the D.H. or Airco 6 aeroplane, which was used with such success, and for so many purposes, during the war. The machine was designed originally as a dual-control school machine. It was also used for reconnaissance, and for bombing submarines, and, more recently, as



The Airco 6 Seaplane (90 h.p. R.A.F. engine).

an ambulance machine. One of its chief features is its simplicity of construction, making it an ideal machine for the owner-flyer, and greatly reducing the flying cost and repair bill. As a joy-riding seaplane it is considered that it will be unequalled. Accommodation is provided for the pilot and one passenger. The engine is a 90-h.p. R.A.F. 1A, and the speed of the machine, at 1,000 feet, 60 miles an hour. It has a "ceiling" at 5,000 feet, gets off the water at 42 miles an hour and has an endurance of 180 miles. Its total weight is 2,440 lb.



The accompanying photograph gives a good idea of the size of an ordinary Handley Page twin-engined passenger machine compared with a modern touring car. The car is a 25/30 h.p. R.F.C. model Crossley. Mr. Handley Page is seen at the wheel, and Lieut.-Col. Sholto Douglas, one of the chief Handley Page pilots, is beside him.

The photograph was taken on an occasion on which a consignment of woollen goods was sent over to the Paris depot of Messrs. Bass, Walker and Company, of 2, Argyle Street, London. To accelerate the dispatch of these goods, a 25/30 h.p. Crossley was placed at the disposal of Messrs. Lavington Bros., the well-known shippers of Old Bailey, who arranged the shipment for Messrs. Bass, Walker and Company. The goods were conveyed to Hounslow by the car, and within 40 minutes of leaving London were on their way to Paris.

COMMERCIAL AERONAUTICS & CIVIL AERIAL TRANSPORT

GREAT BRITAIN.

CIVIL AERODROMES.

The Air Ministry announced on Oct. 11th that the following lists of aerodromes are issued as an addition or in amendment to the lists already published :—

LIST A. (Service Aerodromes only available for Civilian Machines in emergency.)

AMENDMENT.—The following aerodrome has been transferred to List E and is now published in that list :—

Aerodrome.	Nearest Railway Station.	Nearest Large Town.
Detling	Bearstead	Maidstone

LIST B. (Aerodromes temporarily retained for Service purposes.)

AMENDMENTS.—The following aerodromes have been transferred to List E, and published in that list previously :—

Aerodrome.	Nearest Railway Station.	Nearest Large Town.
Beverley	Beverley	Beverley
Chattis Hill	Stockbridge	Winchester
Doncaster	Doncaster	Doncaster
Killingholme	Harbrough	Grimsby
London Colney	Radlett	St. Albans
Penston	Macmerry	Haddington
Seaton Carew	Seaton Carew	West Hartlepool
Shoreham	Shoreham	Shoreham-by-Sea

LIST C. (Aerodromes temporarily retained for Service purposes.)

AMENDMENTS.—The following aerodromes have been transferred to List E, and are now published in that list :—

Aerodrome.	Nearest Railway Station.	Nearest Large Town.
Buckminster	Witham	Grantham
Harpswell	Kirton Lindsey	Gainsborough

LIST D. Aerodromes licensed as suitable for "Avro (504 K) and similar types of Aircraft" only. Except in very few instances accommodation does not exist. The licences have also in the majority of cases been issued for limited periods.

Aerodrome.	Location of Aerodrome.	Nearest Large Town.
Gleneagles	Adjoins station on main Glasgow-Perth railway.	Crieff
Coleford	South of Coleford on road parallel to G.W.R. line.	Gloucester
Wormwood Scrubs	S.W. corner of Wormwood Scrubs.	London (Hammersmith)
West Blatchington	W. of Hove Park, Brighton, at S.E. corner of W. Blatchington.	Brighton

LIST E. (Stations no longer in use by the R.A.F. These stations have been passed to the Government Property Disposal Board. They will be relinquished as soon as the Government property thereon has been disposed of. In many cases the aerodromes are now under cultivation, but it is probable that the sites still form the best emergency landing grounds in the immediate neighbourhood.

Aerodrome.	Nearest Railway Station	Nearest Large Town.
Buckminster	Witham	Grantham
Detling	Bearstead	Maidstone
Harpswell	Kirton Lindsey	Gainsborough

CONTINENTAL AIR SERVICES.

THE AIRCO SERVICE.

Eight weeks' continuous flying on the London-Paris service has now been completed by Aircraft Transport and Travel, Ltd. Out of 123 scheduled flights, 119 have been successfully completed. Approximately 30,000 miles have been flown on the service, making 283 flying hours.

Date.	Type.	Pilot.	Left Hounslow	Arr. Paris.	Left Paris.	Arr. Hounslow.	Pass.
Oct. 13th	D.H. 4a	Lt. Shaw	12.45 p.m.	3.00 p.m.			0
	D.H. 4a	Lt. Chattaway			12.30 p.m.	3.02 p.m.	2
	D.H. 16	Capt. Baylis			12.30 p.m		3
	D H. 9	Lt. Armstrong			3.00 p.m.	5 10 p.m.	1
Oct 14th	D.H. 16	Lt. McMullin	12.40 p.m.	3 00 p.m.			1
	D H. 4a	Lt. Shaw			11 55 p m.	2.20 p.m.	2
	D.H 4a	Lt. Lindley			12 30 p m.	3.17 p.m.	2
Oct. 15th	D.H. 9	Lt. Chattaway	11 45 a.m.	1.50 p.m.			nil
	D.H. 4a	Lt. Tebbitt	12 45 p.m.	3.30 p.m.			0
	D H. 16	Lt. McMullin			12.35 p m.	3.00 p m.	2
Oct. 16th	D.H. 16	Lt. Armstrong	1 00 p.m.	3.15 p.m.			4
	D.H 9,R	Capt Gathergood	1.02 p m.	2 22 p.m.			0
	D.H. 4a	Lt Lindley	1 40 p.m.	3 25 p.m.			1
	D.H. 16	Lt. Lawford	2 54 p.m.	4 39 p.m.			3
	D.H. 4a	Lt. Chattaway			12.30 p.m.	3.25 p.m	0
Oct. 17th	D.H. 4a	Lt. Powell	12.30 p.m.	2 45 p.m.			2
	D.H. 4a	Lt. McMullin	12.34 p m.	2 52 p.m.			2
	D.H. 9	Lt. Tebbitt			12.30 p.m.	3.22 p.m.	2
	D.H. 16	Lt. Lawford			12,30 p.m.	3.30 p.m.	3
Oct. 18th	D.H. 4a	Lt. Tebbitt	12.30 p.m.	2.55 p.m.			1
	D.H. 4a	Lt. Lindley			12.30 p.m.	2.55 p.m.	2
	D.H. 4a	Lt. Armstrong			12 30 p.m.	3.00 p.m.	2



THE FIRST PRIVATE COMMERCIAL AEROPLANE.—A D.H.4 biplane with a 375 h.p. Rolls-Royce Eagle VIII engine owned by S. Instone and Co., Ltd., steamship owners. The photograph shows the machine leaving for Paris on its first journey from Hounslow on Oct. 13th.

The firm's pilot, Lieut. F. L. Barnard (late R.A.F.), flew the machine on the same day from Cardiff to Hounslow in 56 minutes.

The machine carries the "house flag" of Instone and Co.

On Oct. 13th the D.H.16, piloted by Capt. Baylis, which left Le Bourget at 12.30 p.m., had a forced landing at Grand Villier, between Beauvais and Poix, owing to engine trouble. The three passengers and parcels were conveyed back to Paris and continued their journey by air on another machine the next day.

On Oct. 16th the D.H.9.R. machine, piloted by Capt. Gathergood, made the flight to Paris at the rate of 180 m.p.h.

Mr. C. B. Cochran flew from Hounslow to Boulogne in 40 min. in an Airco biplane, collected some costumes for his new production, "Maggie," and returned to London by air on Oct. 16th.

The Handley Page Services.

During the week ending Oct. 15th Handley Page Transport, Ltd., in conjunction with Messageries Aeriennes (Paris) (Bréguet machines), carried 60 passengers and 2,925 lb. of goods on their London-Paris service.

During the same week 20 passengers and 600 lb. of luggage were carried between London and Brussels. This service shows increasing popularity, but the carrying of merchandise by air to Belgium is not yet permitted.

An oil-painting worth £500, consigned by Messrs. Duveen to their Paris branch, was carried in the machine which left Hounslow on Oct. 18th.

The B.A.T. Service.

On the regular weekly service inaugurated by the British Aerial Transport Co. between London and Holland a saloon passenger biplane left Hounslow on Oct. 16th, piloted by Mr. C. Turner. The machine arrived at Amsterdam inside three hours.

On Wednesday, Oct 22nd, a saloon passenger machine with the full complement of passengers was due to leave Hounslow for Amsterdam, piloted by Maj. C. Draper.

London.

Hendon.—Fifty-eight passengers were taken up at the London Aerodrome by the Grahame-White Aviation Co. during the week ending Oct. 18th. Some 5,100 people have had flights in Avro machines during the summer. There are two pupils under instruction, a Miss Cadell and a Mr. Bryce, who will shortly be flying alone.

Hounslow.—A Vickers-Vimy commercial aeroplane, carrying two pilots and a mechanic, left Hounslow at 10.30 a.m. on Oct. 17th and arrived at Le Bourget (Paris) at 1.10 p.m. This machine will give exhibition flights at various places on the Continent.

An Ambitious Airship Scheme.

It is stated that a company named the Great Northern Aerial Syndicate has been formed to link up the world by an airship service. It is stated in the "Blackburn Weekly Telegraph" of Sept. 27th that the syndicate seek to acquire ground to the north of Southport, adjoining the golf course, where they propose to erect a mooring tower with an internal lift.

Three types of airships are said to be in contemplation to carry 32, 40, and 150 passengers. The smaller types are to be used for service in Great Britain and to the Continent. The largest type have had the following routes laid down for them :—(1) Liverpool to York, Hull, Copenhagen, Stockholm, Petrograd, Tomsk, Pekin, San Francisco, New York, Queenstown, and Dublin; (2) Liverpool to London, Paris, Barrow, Colombo, Perth, Melbourne, or Sydney; (3) Liverpool to Cardiff, Lisbon, Sierra Leone, Capetown, Buenos Ayres; (4) to India, Belgium, Germany, Austria, Turkey, and Persia.

The larger airships are to be fitted up in a luxurious style, with carpeted floors, and folding armchairs, similar to the Pullman car, with large windows. A balcony will run along the outside of the car. The cost per mile is put at about half the cost of a taxi-fare to-day, approximately about 9d. per mile.

Bournemouth.

The Supermarine Aviation Works, Ltd., have announced that their flying-boats will continue to carry passengers on suitable and fine days during the autumn and winter seasons at Bournemouth. A large number of visitors are always at the resort in the coming seasons, and particularly fine weather is always experienced during some periods.

The booking agents are Messrs. Sydenham's Library at the Pier Approach. Flights can be made for two guineas and three guineas. Passengers will also be carried to Southampton in the afternoons for four guineas in minimum parties of three.

Brooklands.

The following notes, dated Oct. 19th, have been received from a correspondent :—

Two biplanes, entered for the flight to Australia, have been tested recently at Brooklands. One is the Sopwith "Wallaby," of which Capt. Matthews and Serjt. Kay are the "crew."

The Martinsyde machine which will also attempt the flight is practically ready. Capt. Howell will be the pilot. No information is yet to hand as regards the date when the Martinsyde will start. This machine is very similar to the Martinsyde Transatlantic machine in appearance and in performance. It has a "Falcon" 285-h.p. Rolls-Royce engine, and it is a two-seater.

Mr. F. P. Raynham, who until recently had been testing machines for Martinsyde, Ltd., and Vickers, Ltd., at Brooklands, has flown to Spain on an F.4, presumably for business purposes in connection with Martinsyde, Ltd. Lt. Nisbet, who was second in the Aerial Derby on a Martinsyde F.4, has been engaged as a test pilot by Martinsyde, Ltd. He has recently flown in test flights over the sea both the Australian flight machine and a biplane which his firm have constructed for a film company.

The sea tests of the former machine were very satisfactory. Some alterations and modifications are being made to the film machine.

Martinsyde, Ltd., have lately greatly reduced the number of their employees, and are engaged in manufacturing various small and useful articles. They have produced a two-seater machine similar to their F.4, having practically the same performance. It is expected that this machine will be placed on the market as a sporting model.

Leighton Buzzard.

According to the "Morning Post" of October 8th a new Vickers "Vimy" bomber, fitted with two Rolls-Royce engines, was destroyed by fire recently at Morgan and Co.'s aerodrome at Leighton Buzzard. The value of the aeroplane was over £8,000.

The fire was caused by a workman attempting to take petrol from one of the tanks while a hurricane lamp was near.

Newcastle.

For the first time in the history of commercial aviation tinned fish was carried by aeroplane on Oct. 10th from Newcastle to Edinburgh. An Avro biplane was hired by Angus Watson and Co., canned goods manufacturers, of Newcastle, from Vickers, Ltd., and started on its journey at 9.30 a.m.

It was piloted by Capt. Simpson (late R.A.F.), and carried a cargo of 333 lb. of canned goods consigned to R. and T. Gibson, provision merchants, of Edinburgh. The aeroplane arrived at Turnhouse Aerodrome (Edinburgh) at noon.

A large party witnessed its arrival at Edinburgh, including the Senior Magistrate and representatives of the Edinburgh Chamber of Commerce and the Rotary Club. The company were afterwards entertained to lunch.

The purpose of the flight is not quite clear, but some benefit accrued therefrom as several people obtained a good free lunch as a result of its success.

Southampton.

Demonstration and passenger flights will be given by the Supermarine Aviation Works, Ltd., in their flying-boats at Woolston throughout the winter months.

IRELAND.

At a meeting of the Pembroke Urban Council on Oct. 13th a letter was read from A. V. Roe and Co., Ltd., asking the Council's permission to land their aeroplanes at Merrion Strand, as they proposed to link up by air the principal towns in Ireland, starting for one year from May 1st, 1920.

It was the intention of the company to land and take up passengers at Merrion Strand for services to Cork and Belfast, etc. From the Strand the service will have to be tidal.

CANADA.

Capt. Baskerville (late 117th Squadron R.A.F.) proposes to establish an aerial service in Thousand Islands next summer.

BRAZIL.

According to the "Times" of Oct. 15th the Brazilian Budget for 1920 includes the establishment of an aerial postal service. The Government's loan will amount to £5,000,000.

CHINA.

The Chinese Government has entered into a contract with Vickers, Ltd., for the supply of a large number of Vickers-Vimy commercial aeroplanes. It will be remembered that Handley Page, Ltd., have also built several machines for China.

An issue of £1,800,000 in Treasury notes is being made, all to be expended in the development of commercial aviation. This sum will meet the cost of the purchase of machines, construction of aerodromes, repair depots, and administration.

DENMARK.

The Danish correspondent of The Aeroplane writes :—

Flying Activity.

With the exception that civil flying was not impossible during the war from universal concentration on military aircraft production but from lack of fuel, aviation has developed here much along the same lines as in England, commercial

The Success of the R.34.

Extract from General Maitland's Log:

MIDNIGHT—

"As we lay in our hammocks we listened to the rain beating pitilessly down on the outer cover of our trusty ship of the air, and our feelings, despite the weather, are those of complete confidence and security."

The success of this history-making trans-Atlantic flight and of the subsequent long distance voyages under adverse weather conditions, was largely contributed to by the fact that her cover was finally doped by our **SCHEME H.2.** which was applied

ON THE TOP

of the ordinary dope, thus rendering the cover weather-proof and water repellant.

SPECIAL DOPE H.2

is manufactured entirely by

THE BRITISH CELLULOSE & CHEMICAL MFG. CO., LTD.

the largest manufacturers of Cellulose Acetate in the World, and has been supplied exclusively by them to the British Government for the final doping of the outer cover of

R.32, R.33, R.34.

8, Waterloo Place, LONDON, S.W.1.

Works: SPONDON, DERBY.

Telephone: Regent 4045 (Three lines).

enterprise having during this season been interfered with by official regulations. The chief activities have been in the joy-riding business field, newspapers coming next in the employment of the new transport means, so far mainly from the advertising point of war.

The former commanding officer of the Richthofen squadron, Lieut. Goering, has flown a part of the provincial edition of the weekly paper, the "Home," to Odense, being, however, unable to carry out the other scheduled flight to Aalborg. The Danish former test pilot Reichert, by Albatros, has on his illuminated biplane bombarded Copenhagen by night on behalf of a penny paper, dropping cases containing money, while the public could further win prizes from guessing his correct height when throwing lights above some squares. The Sleswig pilot Schmidt has started a provincial trip, arranged by the German technical manager, Klatte, of Danish Air Express. The passenger and author, Emil Bonnelyoke, read papers on the psychology of Flying in the evening in the cities called on.

The Farman Goliath.

Having carried out a number of joy-rides from the Lundtofte aerodrome over the capital and the surroundings, with paying passengers and a number of guests, including members of the Press and the Air Commission, the Farman Goliath was unfortunate when intending to return to Paris with passengers at £80 each. First a Custom officer turned up, asking a duty of £550, as the foreign aircraft had not only paid the country a flying visit, but carried out advertised joy-riding business. Then the crankshaft breaking of the one 300-h.p. Salmson motors at the Goliath's arrival was repeated with the other engine. So the French twin-engined biplane is still in Copenhagen, and Lieut. Krause-Jensen has returned to Paris.

Too Late.

When the breakdown of a Titan-made crane held up the unloading of a steamer with coal cargo in Aarhus, the firm, Kampmann, Herskind, and Co., in these coal-scarce times, resolved to have the missing gear wheel sent by aeroplane from the Copenhagen works. Owing to a strong head wind the pilot, Flt. Serjt. Bjarkow, on an L.V.G. biplane, ran short of petrol by Kallundborg and had to bring the wheel to the ferry, and thus it arrived too late for the object.

The First Italian Arrivals.

The first of the many and often-announced Italian aeroplanes to arrive was a 200 h.p. engined Savoia seaplane, piloted by Lieut. Count di Robilant, with mechanic Bramucci as passenger, who arrived at Copenhagen (having crossed the Alps and flown along the Rhine Valley to Amsterdam) *via* Cuxhafen, the Kiel Channel, and Nakskov, where he made an intermediate landing to replenish, having run short of lubricating oil. An accompanying sister craft made a forced landing at Borkum, in Germany.

Count di Robilant continued after some days' stay to Stockholm, which was not reached in a non-stop flight, and returned by railway to go to Amsterdam and arrange for a squadron flight to Scandinavia of some of the pilots staying there, the route to be Amsterdam, Gothenburg, Stockholm, Copenhagen.

ICELAND.

The Danish correspondent of The Aeroplane writes :—

The English-Danish Captain Cecil Faber (late R.A.F.) has returned from his pioneer flying work for the establishment of commercial aviation at the Danish island colony. His aeroplane was seen there recently for the first time. Capt. Faber has made 147 flights on an Avro biplane, the longest of which was to the Westmanna Islands, while his biggest number of flights carried out in one day amounted to 30.

FRANCE.

New Farman Machines.

M. Henri Farman has made several flights lately at Buc on the little Farman monoplane which he calls "Le Moustique," which is of 15 ft. span and is fitted with a 35 h.p. A.B.C. engine. The price to the public of this machine is £120. There is also a small two-seated Farman biplane, fitted with a 50 h.p. Le Rhone engine, which is to be sold complete for £300, or at least so rumour says. It has made many good flights recently. This machine is to be known as the "David" that the Farman "Goliath" may not feel unduly lonely.

A Longchamps Incident.

On Oct. 12th a French aviator, M. Carignan, landed on the racecourse at Longchamps during the races to set down a lady passenger. He then endeavoured to fly back to his aerodrome, but sideslipped and fell before getting beyond the confines of Longchamps. The crowd endeavoured to attack him, but were prevented by the police. A summons is being taken out against the aviator on a charge of reckless flying. "L'Auto" aptly heads a paragraph dealing with this incident with the phrase "Les ennemis de l'aviation."

The Prix Peugeot

The aviette designed by M. Baligant is now known as the Baligant-Quénault, as M. Marcel Quénault will pilot it in its trials. M. Quénault was at one time an employee in the Voisin works at Billancourt.

The Aero Club de la Brie.

M. Dumesnil, Under-Secretary of State for Aeronautics during the war, has accepted the office of President d'honneur of the Aero Club de la Brie.

The Coupe Deutsch.

Several attempts were to have been made on the Coupe Deutsch on Oct. 13th, so many that what is in truth partly a time contest bids fair to become a race. Fog and engine trouble eliminated most of the competitors, and only M. Jansen, flying a Nieuport monoplane (180 h.p. Le Rhone), completed the course of 200 kilometres 655 metres (Saint Germain-Meaux-Melun-Senlis-Saint Germain) in 46 min 55 sec.

Sadi Lecointe made three attempts to start, but fog and engine trouble forced him to land finally at Juvisy. M. Rost was also brought down owing to fog.

A correspondent writes :—"M. de Romanet has been having trouble with his Nieuport owing to irregular petrol delivery due to having a pressure installation instead of the Weymann vacuum system usual on Nieuport 29s."

On the following day M. Rost on a Gourdou-Leseurre monoplane (180 h.p. Hispano-Suiza) completed the circuit in 55 min., thus beating M. Jansen's speed, but not by the 10 per cent. which would have made him temporary holder of the cup.

M. de Romanet, Nieuport biplane (300 h.p. Hispano-Suiza), also made an attempt to complete the circuit, but was compelled to land owing to engine trouble. His speed was 183 miles an hour.

On Oct. 15th, M. Sadi Lecointe (Spad Herbemont biplane, 300 h.p. Hispano-Suiza) flew over the Coupe Deutsch circuit at a speed of 153.8 miles an hour.

The Commission Sportive de l'Aero Club de France met on Oct. 17th and homologated the following claims to the Coupe Deutsch, from which it will be seen that M. Sadi Lecointe is the temporary holder of the Coupe.

1. To the Société des Etablissements Nieuport :—Leth Jansen accomplished the circuit on Oct. 13th, 1919, at a speed of 124.6 miles an hour.
2. To M. Sadi Lecointe, who accomplished the circuit on Oct. 15th, 1919, at a speed of 153.8 miles an hour.

The Automobile Show.

Several firms whose interests in recent years have been solely or mainly centred in aeronautics are exhibiting motor-cars of their own design and construction. Among these are the Farman, Voisin, and Gnome-Le Rhone firms. The cars are all expensive and large.

The Paris-Melbourne Flight

M. Poulet and M. Benoist, his mechanic, on a Caudron biplane (two Le Rhone engines), left Issy-les-Moulineaux en route for Melbourne at 7 a.m. on Oct. 14th. They passed over Valence at 11.05 a.m. and landed at Fréjus shortly afterwards. As they flew over Saint Rambert d'Albon, where Védrines is buried, M. Poulet dropped a wreath to which was attached a card on which was inscribed the words, "A mon ami Védrines."

M. Poulet reached Centocelle aerodrome, near Rome, at 10.15 a.m. on Oct. 16th. Between Genoa and Rome he was brought down owing to low clouds and strong winds. After a short rest he continued his journey. On Oct. 17th he flew to Naples, and left that place on Oct. 20th at 6.30 a.m. for Salonika.

HOLLAND.

German Aeroplanes at the E.L.T.A.

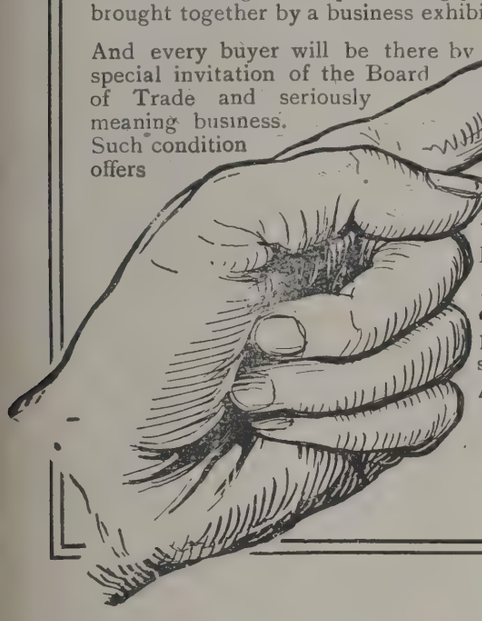
Interesting news comes from Holland concerning the fate of the E.L.T.A. Exhibition buildings and aerodrome. It seems that Herr Fokker has bought up the whole of the buildings and the aerodrome, and as soon as the Exhibition was over and the British machines had left he began filling the place with German machines of all sorts and sizes. The result is that at the present moment there are something like 200 assorted German aeroplanes stored in the E.L.T.A. buildings.

The big dismountable sheds put up by Alban Richards and Co. are still on the ground, and the representatives of the firm refuse to house German machines in them, consequently, those which are unable to crowd into the Exhibition buildings have to stand out in the open.

Evidently, the German Aircraft Industry is more alive to the possibilities of Holland as an aerial junction than is the

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British Aircraft Industry, but it would be interesting to see how these proceedings agree with the Peace Treaty.

The Italian correspondent of The Aeroplane writes :—

Eight millions of florins is mentioned as the very useful sum that Holland is spending on Italian aeroplanes.

ITALY.

British Help Refused.

The Italian correspondent of The Aeroplane writes :—

A report tells of an offer made to the authorities here by an English concern desirous of running certain aeroports in Italy, which kind help was, it is said, more kindly declined. This report may be more of the anti-British work of the enemy in our midst.

New Machines.

A small aeroplane of 3½ metres span is said to be constructing at Naples, and a four-motored Savoia seaplane is forecasted.

An Arrival at Turin.

The return to the Pozzo-Strada (Ansaldo) aerodrome at Turin of Engineer Brezzi and his pilot Stoppani, on their 300 h.p. Ansaldo, from their grand tour of the Central European capitals, was a great event. It had flown to Vienna-Warsaw-Berlin and return, a distance of 6,000 kilos. At Warsaw a second passenger was picked up who was carried over the "Archies" to Berlin. The machine (described in my account of the Taliedo Show) has so made good. It had previously done an Amsterdam and Brussels trip from Turin.

A Caproni with Floats.

The Caproni firm have always held that their large triplane could fly with floats. One has been thus fitted and flies capitally. It is stated that tests at Sesto Calende have led to business with an allied nation.

The "Airport" Co.

The big company promoted to run the Airport of Rome is moving fast. The "Aerobatics" School at Monte Celis, outside the city, is already in their hands, and Centocelle may follow.—T. S. H.

SWEDEN.

The P.O. Flygkompani.

Major C. H. R. Johnston, of the "P.O. Flygkompani," wishes to correct the idea that the company have any connection with A. V. Roe and Co., Ltd. The "P.O. Flygkompani" started to operate in June with the purchase of two Avros and a D.H.6. The pilots are Major Johnston (late R.A.F.), Captain Saunders (late R.N.A.S.), and Lieut. Johnson (late R.A.F.). The latter returned to England on Oct. 3rd to fetch another machine over to Sweden.

The C.O. of the enterprise is Lieut. Herrström (late Swedish Horse Guards and Swedish Flying Corps). He is himself a pilot. The mechanics are half English and half Swedish. The company has a very excellent "impresario" in the person of a Swede, who incidentally made the first commercial flight from Sweden to Finland some years ago in a Morane Parasol.

They have been giving exhibition and passenger flights in different towns in Sweden, and so far have visited 25 towns, spending from two to three days in each, and in the larger towns a fortnight or more. In each place "stunt" flights are given first and then passengers are taken up at prices varying from 100 kr. up to 1,500 for an advertisement flight. The flight for 100 kr. takes about eight minutes; 150 kr. are charged for stunting. Many hundreds of passengers have been taken up at each town and no trouble or injury has been experienced.

The company's pilots are at present in the middle of a tour in the South of Sweden which will last until the approaching winter makes it necessary for them to return to headquarters at Barkarby and fit skids onto the machines. Then they will start for the North, where aeroplanes are less known than anywhere else in the country. At the flying school at headquarters, which is about 10 miles outside Stockholm, they have a waiting list of 10 pupils who wish to join when they have room.

They are the only British aviators in Sweden and the enterprise is financed equally with English and Swedish capital. The "joy-ride" side of civil flying cannot last for ever, but at present it provides the best way of making British men and machines popular in Sweden. At the same time it gives a useful profit. The company has plans maturing for other enterprises in connection with civil aviation, and when opportunity offers these will be opened up.

It would be possible to do a good business in British machines if firms were in a position to offer the goods at once and at reasonable terms. At present German machines are selling best owing to the low rate of exchange. There is an "Aerial Derby" coming off soon, and Major Johnston is living in hopes of obtaining a Scout machine to enter for it.

At last representatives of two English firms have arrived, namely Bristol and Vickers—both, unfortunately, without any specimens of their wares to exhibit. However, they are both looking round and seeing what is wanted in the country.

An Italian Visitor.

A large German-made canvas hangar has been put up for the reception of the Caproni machine which is due. Nothing further has been heard about it.

SWITZERLAND.

There was some delay after the arrival of Capt. H. M. Goode and Capt. Eric Bradley (late R.A.F.) in Switzerland before permission was given to the latter to fly in the country. He has now received permission to fly. No other foreign aviator has a similar authorisation.

Mr. Bradley is the instructor at M. Pethoud's "Aero Ecole d'Aviation" at Lausanne. The Avro machine which he flew to Switzerland has become very popular in the town, and pupils are joining the school in very satisfactory numbers.

The Italian correspondent of The Aeroplane writes :—

The Savoia machines have had considerable success on the Swiss lakes lately. One Pillichody is in Italy on the late Oscar Bider's unfinished work of introducing the machines for Swiss lake work.

UNITED STATES OF AMERICA.

A Handley Page Flight.

The Handley Page machine, which was intended for the Transatlantic flight, and afterwards attempted to meet the R.34 at New York, but crashed in a forced landing at Parrsborough (Nova Scotia), has now been repaired.

On Oct. 9th the machine left Parrsborough at 10.44 a.m., commanded by Vice-Admiral Kerr, and piloted by Major Brackley, carrying in all 11 passengers. Owing to very strong adverse winds encountered, the machine did not reach New York (625 miles) on the same day. It was forced to land at 11 p.m. at Greenport, Long Island, 95 miles from New York, owing to shortage of petrol.

The machine circled over the village for 20 minutes. The villagers built bonfires to show the machine a good landing-place. Major Brackley made a perfect landing in a field, and hearty greetings were exchanged all round.

Admiral Kerr said that the Handley Page had established a new record in carrying 11 passengers for a period of 12 hrs. 1 min. non-stop. The machine was to proceed to Mineola (New York) on the following morning.

Reuter stated on Oct. 8th from New York that a Caproni machine was going to ascend from Mineola to escort the Handley Page to the aerodrome.

[One imagines that a Caproni was chosen because "birds of a feather flock together," and also to minimise the chance of the machines missing seeing each other.—Ed.]

The Handley Page machine arrived at Mineola on Oct. 13th. A non-stop flight will shortly be attempted to Chicago with twelve passengers.

A Farman Agency.

Mr. W. Wallace Kellett has arrived recently from France as an agent for Henri and Maurice Farman. He stated that offices would be opened on Oct. 1st at West Thirty-fourth Street, New York.

Hangars and workshops are to be erected on Long Island, where the aeroplane parts shipped from France will be assembled. A three-passenger-carrying aeroplane is on the way from France for demonstration purposes.

An Inspection of Road Repairs.

Mr. Eddy Stinson recently carried a contractor in a Curtiss biplane in Ohio. They flew 300 ft. above a new brick road which was nearing completion and built by the contractor.

Learning to Fly from the Cinema.

During the war a school was instituted in America to teach pilots correct methods of handling an aeroplane by demonstrations on cinema screens. A civil aviation company have recently opened a similar establishment attached to an aerodrome where aspiring pilots may take a short theoretical course on the film.

The pupil takes his seat in an aeroplane in a dark room. Immediately in front of the machine is the screen, on which pictures are projected whilst an instructor gives an accompanying lecture. Pictures are shown demonstrating the correct methods of using the controls, for example, how to take off and land. The student is instructed to act as if the incidents depicted were actually taking place.

It is said that pupils who have passed a course of cinema tests have invariably proved careful and efficient pilots.

A HOAX RECALLED.

A Dutch writer has pointed out that the R.34 recently made a voyage from America to England in 75 hours, and it was just 75 years ago that Edgar Allan Poe published in the "New York Sun" his hoax about an English airship which flew across the Atlantic in 75 hours.

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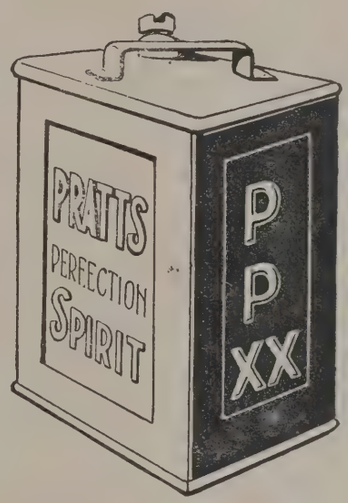
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GREAT BRITAIN.

NAVAL.

ADMIRALTY, Oct. 17th.

The King has been pleased to approve of the award of the following Medals to the undermentioned men:

MERITORIOUS SERVICE MEDAL.

C.P.O. Mech., 2nd Grade, A. Beacham, R.N.A.S., O.N. F512; P.O. Mech. S. G. Cann, R.N.A.S., O.N. F4231; C.P.O. Mech., 3rd Grade, T. Clarke, R.N.A.S., O.N. F1627; Ldg. Mech. D. Cochrane, R.N.A.S., O.N. F4435; C.P.O. Mech., 3rd Grade, A. T. Corrin, R.N.A.S., O.N. F1630; C.P.O. Mech., 3rd Grade, P. Garner, R.N.A.S., O.N. F535; C.P.O. Mech., 3rd Grade, G. H. Gyton, R.N.A.S., O.N. F1004; P.O. Mech. R. A. Heath, R.N.A.S., O.N. F2821; C.P.O. Mech., 3rd Grade, H. Hulse, R.N.A.S., O.N. F493; C.P.O. Mech., 3rd Grade, H. Moliver, R.N.A.S., O.N. F1870; P.O. Mech. S. Parsons, R.N.A.S., O.N. F863; P.O. Mech. H. L. Rolt, R.N.A.S., O.N. F5678; P.O. Mech. D. D. Slater, R.N.A.S., O.N. F9501; P.O. (C.) H. C. Smith, R.N.A.S., O.N. F20242; C.P.O. Mech., 3rd Grade, A. W. H. Tracy, R.N.A.S., O.N. F6694; C.P.O. Mech., 3rd Grade, C. Underwood, R.N.A.S., O.N. F1591.

The following has been brought to the notice of the Admiralty for valuable services in the prosecution of the War:—C.P.O. Mech. R. Harper, R.N.A.S., O.N. 344641 (Po.).

MILITARY.

WAR OFFICE, Oct. 14th.

REGULAR FORCES.—R.F.C.—Mil. Wing.—Flying Officers (Observers). Lt. W. A. S. Brown, 6th Arg. and Suthd. Highrs., T.F., April 23rd, 1916; Temp. Sec. Lt. (on prob.) B. W. A. Ordish, Gen. List, and to be confirmed in his rank, Nov. 3rd, 1916.

WAR OFFICE, Oct 15th.

ARMIES OF OCCUPATION.—TERRITORIAL FORCE.—INFANTRY.—4th Bn. Dorset R.—Sec. Lt. J. L. Fletcher to be Lt., and to remain secd. R.A.F., Nov. 30th, 1918.

INDIA OFFICE, Oct. 17th.

The King has approved the relinquishment by the undermentioned officer of his comm. in the Indian Army:—

Maj. A. H. W. Elias Wynn, I.A., on transfer to R.A.F., Aug. 1st.

AIR FORCE.

AIR MINISTRY, Oct. 10th.

The King has been pleased to give orders for the following appointments to the Most Excellent Order of the British Empire in recognition of distinguished services rendered during the War:—

O.B.E. (MILITARY DIVISION).

Ft. Lt. (A./Wing Comdr.) A. H. S. Baker, M.B.E.; Sqdn. Leader (A./Wing Comdr.) O. T. Boyd, M.C., A.F.C.; Wing Comdr. J. L. Forbes; Sqdn. Leader (A./Wing Comdr.) A. H. C. Kearsey, D.S.O.; Wing Comdr. C. Kirby; Wing Comdr. A. T. L. Nye; Wing Comdr. F. Ranken; Sqdn. Leader (A./Wing Comdr.) A. V. J. Richardson; Sqdn. Leader (A./Wing Comdr.) J. D. K. Restler; Wing Comdr. J. L. Travers; Lt.-Col. I. V. Davson; Sqdn. Leader J. P. Bourke; Flt. Lt. (A./Sqdn. Leader) A. P. Bowdler; Sqdn. Leader A. R. Boyle, M.C.; Sqdn. Leader A. G. H. Carr; Flt. Lt. (A./Sqdn. Leader) E. W. F. Cherry; Sqdn. Leader H. A. Cox; Sqdn. Leader W. J. Y. Guilfoyle, M.C.; Sqdn. Leader D. H. Kennedy; Sqdn. Leader T. G. Leith, M.B.E.; Flying Officer (A./Sqdn. Leader) C. H. Lewis; Sqdn. Leader J. H. Lidderdale; Sqdn. Leader E. S. Saunders; Sqdn. Leader C. J. Stewart; Sqdn. Leader H. C. Wakefield; Sqdn. Leader R. H. Woods, M.C.; Maj. P. C. A. Bridgeman; Maj. E. C. Clements (R.A.M.C.T.); Capt. (A./Maj.) J. de Francia; Maj. A. C. Hartley; Maj. T. G. Hull; Capt. (Hon. Maj.) T. O. H. Lees, A.F.C.; Maj. O. C. Macpherson (Canada); Capt. (A./Maj.) J. M. Mitchell, M.B.E. (Canada); Maj. W. Park; Maj. D. B. Sanders; Maj. A. E. Snape; Flt. Lt. C. B. Baker; Flt. Lt. D. S. K. Crosbie; Flt. Lt. G. F. Evans; Flt. Lt. D. Gordon; Flt. Lt. H. T. Humfress; Flt. Lt. G. W. C. Kaye; Flt. Lt. D. Munro; Flt. Lt. G. G. Shepherd; Flt. Lt. W. P. Smith; Flt. Lt. J. B. Walker.

Asst. Comdt. Miss K. L. Curlett, W.R.A.F.; A./Matron Mrs. L. O. Doughty-Wylie, M.B.E., R.R.C.

M.B.E. (MILITARY DIVISION).

Flying Officer (A./Sqdn. Leader) E. B. Barker; Sqdn. Leader H. N. Wylie; Flt. Lt. T. Armstrong; Flying Officer (A./Flt. Lt.) W. E. Berwick; Flying Officer (A./Flt. Lt.) H. B. Dakin; Flying Officer (A./Flt. Lt.) D. B. Gunn; Flt. Lt. H. G. Hutchinson; Flt. Lt. J. H. Ledeboer; Flt. Lt. J. A. C. Sumner; Flt. Lt. F. Tedman; Flt. Lt. F. K. Wells; Capt. L. Crooks; Capt. A. J. Dawson; Capt. I. N. Dracopoli; Capt. J. M. Furnival; Capt. T. Greening; Capt. G. Ralston; Flying Officer H. S. Burdett; Flying Officer D. P. Cameron; Flying Officer A. T. Hughes; Flying Officer H. D. Lehmann; Flying Officer W. L. Shaw; Flying Officer R. A. Shepheard-Walwyn; Flying Officer G. T. Stroud; Flying Officer C. H. Tancred; Flying Officer G. V. Walsh; Lt. A. C. Blackmore; Pilot Officer W. E. Critchley; Pilot Officer W. E. Humphreys; Pilot Officer T. A. Ross; Observer Officer G. C. Shortridge; Pilot Officer J. E. Tyrrell; Pilot Officer S. G. Young; Administrator Miss A. L. Chauncey, W.R.A.F.

The King has been pleased to approve of the undermentioned rewards to Officers and Other Ranks of the Royal Air Force in recognition of distinguished services rendered during the War:—

DISTINGUISHED FLYING CROSS.

Sqdn. Leader C. H. Stringer; Flt. Lt. F. D. Crundall; Flt. Lt. F. W. Hudson; Flt. Lt. the Hon. E. G. W. T. Knollys, M.B.E.; Flying Officer (A./Flt. Lt.) A. D. Makins; Flt. Lt. E. A. Packe; Flt. Lt. F. X. Russell; Flying Officer E. L. Barrington, M.C.; Flying Officer R. S. Jameson; Flying Officer F. C. C. Yeats-Brown; Lt. W. E. Bottrill (Can. Inf.); Lt. G. M. Eiloart; Pilot Officer H. Lovelady; Pilot Officer F. W. Sinclair.

AIR FORCE CROSS.

Wing. Comdr. W. D. Beatty, C.B.E.; Sqdn. Leader (A./Wing Comdr.) O. T. Boyd, O.B.E., M.C.; Wing Comdr. R. B. Davies, V.C., D.S.O.; Sqdn. Leader (A./Wing Comdr.) E. H. Sparling; Sqdn. Leader (A./Wing Comdr.) L. Tomkinson; Flt. Lt. (A./Sqdn. Leader) D. G. Donald; Flt. Lt. (A./Sqdn. Leader) R. F. S. Leslie, D.S.C., D.F.C.; Sqdn. Leader T. K. Elmsley; Sqdn. Leader V. Gaskell-Blackburn; Sqdn. Leader M. E. A. Wright, Flt. Lt. W. R. D. Acland, Flt. Lt. C. H. Elliott-Smith; Flt. Lt. F. M. Fox; Flt. Lt. T. A. Gladstone; Flying Officer (A./Flt. Lt.) A. F. Hordern; Flt. Lt. F. Nuttall, M.C., D.F.C.; Flying Officer (A./Flt. Lt.) L. N. Sutherland; Capt. R. M. Stirling; Flying Officer W. Armstrong; Flying Officer G. H. Boyce; Flying Officer H. E. Cardwell; Flying Officer R. Douglas (S.A.D.F.); Flying Officer W. T. Garrood; Flying Officer L. A. C. Hudson; Flying Officer L. M. Iles; Flying Officer A. Lanman; Flying Officer J. D. Mail; Flying Officer A. S. Meyrick Jones; Flying Officer J. McF. D. Mills; Flying Officer L. G. Paget; Flying Officer J. R. I. Scambler; Flying Officer G. J. Squires; Flying Officer M. L. Trapagna-Leroy; Flying Officer S. S. Turnbull; Lt. H. A. Miller; Lt. J. A. Smale; Lt. A. J. G. Stryan, M.C.; Lt. N. T. Thorneloe; Pilot Officer C. N. C. Dickson; Pilot Officer F. de M. Hyde; Pilot Officer T. Rennie; Pilot Officer P. S. Riach; Pilot Officer L. G. Warren; Observer Officer E. A. Westall; Pilot Officer I. S. Woodhouse.

AIR FORCE MEDAL.

No. 1357 Sjt.-Maj. 2 J. Barrett; No. 5232 Sjt.-Obs. J. Gilhooly.

MEDAL OF THE ORDER OF THE BRITISH EMPIRE (FOR GALLANT CONDUCT IN FRANCE).

No. 46031 Cpl. F. Harrison.

MERITORIOUS SERVICE MEDAL.

No. 4395 Cpl. W. W. Adkins; No. 26805 Sjt. H. C. Ashwell; No. 30979 Cpl. F. S. Bowles; No. 219650 A./C. 1 C. H. Greenwood; No. 40573 Cpl. T. W. E. Heath; No. 1169 S./M. 1 J. Hudson; No. 215 S./M. 1 J. Kerr; No. 302427 Cpl. J. Lister; No. 1783 Flt. Sjt. J. F. Morrison; No. 18304 Flt. Sjt. J. E. Pays; No. 36955 Cpl. G. Papworth; No. 23725 Sjt. W. J. Payne; No. 93866 Sjt. J. Poole; No. 33436 L.A.C. A. J. Pickering; No. 37883 Flt. Sjt. G. H. Toogood; No. 132183 A./C./H. 2 J. H. Walker.

The following have been mentioned in dispatches and reports for Distinguished Service in the Field:—

Sqdn. Leader A. G. H. Carr; Sqdn. Leader W. J. Y. Guilfoyle; Sqdn. Leader H. C. Wakefield; Flying Officer J. R. Hovenden; Flying Officer E. F. L. Taylor; Lt. J. McL. Pearson; Lt. McL. N. Straight; No. 42792 Sjt. H. S. Dodd; No. 403621 Sjt. R. Fairbrother; No. 44805 Sjt. T. W. Harman; No. 66256 Cpl. F. W. J. Hunt; No. 115589 Sjt. H. E. Mee; No. 403646 Sjt. H. G. Mitchell; No. 99730 Sjt. G. T. Watt; No. 500 Flt. Sjt. T. E. Whittaker.

ROYAL RED CROSS, 1ST CLASS.

Actg. Matron Miss J. M. Cruickshank (Q.A.I.M.N.S.R.).

FOREIGN DECORATIONS.

The King has granted unrestricted permission for the wearing of the following decorations conferred on the Officers and Other Ranks of the Royal Air Force indicated for valuable services rendered in connection with the War:—

CONFERRED BY THE PRESIDENT OF THE FRENCH REPUBLIC.

Legion of Honour (Croix de Chevalier).

Lt. G. G. Bell, D.F.C. (Canadian L. Forces); Lt. J. S. E. Townsend, R.N.V.R., attd. Naval Air Service.

Croix de Guerre, avec Palme.

Lt. D. A. Davies, D.F.C.; Lt. C. B. Green, D.F.C. (Can. L. Forces); Lt. H. J. Gibson; Lt. A. E. de M. Jarvis, D.F.C. (Can. L. Forces).

Croix de Guerre, avec Etoile en Vermeil.

Lt. H. G. Davis, D.F.C.

Medaille Militaire.

No. 54267 Sjt.-Mech. C. R. L. Falcy, D.C.M.; No. 25197 Cpl. (A./Sjt.) H. R. Heys.

Medaille d'Honneur, avec Glaives en Vermeil.

Capt. A. F. Nimmo.

Medaille d'Honneur, avec Glaives en Argent.

No. 29991 Sjt. W. L. Reeve; No. 4705 Sjt. T. E. Williams.

Medaille d'Honneur, avec Glaives en Bronze.

No. 4388 Cpl. J. C. Steadman.

CONFERRED BY THE KING OF ROUMANIA.

Lt.-Col. R. D. Waterhouse, C.M.G.

CONFERRED BY THE KING OF THE HELLENES.

Greek Military Cross, 3rd Class.

Capt. F. A. Bates, M.C., A.F.C.

Medal of Military Merit, 3rd Class.

Sqdn. Leader S. G. Hodges, M.C., A.F.C.

AIR MINISTRY, Oct. 10th.

R.A.F.—The following Officers have been granted short service commns. in the ranks stated, with effect from Oct. 10th. They will retain their seny. in the substantive rank last held by them prior to the grant of the short service commn.:—

Sqdn. Leader.—R. C. Lane (T.).

Flight Lts.—J. H. D. M. Campbell (S.O.); H. Cooch, A.M.I.E.E. (T.); P. E. L. Gethin, A.F.C. (A.); E. L. Johnston, A.F.C. (Airship); C. O. F. Modin, D.S.C. (A.); A. J. Osborn (S.O.); G. W. Robarts, M.C. (A.); N. V. Wrigley (T.).

Flying Officers.—R. M. Grundy (Ad.); H. Hoad (T.); A. E. de M. Jarvis, D.F.C. (A.); A. A. Jones (T.); H. P.-G. Leigh (T.) (with effect from Oct. 6th); F. W. Martyn (T.); H. L. Rough, D.F.C. (A.); E. R. Webb (Ad.).

NOTE.—It is intended that officers empld. as Stores Officers or on "Q" duties shall belong to the new Stores Branch when formed. Officers appearing in this "Gazette" who are at present so empld. will be transferred to this Branch on its formation, and will accept these short service commns. on that condition. They will then come on to rates of pay of that Branch, but will meantime be permitted to draw the higher rates laid down in the new scheme for officers on the Gen. List. Any officer posted to the Stores Branch on its formation will then have the option of declining his short service commn.

The notification appearing in "Gazette" of Sept. 12th appointing the following officers to short service commns. is cancelled:—Flight Lt. H. J. Edgar (A. and S.); Flight Lt. A. E. Siddons-Wilson (T.); Flying Officer J. H. Dale (T.); Flying Officer H. B. Day (Ad.); Flying Officer A. G. Jarvis (A.); Flying Officer R. V. Kann (A.); Flying Officer G. A. Lingham, D.F.C. (A.); Flying Officer W. G. Pudney (A.); Flying Officer A. E. Sweeting (A.).

The notification appearing in "Gazette" of Sept. 16th appointing the following officer to a short service commn. is cancelled:—Flight Lt. C. W. McCann (T.).

The second Christian name of Flight Lt. Charles Geoffrey Murray, O.B.E. (S.O.), is as now described, and not Godfrey, as stated in "Gazette," Sept. 12th.

The second Christian name of Flying Officer James Duff Hewitt (A.) is as now described, and not Dorr, as stated in "Gazette," Sept. 16th.

Flying Officer A. C. Lobley is granted a short service commn. with effect from Aug. 16th, not Sept. 12th as stated in "Gazette" of the latter date.

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R.A.F.—The following temp. appointments are made at the Air Ministry:—Staff Officers, 3rd Class.—(P.) Flight Lt. J. B. Cole-Hamilton, Sept. 26th; (T.) Flying Officer C. A. Longhurst, Sept. 30th.

The following temp. appointments are made:—Staff Officer, 2nd Class.—(O.) Sqdn. Leader F. H. Moody, M.C., Sept. 1st.

Staff Officer, 3rd Class.—(P.) Flight Lt. D. P. Massy, Sept. 1st.

FLYING BRANCH.—Lt.-Col. H. A. Williamson, C.M.G., A.F.C., to be Lt.-Col. (A. and S.) on relinquishing appointment of Group Comdr., April 25th.

Capt. C. J. W. Darwin, D.S.O., to be Capt. (A.), from (T.), July 5th.

Flight Lt. A. McR. Moffatt to be Flight Lt. (A.), from (S.O.), Sept. 13th.

Sec. Lts. to be Lts.:—A. C. Clinton, Oct. 26th, 1918 (substituted for notification in "Gazette," July 2nd, 1918); S. Toby, Dec. 27th, 1918; (Hon. Capt.) G. E. Lange, Jan. 1st; L. G. Destrube, June 6th; R. A. Wade, June 16th; F. Van Praagh, July 10th; S. L. Waters, July 24th.

P.F.O. A. J. Mantle, D.F.C. (late R.N.A.S.), is granted a temp. commn. as Sec. Lt. (O.), July 18th, 1918.

The following relinquish their commns. on ceasing to be empld.:—Lt. A. T. Essex (Sec. Lt., British W. Indies R.), July 29th; Lt. (Hon. Maj.) G. T. J. Barry (Maj., S. Wales Bord.), Sept. 11th; Lt. G. W. Kempster (Lt., Middx. R.), Sept. 15th; Maj. W. Pennefather (Lt.-Commdr., R.N.), Oct. 9th.

The following are transferred to unempld. list:—Sec. Lt. C. G. Ball, Sec. Lt. W. E. Beam, Sec. Lt. D. C. Brown, Sec. Lt. R. T. Hallchurch, Sec. Lt. A. J. Hartley, Sec. Lt. J. G. Heavey, Sec. Lt. L. W. Shelley, Sec. Lt. F. V. Sutton, Sec. Lt. A. W. C. Trew, Sec. Lt. W. H. Vogan, Feb. 1st; Sec. Lt. H. C. Thomas, Feb. 2nd; Capt. D. M. Ballentyne, D.F.C., March 1st; Sec. Lt. H. C. Telfer, March 6th; Sec. Lt. H. J. Fox, March 15th; Lt. T. St. C. Douglas, April 12th; Sec. Lt. C. G. Urquhart, April 15th; Lt. R. G. Wood, April 17th; Lt. R. D. Caley, May 1st; Sec. Lt. A. V. Westwood, May 5th; Lt. R. Stirett Smith, May 7th; Sec. Lt. A. T. Jost, May 20th; Sec. Lt. C. L. Birmingham, May 28th; Capt. A. L. Taylor, June 8th (substituted for notification in "Gazette," July 15th); Sec. Lt. J. Jones, Lt. G. D. Jooste, Sec. Lt. C. K. Joubert, June 14th; Lt. A. R. Kingsford, July 5th; Lt. N. S. Jones, Lt. E. A. L. F. Smith, July 12th; Sec. Lt. R. H. Trollip, July 23rd; Sec. Lt. P. Davis, Aug. 1st; Lt. E. E. G. Nicholson, Aug. 2nd; Lt. D. Wilson, Sept. 1st; Lt. F. S. Bowles, Lt. I. F. Sutherland, Sept. 2nd; Capt. W. U. Dykes, Sept. 8th; Lt. G. L. Wright, Sept. 9th; Lt. H. O. Hope, Sec. Lt. R. Kelly, Sept. 10th; Capt. S. St. G. C. Belfield, Sec. Lt. (Hon. Lt.) F. W. V. Ellvers, Maj. L. P. Openshaw, Sec. Lt. D. J. Stewart, Sept. 15th; Sec. Lt. W. L. Chapman, Sec. Lt. H. S. Crees, Sept. 16th; Lt. M. A. Harker, Sec. Lt. J. W. Watson, Sec. Lt. A. B. H. Youell, Sept. 17th; Lt. E. E. Blakemore, Lt. N. L. Desoer, Sept. 18th; Sec. Lt. R. D. Court, Lt. J. P. Cox, Sec. Lt. T. M. Hodgson, Sec. Lt. (Hon. Lt.) T. C. W. Sandland, Sept. 19th; Lt. (Hon. Capt.) H. C. Higginbotham, Sec. Lt. A. Jenart, Sec. Lt. D. A. F. Vavasour, Sept. 20th; Lt. W. E. F. Jones, D.F.C., Sept. 21st; Lt. W. F. O. Trench, Sept. 22nd; Sec. Lt. W. J. Mabb, Sec. Lt. A. H. Penstone, Sec. Lt. A. Trantor, Sept. 23rd; Lt. H. B. Pett, M.C., Lt. E. F. Rogers (substituted for notification in "Gazette," July 2nd), Lt. L. J. Sanderson, Sept. 24th; Sec. Lt. F. A. Douglas, Capt. R. W. Scoles, Capt. A. T. Sketchley, Sec. Lt. A. H. Sowter, Sept. 25th; Lt. T. Barr, Sec. Lt. W. A. F. Cowgill, Sec. Lt. G. W. A. Ireland, Sec. Lt. A. Thomson, Sept. 26th; Capt. C. V. Bassette, D.F.C., Sec. Lt. J. H. Cairns, Lt. W. S. Hill-Tout, Lt. J. R. Hopkins, D.F.C., Lt. K. Kennedy, Sec. Lt. P. W. McNaughton Sec. Lt. T. Nolan (substituted for notification in "Gazette," May 16th), Sec. Lt. P. A. Templeton, Lt. L. J. Trounce, Lt. G. G. Wakeman, Capt. P. Wickens, A.F.C., Sept. 28th; Sec. Lt. E. H. Biddle, Lt. F. G. Garratt, A.F.C., Sec. Lt. J. K. Pickard, Sept. 29th; Sec. Lt. L. E. Brockman, Lt. A. H. Burt, Sec. Lt. O. F. G. Crosby, Lt. W. H. Eastoe, Lt. T. E. Gohl, Sec. Lt. J. P. Melrose, Lt. R. G. Turner, Oct. 9th; Sec. Lt. E. W. T. Meeser, Lt. W. H. Naylor, Sec. Lt. H. R. Roberts, Lt. J. D. Seal, Oct. 10th.

The following Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—A. W. Hammond, M.C. (caused by wounds), Sept. 6th; B. L. Blofeld (Lt., R. West Kent R.) (contracted on active service), Sept. 26th; A. McDunlop (contracted on active service), Sept. 30th.

G. H. Jacob, Oct. 4th (substituted for notification in "Gazette," Sept. 2nd.)

Lt. R. A. Way (Lt., Wilts R.), resigns his commission, Oct. 11th.

Sec. Lt. C. C. Worboys relinquishes his commission on account of ill-health contracted on active service, and is permitted to retain his rank, Oct. 8th.

Lt. J. C. Sherwin is dismissed the service by sentence of a General Court-Martial, Sept. 12th.

Sec. Lt. L. E. G. Judge, M.C., to take rank and prec. as if his appt. as Sec. Lt. bore date Dec. 24th, 1918.

The Christian names of Sec. Lt. Edward Raymond Beesley are as now described, and not "Ernest Richard," as stated in "Gazette," June 4th, 1918.

The notification in "Gazette," April 4th, concerning Lt. J. H. Solomon is cancelled.

The notification in Gazette," June 6th, concerning Sec. Lt. E. W. A. Smith is cancelled.

ADMINISTRATIVE BRANCH.—Sec. Lt. A. F. Harris to be Sec. Lt., from (O.), July 29th.

Pilot Offr. D. S. G. Burton to be Pilot Offr., from (T.), Sept. 29th.

Sec. Lt. W. Farquharson to be Sec. Lt., from unemployed list, Sept. 24th, prec. next below H. H. Williams.

The following relinquish their commissions on ceasing to be employed:—Sec. Lt. R. F. Nicholls, Oct. 13th, 1918; Sec. Lt. G. Hull (Sec. Lt., R.I. Rif.), Aug. 19th; Lt.-Col. (actg. Col.) A. W. G. McFall (Lt.-Col., retired, Militia), Sept. 18th; Capt. G. F. Earle (Capt., Rif. Bde.), Sept. 20th.

The following are transferred to unemployed list:—Sec. Lt. F. V. Wheeler, March 6th (substituted for notification in "Gazette," April 1st; Sec. Lt. C. G. Churchill-Woodman, March 13th; Sec. Lt. A. N. Ryles, Aug. 1st (substituted for notification in "Gazette," Sept. 5th); Lt. H. Coulter, Sept. 3rd; Lt. J. H. Bryen, Sept. 5th; Lt. D. A. Tomlinson, Sept. 8th; Lt. L. L. Wight, M.C., Sept. 12th; Capt. H. Bryce-Smith, Sept. 15th; Sec. Lt. A. E. S. Whiting, Sept. 17th; Sec. Lt. H. M. Drabble, Sept. 18th; Sec. Lt. L. F. Sewell, Sept. 23rd; Capt. W. A. Ecob, Sept. 25th;

Lt. (Hon. Capt.) H. O. D. Wilkins (Capt., Bedf. R.) resigns his commission, Oct. 11th.

Sec. Lt. T. H. Young relinquishes his commission on account of ill-health, and is permitted to retain his rank, Sept. 23rd.

Sec. Lt. H. S. Neville relinquishes his commission on account of ill-health, and is permitted to retain his rank, Sept. 20th.

The notification in "Gazette" of Sept. 23rd concerning Flt. Lt. G. M. Broadburn and Flying Officer J. A. H. Savage are cancelled.

TECHNICAL BRANCH.—Capt. (actg. Maj.) C. J. W. Darwin, D.S.O., retains actg. rank of Maj. whilst employed as Maj., Grade (A.), from (A.), from Feb. 8th to April 30th.

Capt. C. J. W. Darwin, D.S.O., is graded for purposes of pay and allowances as Maj. whilst empld. as Maj., Grade (A.), from (A.), from May 1st to July 4th.

Capt. F. Workman, M.C., to be Capt., Grade (A.), from (A.), May 9th, 1918 (substituted for notification in "Gazette" of Aug. 5th).

Sec. Lt. S. Jupp is graded for purposes of pay and allowances as Capt. whilst employed as Capt., Grade (A.), Oct. 9th, 1918 (substituted for notification in "Gazette" of May 1st).

Pilot Officer (Hon. Flying Officer) C. Bishop to be actg. Flight Lt. (without pay and allowances of that rank) whilst employed as Flight Lt., Grade (B.)

Sec. Lt. E. A. Moran-Smith to be Lt., Sept. 14th, 1918 (substituted for notification in "Gazette" of April 11th).

Pilot Officer G. H. J. Stein relinquishes the grading for pay and allowances as Flying Officer on ceasing to be employed as Flying Officer, Grade (A.), Sept. 19th.

Sec. Lt. J. S. McLeod to be Sec. Lt., Grade (B.) from (Ad.), June 15th.

Lt. (Hon. Maj.) C. W. Rowe, M.B.E. (Maj., Huntingdonshire Cyclist Bn.), relinquishes his commission on ceasing to be employed, Nov. 7th, 1918.

Squadron Leader H. R. Northover, O.B.E., M.C. (Maj., Canadian Ordnance Corps), relinquishes his commission on ceasing to be employed, June 30th.

Sec. Lt. (Hon. Lt.) J. L. Bicknell (Lt., Gloucester R.), relinquishes his commission on ceasing to be employed, Oct. 3rd.

The following are transferred to unemployed list:—Sec. Lt. R. Johnston, July 3rd; Lt. W. H. R. Skudder, July 9th (substituted for the notification in the "Gazette" of July 18th; Capt. C. J. Turner, Sept. 2nd; Capt. H. W. Campion, Sept. 10th; Lt. R. G. Dalziel, Sept. 11th; Capt. W. V. Bonsor, Sec. Lt. R. C. Handley-Ensor, Sept. 15th; Sec. Lt. (Hon. Lt.) E. W. C. Catling, Sec. Lt. A. H. Varian, Lt. H. M. Whitehead, Sept. 16th; Sec. Lt. F. W. Wheeler, Sept. 17th; Sec. Lt. C. R. Booth, Sec. Lt. A. Gold, Lt. L. A. Owen, Sept. 18th; Sec. Lt. (Hon. Lt.) L. T. G. Jefferson, Sept. 22nd; Capt. S. A. Marples, Sept. 27th.

The following Lts. relinquish their commissions on account of ill-health contracted on active service and are permitted to retain their rank:—H. R. Stewart, Sept. 30th; A. A. Westcott, Oct. 4th.

MEDICAL BRANCH.—Lts. to be Capts.:—J. P. Hosford, July 5th (substituted for notification in "Gazette," Aug. 19th, wherein this officer's surname was described as "Horsford"); G. W. J. Bousfield (substituted for notification in "Gazette," Aug. 19th, wherein this officer's surname was described as "Bonsfield"); A. St. J. Hennessy (substituted for notification in "Gazette," Aug. 19th, wherein this officer's surname was described as "Hennessey"), July 29th.

Maj. H. F. Horne relinquishes his commn. on ceasing to be empld. and is granted rank of Lt.-Col., July 2nd.

The following are transferred to unempld. list:—Lt. S. G. Smith, Sept. 28th; Capt. J. C. Hall, Sept. 30th.

The surname of Capt. K. B. Aikman is as now described, and not "Aickman," as stated in "Gazette," Aug. 19th.

The notification in "Gazette," July 11th, concerning Maj. H. F. Horne is cancelled. The following temp. appointments, W.R.A.F., are made:—Dep. Prin. to be Dep. Administrator, seny. from Aug. 24th, 1918:—Miss M. Allen, Aug. 1st

To be Asst. Administrators:—Mrs. V. M. Hume, July 21st; Miss D. E. Collins, Aug. 6th.

Dep. Administrator (actg. Administrator) Mrs. G. E. Dickinson reverts to substantive rank on ceasing to be empld. as Dep. Asst. Comdt., June 21st.

Asst. Administrator (actg. Administrator) M. A. Scholefield reverts to substantive rank on ceasing to be empld. as Dep. Asst. Comdt., Sept. 20th.

Dep. Administrator (actg. Administrator) Mrs. J. C. Paterson reverts to rank of Asst. Administrator on ceasing to be empld. as Dep. Asst. Comdt., Sept. 23rd.

Dep. Administrator M. H. Grant reverts to rank of Asst. Administrator on ceasing to be empld. as Dep. Administrator, Sept. 13th.

Asst. Administrator (actg. Dep. Administrator) R. J. Wright reverts to substantive rank on ceasing to be empld. as Dept. Administrator, Oct. 1st.

The following officers relinquish their appointments at their own request:—Dep. Administrators:—R. E. Booker, Aug. 18th; D. M. H. de Grave, Aug. 23rd; M. D. R. Leys, Aug. 31st; D. Moss, Sept. 1st; V. E. M. Gallagher (actg. Adm.), M. Wall, Sept. 3rd; A. Jones, Sept. 8th; E. A. Somerset, Sept. 10th; M. M. King, Sept. 13th; H. J. L. Fletcher, Sept. 14th; H. M. Reid (actg. Adm.), P. Baker, Sept. 15th; E. F. J. Simpson, Sept. 16th; P. O. Legard, Sept. 19th.

Assist. Administrators.—F. A. S. Holbrow, June 30th; Mrs. C. M. Knight (actg. Dep. Adm.), July 7th; P. L. Gate, Aug. 18th; N. M. Watt, Aug. 22nd; D. Davis, Mrs. M. L. Niven, Aug. 28th; E. A. Cooke, Aug. 30th; Mrs. C. A. G. Townshend, Aug. 31st; Mrs. I. H. Creighton, R. Mahony (actg. Dep. Adm.), V. Carr-Owen (actg. Dep. Adm), Sept. 1st; E. A. Gardner, Sept. 11th; E. M. Renny-Tailyour (actg. Dep. Adm.), Sept. 12th; E. M. Hunter, E. V. Robinson, M. A. Houghton (actg. Dep. Adm.), Sept. 13th; C. Horsey, Sept. 14th; Y. Jennings, Sept. 17th; M. M. Collings, Sept. 18th; O. B. Wilson, Sept. 22nd; J. O. Crofton, Sept. 24th; M. E. Clarke (actg. Adm.), Sept. 25th; A. M. Taylor, Sept. 29th.

The following officers relinquish their appts. on completion of service:—Asst. Cmdts.—Mrs. L. M. K. Pratt-Bralow (actg. Dep. Commdt.), Sept. 21st; M. A. Thompson, Oct. 1st.

Administrators.—A. J. Cummins, Mrs. A. T. Cooper (D.A.C.), Sept. 1st; Mrs. E. B. Turtle, Sept. 5th; E. L. Lees, Sept. 18th; U. Campbell, Sept. 23rd.

Dep. Administrators.—Mrs. V. MacDonell, Sept. 1st; I. Storey, Sept. 9th; F. L. Gauntlett (actg. Adm.), Sept. 12th; V. C. Guy, Sept. 15th; D. E. Mellor, Sept. 21st.

Asst. Administrators.—D. F. Bulteel, Aug. 31st; G. E. Newman (actg. Dep. Adm.), Sept. 1st; Mrs. E. M. Fuller (actg. Deps. Adm.), Sept. 2nd; C. M. Oakley-Hill, Sept. 3rd; M. V. Jones (actg. Dep. Adm.), Sept. 4th; F. K. Rolland, A. F. Valentine, E. T. Smith, Sept. 8th; P. Brander (actg. Dep. Adm.), Sept. 12th; D. E. Westbrook, Sept. 15th; Mrs. F. K. Pearson, M. A. Payne, Sept. 16th; M. Willis, Sept. 17th; D. Humphrey-Smith, Sept. 18th; E. M. Morrison (actg. Dep. Adm.), Sept. 19th; M. K. Cottle, A. M. Gilchrist, M. C. L. Rees, M. A. Tate, A. R. Kiln, Sept. 20th; B. G. Anson (actg. Dep. Adm.), Sept. 21st; M. S. Boal, Sept. 22nd; E. C. Edwards (actg. Dep. Adm.), D. G. Radcliffe, E. M. Walker, Sept. 23rd; V. V. Baggage, M. B. Kenwrick, Sept. 24th; S. D. Solly, Sept. 26th; B. E. Leefe, Sept. 27th; E. M. Crawford, Oct. 2nd.

MEMORANDA.—Temp. Hon. Lt. (Hon. Capt.) W. S. Kellar relinquishes his commn. on ceasing to be empld., Aug. 26th.

AIR MINISTRY, Oct. 14th.

R.A.F.—The following temporary appointments are made:—Air Commodore.—Air Commodore R. M. Groves, C.B., D.S.O., A.F.C., from Director, Sept. 8th.

Staff Officer (1st Class).—(Air).—Wing Comdr. K. G. Brooke, C.M.G., from S.O.1 at the Air Ministry, Oct. 8th.

Staff Officers (2nd Class).—(P.).—Sqdn. Ldr. A. G. R. Garrod, D.F.C., M.C., Oct. 6th. (Air.)—Sqdn. Ldr. R. M. Field, Oct. 7th.

FLYING BRANCH.—Lt. A. V. Leitch is graded for purposes of pay and allowances as Capt. whilst empld as Capt. (A.), May 27th.



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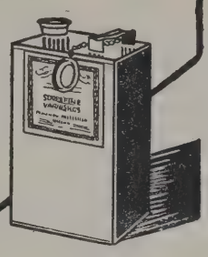
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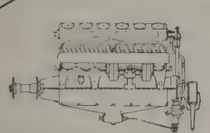
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The following Flying Officers relinquish the grading for pay and allowances as Flt. Lts. on ceasing to be empld. as Flt. Lts. (A.) :—H. G. W. Debenham, Aug. 28th; C. T. Black, Sept. 5th.

The following Flying Officers (actg. Flt. Lts.) relinquish actg. rank of Flt. Lt. on ceasing to be empld. as Flt. Lts. (A.) :—A. D. K. Perkins, Sept. 5th; N. C. Buckton, Sept. 10th.

Sec. Lts. to be Lts. :—J. Duncanson, April 2nd, 1918; J. H. L. Newby, July 12th, 1918; J. S. Maguire, Sept. 26th, 1918; R. J. Hook, Nov. 30th, 1918; C. A. Stubings, Dec. 27th, 1918; W. Barlow, Jan. 1st; C. S. Goode, July 7th; F. G. A. Terrill, July 21st.

Pilot Officers to be Flying Officers :—J. S. Hunt, Sept. 3rd; W. H. Dunton, A. T. Robson, Oct. 1st.

Sec. Lt. L. J. W. Ingram (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt. (O.), June 23rd, 1918.

The following relinquish. their commns. on ceasing to be empld. :—Lt. J. H. Solomon, March 7th; Maj. G. Allen (Capt., Conn. Rgrs.), Aug. 11th; Lt. R. S. Mackenzie (Lt., Can. Cav.), Sept. 21st; Lt. C. A. Bridgland, D.F.C. (E. Surr. R.), Sept. 26th; Sec. Lt. C. P. Stromeyer (Lt., R.G.A.), Oct. 7th.

The following are transferred to unempld. list :—Sec. Lt. C. M. Bochmer, Sec. Lt. H. W. Colgan, Sec. Lt. J. A. Connolly, Sec. Lt. L. E. Edwards, Sec. Lt. F. T. Hall, Sec. Lt. W. W. Hough, Sec. Lt. J. H. Johnston, Sec. Lt. C. F. Joyner, Sec. Lt. M. K. Knudston, Sec. Lt. J. A. Lane, Sec. Lt. A. R. Lavell, Sec. Lt. H. J. O'Brien, Sec. Lt. M. G. Sample, Sec. Lt. A. Stirling, Sec. Lt. W. R. Usher, Sec. Lt. R. L. Walker, Sec. Lt. J. C. Woodward, Sec. Lt. O. J. Walsh, Feb. 1st; Lt. R. L. Hollingsworth, Feb. 15th; Sec. Lt. F. W. Elliott, Sec. Lt. H. Harris, Feb. 28th; Lt. A. D. Pope, Sec. Lt. H. H. Whitlock, Feb. 29th; Sec. Lt. G. S. Black, March 1st; Sec. Lt. R. W. Heine, Lt. K. R. Napier, M.C., Lt. W. McK. Thomson, M.C., D.F.C., March 6th; Sec. Lt. D. H. Tachauer, March 15th; Lt. E. P. Larrabee, March 25th; Lt. D. W. Lane, April 1st; Lt. J. H. Lowson, April 6th; Lt. H. H. Senior, April 10th (substituted for notification in "Gazette," May 9th); Capt. R. K. Slater, April 15th; Lt. J. S. Hewson, Sec. Lt. S. H. Wheatley (substituted for notification in "Gazette," May 5th), April 17th; Capt. G. C. C. Kilburn, Sec. Lt. R. J. Smither, April 20th; Lt. W. S. Stephenson, M.C., D.F.C., April 28th; Sec. Lt. P. S. Manley, Lt. E. J. Lussier, D.F.C., Sec. Lt. R. J. Whitaker, May 1st; Capt. D. A. H. Nelles, D.S.C., May 11th; Lt. G. C. Atkins, May 19th; Lt. E. King, May 20th; Sec. Lt. A. Turner, May 22nd; Sec. Lt. W. G. Minnes, June 1st; Sec. Lt. C. H. Living, June 12th; Sec. Lt. L. H. Jones, June 16th; Sec. Lt. C. C. Kruger, June 17th; Sec. Lt. J. Tough, June 22nd; Sec. Lt. I. Kleinot, July 10th; Lt. R. C. Hardie, Sec. Lt. W. C. Kinnisten, July 12th; Sec. Lt. J. A. Murray (substituted for notification in "Gazette," April 1st), Lt. A. E. N. Ashford, July 24th; Lt. A. F. Bartlett, D.F.C., Aug. 2nd; Lt. H. V. Jones, Aug. 3rd; Capt. J. Clisdal, M.C., Aug. 9th; Sec. Lt. C. E. Moore, Aug. 10th; Lt. E. B. Keele, Aug. 16th; Lt. R. Trattles, Aug. 17th; Sec. Lt. W. N. Keeling, Aug. 20th; Capt. D. B. Calderwood, Aug. 27th; Sec. Lt. L. Kane, Sec. Lt. R. M. MacDonald, Sec. Lt. A. D. Rolfe, Aug. 29th; Lt. W. N. Cumming, Aug. 31st; Lt. N. C. Denison, Sec. Lt. F. L. W. Dowling, Sept. 1st; Sec. Lt. I. S. Woodhouse, Sept. 2nd; Lt. A. Cairnduff, Sec. Lt. V. N. Dickinson, Sec. Lt. H. M. Whittle, Sec. Lt. D. R. Wood, Sept. 4th; Sec. Lt. W. M. Doyle, Sept. 5th; Lt. L. L. Carter, Lt. J. S. J. Craigen, Sept. 6th; Sec. Lt. H. V. Perrin, Sept. 7th; Lt. G. F. Court, Lt. R. G. Shaw, D.F.C., Sept. 8th; Sec. Lt. S. S. Kirston, Lt. J. L. McAdam, Sept. 9th; Sec. Lt. C. H. A. Farnan, Sec. Lt. A. C. Kennedy, Sec. Lt. J. K. Reid, Sec. Lt. H. R. W. Steele, Sept. 10th; Lt. W. T. Crombie, Sec. Lt. A. R. De Villiers-Van-Os, Sept. 11th; Sec. Lt. T. C. Thomson, Sept. 12th; Sec. Lt. R. J. Moyse, Sept. 14th; Lt. F. S. Fisher, Sec. Lt. J. R. Kellett, Sept. 15th; Sec. Lt. P. E. Thomas, Sept. 16th; Lt. (Hon. Capt.) A. H. Harrison, Lt. C. W. McK. Thompson, Sept. 17th; Sec. Lt. M. Goddard, Sec. Lt. H. Hall, Sec. Lt. C. Langley, Sec. Lt. J. A. Seldon, Sec. Lt. W. F. Simpson, Sept. 18th; Sec. Lt. J. Duncanson, Sec. Lt. F. H. Littman, Sec. Lt. O. Taylor, Lt. C. W. Wridgway, Sept. 19th; Lt. F. W. Griffiths, Sec. Lt. W. H. Isted, Sec. Lt. E. J. Mulholland. Sec. Lt. J. Stephens, Lt. F. H. Stringer, D.S.C., Sec. Lt. A. W. Timson, Lt. E. L. Trower, Sept. 20th; Sec. Lt. R. L. G. Wright, Sept. 21st; Capt. T. C. Angus, D.F.C., Sec. Lt. J. G. Elcombe, Sec. Lt. C. St. C. Guild, Capt. E. M. Morgan, A.F.C., Lt. L. S. Rands, Lt. W. D. B. Taylor, Lt. H. G. Topham, Sec. Lt. G. M. Worthington, Sept. 23rd; Sec. Lt. G. H. Fowles, Sec. Lt. M. H. McErlean, Sec. Lt. G. Parker, Sec. Lt. H. C. Pendle, Sec. Lt. W. B. H. Shaw, Sec. Lt. (Hon. Lt.) W. H. M. Spriuggay, M.C., Lt. T. W. Wilson, Sec. Lt. F. A. Wray, Sept. 24th; Sec. Lt. G. Lyles, Sec. Lt. H. MacMillan, Lt. L. G. Nixon, Sec. Lt. E. Pendlebury, Sec. Lt. H. A. Record, Sec. Lt. C. H. Stocks, Lt. W. E. Thomas, Sec. Lt. T. R. Young, Sept. 25th; Lt. (Hon. Capt.) M. S. G. Bigwood, Sec. Lt. W. J. Hale, Lt. H. E. B. Holden, Lt. V. G. Humphreys, Sec. Lt. J. E. Hunt, Sec. Lt. A. J. Keif, Lt. J. T. Quick, Lt. D. P. Laird, Sec. Lt. H. C. Lee, Sec. Lt. N. Pettitt, Sec. Lt. E. E. Smith, Sec. Lt. C. J. Smith, Sec. Lt. A. B. Taylor, Lt. W. W. Tebbutt, Sec. Lt. S. A. Thomson, Sec. Lt. F. G. Tolmie, Lt. G. Wake, Sec. Lt. L. T. Wilson, Lt. W. A. Wheeler, Lt. H. V. Williams, Sept. 26th; Lt. J. M. B. Barnum, Lt. S. C. W. Lovejoy, Capt. I. P. H. Preston, M.C., Lt. D. M. Rourke, Lt. H. M. Taylor, Sec. Lt. C. L. Wilson. Sept. 27th; Lt. L. E. Best. A.F.C., Lt. W. G. Holden, Lt. W. R. Irwin, D.F.C., Sec. Lt. H. M. Keith, Sec. Lt. J. R. Robbins, Sec. Lt. E. F. Sedgwick, Lt. H. C. Senior, D.F.C., Capt. J. L. A. Sinclair, Lt. C. P. Thornton, Sept. 28th; Sec. Lt. F. Corbin, Capt. C. H. Fitzherbert, D.S.C., Lt. W. S. G. Kidder, Lt. H. D. Layfield, Lt. H. P. Rickard, Lt. A. W. Waddy, Sept. 29th; Lt. S. A. R. Solomon, Oct. 6th; Sec. Lt. A. H. Bell. Sec. Lt. A. W. P. Clarke, Sec. Lt. P. G. Greenwood, Sec. Lt. L. W. Hartley, Sec. Lt. R. Lane, Sec. Lt. H. T. Long, Sec. Lt. B. B. Melvill, Sec. Lt. E. T. Mills, Sec. Lt. T. O. Morgan, Sec. Lt. C. Rayner, Lt. R. C. Van Rype Veld, Sec. Lt. E. B. Ward, Sec. Lt. D. C. H. Wayland, Oct. 6th; Lt. H. J. C. Grev, Lt. H. G. Heather, Sec. Lt. B. J. Hendry, Oct. 10th; Sec. Lt. G. Dismore, Sec. Lt. H. B. Fisk, Lt. J. F. Giemre, Sec. Lt. E. Heimann, Sec. Lt. T. D. Keevy, Sec. Lt. P. A. Liebenburg, Lt. H. C. McClelland, Sec. Lt. H. C. Munro, Sec. Lt. C. R. Rees-Gibbs, Sec. Lt. R. T. Riley, Sec. Lt. T. Rothschild, Sec. Lt. D. M. Ryan, Sec. Lt. W. D. Sendin, Sec. Lt. A. R. Sharwood, Sec. Lt. O. R. Steen, Sec. Lt. F. H. Yeo, Oct. 11th; Sec. Lt. F. D. Huggins, Oct. 13th.

Maj. A. K. Robertson relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Oct. 2nd.

Lt. R. C. Steele relinquishes his commn. on account of ill-health, and is granted rank of Capt., Oct. 7th.

The following Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank :—J. A. Harkin, May 20th (substituted for notification in "Gazette" of Feb. 25th); P. H. Baker (caused through wounds), Oct. 2nd; W. S. Anderson (contracted on active service), R. M. J. Bate (contracted on active service), U. Finch (contracted on active service), C. Gilham (caused by wounds), Oct. 2nd; T. S. Byrn (contracted on active service), J. B. Corcoran (contracted on active service), H. W. Smith (caused by wounds), Oct. 7th; W. Adamson (contracted on active service), W. C. Johnston (caused by wounds), R. G. Lye (caused by wounds), Oct. 8th.

Sec. Lt. (Hon. Lt.) E. G. Pernet relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain the rank of Lt., Oct. 7th.

J. F. Stallard (Lt., D. of Corn. L.I.) resigns his commn., Oct. 15th.

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank :—R. H. B. Greenyer (caused by wounds), Oct. 2nd; G. F. Smith, Oct. 3rd.

Sec. Lt. M. A. Watts is ante-dated in his appointment as Sec. Lt., (A.), June 5th, 1918.

The Christian names of Sec. Lt. Leslie Hagger Kemp are as now described, and not Leslie Kemp, as stated in "Gazette" of Sept. 13th, 1918.

The notification in "Gazette" of Sept. 16th concerning P.F.O. L. H. Kemp is cancelled.

The notification in "Gazette" of Nov. 29th, 1918, concernnig Sec. Lt. R. Boyle is cancelled.

The notification in "Gazette" of April 1st concerning Sec. Lt. R. Lane is cancelled.

The notification in "Gazette" of May 13th concerning Lt. L. Patterson, M.C., is cancelled.

The notification in "Gazette" of July 29th concerning Sec. Lt. G. V. Straker is cancelled. Notification in "Gazette" of July 18th stands.

The notification in "Gazettes" of July 8th and Aug. 22nd concerning Sec. Lt. M. A. Watts is cancelled.

The notification in "Gazette" of Sept. 9th concerning Flying Officer E. V. J. Fenelon is cancelled

The notification in "Gazette" of Sept. 16th concerning Lt. A. E. N. Ashford is cancelled.

ADMINISTRATIVE BRANCH.—Capt. (Hon. Maj.) A. F. Morris is graded for purposes of pay and allowances as Maj. whilst empld. as Maj., July 12th.

Flt. Lt. C. S. McNab to be Flt. Lt., from (S.O.), Sept. 20th.

Flying Officer S. G. K. Rapley relinquishes his grading for pay and allowances as Flt. Lt. on ceasing to be empld. as Flt. Lt., Sept. 13th.

Lt. (Hon. Capt.) H. G. Whyte to be Lt. (Hon. Capt.), from unempld. list, Aug. 9th, with precedence next below Lt. E. King.

Flying Officer J. V. Ould to be Flying Officer, from (A.), Sept. 18th.

The following Flying Officers (S.O.) to be Flying Officers :—C. E. Crowne, J. H. Evans, Sept. 20th.

Sec. Lts. to be Lts. :—T. C. Noble, April 2nd, 1918; F. J. Deane, April 21st; D. D. Carcary, Aug. 7th.

Sec. Lt. R. P. Briscoe is graded for purposes of pay and allowances as Lt. whilst empld. as Lt., May 1st.

Pilot Officer O. V. Lee to be Pilot Officer, from (A. and S.), Sept. 8th.

Pilot Officer H. C. McKinley to be Pilot Officer, from (O.), Sept. 26th.

Sec. Lt. R. R. W. Millward (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt., June 11th, 1918.

The following relinquish their commns. on ceasing to be empld. :—Lt. A. V. Faulks, June 16th; Capt. J. B. Morgan, Aug. 9th; Maj. C. V. Beresford (Maj., Worc. R.), Sept. 1st; Lt. R. R. Money (Lt., E. Yorks R.), Sept. 20th; Capt. F. Tuttie, D.C.M. (Qrmr. and Capt., R. Berks. R.), Sept. 25th.

Sec. Lt. S. D. Harrower (Sec. Lt., Bedfordshire R.), Sept. 27th.

Capt. D. C. L. Speed, O.B.E. (Capt., King's Royal Rifle Corps), Sept. 27th.

The following are transferred to unempld. list :—Sec. Lt. A. H. Black, Feb. 17th; Sec. Lt. J. B. Russell, D.F.C., Feb. 24th; Lt. H. Brooks (substituted for notification in "Gazette" of July 18th), Lt. H. F. Cochran (substituted for notification in "Gazette" of June 20th), May 31st; Lt. (Hon. Capt.) H. G. Whyte, June 4th; Sec. Lt. H. P. Jeppe, June 10th; Lt. C. W. L. Calvert, June 11th; Sec. Lt. F. E. Ross, June 22nd; Sec. Lt. W. A. Keeler, July 12th; Lt. H. R. M. Dodd, July 26th; Sec. Lt. R. Betts, Aug. 27th; Sec. Lt. T. B. Dick, Aug. 31st; Sec. Lt. J. H. L. Dickin, Sec. Lt. R. G. Smith, Sept. 2nd; Sec. Lt. R. A. C. Craddock-Hartopp, Sept. 5th; Sec. Lt. A. G. Chapman, Sept. 8th; Sec. Lt. N. Critchley, Sec. Lt. (Hon. Lt.) T. Mumford, Lt. (Hon. Capt.) F. W. Napper, Sept. 9th; Lt. J. F. V. Rider, Sept. 10th; Lt. E. St. H. Davies, Sept. 12th; Lt. H. F. Hendry, Sept. 13th (substituted for notification in "Gazette" of Sept. 23rd); Sec. Lt. H. H. Price, Sept. 17th; Sec. Lt. (Hon. Lt.) R. D. Thomas, Sept. 18th; Lt. A. E. P. Smith, Sept. 19th; Capt. F. Steel, O.B.E., Sept. 21st; Lt. E. Emley, Sec. Lt. E. J. Jordan, Lt. G. S. Lee, Sec. Lt. C. H. Phillips, Capt. (Hon. Maj.) G. N. F. Powell, Lt. H. C. Vickery, Sec. Lt. W. G. Wheatland, Sept. 23rd; Lt. G. Thomson, Sec. Lt. W. B. Young, Sept. 24th; Lt. H. R. Little, Sept. 25th; Lt. F. S. Fooks, M.C., Oct. 1st; Lt. A. Waterworth, Oct. 2nd; Sec. Lt. (actg. Maj.) A. R. Fulton, M.B.E., Oct. 10th; Lt. W. H. Goodbrand, Oct. 13th.

The following Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank :—W. B. W. Clarke (contracted on active service), H. H. Wade (caused by wounds), Oct. 2nd.

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank :—J. Skinner, Sept. 28th; L. G. Davies, Oct. 3rd; J. W. Rimmer, Oct. 4th (contracted on active service); C. A. Seymour, Oct. 9th.

The notification in the "Gazette" of Oct. 7th concerning Sec. Lt. J. Skinner is cancelled.

The notification in the "Gazette" of Aug. 22nd concerning Lt. (Hon. Capt.) H. G. White is cancelled.

The notification in the "Gazette" of Dec. 24th, 1918, concerning Sec. Lt. R. Boyle is cancelled.

TECHNICAL BRANCH.—Sec. Lt. (actg. Capt.) J. W. Tattersall to be actg. Maj. whilst empld. as Maj., Grade (A.), June 10th.

Capt. (Hon. Maj.) H. R. P. Reynolds is graded for purposes of pay and allowances as Maj. whilst empld. as Maj., Grade (A.), from (Ad.), from Dec. 7th, 1918, to June 5th.

Capt. E. Rivers-Smith, M.B.E., is graded for purposes of pay and allowances as Maj. whilst empld. as Maj., Grade (B.), May 14th.

Flt. Lt. W. E. L. Seward, M.C., relinquishes the grading for purposes of pay and allowances as Sqdn. Ldr. on ceasing to be empld. as Sqdn. Ldr., Grade (A.), Aug. 20th.

To be actg. Capts. whilst empld. as Capts., Grade (A.) :—Lt. S. J. Gardiner, Sec. Lt. P. S. Riach, June 10th.

Lt. L. R. Staddon is graded for purposes of pay and allowances as Capt. whilst empld. as Capt., Grade (A.), April 1st.

Lt. P. A. Wright is graded for purposes of pay and allowances as Capt. whilst empld. as Capt., Grade (B.), from (Ad.), May 14th.

Flying Officer A. W. H. Phillips relinquishes the grading for purposes of pay and allowances as Flt. Lt. on ceasing to be empld. as Flt. Lt., Grade (A.), Sept. 17th.

Flying Officer E. S. Cohen to be Flying Officer, Grade (B.), from Grade (A.), and relinquishes the grading for pay and allowances as Flt. Lt. on ceasing to be empld. as Flt. Lt., Grade (A.), Sept. 8th.

Flying Officer (actg. Flt. Lt.) H. G. Wood relinquishes the actg. rank of Flt. Lt on ceasing to be empld. as Flt. Lt., Grade (B.), Sept. 18th.

Lt. F. H. Isitt to be Lt., Grade (B.), from (Ad.), June 10th.

Lt. E. W. Lawrence is graded for pay and allowances as Lt. whilst empld. as Lt., Grade (B.), Nov. 12th.

(To be continued.)

OCTOBER 29, 1919.

THE AEROPLANE

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ON THE FLYING SERVICES, THE AIRCRAFT INDUSTRY AND GRAFT.

To those who have followed during the war the continual agitation in this paper for better aeroplanes and engines for the Flying Services, the recent attack in the daily Press against the Air Ministry on the score of extravagance must seem very amusing. Or, at any rate, they would be amusing if they were not so irritating.

That excellent journal the "Morning Post" seems to be the leader in these attacks, which apparently have for their object the abolition of the Air Ministry. One is far from being out of sympathy with that object, for, though one is prepared to admit that an Air Ministry may be a useful thing to have about the national house, one cannot convince oneself that it is anything in the nature of a necessity even as a Civil Department, and it is still less a necessity as a Naval or Military Department.

All the work that it could possibly do as a Civil Department could be done as well—it could not be done worse—by a sub-section of the Ministry of Transport, and all its Service work—good as it is—could be done very much better by departments of the Admiralty and War Office. In fact, so far as the Admiralty is concerned, either the Admiralty will be forced in the near future to take over the Naval side of the R.A.F., or else the R.A.F. will have to take over the Navy, for recent events coming right on top of the experience of war have demonstrated that the Navy, as at present existing, is superfluous, and that Lord Fisher's explosive dictum "Sack the lot!" may be applied by the nation to the whole Navy apart from that portion concerned with aircraft.

Charges Ancient and Modern.

Before expatiating further on the superfluity of the Navy, one would like to say a few more words concerning the before-mentioned attacks on the Air Ministry.

Those who have read this paper during the war will recognise all the charges now brought against the Air Ministry as old friends. They are precisely the same as those which were brought up at the Air Inquiry into the maladministration of the R.F.C. in 1916. And they are precisely the same as those into which the Admiralty refused to permit inquiry at the same period. Therefore they are not in fact charges which ought to be brought against the Air Ministry at all. They ought to be brought retrospectively against the Admiralty and War Office.

The only novelty about the charges is that since the Armistice contractors for aircraft supplies have been allowed to continue their output unchecked until Peace was definitely declared. As the Armistice came after the Admiralty and War Office ceased to handle aeroplane supplies, naturally the Air Ministry is the department at which most of these charges are levelled. But those who make the charges find it convenient to forget that the Admiralty continued to build airships and their appurtenances long after most of the aeroplane contracts had been cancelled, and that the final cuts in aeroplane and airship contracts came almost simultaneously.

Also the critics forget conveniently that an Armistice is not a Peace, and that though in time of Peace a Government of politicians who are not statesmen may not prepare for war, during an Armistice it is the duty of the War Departments to prepare for a renewal of war. Consequently it would have been criminal to cancel contracts for new and improved machines until Peace was definitely declared.

The Root Cause.

As to excessive deliveries of obsolete machines which were burned as soon as delivered, that is merely a new phase of the old charges brought by this paper against the administration of the R.F.C. in 1915, when quantities of B.E.2cs were being delivered by firms which ought to have been delivering newer and better types of machines. The difference is that after the Armistice the obsolete machines were burned by our own people on the ground, whereas before the Armistice, or at any rate up to the end of 1917 (when the R.F.C. won the Command of the Air), they were sent over the lines where they were shot down and burned, generally along with their crews, by the enemy.

That was in the days when wild enthusiasts charged the R.F.C. authorities with murdering our aviators—charges which apparently amused the said authorities considerably, judging by their attitude at the Air Inquiry.

These murders raised a little interest in the Press, but the financial effect of the delivery of obsolete machines to be burnt with their crews on the enemy's side of the lines was so much less than that of burning more recently obsolete machines ourselves without their crews that no serious agitation was raised. It was not until politicians in and out of the Services saw an opportunity for self-advancement in the formation of an Air Ministry that the imbecility of forming a separate Service with a separate Ministry was considered. And then all the old charges of 1916, together with their sequels in 1917, were raked up to form the Air Ministry in 1918.

That imbecile Act ought to have ruined the Flying Services completely, and it would certainly have done so but for the splendid work done in 1917 by General Trenchard in building up the moral of the R.F.C. and in 1918 by Generals John and William Salmond in sustaining that moral under almost impossible circumstances.

How the relics of the R.N.A.S. held together is a mystery. They seem to have clung onto the Naval tradition. and to have rallied in little groups round their squadron and wing commanders. Certainly they had no support from their senior Naval officers, who were very much too busy scrambling for good jobs at the House of Bolo to bother about what became of the wretched R.N.A.S. seaplane people. And it was very largely this betrayal of the R.N.A.S. by their Naval officers which gave the Germans the command of the air over the North Sea just when the R.A.F. held absolute command over the war areas on land.

Charges False and True.

Now we have the same old superfluity of obsolete machines raked up again for the destruction of the very Air Ministry which an earlier similar superfluity was used to create. But this time we find a difference in the argument.

Then the superfluity was attributed to lack of co-ordination and co-operation between two rival Services. Now it is said, by the "Morning Post," "The charge is that the Air Board subordinated the requirements of the fighting men to the interests of the contractors; and, further, that the same system was continued and carried to incredible lengths by the Air Ministry."

If that sentence means anything it means that the Supply Department and the Technical Department under both the Air Board and its successor the Air Ministry were bribed, or otherwise influenced, to go on ordering obsolete machines so as to save the contractors the expense or at any rate the loss of profit which would be caused by changing over from an old to a new type of machine.

The S.B.A.C. and Graft.

In any case it is a direct charge of graft against British aircraft constructors, and that being so it is the duty of the Society of British Aircraft Constructors to clear the good name of the British Aircraft Industry by demanding an official inquiry into this charge.

So far as those firms which are known as "designing firms" are concerned, one knows that the charge is grossly false. But there may have been "designing" firms, in another sense, of whom the charge is true.

The "designing firms" are those who have maintained a designing staff and who have produced from time to time new types of machines (or engines), which types have been later reproduced in quantities by firms not strictly in the Aircraft Industry at all, but merely manufacturing firms of one sort or another which were dragged in to build aircraft. These designing firms have in fact been the chief sufferers from the foolishness or knavery, whichever it may have been, of the Supply and Technical Departments.

If there has been graft in order to prolong the output of obsolete machines it has certainly not come from the designing firms, who, if they indulged in graft at all, would do so in order to get their newest and best designs accepted.

Fools or Knaves?

One knows enough about the way in which new designs have been held up by the Air Board and Air Ministry to know that the superfluity of obsolete machines has been caused chiefly by the refusal of the Technical and/or Supply Departments to adopt new types which were offered to them. The people who turned down or delayed the new types were either fools or knaves, and it is the duty of the S.B.A.C. to demand an inquiry to prove which they were.

Were they fools or knaves who continued the B.E.2c and its successors the 2d and 2e in production in 1916 and 1917; and who turned down the Sopwith "one-and-a-half-strutter" in the summer of 1915? It was ordered by the French in December, 1915, and yet only one R.F.C. squadron of it was in action on the Somme in September, 1916.

Were they fools or knaves who turned down the Bristol monoplane in the Summer of 1916 and eventually ordered a few which were used in the Balkans (of all places) in 1918?

Were they fools or knaves who turned down the Martinsyde biplane early in 1917, when it was 20 miles an hour faster than anything in the air, and ordered it in quantities *after the Armistice?*

Were they fools or knaves who turned down the "Bantam" B.A.T. late in 1917, when it was miles an hour faster than the Fokker biplane or triplane and twice as strong and manœuvrable? And how did they justify their statement that they could not stand behind plywood for fuselages, in view of the fact that the Germans used little else, and that no B.A.T. fuselage ever gave trouble.

Were they fools or knaves who turned down the twin-engined Dyott and the twin Fairey fighter, and the twin Avro "Pike," each in its day better than any contemporary twin-engined machines?

Were they fools or knaves who washed out the whole programme for fast fighting seaplanes in 1917 and left the Germans the command of the air over the North Sea in 1918?

Were they fools or knaves who neglected the torpedo-dropping aeroplane, which proved its worth in the Dardanelles in the Spring of 1915, and ordered enough *after the Armistice* to destroy a British Fleet in theory with dummy torpedoes in 1919? And how do they justify the escape of the "Goeben" in 1918?

Were they fools or knaves who continually held up new types or changes of types in the de Havilland machines? Which were they who turned down the D.H.1 and D.H.1a, but ordered F.E.2s by the thousand, though inferior in design and performance? Which were they who stopped progress with the D.H.3 in 1915 and revived almost the identical machine in 1918 when it was called the D.H.10?

One could go on almost for ever with similar examples of obstruction, attributable only to foolishness or knavery, and all tending to produce a superfluity of obsolete types. Yet in every case, so far from this action being in the interests of the contractors, it has been directly against their interests. If there has been any undue influence at work on their side it has been in the direction of inducing the authorities to adopt new types.

One knows cases in which normally honest men have gone about trying hard to discover which official could be induced to give a new design or a new idea a fair practical trial instead of turning it down on purely theoretical grounds. If, therefore, there is any charge of graft against the "designing firms," their failure to induce the officials of the Supply and Technical Departments to adopt the newest and best designs seems to provide the best possible evidence of their failure as grafters.

There is, however, another side to the question, and that is whether big firms engaged on producing parts or complete machines of an obsolete type have by one form of graft or another induced the Supply and/or Technical officials to turn down new and improved designs so that they might be allowed to continue their profiteering career undisturbed by changes of patterns, tools, jigs, and so forth. This side of the question might be worth investigating, and as the great majority of the firms who made aircraft or any part thereof during the war are members of the S.B.A.C., it is that Society's duty in their interest, as well as in the interests of the designing firms, to demand an official inquiry into these charges of graft.

One has heard very curious stories of graft among minor firms and minor officials, but one believes that most of the trouble in the bigger matters, such as turning down good machines and engines, has been due to sheer foolishness, especially to that worst of all kinds of foolishness the high and mighty superiority of the scientific theorist over the practical man who merely makes an aeroplane which flies.

This kind of foolishness, as it afflicted the Royal Aircraft Factory (now known as the Royal Aircraft Establishment), and as it still afflicts the kindred affair, the National Physical Laboratory, was probably responsible for more deaths over the lines than was any form of graft.

And, so far as graft is concerned, one believes that the overweening ambition of a few official scientists (so-called) to have their own theories (and so their own supposed abilities) recognised by some official reward or decoration has been responsible for the turning down of more good and new designs than has any other form of graft. For this is a form of graft in that the official scientist or technical official uses his official position, and his consequent social position, to turn down a rival design or scheme and to push his own interests to his ultimate advantage.

On the whole, therefore, one believes that the Aircraft Industry proper has been fairly free from graft. But none the less the charge made in the "Morning Post" is so direct that the S.B.A.C. cannot afford to ignore it. The fact that the charge is made as an attack on the Air Ministry and not on the Aircraft Industry matters but little. The fact that "any stick is good enough to beat a dog with" does not prevent the stick from being made dirty in the process, and it is up to the S.B.A.C. to clean the dirt off the Aircraft Industry in this matter.

Lack of space prevents one to-day from dealing with the effect of the attack on the Air Ministry itself, for after all that is a minor matter, in that any change which is to take place is not likely to happen for a few weeks, whereas the charge against the honesty of the Aircraft Industry is one which affects its international credit immediately. Therefore one proposes to postpone till next week the argument concerning the superfluity of the Air Ministry, or, alternately, of the Royal Navy.—C. G. G.

THE BRITISH AERO SHOW OF 1920.

As the following notice indicates, the S.B.A.C. has decided to hold an Aero Show at Olympia, Hammersmith Road, in July of 1920. Apparently the idea in fixing this remote date is that the show shall not be held until everybody in the Aircraft Industry has had an opportunity of producing an aeroplane which is not merely a modified war machine. There does not seem to be any grounds for imagining that the S.B.A.C. is postponing the holding of the show for the purpose of giving every other nation an opportunity of designing and exhibiting new machines and thus securing any possible orders.

One suggests that as it has been decided to hold the show at such a curious date as the one chosen it might have been well to hold it not in London itself but at some more or less accessible aerodrome where it would be possible for exhibitors to have machines flying as well as those which appear on the stands. This notion has possibly something to commend it, on the assumption that the S.B.A.C. does not desire a mere common mob to attend the exhibition, but is solely concerned with attracting millionaires and bankrupts, who appear to be in these days the only people who have any money to spend. One assumes, of course, that it is not the mere vulgar object of the S.B.A.C. to make the show pay for itself as a gate-money concern, as is the custom in the motor trade, for if machines are to be shown adequately at Olympia there will be no room for the public.

If it had been the intention to make the show pay, it would have been obviously more sensible to have held it somewhere in the immediate vicinity of London, either in marquees in Hyde Park, or at a repaired White City, or at Earls Court, or possibly even at the Crystal Palace, which is now considerably more accessible even than the aerodromes at Hendon or Cricklewood. In the event of any visitor to the exhibition having any desire to fly in a duplicate of any of the machines exhibited, it would have been quite possible to convey such a curious person to an aerodrome in an automobile.

It is possible, however, that the special providence which looks after the interests of England may turn the apparent eccentricity of the S.B.A.C. to good purpose in that by next July either the people who have bought the immature commercial machines exhibited at earlier exhibitions abroad may have seen the error of their ways and may be more disposed to buy British machines, or perhaps, by an even kindlier act of fate, there may be another war by July, in which case of course aircraft will be in very great demand.

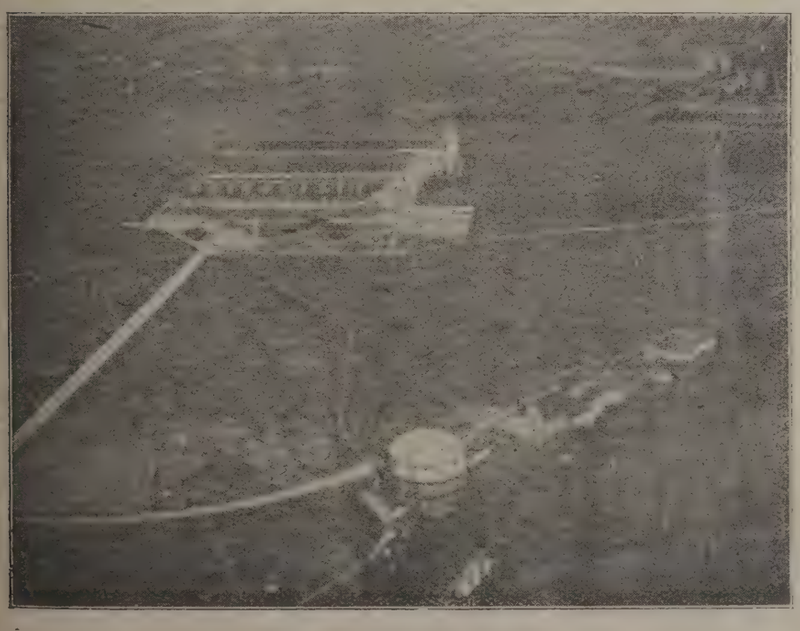
The S.B.A.C. communiqué reads as follows:—

Arrangements have now been made to hold an important International Aero Exhibition at Olympia in July next. It promises to be the largest and most comprehensive display of aircraft, aircraft engines and their components that has ever been brought together, and should be of particular interest, as it will be possible to show something of the post-war developments in Aeronautics. Every type of machine for every variety of purpose will be represented, and, in conjunction with the indoor Exhibition, it is hoped to be able to make provision for trials and demonstration flights at an aerodrome within easy distance.

Before the war a successful series of aero exhibitions was held by the Society of Motor Manufacturers and Traders at Olympia, the first being held so long ago as 1909. Owing to the growth of the British Aircraft Industry during the war, the aircraft firms have formed a separate body, the Society of British Aircraft Constructors, which comprises in its membership practically every British manufacturer of aircraft, aircraft engines and their component parts, accessories and materials, and this body has entered into an agreement with the Society of Motor Manufacturers and Traders under which the pre-war aero exhibitions will be continued under the joint management of the two societies.

The arrangements provide for the setting up of a joint committee to promote aero exhibitions in the United Kingdom and the use of the exhibition organisation maintained by the Society of Motor Manufacturers for the carrying out of its annual motor and other exhibitions.

The Exhibition offices are at 83, Pall Mall, S.W.1.



The first aerial photograph published since the war of the great Zeppelin Factory at Friedrichshafen, on Lake Constance. The enormous size of the "Airship Halls" may be judged by the size of the ordinary workshops and houses in the vicinity. With usual German enterprise, these works, which turned out the majority of Germany's rigid airships during the war, have been converted to peaceful pursuits, and the first of their peace products, the commercial airship, "Bodensee," built for the Hamburg-Amerika Steamship Company, made her first appearance a few weeks ago.

JOHN PORTE, 1884-1919.

British Aviation has suffered a great loss by the death of Colonel John Cyril Porte, who died suddenly on Wednesday, October 22nd. As was well known, Colonel Porte had been suffering for years from tuberculosis, and his death was due to one of those attacks of hæmorrhage which occurred at intervals.

The history of John Porte is a tragedy relieved by the example of indomitable will and loyalty which he has set to all those who serve the King. Few have suffered more and none have done better work in spite of physical and mental suffering.

A Pioneer of Aviation.

John Porte, like so many of those who have done much to develop Naval aeronautics, was one of the early submarine officers who served under Captain Murray Sueter, the pioneer of submarines, airships, and aeroplanes in the Navy. When stationed with his submarine at Portsmouth, Lieut. Porte, as he then was, constructed, in partnership with a brother officer, a quaint glider with which they experimented on Portsdown Hill in 1909. Thus he is entitled to a place among the pioneers of British aviation.

This glider was peculiar in that it was built for a crew of two, one of whom controlled the vertical steering, or elevators, while the other controlled the lateral path with rudder and wing-warping. The machine was launched from a launching track, more or less in the manner of the Wright aeroplanes, and though it met with disaster early in its career it was a distinctly interesting and intelligent experiment.



THE LATE COLONEL J. C. PORTE, C.M.G., R.A.F.

Shortly after engaging in this work John Porte was invalided out of the Navy with tuberculosis, and left in the Service a high reputation as a capable officer, an able technician, and a skilful navigator. The old hands in the Submarine Service still tell stories of his wonderful work with the primitive A-class boats, especially concerning an extraordinary voyage which he made in a thick fog from the Vickers works at Barrow to Plymouth, rounding the points of the treacherous Welsh and Cornish coasts without sighting land or sun, and navigating entirely by dead-reckoning and his knowledge of tides and currents. It is said that for three days and nights he never left the deck of his little craft.

There is no doubt that the hardships which he endured while on such work as this were the cause of his contracting the disease from which he died. But His Majesty's Navy is not accustomed to take notice of such things, which are all in the day's work, so John Porte was simply invalided out.

A Commercial Venture.

His experiences in the Navy, and his own temperament, a curious mixture of rashness and cool calculating foresight, naturally fitted him for the work of a pioneer aviator. Also it seemed that flying would at any rate alleviate his disease, by keeping him constantly in the open air. Consequently John Porte devoted himself to aviation.

After learning to fly at the Deperdussin School at Bethény early in 1911, he formed the British Deperdussin Company, in which Admiral Fremantle was the Chairman, Mr. Lawrence Santoni (now of the Savoia Company) was a co-director, and Mr. Frederick Koolhoven was chief designer. And on a Deperdussin he was one of the starters in the Circuit of Britain in the Summer of 1911. The first British-built Deperdussin monoplane flown by John Porte put up a very fine performance in the Military Aeroplane Trials of 1912, and would certainly have come near winning the competition but for a defective engine.

Afterwards, when a better engine was fitted, he flew the same machine in various competitions in 1913 at Hendon and proved it to be one of the best aeroplanes of the day. It is of interest to note that this same machine, after lying in store during 1914, was brought out again at the outbreak of war and was taken over by the R.N.A.S.

John Porte flew the machine again, and on one occasion at least used it at night to repel a reported Zeppelin raid. Later it was used as an advanced school machine. Later again it was used by Commander R. M. Groves (now Air Commodore) as a hack, and he flew it all over England and a great deal of France. And finally it was irreparably crashed by another officer somewhere in 1916. One mentions this merely by way of proving John Porte's ability to know a good machine when he saw it.

The Beginning of the Big Boats.

Despite the ability of his firm to make good aeroplanes, they failed to find favour with the Government's "experts," so in 1913 the British Deperdussin Company failed to meet its creditors and was put into liquidation. Therefore as there was no opening for his ability in England John Porte went to America, where he joined Mr. Glenn Curtiss in the task of designing and constructing, to the order of Mr. John Wanamaker the millionaire store-keeper, a vast flying-boat on which John Porte was to attempt to fly the Atlantic.

Mr. Curtiss is the first man who ever flew off water and the first who made a flying-boat. It was natural, therefore, that his experience in this direction combined with John Porte's knowledge of the sea and of aviation in general should produce something novel and good. The original Wanamaker-Curtiss was a twin-engined boat, and flew satisfactorily with light loads, but it failed to lift anything approaching a trans-Atlantic load

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of fuel. John Porte proceeded to alter the hull design, so as to make it leave the water more easily, and he installed a third engine.

Though the resulting machine still failed to fulfil trans-Atlantic requirements it was nevertheless a great advance on anything achieved up to that time, and it was in fact the progenitor not only of the various multiple-engined Felixstowe boats, culminating with the "Felixstowe Fury," but also of the United States Navy's "N.C." class of flying-boat, one of which was the first craft to cross the Atlantic by air. Thus John Porte can claim not only to have developed the big flying-boats of which we heard so much during the war, but he can claim, along with his friend Glenn Curtiss, to have originated the type. This fact is proved by the agreement made at the time between Glenn Curtiss and John Porte that the latter was to share in any profits which might be derived from the sale of flying-boats of this type.

Back to the Navy.

Some time before the Wanamaker-Curtiss boat had passed the experimentation stage, the war broke out. John Porte, as an invalid, cast by the Navy as of no further use, was fully entitled to remain in the United States and sell aircraft to this country, or to return to England and become a war profiteer. Such action was not in accord with John Porte's nature.

Without staying to make any arrangements about his personal affairs, without even packing an adequate supply of luggage, he caught the first available boat to England, and immediately on arriving reported for duty to his old chief, Captain Murray Sueter, then Director of the Air Department at the Admiralty. Though Their Lordships of the Admiralty may not be willing in time of peace to maintain a man who is slowly dying of disease contracted while doing the Navy's work, they are ever willing to accept his help in time of trouble, so John Porte was reinstated in the Navy as a Lieutenant-Commander—which would have been his substantive rank had he not been invalided—and was appointed to command as Squadron-Commander the newly formed Naval Air Station at Hendon, and shortly afterwards was promoted Wing-Commander R.N.A.S.

At Hendon his work was to train young civilians to become aviators and to walk in the ways of the Navy. The subsequent careers of those who were trained by him during the early months of the war are the best evidence of his ability as an officer. One need mention no names, but if one were to give a list of the Wing-Commanders and Squadron-Commanders who have done the best work in the R.N.A.S. and Naval section of the R.A.F. it would be found to include an unduly high proportion of John Porte's pupils from Hendon. And it is the distinguishing mark of those who were trained by him that they have maintained throughout their Service careers the highest tradition of the Navy.

During his period of duty at Hendon he took part in the biggest air raid which had taken place up till then, namely that on Bruges, Zeebrugge, and Ostende in February, 1915. As he had to leave his command temporarily to join the raiders one assumes that he did so by way of a change from hard work at home.

The Big Boat Development.

After some months of excellent work at Hendon John Porte was transferred to Felixstowe to take charge of the experimental work. Here he developed the various types of big flying-boats, beginning with the twin-engined "America" type, and working up through experiments with three-engined machines, to the great five-engined "Felixstowe Fury."

Despite his steadily weakening physique he worked like a slave at his designing and constructional work, and invariably flew the boats himself whenever any radical alteration was made in their design or power-plant. And so by a rapid process of evolution the standard-type "F" boats were produced.

Space is lacking in which to record the work done by these boats, which deserve a history of their own. One can only say that they were of the highest value as anti-submarine patrols, and that such was their reliability and radius of action that the boats from the war stations at Felixstowe and Yarmouth regularly patrolled the Dutch and German Coast right into the Helgoland Bight. Others of the type patrolled the Mediterranean from Malta to Taranto, and thence to Greece, Crete, and Egypt. Also the designs of the boats were sent to America and were adopted by the U.S. Navy for their standard type patrol-boats.

The Prosecution.

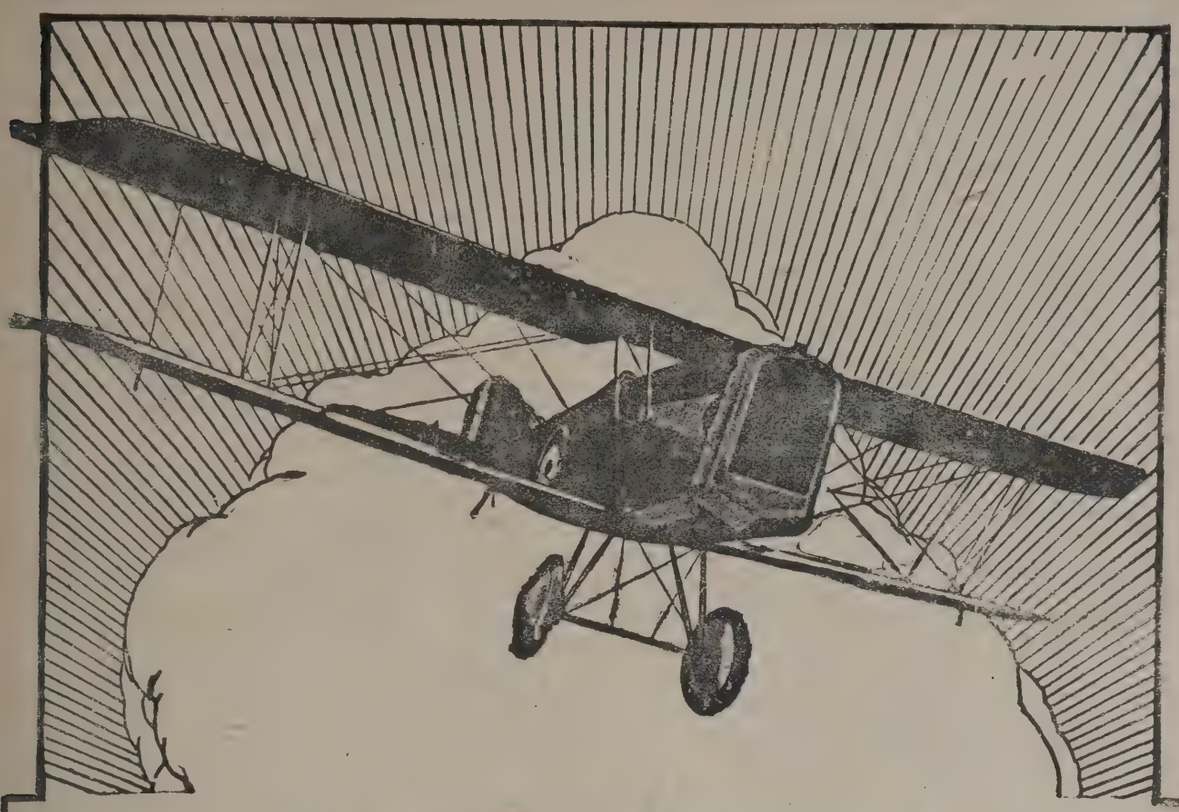
It was while he commanded the experimental station at Felixstowe that the great tragedy of John Porte's life came upon him. He was prosecuted by the Government which he had served so well for receiving illegal commissions on war material. The case was fully reported in this paper and was far too long to recapitulate here, but, to put it as briefly as possible, he was charged with taking commissions from the Curtiss Company on aircraft supplied to the R.N.A.S.

It will be remembered that before the war he had an agreement with Mr. Glenn Curtiss that he should share in the profits on the boats which they had jointly designed, and it was this share which the Law Officers of the Crown chose to regard as illegal. John Porte's chief, Commodore Sueter, gave evidence that so far from having influenced the purchase of Curtiss boats John Porte had in fact advised that the R.N.A.S. should have its flying-boats built in England instead of buying them in America. And it was plainly shown that the money paid by the Curtiss Company to John Porte's legal representative (who was also prosecuted) was due on this pre-war agreement, made while the Navy had no use for him.

The Amazing Sentence.

John Porte, on whom the strain of the charge told heavily, producing attacks of hæmorrhage which at one time in the case nearly caused his death, was far too sick a man to fight to a finish, and his legal representative was too old and also too ill to fight, so they pleaded guilty—by arrangement. The sentence was surely one of the most extraordinary in legal history. John Porte was allowed to go free on condition that he returned to the Treasury some thousands of pounds which had been placed to his bank account, but he was allowed to retain £10,000 which had been settled on his wife. His legal representative was fined a sum exactly equivalent to that which he had received from the Curtiss Company on account of the commission due to John Porte under the pre-war agreement.

How the legal mind arrived at such an agreement is a pure mystery. Assuming that John Porte was guilty—as the Crown claimed—the sentence seems to the layman the exact equivalent of allowing a burglar to go free on condition that he returns the majority of his booty. Assuming that John Porte was innocent—as all his friends believe, and as common sense would seem to indicate—then obviously he should have been allowed to retain the commission which was due to him. And in that case the Nation has appropriated some tens of thousands of pounds which by right belonged to John Porte. Either John Porte should have "done time" or he should have died a rich man. There cannot in justice be any halfway course, whatever there may be in law.



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Among those who know something of what was going on behind the scenes in the R.N.A.S. it is generally believed that the Law Officers of the Crown were induced to bring the case on insufficient initial evidence, and that when what lay behind it was discovered they were willing to compromise. But in order to save the face of Authority the sick man and his aged friend were made to suffer. And the belief among those who know, as aforementioned, is that the charge was raised for the satisfaction of a private enmity, not in reality against John Porte, but in the hope that a higher officer might be dragged into the case and so be disgraced.

The Service View.

Thus do the innocent suffer for their loyalty. How much John Porte's superior officers thought of the verdict may be gathered from the fact that immediately he was released from arrest—as a man who had pleaded guilty to a grave charge, equivalent to embezzling the Nation's money, and had been compelled to disgorge his ill-gotten gains—he was not only reinstated in his command of the experimental station at Felixstowe, but was given command of the war station as well. Shortly afterwards he was made a Companion of the Order of St. Michael and St. George, and was given a step in rank to full Colonel R.A.F., which was the equivalent rank of a Post-Captain R.N.

One could perhaps hardly find a better example of the difference between Justice as understood by the King's Services and Law as administered by civilian officials.

After-War Schemes.

John Porte remained in command at Felixstowe till after the end of the war. Some months ago he resigned from the R.A.F. and devoted himself to the development of certain very big schemes for the construction and operation of flying-boats.

Everything seemed to point to a great success which would recompense him in some measure for his treatment by the Government. He had collected round him a staff of flying-boat specialists whose value he had proved in the Service. He had made arrangements for production at one of the best works in the country. He had secured adequate financial support. And just when all seemed plain sailing he had another attack and died.

His death deprives British aviation of one of its most far-sighted leaders. Only two or three days before his death he did one the honour of unfolding some of his schemes, and if they are now to be forsaken it will be the worse for the future of flying. It is to be hoped that those with whom he was working, and who have his plans in hand, will be enabled to carry them through, for the future good of this country and as a memorial to the great man who originated them.

Ave Atque Vale.

In his own sphere of activity John Porte was a great man. Like so many other brilliant men who have served the King he was the son of an Irish parson, having been born at Bandon, County Cork, in 1884, when his father was vicar of Bandon. He had all the Irish quickness of wit, and that practical and disillusioned mind which is so essentially Irish.

As an officer and a leader of men he showed the highest qualities. Though he could be sufficiently severe when occasion demanded, he had the Heaven-sent quality of attracting and holding the affection of those who served under him. One has yet to find a single officer who was trained by John Porte who does not look on his period of training as one of the happiest and most profitable times in his life. And one knows that all those who served at Felixstowe when he was in command have given to him unqualified devotion.

Of John Porte's own loyalty one has already spoken, but one may now make known that after the prosecution had been launched against him, and while he was in the eyes of our law-givers a putative criminal, ill as he was he took out one of his big boats over the German Ocean and destroyed a German submarine, so that whatever might betide him in the clutches of the law he would have the satisfaction of knowing that his last act as a free man had been against the King's enemies.

Throughout the war John Porte fought death at home so that he might live to fight the King's enemies abroad. He has died after having seen that victory for which he worked so hard, and on the eve of a new fight for the Command of the Air in time of Peace. One can only hope that his unconquerable will and spirit may inspire those on whom deseends the duty of carrying on his work.

To his widow and to his father all who knew and admired John Porte will offer their respectful sympathy in the great loss which so many of us share with them.

C. G. G.



BRITISH ENTERPRISE ABROAD.—An Avro Biplane, piloted by Mr. Eric Bradley, flying at Lausanne. It is understood that this is the first British machine which has flown in Switzerland since the war.

The Success of the R.34.

Extract from General Maitland's Log:

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ILLUSTRATED ON THE LEFT IS THE NIEUPORT NIGHTHAWK FIGHTING MACHINE. ON THE RIGHT IS THE SPECIAL CIVILIAN 2-SEATER MACHINE.

NAVAL & MILITARY AERONAUTICS

[The "Official Gazette" notices will be found on page 1552.]

GREAT BRITAIN.
FROM THE COURT CIRCULAR.

ST. JAMES'S PALACE, Oct. 22nd.

By command of the King, Lieut.-Col. Prince Arthur of Connaught held an Investiture in the Throne Room, St. James's Palace, at 11.30 o'clock this morning on His Majesty's behalf.

The following were invested with the Insignia of the respective Divisions of the Orders into which they have been admitted:

THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE.—Commander.—Military Division.—Wing Comdr. John Halahan, R.A.F. (also received the Air Force Cross).

THE DISTINGUISHED SERVICE ORDER.—Companions.—Lt.-Col. Alexander Adams, R.E., attd. R.A.F. (also received the Insignia of an Officer of the Most Excellent Order of the British Empire, Military Division); Maj. David Stodart, R.A.F. (also received the Distinguished Flying Cross).

THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE.—Member.—Military Division.—Capt. Archibald Smart, R.A.F.

His Royal Highness then conferred decorations as follows:—

THE DISTINGUISHED SERVICE CROSS.—Lt. Edward Cooper, R.A.F.

THE DISTINGUISHED FLYING CROSS AND THE AIR FORCE CROSS.—Maj. Lawrence Wackett, R.A.F.

THE DISTINGUISHED FLYING CROSS.—Capt. Edmund Hardman, R.A.F., and Flt. Lt. Frederick Lord, R.A.F.

THE AIR FORCE CROSS.—Sqdn. Ldr. Alan Duguid, R.A.F.

NAVAL.

ADMIRALTY APPOINTMENTS.

The following appointments have been made:—

OCT. 25TH.—Surgn. Lt. (Temp.).—E. R. Peirce, to "Argus" (Oct. 24th).

OCT. 27th.—Payr. Mid.—P. J. A. Moore, to "Argus" (Oct. 25th).

OPERATIONS IN RUSSIA

It was reported on Oct. 22nd that British warships and aeroplanes were persistently bombarding Krasnaya Gorka.

NAVAL REORGANISATION

With regard to the reorganisation of Royal Air Force units operating with the Navy, the following modifications are being made in the home organisation.

All Air Force units working with the Navy, including airships under naval control, will in future be centralised under the command of an Air Force officer, with the title of Air Officer Commanding the Coastal Area (A.O.C.A.), whose offices will be at 4, Thurloe Place, Kensington.

The first occupant of this new post will be Air Commodore Arthur V. Vyvyan, C.B., D.S.O., who for the past six months has been in command of R.A.F. units in the Mediterranean.

The duties of this officer will include the command of all air units in the United Kingdom working with the Navy, with the exception of personnel embarked in ships of His Majesty's Fleet; as adviser to the Lords of the Admiralty in the first instance on all questions appertaining to Naval aerial policy (the Chief of the Air Staff acting as Chief Adviser); and he will also act as adviser to the Naval Commanders-in-Chief at the various home stations. He will be directly responsible to the Air Ministry for the conduct of training, but will keep in close touch with the Admiralty to ensure that the views of the Lords of the Admiralty receive at all times adequate consideration, and he will also be responsible to the Air Ministry on all questions of supply and maintenance of air units working with the Navy in home waters.

The coastal area will be organised into the following administrative groups.

Operational units in home Naval commands, 20th Group, and 10th Group. So far as concerns operational units in the several home Naval commands, these will continue, as heretofore, to work under the orders of the respective Naval Commanders-in-Chief (and thus under the Admiralty) for all operational purposes.

As regards other purposes, they will be under the Air Officer commanding the coastal area. Each Commander-in-Chief will have the senior combatant Royal Air Force officer in his command as his local adviser, but on more important questions of policy he will refer to the Air Officer Commanding the Coastal Area.

The 20th Group will consist of the aircraft embarked on His Majesty's ships and their necessary shore bases and establishments; the organisation of the latter will be based closely upon existing practice. The group commander will have under his command certain bases for supplying the Fleet.

The 10th Group will consist of the Royal Air Force establishments maintained for the training of the Royal Air Force and Naval personnel required by Royal Air Force units or operating with the Navy at home and abroad.

"MEMORIES."

The following passages are taken from the extracts from "Memories" by Admiral of the Fleet Lord Fisher, which has recently been published:—

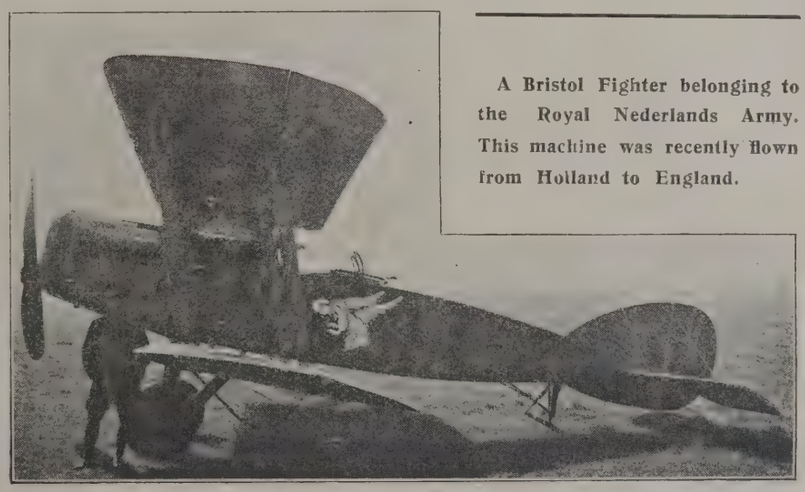
Somewhere about January 15th, 1915, I submitted my resignation as First Sea Lord to Mr. Churchill because of the supineness manifested by the High Authorities as regards aircraft; and I then prophesied the raids over London in particular, and all over England, that by and by caused several millions sterling of damage and an infinite fright.

I refer to my resignation on the aircraft question with some fear and trembling of denials; however, I have a copy of my letter, so it's all right. I withdrew my resignation at the request of Authority, because Authority said that the War Office and not the Admiralty were responsible and would be held responsible. The aircraft belonged to the War Office; why on earth couldn't I mind my own business? I didn't want the Admiralty Building and our wireless on the roof of it to be bombed; so it *was* my business (the War Office was as safe as a church; the Germans would never bomb that establishment!) . . . .

Recently I fortuned to meet Mr. Holt Thomas, and he brought to my recollection what was quite a famous meeting at the Admiralty. Soon after I became First Sea Lord on Oct. 31st, 1914, I had called together at the Admiralty a great company of all interested in the air; for at that moment I had fully satisfied myself that small airships with a speed of fifty miles an hour would be of inestimable value against submarines and also for scouting purposes near the coast. *So they proved.*

Mr. Holt Thomas was a valued witness before the Royal Commission on oil and oil engines, of which I was chairman (a sad business for me financially; I only possessed a few hundred pounds and I put it into oil—I had to sell them out, of course, on becoming Chairman of the Oil Commission—and what I put these few hundreds into caused a disappearance of most of these hundreds, and when I emerged from the Royal Commission the oil shares had more than quintupled in value and gone up to twenty times what they were when I first put in).

Through Mr. Holt Thomas we obtained the very important evidence of the French inventor of the Gnôme engine—that wonderful engine that really made aeroplanes what they now are. His evidence was of peculiar value; and so also



A Bristol Fighter belonging to the Royal Nederlands Army. This machine was recently flown from Holland to England.

was that of Mr. Holt Thomas's experience; and the result of the Admiralty meeting on aircraft was that we obtained from Mr. Holt Thomas an airship in a few weeks, when the experience hitherto had been that it took years; and a great number of this type of aircraft were used with immense advantage in the war. I remember so well that the very least time that could be promised with every effort and unstinted money was three months (but Mr. Holt Thomas gave a shorter time).

In three *weeks* an airship was flying over the Admiralty at 50 miles an hour ("there's nothing you can't have if you want it enough"), and now we've reached the epoch—prodigious in its advent—when positively the air commands and dominates both land and sea; and we shall witness quite shortly a combination in one structure of the aeroplane, the airship, the parachute, the common balloon, and an aerial torpedo, which will both astound people by its simplicity and by its extraordinary possibilities, both in war and commerce (the torpedo will become cargo in commerce). The aeroplane has now to keep moving to live—but why should it? The aerial gyroscopic locomotive torpedo suspended by a parachute has a tremendous significance. . . . .

The following reports and letter will illustrate this history of my efforts in this direction :—

Lord Fisher returned to the Admiralty on Oct. 30th, 1914.

38 S.S. airships were at once ordered—single-engine type. Six improved type.

Before Lord Fisher left the Admiralty a design of a double-engine type was got out, and subsequently another 32 airships were ordered.

Circular letter issued by Lord Fisher in 1914 when First Sea Lord :—

Lord Fisher desires to express to all concerned his high appreciation of the service rendered by those who carried out the recent daring raid on Lake Constance.

He considers that the flight mentioned, made over 250 miles of enemy country of the worst description, is a fine feat of endurance, courage, and skill, and reflects great credit on all who took part in the raid, and through them on the Air Service to which they belong.

The following *précis* of correspondence is inserted because contributory to Lord Fisher's resignation. He had previously written to Mr. Churchill resigning on the ground of the disregard of his warnings respecting the aircraft menace :—

An official secret German dispatch, obtained from a German source, dated Dec. 26th, 1914 :—

The General Staff of the German Army are sending aircraft to attack French fortified places. Full use to be made of favourable weather conditions for attack of naval Zeppelins against the East Coast of England with the exception of London. The attack on London will follow later combined with the German Army airships.

Précis of History of Rigid Airships of Zeppelin Type :—

Lord Fisher, when First Sea Lord, in December, 1908, instructed Admiral Bacon to press for the construction of rigid airships for naval purposes at the meetings of a Sub-Committee of the Committee of Imperial Defence, which held its first meeting in December, 1908, after many meetings at which Admiral Bacon presented the naval point of view with much lucidity. The Committee recommended on Jan. 28th, 1909, the following :—

(*a*) The Committee are of opinion that the dangers to which we might be exposed by developments in aerial navigation cannot be definitely ascertained until we ourselves possess airships.

(*b*) *There are good grounds for assuming that airships will prove of great value to the Navy for scouting and possibly for destructive purposes.* From a military point of view they are also important.

(*c*) A sum of £35,000 should be included in the Naval Estimates for the purpose of building an airship of a rigid type. The sum alluded to should include the cost of all preliminary and incidental expenses.

(*d*) A sum of £10,000 should be included in Army Estimates for continuing experiments with navigable balloons of a non-rigid type, and for the purchase of complete non-rigid airships and their component parts.

Jan. 28th, 1909.

Approved by Committee of Imperial Defence,
Feb. 25th, 1909.

And nothing more was done till I came back to the Admiralty on October 30th, 1914!

Squadron Dinners.

Nov. 1st.—208 Squadron, R.A.F. (No. 8 Naval Squadron). Applications Mr. F. Hammond, 10, Ashbourne Grove, E. Dulwich, S.E. For officers and men together. Price of dinner without drinks, 7s. 6d.

Nov. 8th.—Isle of Grain Air Station. Café Royale Restaurant, Regent Street. Applications Capt. L. A. T. Pritchard, Wadham College, Oxford, before Oct. 29th. Price of dinner without drinks, 15s.

AIR FORCE.

Service Dress Uniform for Officers of the Royal Air Force.

The Air Ministry announced on Oct. 21st that a new pattern Service uniform for officers of the Royal Air Force has been approved by His Majesty the King.

The change of uniform has been decided upon because it was found that the colour of the lighter shade was not sufficiently durable in wear and was liable to fade. Apart from the colour, however, the only variations from the previous pattern are as noted below :

(1) Substitution of black and blue braid for distinguishing ranks on the sleeve, instead of the present gold braid.
(2) Drab pilots' or observers' badges instead of gold.
(3) Abolition of gold embroidery round peak of cap. The peak of the cap will now be of the same material as the crown of the cap.

Officers will not be required to purchase the new uniform until they need to replace, owing to wear, the blue or khaki uniform now in use, but have been informed that no more of the old pattern uniform should be purchased.

Jackets, trousers, and caps will be made of the barathea, though there would be no objection to whipcord of the usual weights being utilised for this purpose if manufacturers can supply such to the correct shade.

Breeches will be made of cavalry twill.

For the present the existing pattern blue greatcoat may be worn, but steps are being taken to provide a suitable cloth of the new shade.

The remarks relating to the greatcoat also apply to the raincoat.

Patterns of the complete garments and of materials used (cloth, braid, buttons and buckle) can be seen on application to Room 177, Air Ministry, Kingsway, London, W.C.2. The buttons and buckle are the same as on the old pattern blue uniform. Patterns have also been sent to the Chambers of Commerce of the following towns :—

Bradford, Leeds, Huddersfield, Halifax, Galashields, Glasgow, Manchester, London, Trowbridge, and Bristol.

The Sale of an Airship.

Short Bros., Ltd., of Bedford, are at present constructing R.38, which is to be sold at cost price to the United States Navy. It is stated that the price will be £500,000.

According to information received from an official source the airship will be the largest in the world. The following statistics are given :—Capacity 2,720,000 cub. ft. (one-third as large again as the R.34). Endurance at cruising speed 45 m.p.h.—nine days. Length 695 ft. Girth 87 ft. 6 in. Engines—four 350 h.p. Sunbeam "Cossack" and two 275 h.p. Sunbeam "Maori." Gross lift, 82 tons. Useful lift, 50 tons. Maximum speed, 70 m.p.h.

The Royal Air Force Rugby Union Football Club.

On Saturday, Oct. 25th, the R.A.F. Rugby XV made their first appearance against the United Services at Portsmouth, and were beaten after a good game. The score, 27 points to 3, gives no indication of the game.

Fixtures (1919-1920) Season.

Nov. 1st.—R.A.F. v. O.M.T. (Old Deer Park, Richmond.)
Nov. 8th.—R.A.F. v. Northampton. (Northampton.)
Nov. 26th.—R.A.F. v. U.S. (Richmond Athletic Ground.)
Dec. 13th.—R.A.F. v. Swansea. (Swansea.)
Dec. 26th.—R.A.F. v. Bradford. (Bradford.)
Dec. 27th.—R.A.F. v. Leicester. (Leicester.)
Jan. 10th.—R.A.F. v. Northampton. (Northampton.)
Jan. 31st.—R.A.F. v. The London Welsh. (Herne Hill.)
Feb. 7th.—R.A.F. v. Navy. (Not settled yet.)
March 6th.—R.A.F. v. Army. (Queen's Club.)
March 27th.—R.A.F. v. Blackheath. (Blackheath.)
April 2nd.—R.A.F. v. Neath. (Neath.)
April 3rd.—R.A.F. v. Llanelly. (Llanelly.)
April 5th.—R.A.F. v. Ebbw Vale. (Ebbw Vale.)

FRANCE.

A Saint Raphael-Kenifra Flight.

An escadrille of six aeroplanes, under the command of Lieut. Mercourt, will leave Saint Raphael for Kenifra, Morocco, towards the end of October. During the oversea part of the journey the escadrille will be followed by the patrol vessel, "Coccinelle." Landings will be made *en route* at Valence, Tarragona, Santapola, Alleria, Malaga, and Rabat.

A French Air Attaché in China.

The French Government has appointed a French air attaché at the French Embassy in Pekin. The French appreciate the high importance of aeronautical development in China. The land is vast, the communications almost primeval. The stores of unexploited wealth in the country are enormous and the first Western nation to give due attention to Chinese commerce will acquire wealth with ease.

London-Paris
Air Express

Summary of First Nine Weeks' Flying.

August 25th, 1919, to October 25th, 1919.

Flights Scheduled	139
Flights accomplished	135
Prevented by weather	1
Interrupted by weather	1
Interrupted by mechanical defects	2
Number of Miles flown	34,000
Average Speed (M.P.H.)	106

The following is an official summary of the weather flown through during these nine weeks.

Days favourable for flying	17
„ unfavourable for flying	26
„ noted officially as "unfit" for flying	11

LONDON:
AIRCRAFT TRANSPORT & TRAVEL, LTD.,
25-27, Old Queen Street, S.W.1.

Full particulars regarding rates and freights can be obtained from Aircraft Transport and Travel, Ltd., 25-27, Old Queen Street S.W.1, or from the American Express Co., Queen Street and Haymarket; Thos. Cook & Son, Ludgate Circus, E.C., and 38-39, Piccadilly, W.; General Transport, Ltd., 52, Crutched Friars; J. Jackson & Sons, 7-8, Charing Cross, and King William Street, E.C.; Henry Johnson & Sons, 18, Byward Street, and Beak Street, W.; Lepaerial Travel, Piccadilly Circus (Criterion Corner); Carter Paterson & Co., 6, Maddox Street, W., and 3, Cannon Street, E.C.; and Hernu, Peron & Co., 98-100, Queen Victoria Street, E.C.

PARIS:
COMPAGNIE GÉNÉRALE TRANSAERIENNE,
118, Champs Elysées.

THE FRENCH MISSION IN SWITZERLAND.

The French military aeronautical mission accredited to the Swiss Government has returned to France, it duties having been completed. Apparently all questions have been amicably settled.

AVIATION IN MOROCCO.

There are at present about 60 military aeroplanes in Morocco and there will be about 200 in the immediate future. They are used by the military for the conveyance of the sick and wounded, the transport of food, and for isolated posts.

There are in Morocco at present eight escadrille headquarters, 26 aeronautical bases with hangars, and 56 simple landing grounds.

ITALY.

THE ROME-TOKIO FLIGHT.

The arrangements for the Rome-Tokio flight interrupted by the "self-determination" of Signor Gabriele d'Annunzio and Fiume, have now been completed. The following officers will take part:—Lieut. Casagrande (Italian Navy), Lieuts. Ancilloto, Perrarin, Locatelli, and Polisco on S.V.A. aeroplanes, and Lieuts. Bonalumi, Garrone, Negrini, and Scavini on Caproni machines. The route to be taken is as follows: Rome, Gisia del Colle, Sclaica, Adalia, Aleppo, Baghdad, Basra, Chanbar, Karachi, Delhi, Benares, Calcutta, Rangoon, Bangkok, Hanoi, Canton, Foochow, Shanghai, Kiaochow, Pekin, Chefoo (?), Fusan, Osaka, and Tokio. The whole distance is about 10,600 miles.

RUSSIA.

OFFICIAL COMMUNIQUE (ESTHONIAN).

OCT. 26th.—In the Finnish Gulf, in the direction of Krassnaya Gorka, an enemy seaplane was shot down by our fire.

SPAIN.

THE PURCHASE OF MILITARY AEROPLANES.

On Oct. 18th the official gazette published a decree authorising the direct purchase of fifty French bombing machines and forty-six machine guns. One regrets to see so large an order given to other than British firms.

A PRESENTATION AEROPLANE

On Oct. 24th a British aeroplane which had been presented to H.M. King Alfonso was officially handed over at the Cuatro Vientos Aerodrome in the presence of the British Ambassador, Sir A. H. Hardinge and Lady Hardinge.

SWITZERLAND.

The Swiss Government has now recognised the right of the Allied Powers over all German military aircraft and it has been decided that no aeroplane shall be purchased from Germany unless the consent of the French Government has first been obtained.

AN ATTEMPT ON THE HEIGHT RECORD.

On Oct. 23rd the Swiss Military aviator Progin ascended from Thoune in a Swiss-built monoplane with a 200 h.p. engine, to attempt the world's height record. At an altitude of 27,000 ft. the oxygen supply failed owing to a leakage and M. Progin became unconscious. The uncontrolled machine began to descend, but when at 4,000 ft the aviator recovered consciousness and regained control. He landed safely at Thoune after two hours' flight.

U.S.A.

THE TRANSCONTINENTAL AIR RACE.

Although Lieut. B. Maynard led all the way in the Army Air Race his actual flying time exceeds that of some other competitors. Lieut. Pearson's flying time is stated to be 48 hours 37 mins 16 secs. Capt. Donaldson's time is officially given at 57 hours 33 mins. 57 secs. Lieut. Maynard was in the air for 67 hours 3 mins. 40 secs.

THE AVIATION SECTION, SIGNAL OFFICERS RESERVE CORPS.

The following paragraph is extracted from the United States "Air Service News Letter" of Oct. 8th, 1919:—

"Attention is called to the fact that officers of the Aviation Section, Signal Officers Reserve Corps, have been authorised to wear the insignia now worn by officers of the Air Service in addition to the letters "U.S." with super-imposed "R."

A MEXICAN INCIDENT.

A Reuter message from San Diego, Cal., dated Oct. 26th says:—

"It is officially announced that the United States Army aviators, Lieuts. Connolly and Waterhouse, who have been missing since Aug. 21st, were murdered by two Mexican fishermen at Bahia-Los Angeles, Lower California, where the pilot alighted after losing his way during a border patrol flight. The identity of the murderers, who came from a Mexican sloop, is known both to the American and Mexican authorities, and a search is being made for them. The bodies of the aviators arrived here on board a destroyer on Sunday.

"Investigators found messages scrawled on the fuselage of the aeroplane, which showed that the officers were for 9 days without food and were compelled to drink water from the radiator. On Sept 1st the two fishermen, who came from the sloop 'Esperanza,' removed the aviators from their machine, which was floating, and rowed them ashore, where they were stabbed to death during the night of Sept. 1st, probably while asleep Their heads were also crushed. The bodies were found under a slight covering of sand, with portions of their limbs protruding. The Mexicans had looted everything portable from the machine."

THE PITY OF IT.

BY S. F. BENDA.

Five years ago, at the beginning of what afterwards came to be considered by the less thoughtful as a very big war indeed, the English-speaking nations—of course, that excludes America—owned two fairly efficient and thoroughly effective Flying Services. The Great British Nation went to war, and proved its claim to the adjective "great" by the very greatness of its mistakes. The two Flying Services went to the war with their respective parent Services and the senior Flying Service—the R.N.A.S.—was precipitated into a little civil war as well.

It is useless to go over old ground and arouse the memory of old half-forgotten insults, particularly when, if the rumour can be credited, the Navy is about to make amends—truly, it is late in the day to amend anything—but better late than never. The R.N.A.S. was never a favourite of the Royal Navy, but there were faults on both sides, as all who know the inwardness of things will own. Still, even the very worst faults of the R.N.A.S. did not justify the formation of the Royal Air Force.

Because the good must ever suffer for the vices of the bad, the R.F.C. was turned into the Military Branch, R.A.F. Because the sins of the fathers are visited upon the children, the great British Nation—great as ever in its foolishness—looked at the R.N.A.S. and said, "Inefficient! What can one expect when the Navy does nothing?" and the R.N.A.S. became the Naval Branch, R.A.F. Then there grew up that curious conglomeration of sailors, soldiers and civilians, called the Independent Force, R.A.F., which did some quite wonderful things over Germany—and then came the Armistice.

Then the newspapers—short of war copy—looked about for scandal with which to fill their columns, and found plenty of it in the R.A.F. First there was waste. The contracts were too large; there were too many machines; there were too many aerodromes, and too many men keeping them in order. The size of the R.A.F. was too great—there would never be another war, argued the newspapers, forgetful of wars in Russia and Afghanistan, and sundry other places—the pay of the R.A.F. was all wrong. People found things were wrong with the W.R.A.F.

But none saw the real scandal—the real cause of waste—the R.A.F. itself. None realised how much cheaper it is to own two Services, with merely two headquarters, instead of three. And none had the courage to own that what had happened with the W.R.A.F. was merely what one might have foreseen must happen when one took women in the Service and expected them to do men's work in a man's way and so changed their whole outlook on life. One does not believe there is any woman living who is fit for a Service life, for to make a success of a Service career one's Service must come first before all things.

Talking to an R.A.F. officer recently one was told, "We have never been given a chance." That sums up the whole situation.

From the beginning the R.A.F. has had no chance. It is formed of two small pieces of the senior Services who hated each other and themselves, and a third piece of civilians enlisted straight from, theoretically, school, but actually, judging from manners and customs, the street. Ridicule, in the shape of uniforms, decorations and the exaggerated praise of the daily newspapers, has been freely bestowed.

The Air Ministry, with absurd rules, and more absurd "news stories," and utterly ridiculous competitions, has helped to make the Service an object for contempt. Jealousy has been fostered between the three Services in the past by the too liberal pay and allowances of the R.A.F., and although this has now been put right it still remains an imaginary grievance on the part of the senior Services.

Is it much to ask that the R.A.F. shall be given a chance? Even the condemned criminal has a right of appeal, and the R.A.F. has been condemned only by the Press and the Government action. Which is the pity of it.

SUNBEAM-COATALEN
Aircraft - Engines

C.Sec.S. 12093/19

8th August 1919.

Gentlemen,

I am commanded by My Lords Commissioners of the Admiralty to express to you, on the occasion of the safe return of H.M. Airship R.34 from her voyage across the Atlantic, their cordial appreciation of the skill and energy which your Firm devoted to the construction of the machinery.

My Lords would be glad if you would convey their sincere congratulations to all concerned.

I am, Gentlemen,
Your obedient Servant,

Messrs Sunbeam Motor Car Co.,
WOLVERHAMTPON.

ADMIRALTY, S.W.

BOOKS REVIEWED.

SOME SECRET SIDES OF THE WAR.

Readers of this paper will recall various reviews by Mr. Rex Brittain of the works of M. Jacques Mortane, the eminent French writer on aerial warfare, which appeared during the war. None of those books have appeared in English. At last, however, those who are unable to read M Mortane's brilliant little pen-pictures in their original tongue have an opportunity of reading him in a peculiarly excellent translation. Mr. Brittain, having absorbed M. Mortane's spirit by the process of reading his other books for purposes of criticism, has translated his latest work, and has managed to retain in it very much of the Gallic spirit of the original.

The book in question is entitled "Special Missions of the Air." The phrase "Special Missions" has for a long time connoted that peculiarly dangerous class of air work which was concerned with the taking of spies (euphemistically known as "agents") behind enemy lines and with bringing them back when opportunity offered.

In the early days the aviators carried their agents to the wild places of the earth which were nominally occupied by the enemy and landed there so that their passengers might alight. Later in the war the said agents were, as a rule, dropped by parachute, thus, perhaps, reducing the risk to the aviators who dropped them, but by no means decreasing their own risk.

The Work of Heroes.

M. Mortane describes, with that peculiarly graphic style which is his own, the work of various notable aviators who were concerned with these dangerous missions. The late Jules Védrines was one of the first to distinguish himself in this work, and M. Mortane notes how the French populace, with whom Védrines had been a popular idol before the war, were disappointed that he did not show up as a Hun-killer in the early days of the war, little knowing that their idol was in fact doing work of a far more dangerous character than the mere killing of Huns.

Even to those of the R.A.F. who have themselves been employed on similar missions the book will be of very great interest, and to the ordinary devotee of aviation who knows nothing of the actual work of the spy-droppers these vivid stories will come quite as a revelation. M. Mortane's method of telling his stories varies between straight narrative of his own, personal narrative of the spy-droppers retailed at second-hand by himself, and letters from the spy-droppers to their relatives reproduced verbatim. Whichever method he adopts, his story, as translated by Mr. Brittain, stands out as an absolute picture of the events and of the emotions of those who took part in these adventures.

Mental Honesty.

Not only does M. Mortane deal copiously with the work of the French spy-droppers, but he has the mental honesty to give descriptions of similar work by German and Turkish aviators, and he is so free from national jealousy as to give peculiarly vivid accounts of spy-dropping and rescuing by Italian aviators who worked with flying-boats on the rivers behind the Austrian lines. In fact, his account of the work of the Italian Naval aviators is quite one of the most interesting chapters of his book.

One's only criticism of the work is that in the haste of reading proofs so as to get the book through under adverse circumstances as quickly as possible Mr. Brittain has committed a few technical solecisms, as, for example, he allows the French rank of "Adjudant" to be spelled as if it were the British appointment of "Adjutant" and he also allow the machine technically known as a "hydro-aeroplane," or, in French, as a "hydravion," to appear as a "hydroplane," which, of course, it is only in part.

One is tempted to quote largely from the stories in the book, but to do so would be to deprive the reader of the genuine thrills to be obtained from reading how the gallant French pilots landed in and escaped from enemy territory, and how the Italian flying-boat pilots brought away whole crews of spies at one effort on small two-seaters.

Our Own People.

Evidently, the soldierly reticence of our own spy-droppers has prevented M. Mortane from mentioning any British feats in this direction, otherwise one can imagine with what zest he would have described how one Ridley spent weeks in enemy territory, after having crashed his machine in landing a spy, and enjoyed himself by sitting disguised as a peasant on the edge of one of the most important of all German aerodromes watching the machines depart and arrive. With no less pleasure would he have related how a certain Jack Woodhouse spoilt a perfectly good pair of riding breeches by sitting on top of an unduly hot Raf engine changing the plugs which had oiled up while the engine was ticking over on the ground pending the alighting of the spy with whom he had arrived.

Not less entertaining would have been M. Mortane's account of the particularly brave spy whose bravery stopped at parachuting, and who only consented to alight by parachute on the condition that matters were arranged so that he should be dropped through a trap-door unexpectedly and thus would be saved the anticipatory horrors of waiting for the drop. One would suggest that Capt. Alan Bott (otherwise known as "Contact"), when at a loss for a subject for the inimitable "Blackwood," should devote himself to interviewing some of our own spy-droppers and putting their stories on record.

Meantime, those who want to get an insight into one of the phases of the war which has hitherto been of the most secret will do well to read M. Mortane, *via* Mr. Brittain.—C. G. G.

["Special Missions of the Air." The Aeroplane and General Publishing Co., Ltd., 61, Carey Street, W.C.2. 3s. net; 3s. 3d. post free.]

THE DOCTOR AND AERONAUTICS.

[The Medical and Surgical Aspects of Aviation. By H. Graeme Anderson, M.B., Ch.B., F.R.C.S., Surgeon-Lieutenant, Royal Navy, Surgeon, Royal Air Force. Pp. xvi+255 Illus. Henry Frowde and Hodder & Stoughton, London, 1919. 12s. 6d. net.]

When young that branch of literature devoted to the mysteries of medicine had a curious charm. The strange language in which its principles were outlined, the intriguing designs with which it was illustrated, each held attraction for the inquiring brain. After a brief period of study there were few diseases from which one knew oneself to be exempt at the moment of reading. But there was ever an odd joy in the contemplation of a future well spent in diseased living. To those jaded by the horrors of Lyceum drama the attraction of a surgical operation provide a refreshing interlude. When in addition the medical and surgical story is complicated by the intricacies of an aviation accident the excitement is quadrupled.

The science and practice of aeronautics has lacked until recently a treatise dealing authoritatively with the medical and surgical aspects of the aviator's or aeronaut's life. This deficiency has been supplied by Mr. H. Graeme Anderson, M.B., who was during the recent war a surgeon-lieut. in H.M. Navy attached for a long period to the Royal Naval Air Service, and later with the Royal Air Force, to which he is now consulting surgeon.

The late Secretary of State for Air writes a short introduction, and chapters are contributed by Lieut.-Colonel Martin Flack, M.A., M.B., Director of Medical Research in the R.A.F., and Surgeon-Lieut. O. H. Gotch, M.B., Ch.B.

Mr. Anderson begins his work with a brief chapter on medical interest in aeronautics, which is in truth an outline of the history of practical flying both in balloons and aeroplanes. He speaks of the curious effects of height on balloonists. "Madame Blanchard," for instance "suffered from severe epistaxis at 22,800 ft."; also "Gaston Tissandier, Sivel, and Crocé-Spinelli all suffered from altitude effects. Prominent among the signs and symptoms were difficulty in breathing, loss of muscular power, venous congestion, nasal and pulmonery hæmorrhage, headache, vomiting, and torpor."

But the author does not explain how it is that such altitude effects were infinitely more common in ballooning during pre-aviation days than they have been in aeroplane flying. In aviation, in so far as one's personal experience indicates, there is less altitude effect than is common in mountaineering. Possibly psychology can supply a reason.

There are three chapters of high interest devoted to the "Selection of Candidates for Aviation," "The Applied Physiology of Aviation," and "The Psychology of Aviation." In these the relation of the physical and mental is outlined simply and clearly.

Mr. Graeme Anderson summarises so well the aviator's duties in war-time that it is desirable at the cost of space to reproduce the paragraph dealing with this matter. "To realise the value of the standards of fitness required it is well to know something of the aviator's duties in war-time. On the one hand, he has usually comfortable quarters, a good bed and food, and has not to undergo the long marches and discomfort of trench life as in the infantry work. He is usually out of range of enemy artillery fire, although subject to hostile aircraft attack. In weather unfit for flying he has much leisure time. On the other hand, in the crowded hours of his daily work he may come through the most intense strain to which the human nervous system can be subjected.

"As it has been aptly put, an aviator's life consists of 'long spells of idleness punctuated by moments of intense

fear.' He has to face extremes in the elements, intense cold, the sun's glare, rain, wind, fog and mist, and gusty or bumpy weather. There is the incessant noise of his engine; he may have long-distance patrols, in which the imagination is given free play to run riot, perhaps over the sea, with no landmarks, and the dread of engine failure ever present in his mind. His visual acuity is sharpened, always on the lookout for hostile aircraft, watching for and registering the flash of enemy guns, taking photographs, noting movements of enemy troops, rolling-stock, submarines, or other information of naval or military value, and subjected to more or less accurate anti-aircraft gunfire from the ground. Often he has to reach altitudes where the available oxygen is reduced by one-half. He may have suddenly and rapidly to change height, as in the modern aerial fight in which he may be opposing more than one enemy machine. His judgment has to be most accurate to perform the various intricate aerial evolutions so as to outwit his opponent and gain a favourable position to rake him with machine-gun fire. He may have to loop, spin, dive, or sideslip, apparently out of control, in order to deceive his opponent or to decoy him over a friendly gun or near a friendly formation. There is the subconscious dread of his aeroplane catching fire in the air. Lastly, and most exciting of all, is the nerve strain of contour chasing or ground strafing, in which he attacks the enemy on the ground from a low height of perhaps 20 to 50 feet."

The description could hardly contain more truth or be more comprehensive.

He states later that there is a particular temperament for flying, and realises that it is not a quality easily to be clinically estimated. Sluggish mentality is a disqualification for flying. Surgical disabilities, such as the lack of one or other leg, do not in every case prevent a candidate from becoming an excellent pilot. But the stomach should operate with the imperturbable exactitude of a Waltham watch. Trunk injuries are not necessarily a disqualification, and the author implies that he knows three cases of aviators still flying who have fractured their spinal columns, of course without injury to the spinal cord.

He says that the past history of the candidate in the matter of smoking and drinking intoxicants is important and is almost impossible of determination in the examining-room. Neither are really dangerous to the pilot providing moderation is practised. "A history of malaria with recent attacks should be a cause for rejection," as malarial cases rarely do well in aviation, especially in cold countries.

In the chapter on "The Psychology of Aviation" the never-ending subject of "fear" is dealt with at length. There is great difficulty in obtaining any accurate data as to the mental state of the average pilot. Introspection is not a habit encouraged in aviation, yet without it there is little chance of true self-description.

The author in his official capacity drafted a form containing a series of questions to be answered by pupils after their first flight alone. Of 100 pupils who completed these forms none confessed to being without fear, and none admitted that they had nervous dispositions. But little reliance can be placed on any man's statements as to his feelings, else the marriage state would have been less provocative of trouble.

The author emphasises the necessity of sympathy on the part of the instructor. The habit of sneering or of bullying will destroy the remaining nerve of many a promising pilot.

A large part of the book is devoted to the description of aeroplane accidents with details of the surgical difficulties immediately attendant on each. Many illustrations are given of aeroplanes destroyed or in the course of destruction by carelessness or accident.

In a section on the "Surgery of Aviation" descriptions and photographs are given of the fracture of the astragalus, an event common only in aeronautics, and of the effects of "waterbite."

The book is written in English of a degree very uncommon. It appeals not only to those expert in medical science, but to all who have a deep interest in aviation and its problems.—W. E. DE B. W.

A RECORD OF A GREAT SQUADRON.

Already there have been produced a few regimental histories of the war recording in detail the deeds of individual territorial regiments which are not linked to line regiments, some battalions of the New Army have produced histories of themselves, and in the cases of certain line regiments with a distinguished history in the past, that history has been brought up to date to the end of the war. But so far as one has discovered, no individual history of any one squadron of the Royal Air Force has been produced until quite recently, when the annals of No. 100 Squadron, R.A.F., were produced by Major C. Burge, O.B.E., who commanded the squadron at the end of the war.

The 100th Squadron has the distinction of being, in the words of Air-Marshal Sir Hugh Trenchard, who has contributed a foreword to the book, "The first complete night-flying squadron that was sent to the Western Front." It arrived in March, 1917, and was under General Trenchard's command for practically the whole of its time in France, for it remained on the Western Front until October, 1917, when it proceeded to the Nancy area in order to begin bombing Germany.

As to the quality of the squadron, one cannot do better than quote Air-Marshal Trenchard again apropos its services on the German frontier. He says, "There it went through one of the hardest winters we have had, but it kept up its great reputation and increased it. The pilots and observers were always cheery and ready to carry out any work asked of them, and in the worst weather they showed the utmost determination to get to the targets they had been ordered to bomb, very often in thunderstorms, or thick fog and mist. Many times they attempted the work when it was impossible to see the ground from above 100 feet owing to mist.

"The rank and file were noted amongst squadrons for being exceptionally good at keeping their engines and machines in serviceable order. This was not easy, and the men very often worked all day and all night.

"In 1918 it still kept up its great name, and was one of the quickest squadrons I have ever had under my command at learning new type machines when it was re-equipped with Handley Pages.

"I can only say that it was one of 'the great squadrons' of the war, and I was very proud to have had the honour of commanding such an efficient squadron."

Major Burge, in his introduction, says that the book is intended to give all ranks a complete record of the squadron's work, and it is moreover intended as a memorial for those who gave their lives for their country while serving in the squadron. With this object in view, the names and addresses of all ranks who served with the squadron are included in the book with the idea that individuals may be able to get in touch with one another.

A further interesting point about the squadron is that it was originally formed in February, 1917, by Major M. G. Christie, D.S.O., M.C. (later Lieut.-Col. and C.M.G.), who has himself a very remarkable record, being a pilot of considerable antiquity, and one of the very few pre-war pilots who owned and flew his own aeroplane.

The book itself is an actual history of the work of the squadron, into which are interpolated here and there chapters of a descriptive nature which illustrate the history without actually continuing it. Thus, for example, there is a chapter by Mr. "Boyd Cable" on a machine which alighted in Hunland and escaped, there is a series of verses, very much of the "field-service" type, but quite amusing, by Corporal J. R. Bird, there is an account of a short night raid by Lieut. W. A. Barnes, and other matter of a similar nature.

A very interesting section of the book is that devoted to the squadron "operation reports," which contain the names of all those taking part in the various bombing raids and detailed reports of the raids. These reports will be news as well as education to a great number of people. The operation reports are illustrated by a number of very illuminative photographs of the places raided, some of them on the "before-and-after-taking" principle.

Added interest is given to the book by the accounts written by some of the officers who had the misfortune to fall into the hands of the enemy. The list of killed and died makes very depressing reading, but consolation is found in a list of honours and awards won by people serving in the squadron.

After reading the book one is glad to find that No. 100 Squadron is to be included among the permanent squadrons of the Royal Air Force, and one feels that this book will be of the very greatest use in carrying on the war tradition of the squadron in time of peace.

It was originally intended that the book should only be sold to officers and men of the squadron itself, and with this idea in view it has been produced in two editions; an *edition de luxe* at 30s. and another, somewhat more cheaply bound but very finely produced, at 15s. However, the interest in the book is such that it should undoubtedly be in the hands of all those who take a really keen interest in military aviation, for it is not merely a history, it is an informative document on air war. Therefore, one is glad to know that those who are sufficiently interested to pay the price may obtain copies, so long as any remain unsold, at the prices mentioned.

Those who wish to have copies are invited to write to the compiler of the work: Major C. Gordon Burge, O.B.E., at, Dent-de-Lion, Westgate-on-Sea, Kent.

Major Burge deserves hearty congratulation on the way in which the book has been produced, and one hopes that it will not merely pay its way but that it will make a profit, which profit will be applied to other good work in connection with the squadron.

THE AUSTRALIAN FLIGHT.

Capt. G. C. Matthews, Aus. F.C., and Serjeant T. Kay, Aus. F.C., left Hounslow at 11.44 a.m. on Oct. 21st on the Sopwith "Wallaby," with 375 h.p. Rolls-Royce engine. This fact was noted in last week's issue of THE AEROPLANE.

A large number of people, including representatives of the Australian Government and of the Air Ministry, witnessed the start. Numerous messages of good wishes were received by Capt. Matthews before his departure, including the following from Capt. H.R.H. the Prince Albert, K.G., R.A.F., "May good fortune attend you in your sporting flight." Among a small number of postal packets carried was a letter from His Majesty the King to the Governor-General of Australia.

According to the "Morning Post" of Oct. 22nd Capt. Matthews had not decided definitely on his first stopping-place, but would probably land near Paris.

Nothing, then, was heard of the aviators until Oct. 24th, when the Air Ministry issued a statement saying that they had landed at Cologne at 2 p.m. on Oct. 22nd.

Before he started the flight Captain Matthews remarked that the Paris-Lyons-Fréjus route was not the straightest, and that he might make as direct a line as possible across Germany. Although flying over the recent enemy countries is forbidden at present, Capt. Matthews probably thought that it would be within the law to land at the British outpost, the 3rd Wing of the R.A.F. at Cologne.

A Reuter message from Melbourne dated Oct. 17th stated that flying officers had made a survey of the air route from Port Darwin to Melbourne, and that the Australian Navy would maintain a sea patrol between Kupang (Timor) and Port Darwin. Petrol would be available at Port Darwin, Cloncurry, Charleville, Narramine, and along the route thence to Albury and Melbourne.

AUSTRALIAN DEVELOPMENTS.

An interesting visitor to this country at the moment is Mr. H. C. Macfie, a well-known resident of Sydney, New South Wales, and chairman of a new Australian aircraft firm officially entitled, Aerial Company Limited. Mr. and Mrs. Macfie arrived in England a few weeks ago, partly on a holiday, but, one learns from Mr. Macfie, also with the intention of purchasing aeroplanes for his firm, which intends to carry out aerial transport with seaplanes and land machines in Australia.

Mr. Macfie has long been interested in aviation, and it was very largely owing to his efforts that the New South Wales Flying School was formed at Richmond, near Sydney. It will be remembered that Mr. W. J. Stutt, one of the best pilots in this country, went out to Australia early in the war to superintend the work of that school, and it is of interest to know that the school has been so successful under his management that Mr. Stutt himself has now been selected by the Federal Government of Australia to be one of the chief advisers of the Government on aerial matters.

Aerial Company Limited started operations by buying two D.H.6s from the Australian Government School at Point Cook, Victoria, when the coming of the armistice put an end to the training of Australian pilots in quantities, and these machines have been doing very good work in and around Sydney since they were purchased.

The A.C.L.—as the firm is commonly called—is financed by private capital. The managing director is Lieut.-Col. P. W. Woods, D.S.O., M.C., and other directors are: Capt. H. Gilles Watson, D.F.C.; Capt. J. H. Matthews; Lieut. N. P. H. Neal, M.C., M.M.; Mr. G. P. Mann; Mr. Lebbeus Horden (who is himself one of the pioneers of aviation in Australia, having imported a Maurice Farman seaplane somewhere about the year 1911); and Mr. H. C. Macfie, who is chairman of the directors.

Capt. C. H. Chateau, R.A.F., is the firm's aerodrome manager.

Those who know the D.H.6 machine, which, despite its many good qualities as a training machine, is hardly what one would choose for long-distance cross-country journeys, will be interested to hear that after the purchase of these two aeroplanes (Nos. B.2802 and B.2803) they were flown from Point Cook, near Melbourne, to Richmond, near Sydney, the pilot of the first machine being Lieut. R. F. Oakes, A.F.C., and of the second machine Capt. P. G. Taylor, M.C. Owing to the fact that the machines were by no means new, and were probably not in the very best condition, the first machine took seven days over the journey and the second one did not arrive until a week later. All the same, considering that the tank capacity of the D.H.6 is only about enough for two hours' flying, and that the speed of the machine is nearer 50 than 60 miles an hour and that there were no landing-grounds *en route* and that there were no adequate tools or spare parts with it to do repairs, the flight is by no means unworthy of the record of the Australian Flying Corps. As a matter of fact, the actual flying time of the first machine for the 560 miles or so was 9¾ hours.

Besides being used for ordinary "joy-riding," the machines have been used largely for advertising purposes in and around Sydney. For example, the well-known drapery firm of David Jones, of Sydney, acquired much merit by engaging one of the A.C.L.'s D.H.6s. to distribute advertising literature over the city.

The firm have the intention of acquiring hydro-aeroplanes of sorts, whether flying-boats or seaplanes is not decided at the moment, so that the "joy-riding" business may be extended in future to the holiday resorts of Sydney Harbour. Apparently the firm has good money behind it and has a thoroughly efficient flying personnel, and so it seems to have every prospect of success.

Mr. H. C. Macfie is also president of the New South Wales section of the Australian Aero Club, which is affiliated to the Royal Aero Club of Great Britain. In May last the New South Wales section held a special meeting, and a friendly arrangement was made with the older Victorian section of the Australian Aero Club that the two sections should have entirely independent control. Apparently the New South Wales section of the Club is going very well and it now numbers several hundred members. The secretary of the new organisation is Mr. S. J. Hart, whose official address is the Australian Aero Club, New South Wales Section, Box 2516, G.P.O., Sydney.

One of the first of the activities of the newly formed section was to welcome home the squadrons of the Australian Flying Corps which returned to Sydney on June 19th in the S.S. "Kaiser-i-Hind." The returning officers and airmen, who were under the command of Lieut.-Col. W. Oswald Watt, D.S.O., were entertained at a gala performance at Her Majesty's Theatre, Sydney, on June 24th, 1919.

ON BLAZING THE TRAIL.

It has been pointed out by a reader of THE AEROPLANE, evidently a very careful reader, that the article published last week on "Blazing the Trail" did in fact misrepresent the position as regards the Department of Information at the Air Ministry. The Air Ministry communiqué to which the article referred did not state definitely in so many words that the F5 flying-boat which visited Stockholm flew over that city. What the communiqué did make clear was that exhibition and passenger-carrying flights were carried out at Christiania, Christiansand, and Copenhagen, that the boat visited Stockholm as well, and it implied that a good impression was created in each of the Scandinavian capital towns visited. It will, one thinks, be admitted that the communiqué was liable to convey the impression that some sort of an exposition was given at Stockholm as well as at the other places specifically mentioned, especially as the communiqué draws attention to the fact that "in Sweden a natural seaplane highway extends right across the country," and that Scandinavia is perhaps the best market in the world for water-going aircraft.

One tenders one's regrets to the Department of Information for misrepresenting the ideas which it intended to convey, and one hopes that in future communiqués of this nature there will be no possibility of misunderstanding.

It is understood that Major-General J. F. B. Seely, Under Secretary for Air, was to make a full statement in the House of Commons on Oct. 28th regarding the alleged disasters to officers and airmen of the R.A.F. who have attempted to fly from London to Cairo

The Handley Page Company made the following statement to the "Morning Post" with regard to the allegations:—

"If the statements concerning the high death-roll among pilots engaged in flying machines from London to Cairo are correct and a whole series of accidents have occurred, it cannot be wholly due to unfortunate coincidences, but must be caused by some lack of organisation somewhere. It would be interesting to inquire why so many engine failures caused the forced landings to which reference has been made. If, as stated, the rubber connections of various engine parts were deteriorated, it would look as if the engines needed overhaul before their dispatch.

"The lack of competent riggers and mechanics along the routes traversed by the machines may perhaps be explained by the fact that a great many of the personnel have been demobilised. Some inquiry would, however, seem to be necessary in order to find out why one machine, for instance, caught fire near Rome although flown by a very experienced pilot, and also why 30 per cent. of the three squadrons of machines detailed to fly from France to Egypt failed to reach their destination.

"The machines which were used for some of these flights—the twin-engine Handley Page—are of the same type that was so successful in bombing Germany during the war and carrying out the London-Paris-Brussels-service since. As is well known, machines of this kind have flown to Calcutta from England, so that it would appear that there must have been something wrong in the organisation if so many machines failed to reach their destination."

AERONAUTICAL ENGINEERING

SUPPLEMENT TO "THE AEROPLANE"

INCORPORATING AIRCRAFT ENGINEERING, AERODYNAMICS, AIRCRAFT FINANCE AND COMMERCIAL AERONAUTICS AND MATTERS PERTAINING TO THE AERONAUTICAL ENGINEER AND THE AIRCRAFT TRADER.

THE WEEKLY COMMENTARY.

The last few months have seen the production of a very considerable number of books dealing with the technical aspects of aeronautics. Some of these works are excellent, and some are appallingly bad.

Several of these works, mostly good, are reviewed below.

The Parnall "Panther," a machine having a number of novel features destined to fit it for the purpose of reconnaissance at sea, using a ship as its aerodrome, is described in this week's instalment of "Modern British Aeroplanes."

A description of French methods of airscrew construction, contributed by a correspondent in Paris, is printed on page 1537 *et seq.*

The two types of plywood construction present features of interest, and this method of construction presents very considerable interest from the point of view of economy in material.

Some details of the Zeppelin giant sea-monoplane are given on page 1524.

SOME TECHNICAL LITERATURE.

Solomon—in the days when literature was yet young—remarked that "of the making of books there is no end"; and Shakespeare—apropos some quite other affair, but quite appositely to the subject of Solomon's prophecy—complained that "this is indeed a bloody business."

Had Shakespeare the advantage of an acquaintance with applied aeronautics, and had he the task of reviewing some of the current technical literature relating thereto, there can be little doubt that the English language would be the richer by a number of adjectives of even more incarnadined purport than it yet possesses.

Yet—though a sore trial to the reviewer—the recent outburst of books dealing with the technique of aeronautics is an encouraging sign. It may be taken as a certain sign of faith in the future of Aviation on the part of both authors and publishers, and the latter class at least are usually credited with some degree of foresight. One would feel even more encouraged by their apparent belief that there is, and is likely to continue to be, a public demand for books dealing with aeronautics from a more or less technical standpoint, if they showed a little more discrimination in regard to the quality of the matter which they publish.

Fortunately a very fair proportion of the recent literature on this subject is quite valuable, and most of the rest of it is quite amusing. The trouble in regard to the latter section is that it is apt to fall into the hands of those as ignorant as the authors thereof, and be taken seriously.

An Extreme Case.

By way of illustration one may cite a little work published by Nisbet and Co., Ltd., at the price of 1s. 6d., entitled "The Aviation Catechism." The author, one Major W. T. Blake, R.A.F. has been responsible for a number of utterances in the Daily Press, under the pseudonym of "Wing Adjutant." In his introduction Major Blake states that "The aim of the author has been merely to answer some of the questions which he has found, *after eight years' flying*, are most frequently asked by those who are interested in aviation but have not an expert technical knowledge of the subject."

The italics are not Major Blake's.

The book, therefore, purports to be a guide to those ignorant of aeronautics, and Major Blake in the passage quoted claims inferentially some technical knowledge and explicitly some considerable experience of aeronautics. Internal evidence in the work itself seems to negative both these claims, for it simply abounds in inaccuracies, often of the most misleading and ridiculous nature.

The following samples of the definitions included in a glossary, for instance, do not inspire confidence :—

Balloonette.—A small balloon forming one of the many divisions of the envelope of a rigid airship.

Bracing Wires.—Wires going from top to lower plane and from front to rear of the planes crossing as a St. Andrew's Cross. They are usually placed between the struts, their purpose being to strengthen the machine.

Flying Wires.—Wires going *from top to lower plane in an outward direction* between the struts, crossing with the landing wires. They do not go from front to rear as the bracing wires. *Their object is to carry the weight of the planes whilst in the air. Sometimes called drift or drag wires.*

Landing Wires.—Wires going from *top to lower plane in an inward direction* between the struts, crossing with the flying wires. Their object is to carry the weight of the planes whilst the machine is on the ground. *Sometimes called anti-drift or anti-drag wires.*

It is worth while to take these four definitions and extract in detail the inaccuracies which they contain.

In the first the general impression given is that a ballonette is a gas container, whereas it is actually an air bag. Secondly, ballonettes are characteristic features of the non-rigid type of airship and are certainly unusual in rigids.

The other three definitions show hopeless confusion. Bracing wire is a general term covering all structural wires, but the author attempts to identify it with what are commonly called Incidence Wires.

The description of the direction of flying wires is somewhat vague, but if it conveys any meaning it means that flying wires occupy the position of what are usually called landing wires. The statement that they "carry the weight of the wings" may be merely a clerical error, but the confusion with drag wires is inexcusable.

The landing wire definition gives them the position of flying wires, correctly states the purpose of landing wires, and makes the confusion with anti-drag wires.

Thus in four definitions there are eight definitely misleading statements.

This is a fair sample of the whole work.

From the catechism proper the following sample may suffice :—

"What is meant by inherent stability?

"Certain machines when properly rigged will, if left to their own devices in the air with the engine running regularly, carry on flying perfectly safely in a straight and horizontal direction. Should the engine be switched off, these machines will drop their nose and find their own gliding angle. This is known as inherent stability and the degree to which a machine possesses this quality is known as its *factor of safety.*"

One must assume that Major Blake really knows no better

and honestly imagines that he is competent to instruct the unlearned in this matter, but it is extremely regrettable that so utterly misleading and valueless a work should have ever seen the light of day.

An American Effort.

"The A.B.C. of Aviation," by Capt. Victor W. Pagé, of the United States Aviation Service, and published by the Norman W. Henley Publishing Co., New York, is a book intended to cover a somewhat similar field to Major Blake's unfortunate lapse. That is to say, that it is designed to give a general idea of the basic principles of flight and of the practical application thereof to the non-technical. This design is carried out very fully and in a manner which calls for little criticism.

The present reviewer, having but a smattering of the American language, hesitates to criticise Capt. Pagé's literary style, but must state that for British students it would be well if certain passages were translated. That, however, is a small affair, and as an instructional handbook for would-be pilots and mechanics the book may be recommended.

An Italian Authority.

In the history of Italian aviation the name of Pomilio has a great position. It is probably not yet well known that in 1918, at the invitation of the Government of the United States, the Brothers Pomilio migrated to that country to assist in the production of American aircraft.

During his residence in that country Signor Ottorino Pomilio has delivered himself of a volume entitled "Airplane Design and Construction."

In this volume the whole subject of aeroplane design and construction is dealt with in an extraordinarily compact form—too compact a form to some extent. The aerodynamic side of the question is handled according to the graphic logarithmic scale method originated by Eiffel—an extremely elegant and very illuminative method which has received too little attention so far in the English-speaking world.

In fact the whole work may be regarded as an essay on the application of graphic methods to the solution of the aerodynamic and structural problems of aeroplane design. It contains nothing of new facts, but is a very clear and lucid exposition of one particular designer's methods, and should be in the hands of all aeroplane designers. Even if it teaches them nothing new it should provide a certain amount of mental stimulus.

"Airplane Design and Construction" is published by the Hill Publishing Co., London, and the price is 30s. net.

Stress Merchants.

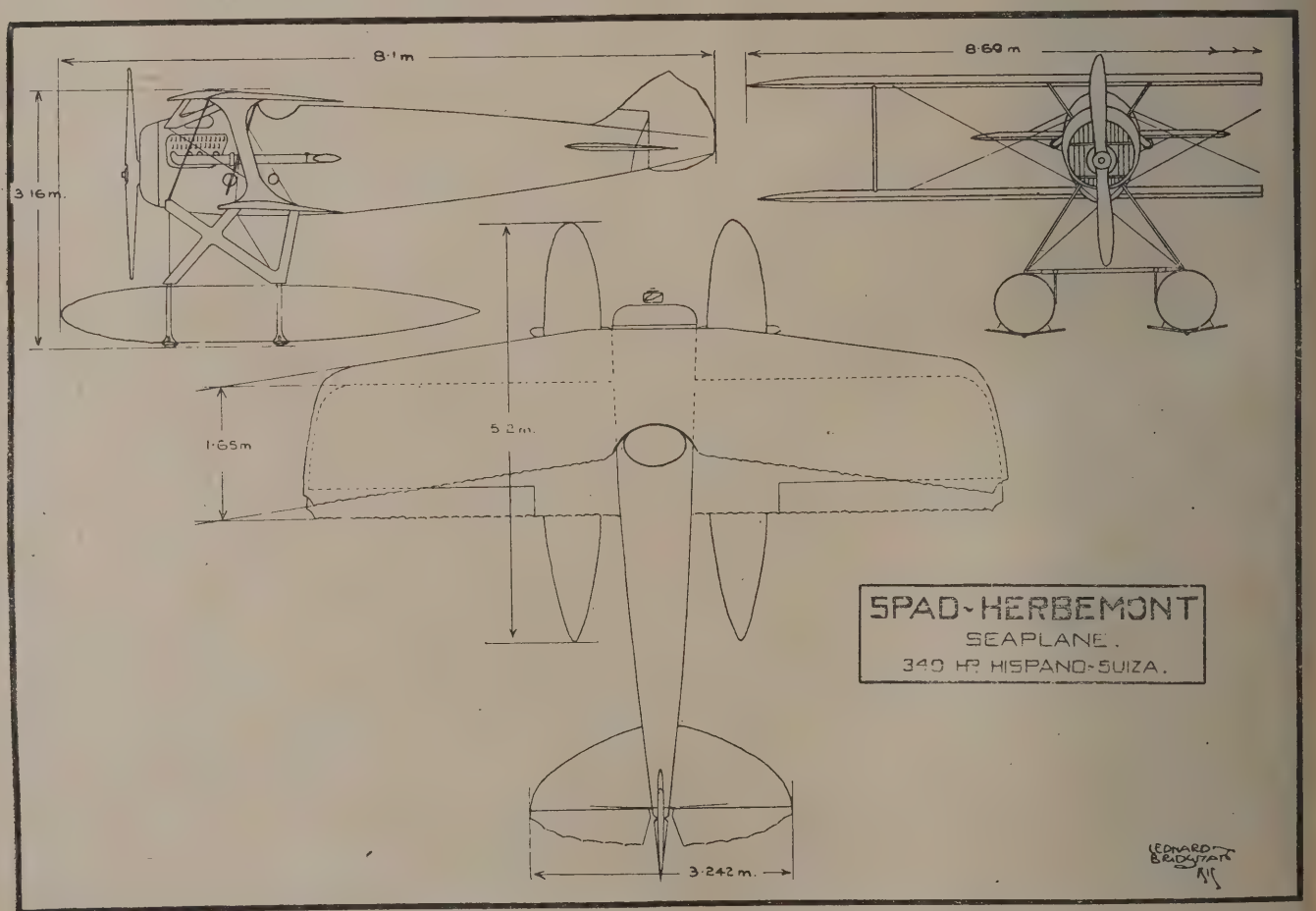
During the late war most British aeroplane designers came into contact, at one time or another, with the official stress merchants of the Air Department, Admiralty, or of the Department of Civil Aeronautics, and their successors of the Air Board, and the Air Ministry.

Doubtless their feelings as to these conflicts are by now somewhat assuaged, and in any case they will realise that the experience gained in the departments concerned in this particular matter is enormous and that its publication cannot but be of immense value.

In "Aeroplane Structures," Mr. A. J. S. Pippard, M.B.E., M.Sc., and Capt. J. L. Pritchard, late R.A.F., have collected into a volume of 300 odd pages the results of their experience, during the war, in checking the structural strength of experimental aircraft. The subject is dealt with very thoroughly and, as a complete discussion of the loads which an aeroplane may have to bear in flight, involves a fairly close study of aerodynamics, the book might almost be called a handbook of aeroplane design, except for the absence of performance data.

The detail design of parts and fittings are dealt with in a very thorough manner, and the book is one which no aeroplane designer can afford to do without.

The book is published by Longmans, Green and Co. at the price of 2s. net.—W. H. S.



The scale drawing reproduced above shows the Schneider Cup Spad machine as it was intended. The machine which actually appeared at Bournemouth had cut down top wings and pontoon type floats, and was fitted with extra chassis struts to the outer side of each float. The streamline floats, fitted with hydrovanes, shown above, have possibities for very high-speed machines, and it would be interesting to hear why they were not used.

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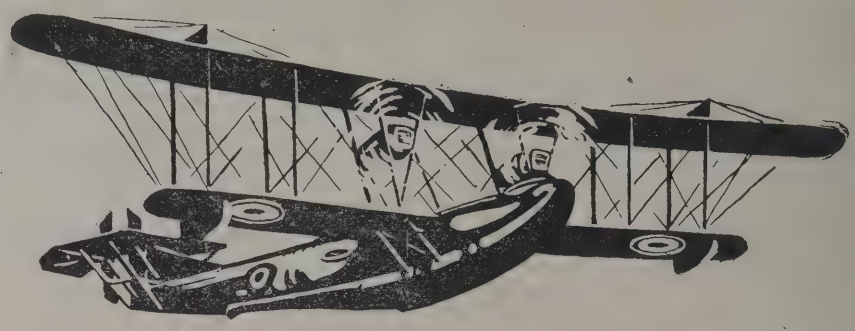


The first direct Flight from Newfoundland to Ireland (1,900 miles) was accomplished by this Aeroplane in 15 hrs. 57 mins. 4 tons of Petrol and Oil were used.

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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

MODERN BRITISH AEROPLANES.

XXI.—Parnall and Sons.



The Parnall "Panther" (200 h.p. B.R.2) showing the hydrovane chassis and the airbags inflated.

Parnall and Sons before the war were a well-known firm of shopfitters and cabinet-makers. During the war they embarked on the manufacture of aircraft and turned out many machines to official specification. During 1917 Mr. H. Bolas, of the Air Department, Admiralty, was released to act as the firm's chief aeroplane designer, and was responsible for the "Panther," the only one of the firm's own design of which any information is available. The proprietors of the firm are W. and T. Avery, Ltd.

THE PARNALL "PANTHER."

The "Panther" is a two-seater reconnaissance ship-plane presenting many unusual features.

The fuselage is a three-ply and bulkhead affair devoid of wire bracing and arranged to fold just aft of the observer's seat. The two cockpits—pilot under the centre section and observer aft—are within an enormous hump built up from the upper part of the fuselage.

At the rear end of the fuselage the tail is carried, as is customary, but the tail plane is built in a lozenge plan form in such wise as to lie snugly alongside the interplane struts when folded for stowage.

Balanced elevators of very considerable area relatively to the fixed surface, are carried.

The machine is fitted with the "Grain" type of emergency flotation gear, consisting of a hydrovane buffer carried ahead of the landing wheels, allowing the machine to alight on the water, together with a wheel releasing gear to avoid the upsetting effect of wheels when so alighting, and a pair of air-bags normally stowed in a deflated condition along the side of the fuselage and extending from the lower plane rear spar to just behind the airscrew. When about to alight these air-bags are inflated from the pilot's cockpit, the wheels are released, and the machine alights on the hydrovanes and gradually sinks till the air-bags support her.



The Parnall "Panther" (200 h.p. B.R.2) showing the fuselage folded to facilitate stowing. The horizontal rods on the undercarriage are the stowed airbags.

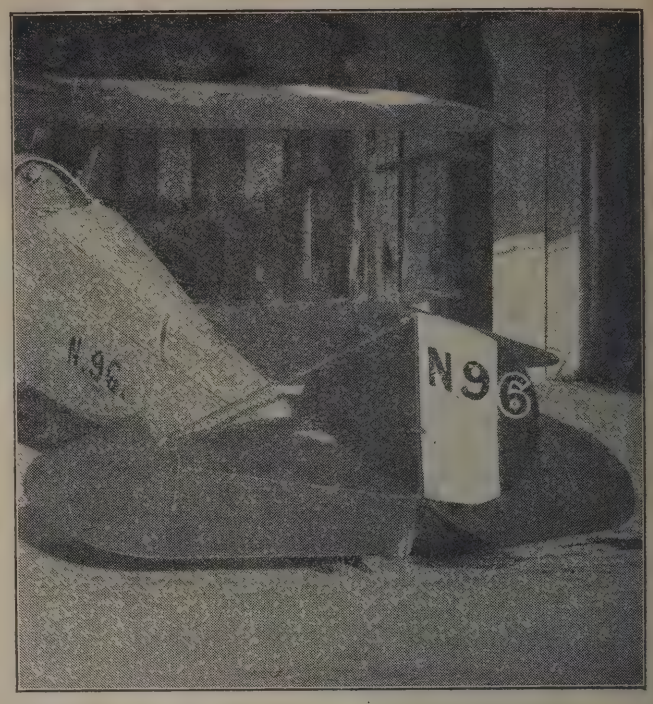
The following specification gives the general dimensions and performance of this machine :—

SPECIFICATION.

Type of machine	Two-seater reconnaissance ship-plane.
Name of machine	Parnall "Panther."
Span	29 ft. 6 in.
Gap	6 ft. 3 in.
Overall length	24 ft. 11 in. (folded, 14 ft. 6 in.).
Maximum height	10 ft. 6 in.
Chord	6 ft. 3 in.
Total surface	336 sq. ft.
Span of tail	12 ft.
Area of tailplane	18.4 sq. ft.
Area of elevators	19.3 sq. ft.
Area of rudder	4.4 sq. ft.
Area of fin	6.85 sq. ft.
Area of ailerons	11.3 sq. ft. each; total, 45.2 sq. ft.
Maximum cross-section of body	14.5 sq. ft.
Engine type and h.p.	B.R.2, 210 h.p. at 1,300 r.p.m.
Airscrew	dia., 2.775 metres; pitch, 2.416 metres.
Weight empty	1,420 lb.
Disposable load, excluding fuel	630 lb.
Total weight loaded	2,560 lb.
Tank capacity hours	4.8 hrs. at 100 m.p.h. at 2,000 ft.
Tank capacity gallons	petrol, 58; oil, 10

PERFORMANCE—

Speed low down	122 m.p.h.
Speed at 6,000 ft.	116 m.p.h.
Speed at 10,000 ft.	111 m.p.h.
Landing speed	40 m.p.h.
Climb—	
To 6,000 ft	6 min. 3 sec.
To 10,000 ft.	12 min. 29 sec.



The Tail Unit of the Parnall "Panther."

THOSE TROUBLESOME NUTS.

Everybody who has had anything to do with internal combustion engines, whether on aeroplanes, cars, or motor-cycles knows that practically every vehicle so driven suffers from the trouble of shedding nuts at unexpected and inopportune moments. Naturally the higher the class of the vehicle the less nuts are likely to fall off, so that it is not every machine to which applies the jest that the makers give away a squirrel to each purchaser, the function of the said squirrel being to run behind and pick up the nuts.

At the same time, the best of workmen and the best of screw-cutting are not guarantees against this disease, which is naturally particularly dangerous in aircraft. Many means have been tried to cure it, the most popular being ordinary spring washers or castellated nuts with split pins. The former depend very largely on the human element in fitting, and the latter are clumsy, unsightly, unreliable and, above all, extraordinary wasters of time and material in fitting.

It is, therefore, the more surprising that all users of such vehicles do not insist on their being fitted with some really reliable nut-fixing agent, such as the "Fastnut" washer, which is now used as a standard fitting by forty railway companies, over sixty colliery companies, and by the London General Omnibus Company. Nothing gets a worse gruelling that does a motor 'bus, and the satisfactory nature of the "Fastnut" washer is proved by the fact that contracts totalling upwards of 1,000 gross monthly of "Fastnut" washers are being absorbed in the manufacture or maintenance of motor 'buses. The figure seems pretty large, but one has the word of Brown Brothers, Limited, for the statement, and as Brown Brothers are the sole agents for "Fastnut" washers for the Aircraft Industry and the motor trade, and as one has known Bown Brothers, Limited, for more years than one cares to remember, one accepts the statement unhesitatingly.

Apart from the fact that the "Fastnut" washer is actually far more reliable and far less trouble than a castellated nut and split pin, it is a great deal preferable in that it saves the excessive length of nut and bolt necessary for the fitting of the split pin. Also with a "Fastnut" washer a bolt locks up wherever it is put so that it is never necessary to strain the bolt by wrenching the nut round an extra seventh or eighth of a turn so as to bring the castellation opposite the hole for the split pin.

Taking it all round, therefore, the "Fastnut" washer works out cheaper in labour and material than any of the ordinary standard methods of fixing. The chief engineer of the United Legal Indemnity Insurance Society, Ltd., writes that, as the result of tests, he is now prepared to make a reduction in the premium for insurance of all engines, etc., fitted with "Fastnut" washers. This is a point which might be very well worth considering by makers and owners of commercial aircraft.

Although it is very seldom that a British aeroplane falls to pieces in the air, one has heard of involuntary descents caused by the disappearance or slackening off of important nuts, and as the rate of aircraft insurance is still pretty high it might be well to consnder the use of "Fastnut" washers as an inducement to lowering premiums.

A NOTABLE ACHIEVEMENT.

In connection with the aerial service between London and Amsterdam two sets of aeroplane landing-wheels and tyres to suit the special conditions of the Dutch landing-grounds were required in a hurry.

The Palmer Tyre, Ltd (who, it will be remembered, made the landing-wheels and tyres of every bombing and fighting aeroplane that left these shores during the Great War), did not happen to have this particular type in stock in London at the moment, but with their usual enterprise immediately got into touch with their Paris house.

The tyres were handed over to the Paris representatives of Aerial Transport and Travel, Ltd., brought over to London by the next Airco machine, and within five hours these landing-wheels and tyres were ready for fitting to the British Aerial Transport Co.'s machine waiting to proceed to Amsterdam.

TO PATENTEES AND EXPERIMENTERS.

Mr. H. A. Sturch, A.M.I.Mech.E., A.M.I.A.E. (late of the editorial department of "The Car"), has now entered into partnership with Mr. John Walker, and the partners are opening a business as consultants and patent agents with offices at Kenilworth Road, Berkswell, Coventry.

They are prepared to assist in the designing and in the production of the component details of steam-engines, cars, commercial vehicles, pumps, aeroplane engines, etc., and to produce drawings and high-speed tracings under rush conditions. They will doubtless be found useful by firms engaged on experimental work.

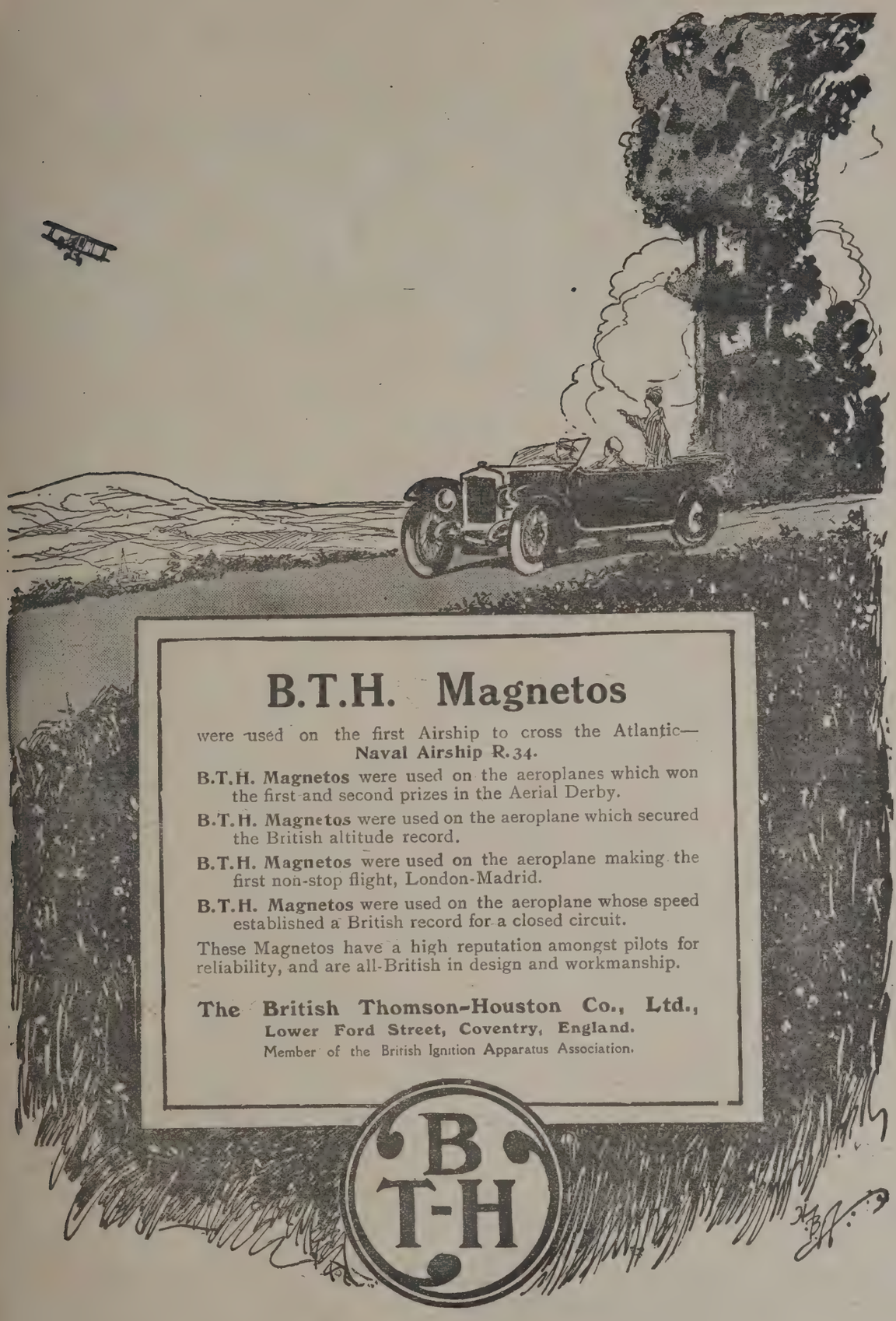
CARRYING ON.

It is good to note that at least one firm is going to continue its passenger flights during the winter months. It is the Supermarine Aviation Works, of Southampton, which states that the policy of deciding to carry on during what would ordinarily be called "the off season" will show the public that civil aviation, as far as flying boats are concerned, can be carried on throughout the whole of the year.

A NEW ASCOL COMPANY.

Mr. G. H. Mansfield is about to form two companies, one to be known as the Ascol Company, to deal in motor accessories, aircraft goods, etc., and the other to be known as G. H. Mansfield and Co., to deal with export business. An agreement has already been entered into for doing business in India.

The trade-mark "Ascol" and the goodwill from the liquidators of the old company have been purchased by Mr. Mansfield. As a temporary measure one of the first-floor flats in Ascol House has been taken over for use as offices.



B.T.H. Magnetos

were used on the first Airship to cross the Atlantic—
Naval Airship R.34.

B.T.H. Magnetos were used on the aeroplanes which won the first and second prizes in the Aerial Derby.

B.T.H. Magnetos were used on the aeroplane which secured the British altitude record.

B.T.H. Magnetos were used on the aeroplane making the first non-stop flight, London-Madrid.

B.T.H. Magnetos were used on the aeroplane whose speed established a British record for a closed circuit.

These Magnetos have a high reputation amongst pilots for reliability, and are all-British in design and workmanship.

The British Thomson-Houston Co., Ltd.,
Lower Ford Street, Coventry, England.
Member of the British Ignition Apparatus Association.

B T-H

THE ZEPPELIN-LINDAU GIANT MONOPLANE FLYING-BOAT.



The Zeppelin-Landau Giant Sea Monoplane (four 260 h.p. Mercédès engines).

The following information of the German giant naval aircraft is extracted from an article by Herbert Martin in the last issue of the German "Motor," on "The Position of the German Naval Air Service at the Signing of the Armistice."

"The giant aircraft of the Navy were turned out by the Zeppelin works at Staaken-by-Spandau and at Lindau-on-Bodensee, the former being of the well-known land-going type, equipped with four 260-h.p. Mercédès motors in two interplane power eggs (combined tractor and propeller screw drive), and provided with two long narrow floats. No specimen reached the active service stage before armistice was signed.

"Fuel was carried for 10 hours' flight at full power with all engines with a speed of 125 km. per hour, and after four to five hours' flying the aircraft could remain in the air on three engines. The armament consisted of three guns, one being arranged in the nose of the fuselage and one above each engine nacelle in the top plane. The two-centimetre aircraft gun was mounted aft in the fuselage on a swivelling gun-ring. The wireless receiver and sender were arranged in a special compartment aft, which was fitted with a collapsible wireless mast which enabled the aircraft to send messages when resting on the water.

"The monoplane naval aircraft turned out by the Zeppelin-Lindau works (first illustrated in THE AEROPLANE of Dec. 25th last, and in some Allied references called the 'Dornier' model) showed a better performance and improved flying qualities, giving a speed, with full equipment and carrying fuel for 10 hours' flight, of 145 km. with all four engines running at full power, and when three-quarters of the fuel was consumed the aircraft could fly at low height on two engines, thus extending the duration considerably beyond 10 hours.

"The weight of the Zeppelin-Lindau naval aircraft that has successfully passed the seaworthiness tests, amounts to 10 tons compared with 12 tons for the Zeppelin-Staaken model.

"The fuselage was raised above the plane, somewhat similar to the Ursinus biplane.

"The wireless compartment, with receiving and sending plant and mast, is in front, followed by a swivelling gun-mount. The single float may perhaps better be termed a flying-boat, and was made of duralumin, having in the bow an aircraft gun-mount, followed by the pilot's cockpit and fuel tanks. In the stern of the boat is another gunner's cockpit. On either side of the boat two engines were carried in engine nacelles, resting on A-struts and driving tractor and a propeller airscrew. The 260 h.p. engines could be repaired during flight and admittance to the top fuselage was by means of a rope ladder.

"The crew of both types of Zeppelin giant naval aircraft numbered five men. When the war ended improved editions of these models and new types were under construction, but work was stoppel by the Government Departments in question, as no need then existed for their employment in the sphere for which they were designed."—H.

AEROPLANES TO THE RESCUE OF THE MOTOR TRADE.

Owing to the recent strike, the Warland Dual Rim Company found that the material they had forwarded for their display at the Paris Show had not arrived.

It was necessary, therefore, to charter the aid of an aeroplane, and arrangements were made with the Airco Company and all the material was handed to them at 10 o'clock in the morning. At five the same evening the stuff was delivered to its destination. A telegram which was dispatched at the same time, advising their agent of it having left, arrived some 2½ hours after the goods.

Aviation is playing a more important part in industry every day.

A POWERFUL ALLIANCE.

The interesting announcement is made that Handley Page, Ltd., have been appointed sole agents for the sale of Triplex Safety Glass in India, Australia, New Zealand, and South Africa. All inquiries relating to Triplex glass business in the aforementioned countries should therefore be sent to Handley Page, Ltd., at Cricklewood, and not to the Triplex Company.

From this it is evident not only that Handley Page, Ltd., are extending their activities in various directions besides that of merely selling or operating aeroplanes, but that those responsible for the firm know a good thing when they see it.

EQUIPMENT WAREHOUSES.

The Aircraft Materials and Equipment Corporation of New York have completed arrangements whereby they become distributors in the United States of spare parts for Canadian training aeroplanes. These machines were used by the R.A.F. in Canada. Several hundreds have been sold for commercial purposes throughout the country.

The corporation have leased a large warehouse in New York. A complete stock of parts for engines as well as aeroplanes will be kept. A comprehensive catalogue has been published.

A plan has been worked out whereby parts will be sent off on the same day that the order is received. This was done because commercial users of aeroplanes cannot afford to keep their machines laid up for indefinite periods while they are obtaining new parts.

A branch warehouse has been opened at Chicago, and as soon as arrangements have been made another will be opened in San Francisco.

A NEW COMPANY.

W. D. ODDY AND CO.—Private company. Registered Sept. 25th. Capital, £25,000 in £1 shares. To carry on the business of manufacturers of aircraft, heavier- and lighter-than-air machines, propellers and airscrews and accessories, etc., appertaining to aircraft. The subscribers (each with one share) are:—W. D. Oddy, 47, Gledhow Wood Grove, Roundhay, Leeds, engineer; R. Blackburn, Rowcliffe, Boston Spa, engineer. The first directors are: W. D. Oddy and R. Blackburn (both permanent). Qualification £100. Registered Office: Propeller Works, Globe Road, Leeds.

The excellent work done by Mr. Oddy's firm in its original form during the war will be remembered. Oddy airscrews then attained a high reputation which one feels sure the new firm will maintain.

A PRESENTATION.

At a social evening of the staff of the Lang Propeller Works, held on Oct. 9th, Mr. C. A. Laing, the works manager, and his wife were the guests of the evening, and were presented with a handsome clock and an illuminated address in recognition of their silver wedding.

FRENCH AIRSCREW PRACTICE DURING THE WAR.

By JOHN STRONG.

French airscrew practice varied very little from British methods either in design or manufacture, and although quite a large number of patents were taken out during the war only types designed previously were in general use, such as the Chauvière, Lumière, Ratmanhof, Ratier, Levasseur and Régy. For all-round efficiency the Lumière showed up particularly well.

The attached diagram comparing the blade widths of typical British, French, American, Italian, German, and Austrian airscrews is instructive.

TIMBER TREATMENT.

With the exception of the Valéri and de la Grandville systems, 1 in. boards were invariably used for the laminations.

The timbers allowed were the same as in England, but the same amount of old, naturally dried stock was not available, and so the timber was invariably either wet or dry kilned. Elm and beech were treated with Capt. Otto's ozone process, which consisted in alternately passing pure air and ozone-charged air through the kiln at a comparatively low heat.

Kilned timber was usually cut into 27 mm. planks and allowed to stand for a month before using. The planks were then brought into the drying-room and stocked until required. The timber thus acquired the working temperature of the shops.

AIRSCREW WOODS AUTHORISED.

FOR WAR SERVICE.—European walnut, American walnut, beech, mahogany (true), elm, ash, Ban-lang.

FOR SCHOOL MACHINES.—Honduras mahogany, Cuban (tobacco) mahogany, birch (Canadian), African walnut.

AUTHORISED, BUT NOT IN USE.—Oak (Querous Robur), Grand Bassam (mahogany).

MANUFACTURING METHODS.

The planks were slightly warmed in an oven and then planed down to 22 mm. thickness, marked out for the laminations, and roughed out to shape and the preliminary centre hole drilled. The shaped laminations were roughed with a toothed plane.

When building up the blocks great care was taken to balance individual laminations. This made the final working-up very simple.

The blocks were then glued up, either hot glue (Lyons and Givet) or casein were used. The casein was preferred officially. Top and bottom gluing boards were used as illustrated, and this allowed four or six blocks to be put into one press, thus economising floor space.

SHAPING.

After taking the block from the press the centre hole was bored to size, and then the block was clamped onto a jig and the blades spindled to the exact profile as seen in plan. While on this jig the boss was also roughed out on another vertical spindle with a concave cutter.

The next operation was facing up the boss, for which a drilling machine with a special cutter was used.

The block was afterwards roughed out on a band saw, for which operation an average workman took about 20 min.

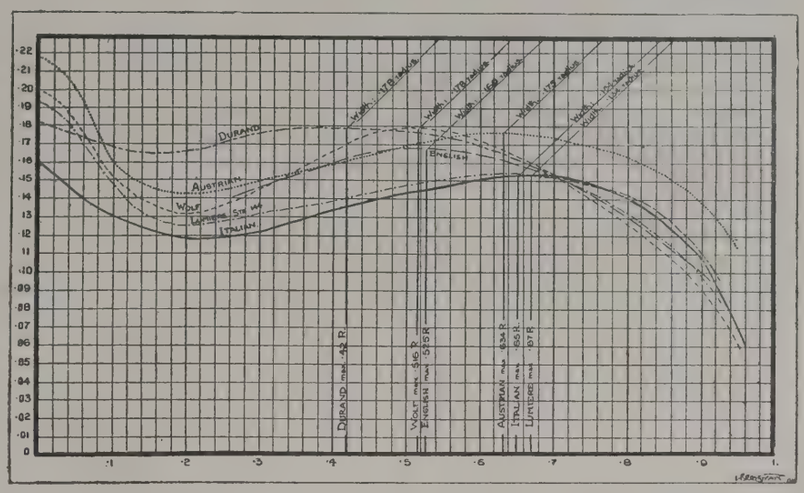


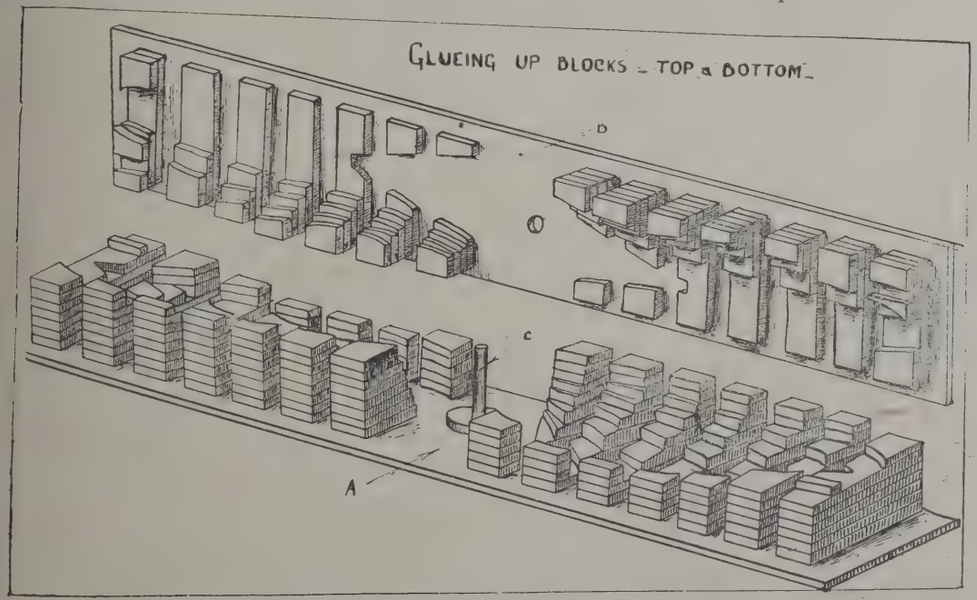
Diagram showing blade width in relation to radius for typical British, French, Italian, American, German and Austrian Airscrews.

for the two blades, both back and face. No marking out was necessary. A succession of cuts were taken until only just the corners of the steps were left in. This only left about 2 mm. to be shaped by hand.

The next operation was shaping out the face and setting the pitch. This was usually done by hand, but in the Lumière shops an ordinary overhand planing machine and a box-jig were used.

The pitch was then initially verified on the test bench and the first cuts taken at the usual sections and verified by templates. The back of the blade was subsequently shaped by hand, using the section cuts as guides. The airscrew was then finished back and face and balanced, either knife-edge or ball-bearing stands being used, and cone mandrels. The bolt-holes were drilled to templates as usual, 1-2 mm. clearance being allowed.

The finished airscrews were afterwards either stained and varnished or lacquered.



The average time taken for hand-shaping after the roughing out on the band saw was less than six hours, and exceptional men only took 2½ hours. Piecework was usual. The labour per airscrew from planing down the planks to final inspection was invariably less than 30 hours, and the workmanship was excellent throughout.

SHAPING MACHINES.

Shaping machines did not come into very general use, as all the British and American machines available cut across the blade and took longer than hand-shaping. An exceptionally good machine was produced by Mr. Wasmer. This shaped

along the blade instead of across it, cutting two at a time, and taking 10 min. per face per blade.

Another good reproducing machine, which also cut along the length of the blade, was the Selmersheim, which is illustrated.

Other Methods.
Eclair.

Timber. — Walnut, mahogany, birch, elm, beech.

Dryness of Timber.—As delivered by French Government and then subjected to tests for humidity. It must not contain more than 15 per cent. or less than 10 per cent.

S.F.A. Timber Inspection.—The Service de Fabrication Aéronautique is equivalent to the British A.I.D. A sample of timber from each batch is sent to S.F.A. having the thickness and width of the laminæ and at least 150 mm. (roughly 6 in.) long.

Heated Chambers.—These are large enough to contain sufficient laminæ for six days' work ahead. Hot, dry air is used (hot damped air is not allowed). Artificial ventilation is employed.

Temperature in Works.—Is never below 65 deg. Fahr. or above 75 deg.

Glue.—Lyons and Givet mixed hot glue or casein if specified.

Period Under Clamp.—Three (3) laminæ under clamps 6 hours; then the two blocks of three laminæ glued together for 6 hours.

Period Before Roughing.—Roughing out is done on band saw, one skilled man roughing 50 airscrews per diem to within 2 to 3 mm. of final. This is done not less than three days after release from clamps.

Period Before Final Shaping.—Twelve days after roughing out the block goes to final shaping, giving 15 days in all after release from clamps.

Centre Bore.—No paint or varnish. Bored a tight push fit.

Bolt Holes.—No paint or varnish. Bored + ½ mm.

Varnish.—Woodfiller, three coats varnish, pumice, French polish, and alternatively lacquer finish.

Levasseur.

Timber Used.—Walnut, mahogany, beech, elm.

How Dried.—Kiln and in heated rooms.

Temperature in Works.—65 deg. to 70 deg. Fahr.

Gluing Room.—Only kept warm by the tables used for heating laminæ, with the result that in the morning in winter the gluing room is rather cold.

Hot Glue Used.—The glue is specially made for Messrs. Levasseur, and is their trade secret. The boards are brushed over with formalin before gluing.

Assembling.—A board 65 mm. thick by 180 mm. wide is used on which the laminæ are applied, and then the whole is clamped by four-sided clamps having three wooden adjustment screws on the top.

Gluing en Bloc.—They apply glue to both sides of laminæ and clamp up the seven or eight laminæ *en bloc*.

Period Under Clamps.—The block is left only 4 *hours* under clamps. They sometimes rough off at once, but usually after 10 or 15 days, and then finish. But the block is always left 15 days between release from presses and final shaping.

Band Saw.—Roughing off is done by one man on a band saw to within 3 mm. of final dimensions—for this the man must be both skilled and efficient.

S.F.A. Inspection.—Examined in the white, directly airscrew is out of shaper's hands, and again after varnishing, as is usual in France.

Finish.—Woodfiller, three coats varnish, and French polish. Recently they were lacquered only.

Centre Bore.—Push fit. No paint or varnish.

Bolt Holes.—Plus ½ mm. No paint or varnish.

Tipping.—De la Grandville pig-skin tips or ordinary metal tips, following usual French practice.

Regy.

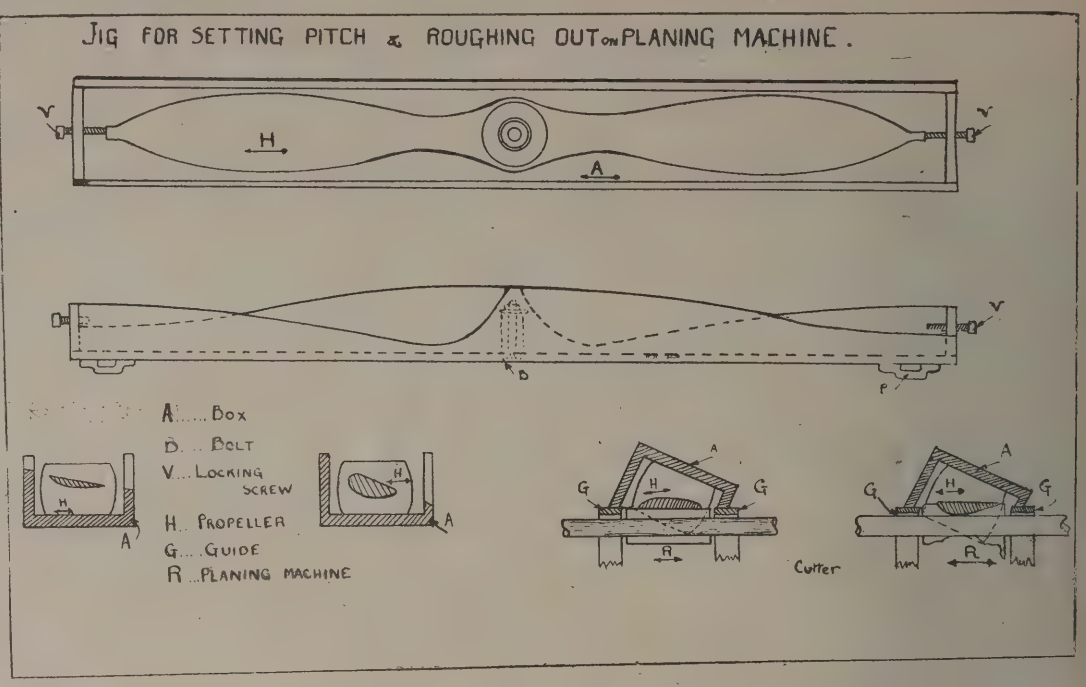
Timber.—Walnut, South of France walnut, mahogany, beech (mostly ozone kiln dried).

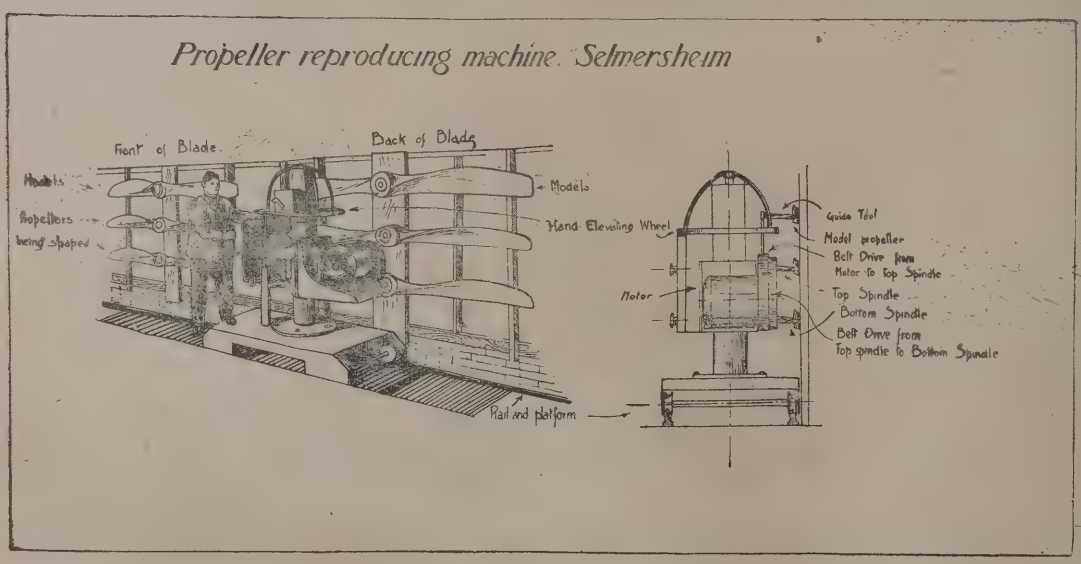
Temperature in Works.—65 deg. to 70 deg. Fahr.

Formalin.—Formalin is painted on the laminæ, which are then put into heated chambers for 8 or 10 mins.

Glue.—The laminæ are then taken out and a mixture of hot Lyons and Givet glue is immediately applied, two laminæ at the time.

Clamps.—The usual French type, left on 5 to 12 hours; then pairs glued *en bloc*, 12 hours. Formalin is immediately painted on along the glue joints.







GWYNNES
LIMITED.

CONTRACTORS TO H.M. GOVERNMENT

MANUFACTURERS AND SOLE LICENSEES IN THE BRITISH EMPIRE

"CLERGET" PATENT AERO ENGINES

ENGINEERS, LONDON.

"GWYNNE, LONDON." "HAMMERSMITH 1910."

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

Casein Glue.—Recently only casein glue has been employed, and airscrews glued up *en bloc* in one clamping up.

Shaping, Roughing, and Inspection.—As in other works.

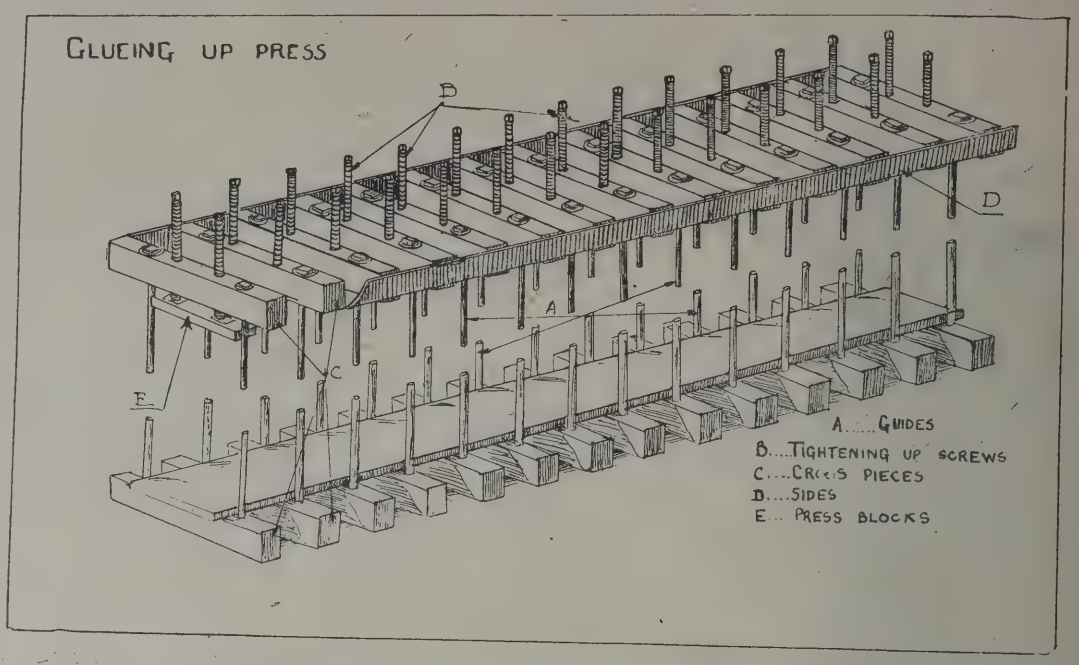
De la Grandville (Plyboard Construction).

(Société des Hélices Armées et Matricées.)

Temperature. — In the works, 65 deg. Fahr., excepting when first roughing out laminæ.

Air.—Air in works is kept dry as possible.

Timber. — Walnut, mahogany, lime, ash, and others, in 7 mm. laminæ. Face of airscrew in walnut or mahogany. Face pieces of boss in any hardwood.



Laminæ.—Are 7 mm. in thickness and are full length for first four or five from tip to tip. Next full length from sections E to E, next full length from sections D to D, and so on.

First Stage.—Marking out and sawing of laminæ, to be done as far as possible in a room having a temperature of 75 deg. Fahr.

Second Stage.—Assembling, gluing, and placing of fabric between the first four laminæ to about one-third from tip—that is, only from about section E to tips. Clamping the whole *en bloc* on the matrice or shaping press. Fifteen minutes are allowed to elapse before tightening up the clamps.

Period Under Clamps.—For soft woods two days, and for hard woods three days. The glue used is casein, make R.G. The preparation of this glue requires no special installation, being used cold. Care is taken to brush off all glue oozing out of the sides of the laminæ after a lapse of one hour under clamps.

Third Stage.—Removing block from matrice or shaping press, checking alignment and centre of airscrew, drilling a preliminary hole of 50 mm. diameter in centre of boss. Ten days are allowed for block to dry after release from clamps.

Fourth Stage.—Gluing onto the boss of hardwood packing pieces, if necessary. Two days under clamps. Five days drying after release from clamps.

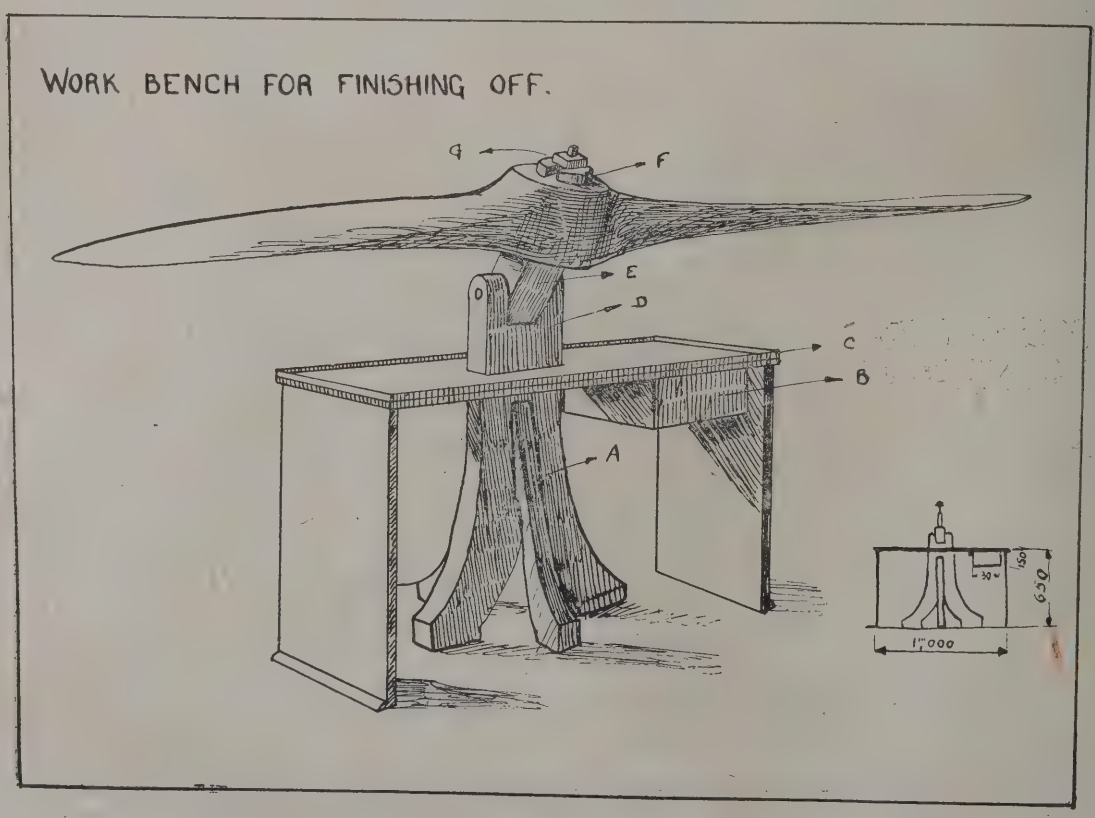
Fifth Stage.—Squaring the hub, drilling centre bore and bolt holes to size.

Sixth Stage.—Tracing and roughing out on band saw. Three days allowed for 5th and 6th stages. Ten days left to stand after roughing before shaping.

Seventh Stage.—Shaping, etc., balancing, and S.F.A. inspection. This takes from eight to ten hours in all.

Eighth Stage.—Tipping or beading with specially prepared "pig-skin" parchment, without screws or rivets, with special hot "Bugaline Glue." Three days under clamps. *Note.*—If the pitch of an airscrew has dropped, or *vice versa*, at the tip, it is claimed that this can be rectified and made to keep correct for an indefinite period by the application of this pig-skin clamped on by jigs having the required pitch.

Varnishing.—Woodfiller was used and three coats of varnish, pumiced down, and French polished. Recently all airscrews were lacquered instead of varnished.



Valeri (Plyboard Construction.)

The Valeri system of manufacture would have been very interesting if the timber scarcity had been more severe. It allowed 30 airscrews to be made from a cubic metre of timber instead of only six, and called for no special skill or plant.

Thin veneers as used for three-ply were employed, and disposed :—

One layer with fibre along the airscrew blade.

One layer with fibre at 45 deg. to the left.

One layer with fibre straight.

One layer with fibre at 45 deg. to the right.

One layer with fibre straight, etc.

The outside boards for the boss were of

BLOCTUBE CARBURETTORS
FOR AERO-ENGINES

RENÉ TAMPIER

CONSTRUCTING ENGINEER,
INVENTOR AND PATENTEE

CONTRACTOR TO H.M. AND ALLIED GOVERNMENTS.

PARIS. LYONS. TURIN.

BLOCTUBE CARBURETTORS COMPLETE.

BLOCTUBE PETROL VALVES.

BLOCTUBE CONNECTIONS.

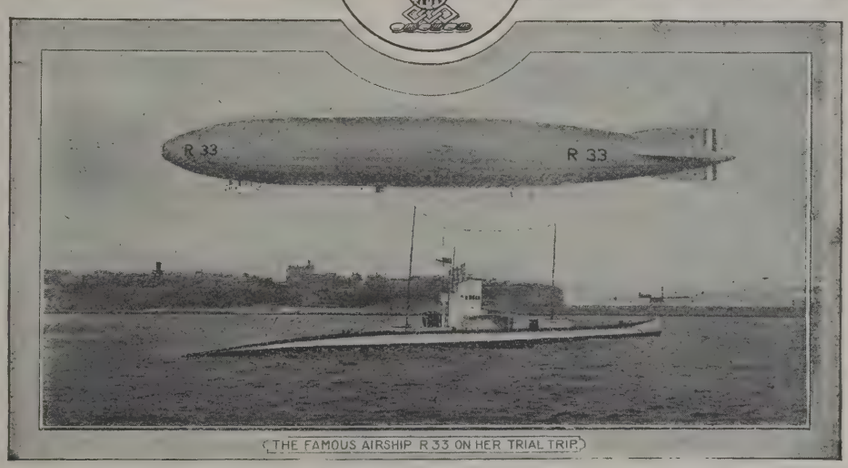
BLOCKTUBE CONTROLS.
Large Variety of Models.

INTERMEDIATE BRACKETS.
Straight or Bell Crank.

BLOCTUBE CARBURETTOR WORKS,
DANEMERE STREET, PUTNEY, LONDON, S.W.15.

Telephone—PUTNEY 242. Telegrams—"TUBLOCARB, PUT, LONDON."

TRADE MARK.



THE FAMOUS AIRSHIP R 33 ON HER TRIAL TRIP.

RIGID AIRSHIPS FOR WAR, MAIL & PASSENGER SERVICE.

SIR W. G. ARMSTRONG, WHITWORTH & CO., Ltd.,

NEWCASTLE-UPON-TYNE. **Works: Barlow, near Selby, Yorks.**

LONDON OFFICE: 8, GREAT GEORGE ST., WESTMINSTER, S.W.1.

TELEGRAMS: "ZIGZAG PARL, LONDON." TELEPHONE: VICTORIA 4010.

hardwood, but any timber excepting elm could be used for other layers. Either casein or hot glue could be used.

The top and bottom boards of the press could be shaped so that when dry the blade is already nearly to pitch. This saves a lot of cutting away. When hot glue was used water-heated presses were employed.

The strength of these plyboard airscrews is equal to ordinary construction, and when properly made there is no tendency to lose pitch even after long service.

The table herewith gives an idea of the timber required to make an average airscrew by the various methods.

COMPARISON OF THE THICKNESS OF BAULK NECESSARY TO MAKE A NORMAL AIRSCREW.

Laminations.	Ordinary English Method.	De La Grandville.	Valéri.
Sawing	1 mm.	2 mm.	0
Thickness	25 mm.	10 mm.	2 mm.
Planing down ...	4 mm.	3 mm.	0
Finished Plank ...	21 mm. thick	7 mm.	2 mm.
Thickness of normal Airscrew	147 mm.	147 mm.	147 mm.
Loss for seven Laminations	35 mm. per 21 lm.	105 mm.	no loss in sawing & planing.
Thickness of Baulk necessary to make a normal Airscrew	182 mm.	252 mm.	147 mm.

Tipping.

Seaplane airscrews had their blades protected with copper sheathing, following British practice, with the exception that instead of fitting a long length of metal the tip was divided into 8 cm. lengths with 1 mm. between the pieces. This allowed the blade to give a little and avoided the corrugation of the metal which was otherwise common.

Recently land-machine blades were also tipped, but with "Grandville" pig or calf parchment. This was to prevent splitting after being hit, and therefore corresponded to the fabric used on British airscrews.

Lacquering.

Since lacquering has been adopted, tipping has been abandoned as unnecessary.

The lacquer used is the usual "Japanese" gum, supplied from French Indo-China in large quantities. The gum is allowed to settle in barrels, the heavy precipitate being the least valuable, and it is used mixed with a kind of Fuller's earth for a woodfiller. When this coat has dried it is well pumicestoned down and the second coat, consisting of pure gum of the middle gravity, is applied. This is given at least a day to dry and is also pumicestoned before the third coat is applied. This consists of the best of the gum and has mixed with it the necessary colouring matter.

All the coats are applied not with a brush, but with a flat wooden instrument shaped like a putty-knife.

The lacquer finish is hard but flexible. It is not affected by acids, seawater, spray and sand, gravel or the like, but at the same time gives to the whip of the blade without flaking or cracking. Indeed, the process is also used for the mudguards of motor-cars and for insulating fine copper wire for electrical machines for this very reason.

Lacquering gives a beautiful finish for less expenditure than varnishing and polishing.

Dihedral.

Two designers, Levasseur and Lumière, departed from orthodox practice in giving a slight forward dihedral to their blade to balance correctly the centrifugal and bending stresses on high horse-power airscrews. Unlike British designs, they had constant pitch blades.

Variable Pitch.

The development of the Ratteau Turbo-Compressor and other systems of maintaining engine power at altitudes has led to a lot of interesting experimental work, but nothing definite has yet been evolved.

Mr. L. de Monge, the designer of the Lumière airscrew and Mr. Desmons are working up a patent of the latter to obtain the same result without a variable pitch airscrew. The proposal is to have two two-bladed airscrews, one for getting off and climbing to 15,000 ft., and the other for operating above that height. The altitude airscrew would be free during the first part of the climb, and be brought into action when required by a special clutch, thus converting a two-blader into a four-blader at will.

Several attempts were made to produce pusher machines with fuselages, but they were never quite successful.

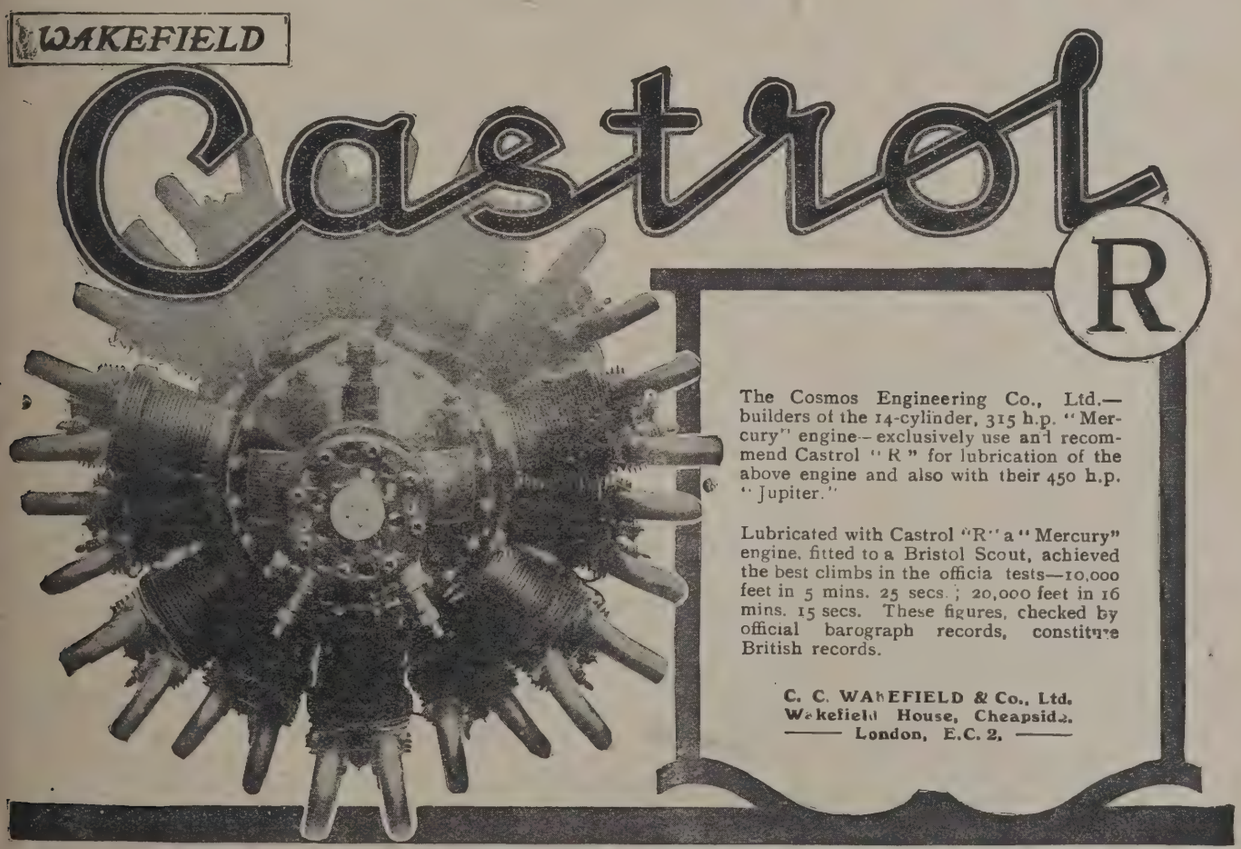
There has really been very little to choose between French and British airscrew design. If anything, the light-weight, flexible French type was a little more efficient, and certainly cost much less to make. The joints and the concessions as to methods of manufacture allowed to makers by the Technical Authorities were practically the same as in England.

TABLE OF COMPARATIVE TESTS.

300 H.P. Hispano-Suiza—Sopwith Dolphin Machine with various Airscrews.

Machine	Sopwith Dolphin C_1 No. 3618.		Do.		Do.		Do.		Do.		Do.	
Engine	H.S. 8th Feb. 300 h.p. No. 200,044.											
Total Load	359 Kilos.											
Airscrew (Make) ...	Lumière		Gallia		Ratmanoff		Lumière		Levasseur		Levasseur		Gallia	
Series	144 b.		38 No. 2509		H.V. 11540		144 d.		672 No. 23526		668 No. 23332		38 No. 2509 Mod.	
Diameter	2.50		2.55		2.49		2.50		2.55		2.50		2.55	
Pitch	2.155		2.21		1.99		2.135		2.03		2.065		2.09	
Width of Blade ...	0.176		0.211		0.172		0.1757		0.1705		0.1575		0.1895	
	Time	R.P.M.	Time	R.P.M.	Time	R.P.M.	Time	R.P.M.	Time	R.P.M.	Time	R.P.M.	Time	R.P.M.
Climb to 1,000 Metres	2'39	1,650	2'36	1,550	2'44	1,690	2'45	1,625	2'48	1,640	2'57	1,665	2'42	1,650
,, 2,000 ,,	5'17	1,660	6'03	1,540	5'18	1,685	5'31	1,630	5'31	1,655	5'54	1,675	5'23	1,645
,, 3,000 ,,	8'41	1,670	9'45	1,525	8'26	1,680	8'40	1,630	8'39	1,660	9'15	1,695	8'35	1,640
,, 4,000 ,,	12'35	1,660	14'43	1,510	12'13	1,685	12'29	1,630	12'20	1,660	13'07	1,695	12'21	1,630
,, 5,000 ,,	17'40	1,650					17'51	1,635	17'37	1,670	18'42	1,685	17'42	1,620
,, 6,000 ,,	26'27	1,640												
Ceiling in Metres ...	7.500						7,500		7,500		7,500		7,500	
	K.P.H.	R.P.M.	K.P.H.	R.P.M.	K.P.H.	R.P.M.	K.P.H.	R.P.M.	K.P.H.	R.P.M.	K.P.H.	R.P.M.	K.P.H.	R.P.M.
Speed at 1,000 Metres	,,	,,	,,	,,	227	1,880	,,	,,	,,	,,	,,	,,	,,	,,
,, 2,000 ,,	,,	,,	,,	,,	223.5	1,870	227.5	1,830	223.0	1,860	212	1,860	,,	,,
,, 3,000 ,,	,,	,,	223.5	1,740	219.5	1,860	223	1,815	219.0	1,850	211	1,850	219	1,790
,, 4,000 ,,	215	1,840	221	1,720	214	1,840	216	1,785	212.0	1,825	208	1,830	215	1,770
,, 5,000 ,,	202	1,810					208	1,760	204.0	1,800	200	1,815	207	1,750
,, 6,000 ,,	182	1,740												


What flying has taught us—
The demand of the aeroplane for the utmost power from the lightest and most trustworthy engine, and our concentration on that problem, has taught us much—and each owner of the new Austin "Twenty" will benefit thereby.
More power with less weight and greater reliability combined with silent running, flexibility and marked economy are characteristics of the new Austin "Twenty" and assure its selection by discriminating motorists.
The new Austin "Twenty"
THE AUSTIN MOTOR CO., LTD.,
Head Office: NORTHFIELD, BIRMINGHAM
Telephone—Kings Norton 230.
Telegrams—"Speedily, Northfield."
And at London, Manchester and Paris.


WAKEFIELD
Castrol
R
The Cosmos Engineering Co., Ltd.—builders of the 14-cylinder, 315 h.p. "Mercury" engine—exclusively use and recommend Castrol "R" for lubrication of the above engine and also with their 450 h.p. "Jupiter."
Lubricated with Castrol "R" a "Mercury" engine, fitted to a Bristol Scout, achieved the best climbs in the officia tests—10,000 feet in 5 mins. 25 secs.; 20,000 feet in 16 mins. 15 secs. These figures, checked by official barograph records, constitute British records.
C. C. WAKEFIELD & Co., Ltd.
Wakefield House, Cheapside.
London, E.C. 2.

A TEST OF ALCOHOL FUEL.

According to a message from Washington, one hundred and thirty gallons of alcohol were brought into Washington by a mail aeroplane of the Post Office Department recently. The aeroplane flew 3,000 ft. over the heads of the excise officers and policemen on the look-out for what are known as "bootleggers." The alcohol was not carried in the mailbags, which would be in violation of the law, but in the fuel tanks, nor was it peddled around in the haunts of the bootleggers after its arrival. The proper thirst for this character of alcohol has not yet been cultivated. It contains a fair percentage of benzol and enough ether to give it additional kick.

The aeroplane which brings in this alcohol every other day is known among the air mail pilots as the "Bootlegger," and is the forerunner of a revolutionary change in the motor operation of the Air Mail Service. This product is the new alcohol fuel which takes the place of the high-grade aeroplane petrol. After a number of tests with this new fuel under adverse weather conditions, the Post Office Department is changing over its aeroplane engine attachment and will shortly be operating the entire New York-Washington route with the alcohol fuel.

Its great advantage lies in the cleanliness of the engine, reducing cost of upkeep, and in its burning cooler than gasoline, thereby overcoming objections to the high compression engine at low altitudes. Engines which ordinarily are 25 to 26 gallons of petrol operate on the new fuel on about 20 gallons, which gives greater flying radius to the machines. It reduces chances of forced landings by keeping the sparking plugs and the engine cylinders clean of carbon and oil accumulations. With this fuel it will be possible to operate the mail in a De Havilland 4 regularly in a non-stop flight from New York to Cleveland, a distance of 430 miles, whenever fog or rain conditions in the mountains make it inadvisable to attempt to land at the intermediate field at Bellefonte, Pa.

A CORRECT DIAGNOSIS.

Apropos the Schneider Cup race it is gratifying to observe that the French journal "L'Air," in its report of the occurrence, states that it is glad to believe that those who know the British people will not accuse them of intentional discourtesy to the foreign competitors, but will realise that it was merely the organisation of the competition which was in fault.

AN INTERESTING MOVE.

Those who like to have news of the pioneers of aviation will be interested to hear that Mr. C. Compton Paterson, who was certainly one of the first men in England to build and fly his own machine—as he did at Freshfield, in Lancashire, in 1910—and who afterwards, with Mr. Guy Livingston (now Brigadier-General and C.M.G.), organised the first introduction of aviation to South Africa, is now organising the output of Skootamotas in the Isle of Wight.

It will be remembered that Mr. Paterson was responsible for the building, equipping, and manning of the factory erected by J. S. White and Co., of Cowes, on the high land above the town, and that while there he managed to produce an extremely creditable number of Short seaplanes with hands which had to be trained on the spot. This factory has now been taken over by Gilbert Campling, Ltd., for the manufacture of Skootamotas, and Mr. Brown, of that firm, is busily engaged with Mr. Paterson in reorganising the factory for rapid production on the most approved modern system.

When in the Isle of Wight recently one had the opportunity of going round the factory and studying the methods which are being laid down for production Though simplicity itself in operation, the system is in fact far too elaborate to be described in print, apart from the fact that the firm might not like to have its own particular system made public. One can only say that the organisers do not seem to have omitted from their consideration a single detail which can assist rapid and efficient production.

The fact that Mr. Paterson is in control of the works is sufficient guarantee that the work will be thoroughly well done, and though it will be some little time before production actually begins, one believes firmly that the apparent delay caused by organising production will be made up in a very short time by the perfect system under which production will proceed.

FOREWARNED AND FOREARMED.

On Friday, October 10th, 1919, J. Samuel White and Co., Ltd., of East Cowes, formerly well known as builders of seaplanes of very high quality, delivered to the Navy a new and powerful destroyer of the "W" class, known as the "Witherington." This ship was laid down on July 29th, 1918, and launched on January 16th, 1919.

From the aeronautical point of view the interesting point about "Witherington's" armament is that she carries special anti-aircraft high angle guns as part of her regular armament. This may be taken as proof that the Royal Navy at last recognises that aircraft are to be reckoned in future as one of the regular afflictions of war and that H.M. ships must in future be armed to combat this new weapon.

ROLLS-ROYCE, LTD.

In a letter received regarding the Rolls-Royce exhibit at the coming Olympia Motor Exhibition several interesting facts are stated about their aero engines.

During the war the Government required the whole of the Rolls-Royce works to be engaged exclusively in the manufacture of aero engines. Since the armistice the Government have required that a large proportion of the works should be engaged in making further aero engines. A new type is now being constructed of high horse-power.

It is also stated that the company have derived a great deal of information during their extensive experiments and experience connected with the construction of their aero engines. This information, which has helped to perfect their present car chassis, might otherwise have required many years to acquire.

PALMER TYRES AT OLYMPIA.

The Palmer "Cord" tyre—now used on practically every wheeled aeroplane in this country—will naturally enough be well represented at the forthcoming Motor Show.

Unfortunately, lack of space will prevent the exhibition of the Palmer cording machine, but a full line of their tyres will be on show at the stand of the Palmer Tyre, Ltd.

ILLUMINATION.

When the metal filament lamp—now the standard appliance for electric lighting throughout the world—was first produced great difficulty was found in producing the wire filaments in sufficiently small diameters to give units of sufficiently small candle-power for ordinary use, except when run on circuits of very low voltage. This limited their use to conditions where large lighting units could be employed or to cases where transformers could be used to give a low pressure supply.

Since those days constant experiments and research have removed these disabilities.

The nitrogen-filled "Half-Watt" lamp, introduced in 1913, was the result of a discovery that metal filaments could be run at a higher temperature and giving a much greater efficiency in an atmosphere of nitrogen than in a vacuum.

Although the filament of an incandescent lamp is well below the melting point of the metal, a kind of slow evaporation of the metal goes on continuously, and the metal is deposited on the bulb, blackening it, and thus greatly reducing the light given, and eventually causing the failure of the filament itself. The presence of an inert gas reduces this disintegration of the filament and allows it to be run at an increased output.

This type of lamp suffers from one fault of the early metal filament lamps and it cannot be made to give small candle-powers except on low voltage circuits.

In 1914 it was found that the use of Argon instead of nitrogen for filling this type of lamp made it possible to use finer filaments without disintegration and consequently to produce lamps of smaller candle-power.

Argon—discovered by Lord Raleigh in 1894—is an inert gas present in very minute quantities in the atmosphere. Until 1914, no use had been found for it, and there were no facilities for its collection, and under war conditions great difficulties were experienced in obtaining Argon for gas-filled lamps.

Since then the General Electric Company have laid down an Argon producing plant at the Osram Lamp Works at Hammersmith, and they are now producing ½-watt Osram Argon-filled lamps commercially.

100 to 130 volt lamps are made in sizes down to 60 watts, and lamps for circuits between 200 and 260 volts are made down to 100 watts.

The candle-power of these lamps is approximately twice that of the ordinary metal filament lamp consuming the same power.

ANOTHER TRANSFORMATION.

The following appears in the list of new companies registered :—

Kingsbury Engineering Co., Ltd.—Registered Oct. 13th. Capital £200,000 in 5s. shares. Objects : To carry on the business of manufacturers of and dealers in motor vehicles, cycles, ships, vessels, aircraft, etc. The first directors are : E. Barningham, Calcot Rise, Reading; H. Barningham, 11, Selwood Place, S.W.7; A. J. Foster, 445, Oxford Street, W.; and P. Lake, Kingsbury House, Kingsbury, N.W.9, all engineers. Solicitor : L. Blair, 94, Hope Street, Glasgow. Registered office : Kingsbury Lane, Kingsbury, N.W.9.



GREAT BRITAIN.

Civil Aerodromes.

The Air Ministry announced on Oct. 25th that the following lists of aerodromes are issued as an addition or in amendment of the lists already published :—

LIST B (Service Stations also available for Civil Use).

Amendments.—The following aerodrome has been transferred to List E and is now published in that list.

Aerodrome.	Nearest Railway Station.	Nearest Large Town.
Sherburn-in-Elmet.	Sherburn-in-Elmet.	Selby.

LIST C (Aerodromes temporarily retained for Service purposes.)

Amendments.—The following aerodromes have been transferred to List E and are now published in that list :—

Aerodrome.	Nearest Railway Station.	Nearest Large Town.
Lake Down	Amesbury	Salisbury
Newhaven (S)	Bishopstone	Newhaven
Sedgeford	Sedgeford	Hunstanton
Yatesbury	Calne	Marlborough

References : (S) Seaplane station

LIST D.

Aerodromes licensed as suitable for "Avro (504K) and similar types of aircraft " only. Except in very few instances accommodation does not exist. The licences have also in the majority of cases been issued for limited periods only.

Aerodrome.	Location of Aerodrome.	Nearest Large Town.
Brighouse	Stoney Lane	Halifax
Leamington	Polo Ground, Radford Road	Leamington

LIST E. (Stations no longer in use by the R.A.F.)

These stations have been passed to the Government Property Disposal Board. They will be relinquished as soon as the Government property thereon has been disposed of. In many cases the aerodromes are now under cultivation, but it is probable that the sites still form the best emergency landing grounds in the immediate neighbourhood.

Aerodrome.	Nearest Railway Station.	Nearest Large Town.
Lake Down	Amesbury	Salisbury
Newhaven (S)	Bishopstone	Newhaven
Scapa Flow (S)	Thurso (by boat to mainland)	Kirkwall
Sedgeford	Sedgeford	Hunstanton
Sherburn-in-Elmet	Sherburn-in-Elmet	Selby
Yatesbury	Calne	Marlborough

References : (S) Seaplane station.

The Continental Air Services.

THE AIRCO SERVICE.

The ninth week of regular flying between London and Paris was completed by Aircraft Transport and Travel, Ltd., on Oct. 25th. One hundred and thirty-five flights have now been accomplished out of a scheduled number of 139. The charts showing the volume of goods carried are showing a healthy upward curve.

THE AIRCO SERVICE

Date.	Type.	Pilot.	Left Hounslow	Arr. Paris.	Left Paris.	Arr. Hounslow	Pass
Oct. 20th	D.H. 16	Lt. Shaw	12.30 p.m.	2.55 p.m.			3
	D.H. 4a	Lt. McMullin			12.35 p.m.	2.50 p.m.	0
Oct. 21st	D H. 9	Lt. Chattaway	12 42 p.m.	3.00 p.m.			2
	D.H. 4a	Capt. Baylis	12.42 p.m.	3 00 p.m.			1
	D H. 4a	Lt. Armstrong	1 25 p.m.	3 50 p.m.			1
	D.H. 16	Lt. Tebbit			12.30 p.m.	2.46 p.m.	2
Oct. 22nd	D H. 16	Lt. Powell	12.30 p.m.	2 50 p.m			2
	D.H. 16	Lt. Shaw			12.30 p m	2.30 p m.	2
Oct. 23rd	D.H 4a	Lt. Campbell-Orde	12.30 a m.	2.50 p.m.			0
	D H. 4a	Capt Baylis			12 27 p m.	2.45 p m.	0
	D.H 9 R	Capt. Gathergood			12.47 p.m.	2.25 p m	0
Oct. 24th	D.H. 16	Maj. Patteson	12.40 p m.	2 50 p.m.			3
	D.H. 4a	Lt. Chattaway			12,30 p.m.	2 30 p m.	0
	D.H. 9	Lt. Armstrong			12.30 p.m.	2.45 p m.	0
	D.H. 4a	Lt. Powell			2 50 p m.	4 40 p.m.	0
Oct. 25th	D.H. 4a	Lt. Lawford	12.30 p.m.	2 45 p.m.			1
	D H. 16	Lt. Campbell-Orde			12.30 p.m.	2.50 p.m.	0

On Oct. 23rd Lieut. Lindley piloted a specially chartered machine, a D.H.4a, which left Hounslow for Brussels at 2.55 p.m., carrying a passenger on urgent business. The time of arrival at Brussels is not notified.

THE HANDLEY PAGE SERVICE.

During the week ending Oct. 22nd 47 passengers and 2,184 lb. of freight were carried on the Handley Page service London-Paris. Lieut. McIntosh piloted a machine that made a return journey to Paris on one day. The actual flying time was 6 hr. 40 min.

The Nieuport monoplane (180 h.p. Le Rhône) on which M. Jansen is attempting to become holder of the Coupe Deutsch. He completed the course at a speed of 124.6 miles an hour, and held the Coupe until two days afterwards M. Sadi Lecointe beat him with a speed of 153 miles an hour. It is of interest to note that the speed of this monoplane is not notably higher for the extra 50 h.p. than was that of the Bristol-Barnwell monoplane with the 136 h.p. Clergêt.



On Oct. 20th, despite the prevalence of fog over England and the Channel, a Handley Page accomplished its journey from Paris to Hounslow with freight and passengers. The visibility was very poor. The flight took 3 hr. 45 min.

On Oct. 24th a machine on the same journey with nine passengers and freight passed through a snowstorm in Kent.

During the week ending Oct. 22nd 19 passengers were carried on the London-Brussels service.

The London Customs Bill of Entry now contains in its Imports columns details concerning goods brought into Great Britain by air. A recent issue announced that the Handley Page Transport Co., Ltd., had imported from France quantities of silk, fancy goods, ladies' hats and embroidery.

THE B.A.T. SERVICE.

On Thursday, Oct. 23rd, the B.A.T. commercial machine, piloted by Mr. Cyril Turner, left Hounslow for Amsterdam, at which city he arrived in 2 hrs 40 min.

On Saturday, October 25th, Major C. Draper piloted a B.A.T. saloon-passenger machine with a full complement of passengers to Amsterdam. This trip is quite outside the regular service, but the demand for aerial transport to Holland is now growing, and it may be necessary to put on this service two machines per week instead of one.

THE LONDON-PARIS FLIGHT: FASTEST TIME.

Sir,—In your issue of October 22nd appears an advertisement of the Aircraft Manufacturing Company in which it is stated that a *racing machine*, piloted by Capt. Gathergood, accomplished the flight from Hounslow to Le Bourget in 1 hour 20 minutes, and a claim is made that this is the greatest speed so far attained on the London-Paris route.

This claim is quite unwarranted, because a far finer performance was accomplished in April last by a standard Martinsyde F.4 machine, which did the journey to Paris in 75 minutes.

The following figures have been obtained by us from the Air Ministry and relate to a flight made on April 9th by a standard Martinsyde F.4 (Rolls-Royce "Falcon" engine) flown by Capt. Jefferson on the ordinary London-Paris route, carrying despatches for the Communication Squadron. This machine left Hendon at 3.20 and arrived at Buc at 4.35. The distance on the route followed was 253 miles, and the speed works out at an average of 202 m.p.h.

As you are no doubt aware the Royal Aero Club recognise performances officially published by the Government as official performances, and so far as we know there was no official observance of the performance claimed by the Aircraft Manufacturing Company, which in any case is not the greatest speed on the London-Paris route; the Hounslow-Le Bourget route being a shorter route and the machine was apparently a specially-designed racing machine, whereas the performance set up by a Martinsyde was a standard machine in the hands of the R.A.F.

We shall be glad if, in justice to ourselves, you will give prominence to this letter in your next issue.

Yours faithfully,
Martinsyde Ltd.
HAMILTON FULTON (Director).

BOURNEMOUTH.

It is arranged that the Avro air fleet will visit Bournemouth to give a flying display for the week ending Nov. 2nd.

BRIGHTON.

On Saturday, Oct. 25th, the Avro air fleet visited Brighton for the third successive week-end. Tea was served on the ground and a band was present. The new aerodrome at West Platchington Farm, which consists of about 50 acres, is being fenced round and hangars are being erected.

A very large crowd collected on the aerodrome. Owing to the high wind the parachute descents had to be postponed, but Major A. G. Taylor, A.F.C., put up a very fine exhibition of trick-flying.

The chief interest, however, centred in the appearance of the little Avro-Green "Baby," which had been brought down from Hamble by Capt. Hammersley, M.C. The "Baby" played about in the air as usual, and delighted the crowd immensely. Another attraction was the display of the model aeroplane kites which have been invented by an A.I.D. official at Hamble. These were made to perform most extraordinary feats in the air.

BROOKLANDS.

A Weybridge correspondent of THE AEROPLANE writes:—

There has been little activity at Brooklands aerodrome lately, beyond a few test flights. The R.A.F. are expected to remain there for some months to come. Machines flying across country occasionally land at Brooklands, but there is no activity at present manifested in the way of passenger flights, etc. The repairing of the motor track has been started, but the aerodrome itself has a rural aspect, owing to the presence of hayricks and sundry horses, although the various buildings, hangars, etc., and an occasional aeroplane might lead the newcomer to believe that Brooklands was once a busy aerodrome.

Messrs. Gordon Watney and Co., of Weybridge, who, during the war, were engaged in manufacturing and repairing aero-engines, are closing down on aircraft work of all sorts. Among the types of aero-engines which passed through the hands of this firm were the Beardmore, Clerget, Le Rhône, Gnôme, B.H.P., Hispano-Suiza, and R.A.F. engines. Nearly 2,000 employees were engaged at one time in this work.

The firm has lately begun again the construction and repairing of automobiles, with Mercédès cars as a special line. Before the war they were very successful with Mercédès cars in racing on Brooklands track.

According to reports from authoritative sources the Anglo-American Oil Co. will take over the works as a motor repair depot.

Another report declares that the Vickers "Vimy" commercial machines, for which the Chinese Government have placed an order, will be constructed at the Weybridge works of Vickers, Ltd. A considerable extension has lately been made to these works, which are manufacturing various appliances, included among which are brick-making machines.—J. S. S.

LONDON.

HENDON.—Very little has been heard of the London Aerodrome at Hendon since the last of their summer meetings fizzled out owing to lack of public interest some months ago. With the general slackening down of the Aircraft Industry since the end of the war, it might have been thought that the place had died a slow and lingering death, but when one does get inside, quite a respectable amount of activity is to be found.

On the afternoon of Oct. 17th one's guide was Major Carr, A.F.C., D.C.M. (late R.A.F.). Under his cheerful guidance it was possible to make a tour of the workshops, where aeroplanes are still being constructed. Those most worthy of note are the Ganymede and two Grahame-White Limousines.

MULTI-PASSENGER-CARRYING MACHINES.

The Ganymede was constructed as a long-distance bomber early in 1918, but was not accepted by the Air Ministry. It was built as a twin fuselage three-engined biplane, fitted with two tractor and one pusher airscrews.

The pusher engine has now been removed and a large long cabin has been put in its place with seats for 18 persons. In place of the two Sunbeam tractor engines, two Napier "Lion" 450 h.p. engines have been fitted. The machine has made some quite successful test flights.

One of the two Grahame-White Limousines was recently on a test flight when the engines cut out owing to failure of the petrol system. A landing had to be made on a rough allotment. The machine was somewhat damaged, but would have fared much worse if it had been without the two sturdy emergency landing wheels which are fixed at the bottom of the cabin. On the occasion of the accident these wheels took most of the weight of the machine, as one side of the main undercarriage broke.

There are machines owned by many people in Grahame-White's sheds. One saw a Westland Limousine, several Nieuports, a few D.H.6, and the expected collection of Avros. There were also two Grahame-White biplanes, pushers of ancient design, still perfectly fit for flying.

THE CAPRONI TRIPLANE.

The Caproni triplane has been expected in Sweden for the last month. But for that time it has been at Hendon with its tail comfortably housed under a tin hangar. The remainder of the machine has perforce to stay in the open, there being no accommodation for it, but it does not appear to have suffered.

On the afternoon of Oct. 17th it was taken for a short flight. The Italian pilot was accompanied at the dual control by Capt. Chamberlayne (late R.A.F.). It appeared that only one passenger was induced to sit in the ball-shaped greenhouse, which is in reality a two-storied passenger-cabin which is slung uncomfortably near the ground under the centre nacelle, which also accommodates the two pilots on the upper "floor" and a third engine which helps to push the machine along from behind.

With all its engine-power the Caproni flies quite well. There are a considerable number of interplane struts with mostly single cable bracing wires.

The two tractor engines are placed in the noses of the two fuselages and apparently only supported by a few holding-down bolts to the engine bearers. The monoplane tail plane has three huge balanced rudders fixed on its top. They are resplendent with the Italian national colours.

THE B.A.T. CO

The British Aerial Transport Co. displayed some activity during the afternoon. A B.A.T. Baboon and an F.K.26 Commercial arrived on the aerodrome quite prettily as the darkness was setting in. All things considered, it was not as dull an afternoon as one in the summer, when only the

monotonous hum of the passenger-carrying carroty Avros disturbed the peaceful sight of the trains going by.

Major C. Draper, D.S.C., flew a B.A.T "Bantam," fitted with a 200 h.p. "Wasp" engine, from Hendon to Cowes on Oct. 23rd, and returned on the same day in 35 min.

NORTHOLT.—Considerable success has been achieved by the Central Aircraft Company at their School at Northolt Aerodrome, and Mr. Herbert Sykes, O.B.E., the Chief Instructor, appears to be getting excellent results out of the C.A.C. "Centaur IV" training machine, which is fitted with a 100 h.p. Anzani engine.

The excellence of the C.A.C. system of training is shown by the fact that two of their pupils, Mr. Tanner and Mr. Pool, who recently qualified for their Royal Aero Club certificates, passed their tests after 3 hrs. 15 min. and 3 hrs 30 min. respectively in the air. The result is that each of them has now a matter of 7 hours' further flying practice as a properly certificated aviator before he has completed his full 10 hrs. of flying as specified in the School contract

Some of the earlier pupils have put up even more satisfactory performances in that one of them qualified after 1 hr. and 40 min. flying, and another one after 2 hrs. and 5 min. practice, which is certainly uncommonly good.

MANCHESTER.

The northern Avro fleet held a carnival at Alexandra Park aerodrome last week-end for the benefit of the Manchester and Salford Hospital Saturday Fund. Over 9,000 people paid for admission, and passenger-flying went on briskly till dusk came on, leaving many applicants for tickets disappointed. About £300 was handed over to the hospital fund. The flying display was as fine as was to be expected from the Avro pilots. Another display will be given on the same aerodrome next week-end.

CANADA.

SLOW DISTRIBUTION.

A member of the Aerial League of Canada at Victoria, British Columbia, writes that the League is trying to obtain some of the 107 machines given to Canada by the Imperial grant. By the present system of distribution they will be obsolete by the time the League lays hands on them.

A REBUILDING AND A PRECEDENT.

Yarrows, Ltd., shipbuilders, of Victoria, B.C., have rebuilt the Pathfinder I, a Curtiss training aeroplane which met with a bad accident. The machine had to be virtually constructed, and the shipbuilders, unused to that type of craft, had only technical blue-prints to guide them. The mechanics of the Aerial League gave advice on the more technical sides of the work.



The Pathfinder II (Curtiss Training Machine) at Victoria, B.C., during a flying exhibition.

When the machine was completed the Aerial League intended to fly the machine over Victoria with the Pathfinder II. On that occasion, for the first time in the history of the city, two aeroplanes would take the air in formation.

The Pathfinder II has been visiting various fairs in the district and taking up passengers, piloted by Mr. W. H. Brown. At Puyallup Fair a young couple insisted on going up together, so for the first time the Curtiss carried three persons.



M Sadi Lecointe, the temporary holder of the Coupe Deutsch, and M. Herbemont (on the right), the designer of the Spad-Herbemont monoplane.

BRAZIL.

THE AIR SERVICES.

According to Brazilian journals it is expected that the preliminary flights over the civil aerial transport routes which are to be served by the Italo Brazilian Aerial Transport Company will be made during October.

The machines to be used are two Capronis. The concern is under the management of the Italian engineer Signor Gialio Cappa Bava, and there are at present three Italian pilots, Lieuts. Guiseppi Gandola, Mario Quaranta, and Virgilio Ercolani. Lieut. Gandola is said to have been of D'Annunzio's squadron during the war.

DENMARK.

The Danish correspondent of THE AEROPLANE writes :—

Now that an air commission has been appointed and the Danish Parliament will soon sanction the Air Navigation Act, The Danish Traffic Co. (in preparation) has handed in applications for concessions on a number of routes. Under the new conditions the Government will control aviation very extensively and will not support private enterprise at State expense by granting concessions, though their issue do not mean monopoly on any line.

The home routes in question are : Copenhagen-Aarhus-Aalborg-Skagen ; Copenhagen-Odense-Kolding-Esbjerg and likely a route Aarhus-Flensborg, if the latter city returns to Denmark. Further, the foreign lines are : Copenhagen-Stockholm (perhaps on to Helsingfors and Petrograd) ; Copenhagen-Gothenburg - Christiania - Trondhjem ; Copenhagen-Esbjerg-Hull ; and Copenhagen-Warnemünde-Berlin (and perhaps Vienna), and finally various western routes, which have not been fully settled yet, as the negotiations with the air traffic companies there have not been finished.

FRANCE.

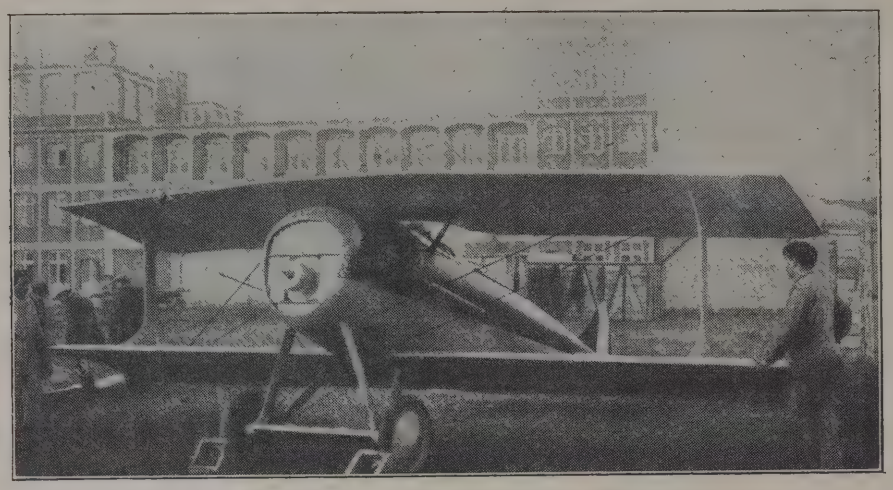
THE COUPE DEUTSCH.

On Oct. 20th M. Sadi Lecointe on a Spad Herbemont biplane (300-h.p. Hispano Suiza) flew over the Coupe Deutsch course at a speed of 156.5 miles an hour. Passing the Chateau de St. Germain at 3.18⅘ p.m. he repassed it at 4.3½ p.m. To beat this time it will be necessary for the next challenger to fly at a mean speed of about 172 miles an hour.

On Oct. 22nd M. de Romanet, flying a Nieuport biplane (300-h.p. Hispano-Suiza), made an attempt on the Coupe Deutsch. He left St. Germain at 2.3 p.m. and returned at 2.45, thus covering the course at a mean speed of about 167 miles an hour. Though faster than M. Sadi Lecointe, M. de Romanet does not become holder of the Coupe as his speed does not exceed that of the former pilot by the necessary 10 per cent.

THE FEDERATION AERONAUTIQUE INTERNATIONALE.

The Congress of the F.A.I. was held at Brussels on Oct. 22nd, 23rd, 24th. The representatives of Great Britain were, as stated last week, Lieut.-Col. McClean, Lieut.-Col. Ogilvie, Lieut.-Col. O'Gorman, and Mr. Perrin. France's interests were upheld by H.I.H. Prince Roland Bonaparte, M. le Comte de la Vaulx, MM. Tissandier, Besancon, Blondel, La Rougery, Clunet, Boyer, Guillan, Lieut.-Col. Ferrus, M. Gasnier, Capt. Hirschauer, MM Imbrecq, Laillemant de l'Institut, A. Leblanc,



THE HOLDER OF THE COUPE DEUTSCH.

The Spad-Herbemont biplane (300 h.p. Hispano-Suiza) on which M. Sadi Lecointe completed the Coupe Deutsch course on Oct. 20th at a speed of 156 miles an hour. He is the temporary holder of the Coupe Deutsch until his speed is beaten by 10 per cent. This means that to dispossess M. Sadi Lecointe the next competitor must achieve a speed of 173 miles an hour.

M. le Comte de la Valette, MM. Quinton, Rousseau, Screan, Surcouf, Saunière, General Roques, and Capt. Fonck, Japan, Norway, Netherlands, the United States, Denmark, Sweden, Brazil, and Italy all sent representatives

THE NEW POSTAL ROUTES.

A decree outlining the new rates for the aeroplane post in France and Morocco was printed in the official gazette dated Oct. 21st, 1919. The rates for foreign countries remain at the rates previously settled by the respective countries concerned. The new internal rates for France and Morocco and between France and England are as follows :—The ordinary postal rates fixed by the International Postal Convention (in the years before aviation had become more than a dream) plus a surcharge by the country of origin of 3 frs. for each 20 grammes (or 2s. 6d. for each English ounce).

THE FARMAN "DAVID."

The little Farman two-seated biplane (40-h.p engine) known as the "David" recently produced by the Farman brothers is of the following dimensions :—Span, 23.294 ft.; chord, 5 ft.; length, 19.6 ft.; total plane surface, 215.286 sq. ft.; weight ready to fly, 440.924 lb. The price to the public is 12,000 frs. (about £330 at present rates of exchange). The cost of running this machine is said to be about thirteen centimes a kilometre.

THE FARMAN PROGRAMME.

The Farman brothers intend to open direct aerial services between Paris and London and Paris and Brussels. They undertake to convey passengers from Buc to London, Brussels, Rome, Madrid or as far as the pocket of the traveller will permit. These journeys may be made in single-seated, two-seated, four-seated, six-seated, or twelve-seated aeroplanes.

They are specialising in the construction of aeroplanes for those who desire to adopt aerial touring as a hobby. In addition to the "David" referred to above the Farman brothers are producing the F.70 three-seater with tractor airscrew, the F.40 three-seater with a propeller airscrew, the flying limousine F.50 with tractor airscrews, and the twelve-seater "Goliath."

A MOROCCAN AERIAL POST.

A civil aviation firm is shortly opening an aerial post in Morocco and to Spain. Letters from France will be taken by train to the Sud Express terminus in Spain and thence will be transported daily by aeroplane to Tangiers, Rabat, or Casablanca.

AN EXHIBITION FLIGHT.

The Vickers Vimy commercial aeroplane piloted by Capt. Cockerell which is on an exhibition tour on the Continent has visited Paris and Bordeaux. The machine was exhibited at both places and then flew to Biarritz (near the borders of Spain). The journey from Bordeaux to Biarritz took two hours.

THE SALON DE L'AERONAUTIQUE.

A correspondent writes :—

There is a point which may trouble exhibitors of large machines. If they are being flown over, to be dismantled and taken by road to the show, the exhibitors ought to be warned that the gates of Paris are barely three metres wide, so that large fuselages could not pass. There is one method of avoiding this trouble by taking the machine up river on barges to the quai near the Grand Palais. M. Bleriot is doing this.

All the available space for aeroplanes has been applied for, but there is still room in the galleries.

Bristols, Handley Pages, Westlands, Boulton and Paul, the French Vickers, and the S.B.A.C. have applied for stands.

A MOROCCAN TRANSPORT LINE.

A new transport line is being opened in Morocco in November by a group of well-known French pilots. Sopwiths (French-built), converted to take two passengers, are being used. They are the single-seaters which were built in France as two-seaters, with Clerget 130 h.p. engines, and known here as "Camels."

PASSENGER FLIGHTS.

Lieut. Madon and his partner, Lieut. Nodin, are going on with their passenger-flying at holiday resorts during the winter. They are doing as much as any syndicate in France to popularise aviation. During the season at Boule and Trouville they took up over 5,000 paying passengers with one G.3 Caudron.

THE LUMIERE AIRSCREW.

The Lumière Airscrew concern has been converted into a Société Anonyme, with a capital of 500,000 frs. Directors : Madame M. Lumière and M. de Monge. This is the only propeller factory in France working full time. All the competitors for the Schneider Race and the Coupe Deutsch, with the exception of the Gourdou, had Lumière airscrews, which shows the esteem in which this design is held over here. All the G. Levy flying-boats in use on the Belgian Congo Aerial Transport Line have also their airscrews with the lacquer finish which prevents warping in hot climates.

AIR NAVIGATION REGULATIONS.

Navigation and Maintenance Regulations, similar to those in force in England, are being prepared, making flying conditions the same in France as in other countries. The "Air Navigation Department," of which Colonel Saconey is the

THE FASTEST OVER THE COURSE.

Side view of the Nieuport biplane entered by the Nieuport Co. for the Coupe Deutsch and flown by M. de Romanet, who was the firm's spare pilot for the Schneider Cup Race. This Nieuport is a modification of the famous "Type 29," which did so well towards the latter end of the war. This machine covered the course at an average speed of 167 miles per hour, but as it did not exceed the Spad's speed by 10 per cent. it does not hold the Cup.





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GERMANY.

According to the "Times" of Oct. 28th all the aerial post and passenger traffic between Germany and Czecho-Slovakia has been taken over by the Saxonian Airship Company, of Dresden. The airship service will run thrice weekly.

A New Landing Ground at Karlsruhe.

The parade ground at Karlsruhe is now to be turned into a landing ground for aeroplanes in accordance with the plans of a company whose interest is the development of public interest in the downs of Karlsruhe.

An Italian Aeroplane in Germany.

The Danish correspondent of The Aeroplane writes :—

On Oct. 6th the first Italian aeroplane landed in Germany. It was an Ansaldo biplane, fitted with a 300-h.p. Fiat engine, and alighted at 5 o'clock in Johannisthal with two officers on courier service to the Italian Consul in Berlin. They had left Rome some days before, flying on the first day via Venecia to Vienna and on in the afternoon to Warsaw, carrying out their orders. The non-stop flight from the Polish capital to Berlin took six hours. The machine was housed in the shed of the German Air Traffic Co. and was to return by air to Rome via Turin.

HOLLAND.

The Handley Page machine which was exhibited during the E.L.T.A. at Amsterdam left for Scandinavia on Oct. 21st, via the Dutch aerodrome of Soesterberg.

NORWAY.

The Danish correspondent of The Aeroplane writes :—

The Thulin-trained Norwegian pilot, Juhl, carried out joy-rides at a seaside resort near Copenhagen this summer with a le Rhone-engined diagonally-strutted Nielsen and Winther three-seater flying boat, till a special certificate was required for public flights. Then he intended to return to Norway by air, but after leaving Skagen a petrol pipe broke near the Norwegian coast. After drifting for twenty-two hours in Skagerak and Kattegat the flying boat stranded on a small island at the Swedish coast, rescued by a fishing motor-boat, the former assisting before getting anyhing to eat.

SPAIN.

The Barcelona Flying Meeting.

The Barcelona Flying Meeting took place on Oct. 12th. Among the machines were an Ansaldo (250 h.p. Spa), an Espagna (180 h.p. Hispano-Suiza), an Alfaro (180 h.p. Hispano-Suiza), a Vendome (60 h.p. Le Rhone), a Caudron-type biplane G3 (80 h.p. Le Rhone), a Morane-Saulnier "Parasol" two-seater piloted by M. Bourgeois, and a Morane-Saulnier "Parasol" single-seater (110 h.p. Le Rhone), piloted by M. Fronval. M. Fronval and M. Bourgeois flew in a thick fog and succeeded in getting the first and second prizes respectively in the competition (a race over a circuit of about 66 miles. On Oct. 14th these two pilots flew to Madrid.

SWEDEN.

The Danish correspondent of The Aeroplane writes :—

At the request of the Swedish Hydraulic Department, the Swedish Air Traffic Co., Ltd., has worked out a detailed preliminary estimate for the establishment of an air connection between Porjus and Lilla Sjöfallet, where large hydraulic works are being carried out.

The heavy competition that the British aircraft trade has to stand to Germany owing to the present low mark value is evident from the estimate, as three seaplanes, with spares, of the Friedrichshafen type are calculated at kr. 170,000 (£9,445) against the cost of kr. 197,000 (£10,945) for three Short seaplanes of the sporting type—a difference of £2,500.

SWITZERLAND.

Permission to Fly.

Foreign aviators wishing to fly in Switzerland should apply to the Swiss Military Department at Berne, which is the only authority capable of issuing permits. All aeroplanes entering Switzerland are placed on a special register and if they are to remain in the country must have inscribed on the wings and fuselage the letters C. H. (for Confederation Helvetique) in white on a red base, and in addition the special registration number.

UNITED STATES OF AMERICA.

The Aerial Mail Service.

The Post Office authorities have made the announcement that it is intended to establish an aerial mail service from New York to San Francisco. A Bill has been introduced in Congress to give power to appropriate money for this purpose. It is said that the decision was arrived at as a consequence of the success (?) of the Army transcontinental air race.

AIRCRAFT IN PARLIAMENT

HOUSE OF COMMONS.

The following oral answers were given on Oct. 22nd :—

GOVERNMENT DEPARTMENTS (STAFFS).

Mr. GILBERT asked the Under-Secretary of State to the Air Ministry whether he will state what reduction in staff has taken place in his Department, including those employed at depots, since Nov. 11th, 1918; and whether he is taking any steps to make further reductions.

The UNDER-SECRETARY of STATE for AIR (Major-Gen. Seely) : I am not sure what my hon. friend means by "including those employed at depots," but I assume that this is to be interpreted as including all persons employed. Since Nov. 11th, 1918, the numbers employed by the Air Ministry at headquarters and depots have been reduced from 68,150 to 24,700 on Sept. 30th, 1919. These are approximate figures, since all returns are not made up to the same date. Further reductions have been made since Sept. 30th, and the process is continuing as rapidly as possible.

ROYAL AIR FORCE.

Mr. CLOUGH asked the Under-Secretary of State to the Air Ministry if he will inform the House what was the strength of the personnel of the Air Force on Oct. 18th; what it was on Aug. 12th, 1918; and what it was on the date of the Armistice.

Major-Gen. SEELY : The particulars asked for by my hon. friend as to the strength of the Royal Air Force on the dates mentioned by him are as follow :

	Officers	Other ranks.
Date of Armistice	30,122	263,410
Aug. 12th, 1919	9,044	39,671
Oct. 18th, 1919	6,005	31,976

An HON. MEMBER : Can he say whether all the anti-aircraft stations have now been abolished in this country?

Major-Gen. SEELY : I could not say that without notice. It does not come under my Department, but under the Home Forces. It ought to be put down to the Secretary of State for War.

Sir W. JOYNSON-HICKS : How many women are included in that last total.

Major-Gen. SEELY : I could not say that without notice.

AIR FORCE (REVISED) ESTIMATES.

Mr. CHAMBERLAIN, replying to Mr. Arnold, said that he hoped that the Air Force Estimates would be presented early next month.

* * *

The following oral answer was given on Oct. 23rd :—

WOMEN'S ROYAL AIR FORCE.

The UNDER-SECRETARY of STATE for AIR (Major-Gen. Seely), replying to Lieut.-Comdr. Kenworthy, said that the numerical strength of the Women's Royal Air Force on Sept. 30th, 1919, was officers 164 and other ranks 5,800.

It is proposed to reduce the number of all ranks to 400 by Dec. 1st, and to 200 by January 1st, 1920. The number of female civil subordinates on the same date was 2,529.

* * *

The following answers were given on Oct 27th, and are extracted from the "Times" of Oct. 28th :—

A BRITISH AIRSHIP FOR AMERICA.

Major-Gen. SEELY, Under Secretary for Air, in reply to Colonel Moore-Brabazon, said :—Arrangements have been made between the United States Navy and the Air Ministry by which the airship R.38, embodying the newest features in design and construction, will be completed without delay. The vessel will be handed over to United States naval personnel on completion, and will proceed to America with her American crew as soon as the shed to house her is ready. The United States Navy will take over the vessel at cost price, the Royal Air Force undertaking the training of the American naval personnel, free of cost, except pay and rations.

DESTRUCTION OF AEROPLANES.

Mr. A. T. DAVIES asked the Under Secretary of State to the Air Ministry whether large numbers of aeroplanes had been destroyed by burning in the occupied districts of France and Belgium; whether aeroplanes of the newest type were being delivered under contracts until the summer of this year; and whether the Canadian Government, adopting a different policy, disposed of similar aircraft with commercial advantage.

Major-Gen. SEELY, Under Secretary to the Air Ministry, said :—In answer to the first part of my hon. friend's question instructions have been given :—(a) That any aircraft declared obsolete for all purposes (i.e., Air Force and civil) shall be reduced to produce, and the produce handed to the Disposal Board; and (b) that any aircraft totally wrecked and beyond repair shall be reduced to produce, and the wreckage burned after the removal of all parts of value. The number of crashed aircraft burnt after the removal of the valuable parts under (b) has been 28. In addition, since July 1st, 1919, the residue of 250 crashed and 350 deteriorated or obsolete machines have been burnt after the valuable parts had been removed. The answer to the second part is in the affirmative. I have no official knowledge of the matter referred to in the third part of my hon. friend's question, but I think he has in mind a transaction carried out by the representative of the Ministry of Munitions in Canada on behalf of His Majesty's Government. If I am correct I would refer him to the Minister of Munitions.

THE GOVERNMENT AND CIVIL AVIATION.

Major-Gen. SEELY, replying to Colonel Burgoyne, said :—Whilst no direct subsidies are being made by the Government for the development of civil aviation, assistance is given to all firms desirous of receiving it in the following directions :—The free supply of meteorological information and free communication services (i.e., wireless, signals, flying directions, etc.). Arrangements are also in hand for the establishment of a system of emergency landing grounds throughout the country, which will be open to all firms who wish to make use of them. At Government aerodromes, other than those required purely for Royal Air Force services, aerodrome facilities and shedding are available for all firms on lease, thus saving them a considerable proportion of the initial capital expenditure.

EXPENDITURE.

The following was contained in Table III—Estimated Expenditure—of the White Paper laid before the House of Commons by Mr. Austin Chamberlain on October 27th :—

	As estimated in the Budget.	As now estimated.	More or less than in the Budget.
Air Force	£66,500,000	£57,500,000	—£9,000,000

Air Services.—The reduction is due to the transfer of expenditure on winding up Aircraft contracts to the Vote for the Ministry of Munitions. Provision is made for increased pay of the Air Force (£100,000).

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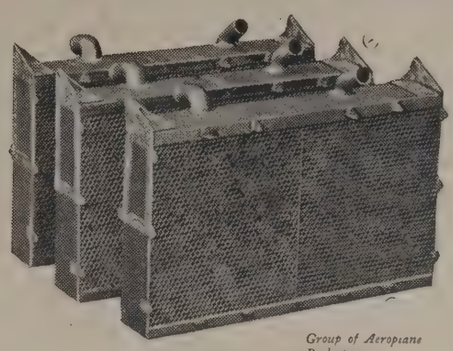
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OLYMPIA SHOW, 1919.
STAND NO. 338.

EXTRACTS FROM "THE LONDON GAZETTE."

GREAT BRITAIN.

MILITARY.

WAR OFFICE, Oct. 20th.

REGULAR FORCES.—INFANTRY.—SERVICE BATTNS.—W. Rid. R.—Temp. Sec. Lt. D. F. McColl (R.A.F.) to be temp. Sec. Lt., Oct. 11th, 1918.

TERRITORIAL FORCE.—INFANTRY.—6th Bn., Royal Welsh Fus.—Sec. Lt. I. S. Bellis to be Lt., and to remain secd R.A.F., May 1st.

WAR OFFICE, Oct. 21st.

REGULAR FORCES.—R.F.C.—Mil. Wing.—Flying Officer.—Sjt. W. J. Beer (since killed), R.F.C., and to be temp. Sec. Lt., R.F.C., Gen. List, Nov. 25th, 1917. (Substituted for the notification in the "Gazette" of March 15th, 1918.)

CAVALRY.—6th D. Grds.—Sec. Lt. J. H. B. Rygate (temp. Sec. Lt., R.A.F.) to be Lt., June 21st.

INFANTRY.—K.R. Rif. C.—Temp. Sec. Lt. P. C. Molland resigns his commn. on appt. to R.A.F., Nov. 8th, 1918.

TERRITORIAL FORCE.—INFANTRY.—5th Bn., Glouc. R.—Sec. Lt. J. W. Davies to be Lt. and to remain secd. R.A.F., Feb 1st.

WAR OFFICE, Oct. 22nd.

REGULAR FORCES.—GEN. LIST.—Pilot Officer E. G. Masson, from R.A.F., to be temp. Lt. for duty as a Military Accountant Officer, June 12th.

ESTABLISHMENTS.—The following temp. appts. are made:—Anti-Aircraft, Searchlight, and Sound Location School.—Instr.—Capt. (actg. Maj.) P. F. M. Michelli, R.E., from May 30th to July 1st. Asst. Instrs.—May 30th.—Capt. D. R. St. J. J. ffrench-Mullen, R.E., Temp. Capt. A. S. Millar, R.G.A. (substituted for the notification in "Gazette" of Aug. 28th, under "School of Electric Lighting").

WAR OFFICE, Oct. 23rd.

The King has been pleased to give orders for the following appointment for valuable services rendered in connection with the defence of Kut-al-Amarah Dated June 3rd, 1919:—

DISTINGUISHED SERVICE ORDER.

Capt. S. C. W. Smith, E. Surr. R., Spec. Res., and R.A.F.

WAR OFFICE, Oct. 23rd.

REGULAR FORCES.—ESTABLISHMENTS.—R.F.C.—Mil. Wing.—The following appt. is made:—Flying Officer.—Temp. Sec. Lt. (on prob.) E. H. Bullen, Gen. List, and to be confirmed in his rank, Feb. 18th, 1918.

ROYAL REGIMENT OF ARTILLERY.—R.H. and R.F.A.—Lt. J. A. G. Haslam, M.C., D.F.C., resigns his commn. on appt. to the R.A.F., Aug. 1st.

WAR OFFICE, Oct. 24th.

REGULAR FORCES.—ESTABLISHMENTS.—R.F.C.—Mil. Wing.—Notification regarding Lt. (temp. Capt.) R. O. C. Bush (R. Dub. Fus.), in "Gazette," Oct. 3rd, is cancelled.

AIR FORCE.

AIR MINISTRY, Oct. 14th

Pilot Officer R. McG. Freemantle relinquishes the grading for pay and allowances as Flying Officer, Grade (A.), Sept. 17th.

Sec. Lt. (Hon. Lt.) W. L. Head to be Lt., without pay and allowances of that rank, Nov. 24th, 1918.

Pilot Officer W. H. Lowther to be Flying Officer, without pay and allowances of that rank, Aug. 5th.

Pilot Officer N. F. S. Hecht to be Pilot Officer, Grade (A.), from (Ad.), Sept. 8th.

Pilot Officer C. P. Brown to be Pilot Officer, Grade (B.), from (Ad.), Sept. 8th.

Pilot Officer W. T. T. Glassbrook to be Pilot Officer, Grade (B.), from Grade (A.), Oct. 8th

The following relinquish their commns. on ceasing to be empld.:—Capt. R. C. Gill (Capt., R.G.A.), Aug. 27th; Lt. E. F. L. Taylor (Devon R.), Aug. 31st.

The following are transferred to the unempld. list:—Sec. Lt. (Hon. Lt.) A. K. H. Maitland, April 19th (substituted for notification in the "Gazette" of Aug. 8th); Sec. Lt. J. W. Cruickshank, May 5th; Lt. T. T. Murray, July 2nd; Sec. Lt. J. W. Lockhart, Aug. 2nd; Capt. J. B. R. Swan, M.B.E., Aug. 16th; Sec. Lt. D. W. Genge, Capt. S. S. Hatfield, Aug. 27th; Lt. N. E. Corbishley, Aug. 29th, Sec. Lt. J. Corrall, Lt. G. M. Garro-Jones, Sept. 1st; Sec. Lt. R. R. Wilson, Sept. 2nd; Lt. A. H. Sippe, Lt. T. Willis, M.B.E., Sept. 3rd; Capt. A. Garrard, Sept. 4th; Sec. Lt. E. Haghe, Sec Lt. (Hon. Lt.) P. Jeffery, Lt. S. N. Veitch, Sept. 9th; Sec. Lt. T. McClelland, Sept. 11th; Capt. F. M. Davies, Lt. J. H. Secker, Sept 14th; Sec Lt. D. Liddendale, Sept. 15th; Sec. Lt. A. M. Davies, Sept. 16th, Sec. Lt. H. H. Williams, Sept. 18th; Sec Lt. E. F. Fardon, Lt. G. E. Thomas, Sec. Lt. C. R. Tweeddale, Sept. 20th; Capt. E. A. B. Tooth, Sec. Lt. J. Turnley, Sept. 22nd; Sec. Lt. F. S. McRae, Lt G. Smart, Sept. 23rd; Lt. M. B. K. Egan, Sept. 24th; Lt. M. H. MacLucas. Sept. 26th; Sec. Lt. J. T. Lawlor, Sept. 29th; Lt. A. B. Smith, Sept. 31st; Sec. Lt. (Hon. Lt.) P. L. Lindup, Oct. 6th; Capt. W. Calder, Lt. R. C. Nicholls, Oct. 9th; Capt. J. A. Cowling, Oct. 10th.

Lt. H. W. Durtnell relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain his rank, Oct. 8th.

Sec. Lt. W. A. Murphy relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, Oct. 8th.

MEDICAL BRANCH.—Lt. D. Pennington is transferred to the unempld. list, Sept. 27th.

DENTAL BRANCH.—The following are granted temp. commns. as Lts.:—G. H. Warner, May 20th, 1918 (substituted for notification in "Gazette," May 21st, 1918, in which he is shown under "Medical" Branch); C. Murray-Shirreff, June 6th, 1918 (substituted for notification in "Gazette," June 7th, 1918, in which he is shown under "Medical" Branch); C. M. John, July 18th, 1918 (substituted for notification in "Gazette," July 26th, 1918, in which he is shown under "Medical" Branch); W. Inman, Oct. 25th, 1918 (substituted for notification in "Gazette," Oct. 29th, 1918, in which he is shown under "Medical" Branch).

CHAPLAINS' BRANCH.—The following are transferred to the unempld. list:—The Rev. P. G. Levy, May 31st; the Rev. J. M. Wood-Smith, M.A., Sept. 22nd.

MEMORANDA.—Pilot Officers to be Flying Officers:—F. A. Holmes, Aug. 27th; E. A. Cogswell, Oct. 1st.

The following Overseas Cadets are granted temp. commns. as Sec. Lts., with effect from Feb. 15th, and relinquish such commns. with permission to retain rank from the day following termination of the standardised voyage in the case of those claiming immediate repatriation, and from the day following demobilisation in England in all other cases:—1048034 F. R. Ames, 506415 H. J. Barrand, 500366 M. C. Boyd, 2040162 G. H. Dawson, 110141 C. H. Dowd, 2542305 A. F. Duncan, 2228322 A. Either, 100215 R. D. Evans, 1262000 G. W. Jones, 2204150 R. Lake, 506177 F. G. Leslie, 339625 J. F. Lyons, 764003 E. P. Magee, 202089 J. S. Martin, 436310 R. F. Martin, 252352 J. McD. Minifie, 339520 T. D. McFarlane, 207024 F. T. Perry, 494 C. F. Peterson, 2265801 E. C. Peterson, 534603 C. Roberts, 637050 W. A. Rose, 507715 J. McD. Simpson, 1012808 T. H. Wallace, 2584301 H. H. Weese.

The following relinquish their commns on ceasing to be empld.:—Capt. J. Williams (Qrmr. and Capt., D of Corn. L.I.), Oct. 1st; Maj. H. M. M. Robertson, O.B.E., M.C. (Maj., R.R.A.), Oct. 6th.

Temp. Hon. Lt. H. Yates relinquishes his commn. on ceasing to be empld., Oct 7th.

The following are transferred to the unempld. list:—Capt. E. G. Walker, from (S.O.), Aug. 31st; Lt. C. J. Walters, Sept. 12th; Capt. L. Reynolds, from (S.O.), Sept. 24th.

The Christian names of 37699 Cadet Albert Henry Barlow are as now described, and not Arthur Thomas Barlow as stated in "Gazette" of July 15th.

AIR MINISTRY, Oct. 17th.

R.A.F.—The undermentioned temp. appointment is made at Air Ministry:—Staff Officer, 3rd Class.—(T.) Flying Officer T. Kerr-Jones, Sept. 29th.

Air Attaché.—Sqdn. Ldr. J. P. C. Sewell, O.B.E., Sept. 25th.

FLYING BRANCH.—Capt. N. G. Stewart-Dawson, D.S.C., to be actg. Maj. whilst Maj. (A. and S.), May 17th; Capt. H. L. H. Owen, A.F.C., graded for pay and allowances as Maj. whilst Maj (A.), May 1st to June 30th; Capt. F. L. C. Butcher graded for pay and allowances as Maj. whilst Maj. (A'ship), May 1st, Capt. (actg. Maj.) K. B. Harbord to be Capt. (A.), from (S.O.), and relinquishes act.g rank of Maj. on ceasing to be empld., Oct. 5th, 1918 (substituted for "Gazettes" July 15th and Sept. 23rd); Lt. W. H. Park, M.C., to be actg. Capt. whilst empld. as Capt. (A.), May 17th.

2nd Lts. to be Lts.:—W. D. Redmond, June 1st; R. Bretherton, Nov. 8th; E. C. Crouch, Dec. 27th, 1918; A. C. James, June 13th, 1919; Pilot Officer T. P. T. Jones to be Flying Officer, Sept. 14th; 2nd Lt. G. A. Osborne (late Gen. List, R.F.C., on prob.) confirmed as 2nd Lt. (O.), July 10th, 1918; 2nd Lt. L. Hudson to be 2nd Lt. from unempld. list, May 20th, with precedence next below 2nd Lt. Thomas Smith (Obs.), Lt. J. E. Periera relinquishes commn. on reversion to I.A.R.O., Oct. 9th.

The following relinquish their commns. on ceasing to be empld.:—Lt. L. Patterson, M.C. (Lt., R. Art.), April 11th; Lt. R. F. L. Bush (Lt., R. Art.), May 2nd; 2nd Lt. T. B. Anderson, May 9th; Lt. J. O. Leach, M.C. (h.p. list), June 28th; Capt. J. Selwyn (Capt., R. Art.), Sept. 23rd; Capt. C. Patteson, M.C., A.F.C. (Lt., S. Wales Bord.), Oct. 4th; 2nd Lt. S. W. P. Foster-Sutton (Lt., E. Kent R.), Oct. 8th.

Transferred to unempld. list:—Capt. H. F. Beamish, D.S.C., Jan. 4th, Feb. 1st; 2nd Lts. J. E. Beolchi, R. F. Burnett, D. W. C. Derby, R. H. Ellard, N. H. Glaad, F. W. Glasby, D. A. Goodine, R. E. Harrington, E. H. Jones, T. B. Kelly, E. Jaycock, A. C. Stronge, V. H. Summers, A. L. Veale, J. E. Waller, E. E. Watts, F. H. Woodman, D. Wyman, Lt V. G. Odling, Feb. 18th; Sec. Lt. G. M. P. O'Keefe, Feb. 25th; Lt. P. H. Moody, Feb. 28th; Lt. E. A. Magee, March 10th, March 15th; Lt. G. W. Curtis, 2nd Lt. J. H. Kennedy, Lt. J. A. M. Robertson, Lt. G. S. Harvey, March 20th; Lt. G. C. W. Dingwall, March 21st; 2nd Lt. E. G. Gallagher, April 1st; Lt. D. J. Hugh-Jones, April 8th, April 17th; 2nd Lt. W. C. S. Smith, 2nd Lt. G. K Smith, M.C., Lt. E. C. Hoy, D.F.C., April 19th; 2nd Lt. J. C. Malcolmson, April 21st; 2nd Lt. W. S. Page, April 24th, April 30th; 2nd Lt. J. R. I. Farquharson, Lt. I. W. Lieperd, D.F.C., 2nd Lt. A. Taylor, May 10th; Lt. R. S Larkin, M.C., May 17th; Lt. M. E. Miller, May 19th; Lt. W. H. Comstock, May 21st; 2nd Lt. William Turner, May 23rd; Capt. C. M. Crowe, M.C., D.F.C., May 25th; 2nd Lt. R G. Pigeon, May 28th, June 1st; Lt. H. N. Compton, D.F.C.; 2nd Lt. W. G. F. Grant, Lt. H. J. Whittingham, July 4th; 2nd Lt. M. D. Sinclair, July 9th, July 10th; 2nd Lt J. Blair, 2nd Lt. W. H. Todd, 2nd Lt. C. W. Wright, July 12th; 2nd Lt. A. R. Lee, 2nd Lt. W. W. Smith, Lt. K. Bon, July 28th; Lt. M. E. Ashton, Aug. 1st; 2nd Lt. C. E. Sherwood, Aug. 7th; Lt. G. E. Hicks, Aug. 9th; Lt. T. W. Kerr, Aug. 10th; Lt. G. A. Flavelle, D.F.C., Aug. 22nd; 2nd Lt. (Hon. Lt.) A. W. Allan, Aug. 23rd (substituted for notification in "Gazette," Aug 26th), Aug. 27th; 2nd Lt. J. E. Fox, Lt. W. E. G. Mann, D.F.C., 2nd Lt. D. H. Godden, Aug. 30th; 2nd Lt. W. K Young, Sept. 3rd; 2nd Lt. C. H. Smith, Sept. 4th; Lt. M. E. Faithfull, Sept 5th, Sept 5th; Capt. D. M. Faure, Lt. G. W. Nelson, 2nd Lt. M. B. Glover, Sept. 7th; 2nd Lt. S. Jones, Sept. 8th, Sept 9th; Lt. G. M. Emerson, Lt. R. J. Gammon, D.F.C., 2nd Lt. A. L. Farmer, Sept. 10th, Sept. 11th; Lt. C. C. Connochie, Capt. A. Goodfellow, Lt. F. C. Gorringe, M.C., D.F.C., 2nd Lt. (Hon. Lt.) H. E. R. Ford, M.C., Sept. 12th; 2nd Lt. H. H. Weeks, Sept. 13th; Capt. E. J. L. W. Gilchrist, M.C., D.F.C., Sept. 14th, Sept. 15th; 2nd Lt. G. R. Edwards, Lt. T. A. Ford, Lt. D. S. Fox, 2nd Lt. P. F. W. Whelan, Lt. S. G. Williams, Sept. 16th, Sept 17th; Lt. W. D. Littlewood, Lt. A. Richards, 2nd Lt. H. V. Evans, Sept. 18th, Sept. 19th; Capt. H. A. Furniss, D.S.C., 2nd Lt. T. L. Gann, Sept. 20th; Lt. J. A. Barnes, Lt. R. R. Bentley, Lt A. R. Fairbairn, D.F.C., Lt. W. T. Ward, Sept. 24th; Lt M. E. Bradley, 2nd Lt. E. G. Carter, Lt. W. W. Dingle, Lt. J. B. Edwards, Capt. A. B. Fanstone, A.F.C., Lt. A. P. Godfrey, Sept. 25th; 2nd Lt P. J. Baker, 2nd Lt I. G Best, 2nd Lt. R. D. Butler, 2nd Lt. C. H. E. Coles, 2nd Lt. F. W. Dey, 2nd Lt. (Hon. Lt.) A. Dunton, Lt. A. D. MacMillan, Lt. (Hon. Capt.) J. C. Wolley-Dod, Sept. 26th; 2nd Lt. W. Berry, 2nd Lt. S. D. Blanchard, Lt. N. Braithwaite, Lt V. A. J. Clark, Lt. E. C. Moon, Capt. C. Seedhouse, Lt. A. R. Turpin, Lt. R. B. Wainwright, Sept. 27th; Lt. P. Anderson, Lt. H. W. Auerbach, 2nd Lt. E. L. Edwards, Capt. C. H. Gardner, A.F.C., Lt. (Hon. Capt.) G. G. Roberts, M.C., Sept. 28th; 2nd Lt. A. D. Geiger, 2nd Lt. (Hon. Lt.) C. J. E. Malet-Veale, 2nd Lt. D. A. Martin, 2nd Lt. R. G. K Morrison, Lt A. Rutherford, Sept. 29th; 2nd Lt. A. H. Allingham, 2nd Lt. W. R. Stewart, Lt F. C. Fowkes, Sept. 30th; 2nd Lt. H. M Fletcher, Oct. 2nd; Lt. A. D. Stubbs, Oct. 8th, Oct. 10th; 2nd Lt. W Coutts, Lt. M. T. Stanley, Oct. 11th; 2nd Lt L. D. Jacobs, 2nd Lt R. R. H. Picot.

The following Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—F. B. Harland (caused by wounds), Oct. 2nd; D. M. Murdock (contracted on active service), Oct. 6th; W. Biheller, Oct. 8th; 2nd Lt. R. Leask (Lt., H.L.I., T.F.) relinquishes his commn. on account of ill-health (caused by wounds), granted the rank of Lt., Oct. 6th; 2nd Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—S. J. Bolitho, June 25th (substituted for "Gazettes" of March 14th and July 1st); W. H. Saunders (contracted on active service), July 12th (substituted for "Gazette" July 15th); C. T. Skipper, Oct. 10th; 2nd Lt. W. H. Perks resigns commn., Oct. 16th

2nd Lt. L. F. Ross antedated in appointment as 2nd Lt. (A. and S.), to May 5th, 1918; 2nd Lt. R. R. Nelson antedated in appointment as 2nd Lt. (A. and S.), to May 26th, 1918.

The initials of Flt. Lt. P. J. H. Sumner are as now described, not P. J., as stated in "Gazette," Sept. 26th.

The rank of Lt. T. R. Adair is as now described, not 2nd Lt. as in "Gazette," Sept. 19th.

The notification in "Gazette," May 23rd, concerning 2nd Lt. T. B. Anderson is cancelled.

The notification in "Gazette," July 8th, concerning Lt. R. T. Percival is cancelled.

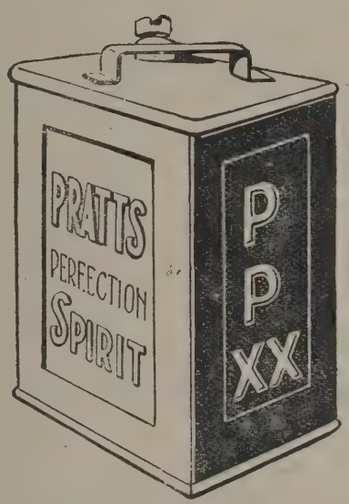
The notification in "Gazette," July 29th, concerning 2nd Lt. H. P. Brummell is cancelled.

ADMINISTRATIVE BRANCH.—Lt. (Hon. Capt.) C. W. A. Millar is graded for pay and allowances as Maj. whilst empld as Maj., Dec. 21st, 1918

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(substituted for notification in "Gazette," May 27th); Capt. F. E. Hellyer, O.B.E., graded for pay and allowances as Maj. whilst empld. as Maj., May 1st to June 24th.

Flt. Lts. (S.O.) to be Flt. Lts.:—R. Belli-Bivar, M.B.E., Sept. 9th, Sept. 22nd; H. B. Kavanagh, M.B.E., R. R. L. L. Thom, Lt. F. W. H. Durrant graded for pay and allowances as Capt whilst empld. as Capt., from (T.), March 6th to Aug. 16th (substituted for notification in "Gazette," Sept. 23rd); Flying Officer T. Gibson to be Flying Officer from (S.O.), and graded for pay and allowances as Flt. Lt. whilst specially empld., Sept. 15th; Lt. C. G. Stewart to be Lt., from (A.), April 17th; Flying Officer J. E. Doyle, D.F.C., to be Flying Officer, from (A.), Sept. 25th.

Flying Officers to be Flying Officers, from (S.O.):—J. C. Barraclough, Sept. 15th; R. J. Slade, Sept. 22nd; 2nd Lt. R. R. W. Millward to be Lt., Aug. 21st; Pilot Officer E. Higgs to be Flying Officer, Sept. 9th; 2nd Lt. Horace Fenn Turner to be 2nd Lt., from (K.B.), April 17th (substituted for notification in "Gazette," June 27th; 2nd Lt. (Hon. Capt.) F. C. Marsh (Maj., Hussars) relinquishes his commn. on ceasing to be empld., Oct. 11th.

Transferred to unempld list:—2nd Lt. Z. Braun, Dec. 24th, 1918; 2nd Lt. T. B. Laurence, May 1st, 1919; Lt. G. T. Stoneham, June 12th; Lt. D. Miller, June 21st; 2nd Lt. J. W. A. Legge-Willis, July 10th; Lt. L. C. Messister, July 16th (substituted for notification in "Gazette," Aug. 22nd); Lt. J. H. Firstbrook, July 18th; Lt. F. A. Watson, Aug. 27th; 2nd Lt. J. H. Edgelow, Sept. 2nd; Lt. O. J. Gagnier, Sept. 5th; 2nd Lt. B. J. M. Dumas, Sept 9th, Sept. 18th, Lt. T. N. Anderson, Lt. H. A. Birks (substituted for notification in "Gazette," June 10th); Lt. W. J. C. Gibson, Sept. 19th; Lt. (Hon. Capt.) J. F. Dawson, 2nd Lt. C. H. Gauntlett, Capt. F. E. Vaughan, Sept. 20th; Lt. I. V. Boxer (substituted for notification in "Gazette," Oct. 7th); Lt. J. P. Greenwood, Lt. H. M. Giles, Sept. 24th, Sept. 25th; Lt. S. F. R. Hulbert, Lt. E. S. B. Tavener, Lt. A. J. Croft, M.C., Sept. 28th; Lt. G. H. Carbutt, Oct. 7th; 2nd Lt. R. G. Smith, Oct. 10th; Lt. A. R. Barnes, Oct. 20th.

Lt. A. B. Kinnair relinquishes his commn. on account of ill-health, and is granted rank of Capt., Oct. 10th.

Lt. H. C. R. Milward (R.H.A., T.F.) relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, Sept. 24th (substituted for notification in "Gazette," Sept. 30th)

The notification in "Gazette," Aug. 2nd, 1918, concerning 2nd Lt. G. H. Tait is cancelled.

The notification in "Gazette," Aug. 15th, concerning 2nd Lt. W. W. Smith is cancelled.

The notification in "Gazette," July 8th, concerning 2nd Lt. F. A. A. Hewson is cancelled.

TECHNICAL BRANCH.—Capt H. R. Lecomber, O.B.E., is graded for pay and allowances as Maj. whilst empld. as Maj., Grade (A.), May 1st; Flt. Lt. M. V. Wrigley to be Flt. Lt., Grade (A), from (S.O.), Aug. 1st (substituted for the notification in "Gazette," Sept. 23rd); Lt. S. W. Bryant is graded for pay and allowances as Capt. whilst empld. as Capt., Grade (A), Nov. 26th, 1918; Flying Officer F. J. Cooke graded for pay and allowances as Flt. Lt. whilst empld. as Flt. Lt., Grade (B), from (S.O.), Sept. 22nd; Lt. A. Bushfield is graded for pay and allowances as Lt whilst empld. as Lt., Grade (A), July 1st; Flying Officer W. J. Standish is graded for pay and allowances as Flying Officer whilst empld. as Flying Officer, Grade (A), Aug. 8th to Sept. 11th; Lt. P. A. Wright to be Lt., Grade (B), from (Ad.), June 12th; Lt. W. W. McDonald is graded for pay and allowances as Lt. whilst empld. as Lt., Grade (B), May 24th; 2nd Lts. graded for pay and allowances as Lts. whilst empld. as Lts., Grade (A):—H. J. Adkins, May 1st to Sept. 11th; J. H. Dann, June 11th.

Pilot Officers to be Flying Officers, without pay and allowances:—C. A. Cordeaux, Sept. 11th, Oct 1st; E. Parrett, S. A. Smith.

Sec. Lts. (Ad.) to be Sec. Lts., Grade (A):—E. T. Fielding, Nov. 28th, 1918; L. T. Bulmer, March 20th, 1919.

Transferred to Unempld. list:—Sec. Lt. (Hon. Lt.) R. S. Clifton, March 2nd; Sec. Lt. F. S. Willsie, May 15th; Capt. P. W. Goodchild, May 28th; Sec. Lt. (Hon. Lt.) C. E. Day, Aug. 1st; Sec. Lt. C. S. Crocker, Aug. 21st; Lt. D. W. Edmonds, Aug. 29th; Sec. Lt. R. A. Ford, Aug. 30th; Sec. Lt. C. J. French, Sept. 2nd; Lt. E. A. Verpilleux, M.B.E., Sept. 5th, Sept. 8th; Lt. W. H. Evans, Sec. Lt. H. Gamage, Capt. J. O. Nichol, Lt. T. A. Roberts, Actg. Lt. W. A. Fowler, Sept. 12th; Sec. Lt. J. A. Peoples, Sept. 16th; Lt. J. Y. De la Cour Elliott, Sept. 17th, Sept. 19th; Maj. R. F. S. Cotton, Lt. A. R. Langton, Sec. Lt. W. Daughton, Sept. 24th, Sept. 25th; Lt. H. G. Gregory, Sec. Lt. A. E. Williams, Lt. A. J. C. Fuller, Sept. 26th, Sept. 27th; Lt. H. G. Burroughs, Capt. J. Reed, Sec. Lt. P. C. Thornton, Sept. 28th, Sept. 29th; Sec. Lt. H. V. Bullock, Lt. M. L. Dobbin, Sept 30th; Lt.-Col. W. H. Lang, O.B.E., Sec. Lt. W. E. Wells, Oct. 1st; Lt. S. P. Elliott, Sec. Lt. (Hon. Lt.) R. R. Fensom, Lt. R. F. Malabar, Oct. 5th; Sec. Lt. G. K. Lindsay, Oct. 9th; Sec. Lt. H. S. M. Coster, Oct. 13th; Actg. Maj. D. G. Nairn, O.B.E. (R.A.S.C., T.F.) relinquishes his commn. on account of ill-health, and retains the rank of Maj., April 26th (substituted for notification in "Gazette," April 25th).

The notification in "Gazette," April 29th, concerning Sec. Lt. C. W. O'Brien is cancelled.

MEDICAL BRANCH.—Lt.-Col. G. N. Biggs (Maj., R.A.M.C., T.F.), from unempld. list, to be restd to estabt without pay and allowances, Aug 13th; Flying Officer R. G. J. McCullagh to be Flt. Lt., Aug 14th

Transferred to unempld. list:—Capt. W. P. Whippell, April 28th; Actg. Lt.-Col. J. L. Bailey, O.B.E., Oct. 7th; Actg. Lt.-Col. H. C. T. Landon, O.B.E., Oct. 10th.

DENTAL BRANCH.—Flying Officer L. Wigoder to be Flt. Lt., Oct. 7th; Capt. R. Fyson transferred to unempld. list, Sept. 20th.

MEMORANDA.—Pilot Officer W. J. Bray to be Flying Officer, Oct. 1st.

Cadets granted hon. commns. as Sec. Lts.:—F. F. Harvey, Jan. 14th; A. A. Morland, Jan. 17th; W. E. D. Clark, Jan. 19th; W. F. Mutton, Feb. 4th; H. Cotton, Feb 8th; R. Carhart, Feb 12th; H. Freedman, Feb. 25th; H. E. Mabin, March 4th; T. C. Lonie, March 14th; E. S. Taylor, March 21st; D. B. Parsons, March 22nd; R. Mortimer, March 27th; H. A. Jacobs, April 15th; G. T. T. Morris, April 17th; H. M. Crowther, April 24th; L. J. Rumsey, April 27th; J. Dixon, May 2nd; A. Nobbins, May 3rd; W. H. Denham, May 16th; P.F.O. F. C. Edwards, June 17th; H. J. Bailey, June 19th; E. W. Twamley, July 1st.

Capt. R. L. S. Raffles is transferred to unempld. list, from (S.O.), Sept. 13th.

Temp. Hon. Lts. relinquish their commns. on ceasing to be empld., Sept. 16th:—K. N. Barnes, A. J. Bohringer, F. E. Coles, F. J. Crinage, F. A. Crouch, C. H. Grace, H. Petrie, W. A. Pett, W. W. Purves, R. E. Tiffin.

The notifications in "Gazette," Aug. 26th, concerning the undermentioned Officers are cancelled:—Sec. Lts. M. L. Bisson, J. H. F. Hock, G. T. Horne, W. E. May, E. Moorland, L. M. Montgomery, S. J. Livingstone.

AIR MINISTRY, Oct. 21st.

R.A.F.—PERMANENT COMMISSIONS.—The notification appearing in "Gazette" of Aug. 1st appointing the following Officers to permanent commns. is cancelled:—Maj. T. S. Impey (A.), Maj. J. S. Mills, D.S.C. (A.), Maj. E. H. M. O'Farrell (A.), Capt. H. F. Delarue, D.F.C. (A.), Capt. C. T. MacLaren, O.B.E. (A.), Capt. E. M. Pollard (A.), Capt. G. T. Porter (A.), Lt. H. de V. Leigh, D.S.C. (A.), Lt. J. F. Nalder (Ad.), Lt. T. Roberts (A.), Lt. J. S. C. Robinson (O.).

The notification in "Gazette" of Aug. 22nd appointing Lt.-Col. O. H. K. Maguire, D.S.O. (A.), to a permanent commn. is cancelled.

The initials of Maj. P. R. Burchell are as now described, and not "R. P.," as stated in "Gazette" of Aug. 1st.

The surname of Lt. C. C. Bazell is as now described, and not "Bazzell," as stated in "Gazette" of Aug. 1st.

The notification in "Gazette" of Sept. 5th concerning Capt. F. E. P. Barrington is cancelled (the notification in "Gazette" of Aug. 1st is to stand).

The name of Lt. M. Minter is as now described, and not Lt. M. Minter, M.C., as stated in "Gazette" of Aug. 1st.

The name of Capt. C. H. Elliott-Smith is as now described, and not Capt. C. H. Elliott-Smith, M.C., as stated in "Gazette" of Aug. 1st.

The classification of Lt. A. S. Thompson is (Ad.) and not (A.) as stated in the "Gazette" of Aug. 1st.

The date of appointment of Lt. J. Whitford to a permanent commn. is Aug. 16th, and not "Aug. 1st" as stated in the "Gazette" of Aug. 1st.

The following temp. appointments are made at the Air Ministry:—Staff Officer, 1st Class.—(Air.)—Maj. G. J. Watney, March 25th, and to be actg. Lt.-Col. until April 30th. (Substituted for the notification in the "Gazette" of June 20th.)

Staff Officer, 2nd Class.—(Air.)—Capt. W. E. G. Bryant, March 25th, and to be actg. Maj. until April 30th. (Substituted for the notification in the "Gazette" of June 20th.)

The following temp. appointments are made:—Staff Officer, 2nd Class.—(T.)—Sqdn. Ldr. F. Jolly, from Aug. 15th to Sept. 19th.

Staff Officers, 3rd Class.—(Air.)—Flying Officer (actg. Flt. Lt.) O. R. Gayford, and relinquishes the actg. rank of Flt. Lt., Sept. 22nd. (P.)—Flt. Lt. A. McK. Moffatt, Oct. 13th. (Q.)—Sec. Lt. W. A. Glasper, June 12th.

FLYING BRANCH.—Wing Comdr. I. T. Courtney, C.B.E., to be Wing Comdr. (A.), from (S.O.), Oct. 1st.

Sqdn. Ldr. Sir N. A. R. D. Leslie, Bart., C.B.E., to be Sqdn. Ldr. (A.), from Air Attaché, Sept. 25th.

Flt. Lt. D. S. Earp to be actg. Sqdn. Ldr. whilst empld. as Sqdn. Ldr. (O.), Aug. 1st to Oct. 11th

Capt. M. Henderson, D.S.O., is graded for purposes of pay and allowances as Maj. whilst empld. as Maj. (A.), from June 17th to July 31st.

Flt. Lt. H. I. Hanmer, D.F.C., to be Flt. Lt. (O.), from (S.O.), Sept. 1st.

Lt. R. E. Butler to be actg. Capt. whilst empld. as Capt. (A.), from Dec. 1st, 1918, to April 25th.

The following Lts. are graded for purposes of pay and allowances as Capts whilst empld. as Capts. (A.):—R. S. Capon, to July 31st; L. C. Pockney, May 1st; W. Jones, June 13th.

Lt. F. R. Hockney relinquishes the grading for pay and allowances as Capt. on ceasing to be empld. as Capt (A.), June 3rd.

The following Flying Officers relinquish the grading for pay and allowances as Flt. Lts. on ceasing to be empld as Flt. Lts. (A.):—A. A. Leitch, M.C., D.F.C., Sept. 5th; W. S. Reid, Sept. 6th; E. W. White, Sept. 25th.

The following Flying Officers (actg. Flt. Lts.) relinquish the actg. rank of Flt. Lt. on ceasing to be empld. as Flt. Lts. (A.):—(Hon. Flt. Lt.) L. N. Sutherland, Sept. 1st; L. Clarke, Sept. 4th; A. J. C. Styran, M.C., Sept. 19th.

Flying Officer V. Stranders to be Flying Officer, from (S.O.), Sept. 8th.

Sec. Lts. to be Lts.:—(Hon. Lt.) G. E. Clavey, July 22nd, 1918; A. J. Rankin, Sept. 10th, 1918; E. E. Taylor, Oct. 13th, 1918; W. E. J. Bloodworth, Sept 27th, 1918; S. T. Crowe (since reclassified to Admin.), April 25th; W. J. Millen, June 30th; P.F.O. F. B. Candy (late R.N.A.S.) is granted a temp. commn. as Sec. Lt. (A. and S.), Sept. 27th, 1918.

The following relinquish their commns. on ceasing to be empld.:—Capt. (Capt., R.W. Surr. R.) L. M. Boddan-Whetam, from (S.O.), Aug. 28th; Sec. Lt. L. E. G. Judge (Sec. Lt., L.N. Lancs. R.), Aug. 29th; Sec. Lt. D. W. Clarke (Lt., R.F.A.), Sept. 17th; Maj. G. Henderson (Maj., Indian Army), Sept. 18th; Lt. E. V. C. Hamilton (Lt., Wors. R.), Sept. 19th; Lt. R. G. Lewis (Lt., S. Wales Bord.), Sept. 20th; Lt. (Hon. Capt.) H. A. Courtenay, D.F.C. (Capt., R.A.S.C.), Lt. P. Gurrey (Lt., Suff. R.), Sept. 25th; Lt. (Hon. Capt.) C. F. Yarde (Capt., R.A.S.C.), Sept. 26th; Lt. A. C. Jelf (Sub-Lt., R.N.), Oct. 1st; Capt. A. Howe (Capt., R.W. Kent R.), Oct. 4th; Capt. D. R. Hanlon (Capt., R.G.A.), Oct. 7th; Lt. E. S. Wheatley (R.W. Surr. R.), Oct. 9th; Lt. E. V. A. Bell (Lt., Hamps. R.), Oct. 13th; Lt. C. G. Stewart (Lt., R. Scots Fus.), Oct. 14th; Lt. (Hon. Capt.) T. A. Francis (Capt., R. Ir. Regt.), Oct. 15th.

Transferred to unempld. list:—Capt. G. H. Simpson, Jan. 24th (substituted for notification in "Gazette," Feb 25th, wherein this officer's rank was stated to be Lt. (Hon. Capt.)); Sec. Lt. R. D. Chalmer, Sec. Lt. A. M. Crawford, Sec. Lt. F. J. Ham, Sec. Lt. H. D. Hoolihan, Sec. Lt. F. Kerr, Sec. Lt. J. C. Long, Sec. Lt. C. M. Loves, Sec. Lt. C. A. McGillivray, Sec. Lt. D. M. MacKenzie, Sec. Lt. L. F. Patterson, Sec. Lt. L. D. Squair, Sec. Lt. G. P. Smith, Sec. Lt. D. E. Woolard, Feb. 1st; Sec. Lt. S. E. Storey, Feb 8th; Sec. Lt. W. Pendleton, Feb. 24th; Sec. Lt. F. A. Lewis, Feb. 29th; Lt. G. H. Bush, Sec. Lt. (Hon. Capt.) P. S. Page, M.C., March 1st; Lt. W. F. S. Purvis, March 5th; Sec. Lt. E. R. Petts, March 6th; Sec. Lt. (Hon. Lt.) R. Esterbrook, March 11th; Lt. R. B. Smith, April 1st; Sec. Lt. A. Lawlor, April 10th; Sec. Lt. C. R. Cooke, April 14th (substituted for the notification in the "Gazette" of Sept. 12th); Sec. Lt. L. T. Lawrence, April 16th; Lt. A. Eckley, Sec. Lt. M. G. Larder, April 19th; Sec. Lt. F. Smith, April 20th; Lt. H. C. Taylor, April 22nd; Sec. Lt. J. P. Gilbert, May 8th; Sec. Lt. K. E. M. Holmes, Sec. Lt. (Hon. Lt.) T. W. Watts (substituted for the notification in the "Gazette" of June 6th), Sec. Lt. T. A. Woodward, May 11th; Sec. Lt. (Hon. Lt.) F. Smith, May 15th; Sec. Lt. C. G. Brennard (substituted for the notification in the "Gazette" of May 20th), Sec. Lt. T. P. Forrester, Sec. Lt. S. Kenna, May 20th; Lt. H. O. Irwin, May 27th; Sec. Lt. C. E. Mallone, June 1st; Lt. P. H. Clarke, June 11th; Sec. Lt. H. W. Gill, June 13th; Sec. Lt. A. E. Eastes, June 24th (substituted for the notification in the "Gazette" of June 27th); Sec. Lt. F. E. King, July 12th; Sec. Lt. G. C. Upson, Aug. 2nd; Lt. H. V. Robins, M.C., A.F.C., Aug. 14th; Sec. Lt. J. E. Hernon, Aug. 15th; Lt. E. J. Stephens, Aug. 16th (substituted for the notification in the "Gazette" of Aug. 15th); Lt. C. E. V. Graham, M.C., Aug. 29th; Lt. W. H. Thompson, Aug. 30th; Sec. Lt. H. A. Griffiths, Sept. 1st; Sec. Lt. L. R. Griffin, M.M., Sec. Lt. W. Hall, Sept. 2nd; Lt. H. P. Guard, Lt. J. H. Leavesley, Lt. (Hon. Capt.) C. C. Snow, D.F.C., Sept. 3rd, Sec. Lt. W. M. Hall, Lt. W. F. H. Harris, Sec. Lt. F. W. Long, Sept. 4th; Sec. Lt. L. A. Gray, Lt. F. A. W. Handley, Sec. Lt. F. A. Lawson, Lt. (Hon. Capt.) A. P. Mitchell, Sec. Lt. D. L. Townsend, Sept. 5th; Sec. Lt. A. F. Legg, Lt. G. R. T. Marsh, Sept. 6th; Sec. Lt. L. S. Mersh, Lt. J. R. Statter, Sec. Lt. H. M. Thompson, Sept. 7th; Sec. Lt. A. H. Lumsden, Sec. Lt. C. E. Sunnucks, Lt. G. F. Thomas, Sept 8th; Sec. Lt. E. H. Halley, Sec. Lt. E. W. Harriott, Lt. N. D. Lansdown, Lt. G. M. Stephenson, Lt. A. C. Stopher, Sec. Lt. G. Travers, Sept. 10th; Sec. Lt. R. S. Griffiths, Sec.

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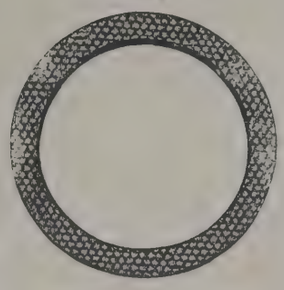
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TELE {GRAMS: Aircraft / PHONE: 1176} EASTBOURNE

Lt. R. S. Stainsby, Lt. E. H. Stanes, M.C., Sept. 11th; Lt. L. S. Latham (substituted for notification in "Gazette" of Sept. 26th), Lt. I. H. Lawrence, Sept. 12th; Sec. Lt. P. F. T. Luckham, Sept. 13th; Sec. Lt. J. J. Luckley, Sept. 14th; Lt. H. Richard-De-Leschery, Sec. Lt. L. E. Gunn, Lt. H. C. Leaver, Sec. Lt. G. C. Lugg, Sept. 15th; Sec. Lt. L. R. Lane, Sept. 16th; Sec. Lt. J. C. Rottomley, Lt. W. A. R. Robertson, Sept. 17th; Lt. S. Lindsay, Lt. H. B. Mann, Sept. 18th; Capt. I. O. Griffith, A.F.C., Sept. 19th; Lt. A. J. J. Lamb, Capt. F. S. G. Lewis, Sec. Lt. R. G. Mollard, Sept. 20th; Sec. Lt. G. Hall, Sept. 22nd; Lt. A. H. Forester, Lt. L. Lovatt, Sept. 23rd; Lt. A. D. C. Browne, Lt. R. S. Gilbert, Sec. Lt. J. B. Leach, Sept. 24th; Sec. Lt. R. G. S. Thomson, Sept. 25th; Sec. Lt. J. A. Barber, Sec. Lt. J. R. N. Booth, Lt. (actg. Capt.) A. Boyle, M.C., A.F.C., Lt. A. M. Lewis, A.F.C., Lt. C. C. F. Osborn, Sec. Lt. J. O. Taylor, Sept. 26th; Sec. Lt. G. E. O. Dixon, Lt. A. W. Donald, Lt. C. H. Miller, Sec. Lt. F. T. Parr, Sept. 27th; Sec. Lt. G. B. Emery, Lt. T. H. Forrest, Sec. Lt. N. Gray, Lt. G. F. Shreve, Sept. 28th; Sec. Lt. H. A. Zeats, Sept. 29th; Maj. J. E. Dixon-Spain, O.B.E., Sept. 30th; Sec. Lt. W. R. Hatfield, Oct. 2nd; Lt. E. R. Lickfold, Lt. J. Mackereth, Oct. 5th; Lt. M. G. Carmody, Sec. Lt. J. M. Ward, Oct. 7th; Sec. Lt. H. G. E. Davis, Lt. R. C. D. Clifford, Sec. Lt. E. J. Wing, Oct. 8th; Lt. J. A. H. Chaproniere, Sec. Lt. R. B. Clarke, Capt. W. E. Collison, Sec. Lt. E. Exton, Sec. Lt. A. Glen, Lt. H. P. Schoeman, Lt. H. L. Swinburne, Lt. W. Urinowski, Oct. 9th; Lt. E. W. Coveney, Sec. Lt. R. W. C. Waugh, Oct. 10th; Lt. H. M. Fletcher, Oct. 11th; Sec. Lt. A. G. T. Wills, Oct. 20th.

Capt. C. H. Brewer, M.C., relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain his rank, Oct. 13th.

The following Lts. relinquish their commns. on account of ill-health and are permitted to retain their rank :—T. G. Drew-Brook (caused by wounds), Sept. 30th; E. H. Stanes, M.C. (Manch. R.), C. B. Whitney (contracted on active service), Oct. 14th; A. B. E. Graham, Oct. 22nd.

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank :—E. L. Milborrow (contracted on active service), Oct. 10th; V. L. Watts (caused by wounds), Oct. 11th.

The surname of Sec. Lt. L. A. Roberton is as now described, and not "Robertson," as stated in "Gazette" of Sept. 26th.

The initials of Sec. Lt. R. C. Adams are as now described, and not "F. C.," as stated in the "Gazette" of Sept. 26th.

The surname of Sec. Lt. R. J. Ottaway-Wilson is as now described, and not R. J. O. "Wilson," as stated in the "Gazette" of Feb. 21st.

The notification in the "Gazette" of June 17th concerning Sec. Lt. J. H. Taylor refers to "John Homes Taylor."

The notification in the "Gazette" of March 11th concerning Lt. W. Green (E. Yorks R.) is cancelled.

The notification in the "Gazette" of March 25th concerning Lt. P. H. Clarke is cancelled.

The notification in the "Gazette" of July 25th concerning Sec. Lt. F. C. Logan is cancelled.

The notification in the "Gazette" of Aug. 19th concerning Sec. Lt. H. Toms is cancelled.

The notification in the "Gazette" of Oct. 3rd concerning Sec. Lt. F. W. F. Turner is cancelled.

ADMINISTRATIVE BRANCH.—Group Capt. T. B. Wood, C.M.G., to be Group Capt., from (S.O.), Oct 1st.

Sqdn. Ldr. A. C. E. S. Bowlby relinquishes the grading for pay and allowances as Wing Com. on ceasing to be empld. as Wing Com., Sept. 12th. Sqdn. Ldr. A. ap Ellis to be Sqdn. Ldr., from (S.O.), Oct. 1st.

Flt. Lts. to be Flt. Lts., from (S.O.) :—E. D. Cole, F. J. Wise, Aug 15th; C. C. Treatt, Sept. 1st; H. A. J. Wilson, O.B.E., Sept. 22nd.

Lt. A. B. Monk to be actg. Capt. while empld. as Capt., from Oct. 4th, 1918, to April 30th (substituted for the notification in the "Gazettes" of March 25th and May 23rd).

The following Lts. are graded for purposes of pay and allowances as Capts. while empld. as Capts. :—Lt. S. F. A. Welsh, April 2nd; Lt. J. Woolfenden, May 1st to July 25th.

Lts. to be Lts. :—R. W. Silk, from (O.), May 12th (substituted for the notification in the "Gazette" of June 10th); J. E. Drummond, from (A.), July 25th.

Flying Officers to be Flying Officers :—R. B. Luard, from (A.), Sept. 8th; F. Dance, M.B.E., from (S.O.), Oct. 10th.

The following Flying Officers relinquish the grading for pay and allowances as Flt. Lt. on ceasing to be empld. as Flt. Lt. :—W. E. N. Growden, Aug. 20th; C. A. Howe, Aug. 26th.

Flying Officer (actg. Sqdn. Ldr.) G. B. Redgrave relinquishes the actg. rank of Sqdn. Ldr. and the grading for pay and allowances as Flt. Lt., Sept. 12th.

Sec. Lts. to be Lts. :—R. P. Briscoe, Dec. 27th, 1918; R. C. Rogers, June 6th.

The following Sec. Lts. are graded for purposes of pay and allowances as Lts. whilst empld. as Lts. :—J. G. Le Brun (to Sept. 23rd), T. Surr (to July 14th), May 1st.

Pilot Officer G. P. Abbott relinquishes the grading for pay and allowances as Flt. Lt. on ceasing to be empld. as Flt. Lt., Sept. 3rd.

Lt. C. L. Mundey, M.C. (Lt., R. Fus.), relinquishes his commn. on ceasing to be empld., Sept. 30th

Transferred to unempld. list :—Sec. Lt. P. E. Kearney, July 10th; Lt. T. F. Davis, Aug. 6th; Lt. A. Hancock, Aug. 27th; Sec. Lt. G. A. Lyns, Aug. 30th; Capt. F. J. Gray, O.B.E., Sept. 1st; Sec. Lt. H. P. Bell, Lt. C. A. Umbers, Sept. 3rd; Sec. Lt. A. J. Goring, Sept. 5th; Sec. Lt. P. A. Stallard, Sept. 7th; Sec. Lt. A. F. Stevens, Sept. 8th; Sec. Lt. A. Snell, Lt. J. A. Stedman, Sept. 9th; Sec. Lt. H. T. Green, Sept. 17th; Sec. Lt. H. P. Bolt, Sec. Lt. R. N. H. Cole, Sept. 20th; Capt. L. B. Mills, M.C., Lt. I. Morgan, Sept. 23rd; Lt. D. W. McEwan, Sept. 24th; Sec. Lt. L. T. Hoare, Sept 25th; Sec. Lt. H. V. Hall, Sec. Lt. S. G. Marsh, Sept. 27th; Lt. H. T. Evans, Sept. 29th; Lt. C. H. Cocup, Sept. 30th; Sec. Lt. W. O. Watt, Oct. 9th.

Lt. F. W. Dogherty relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Oct. 22nd.

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank :—F. C. Logan, July 10th; W. D. Layton (contracted on active service), Oct. 14th; J. O. Minshall (caused by wounds), Oct. 15th.

The surname of Sec. Lt. J. H. Gray is as now described, and not "Grey" as stated in "Gazette," Sept. 26th.

The notification in "Gazette" of April 29th concerning Lt. A. H. F. Brothers is cancelled.

TECHNICAL BRANCH.—Maj. R. G. L. Markham is graded for purposes of pay and allowances as Lt.-Col. whilst empld. as Lt.-Col., Grade (A), May 1st.

Maj. H. E. Day, D.S.O., M.V.O., to be Maj., Grade (B.), from (S.O.), July 21st. (Substituted for the notification in "Gazette" of Aug. 1st.)

Capt. C. B. Dalison is graded for purposes of pay and allowances as Maj. whilst empld. as Maj., Grade (A.), from (A. and S.), May 1st.

Capt. W. S. Hammond, O.B.E., is graded for purposes of pay and allowances as Maj. whilst empld. as Maj., Grade (A.), May 1st.

Lt. G. S. Hallas, M.C., is graded for purposes of pay and allowances as Maj. whilst empld. as Maj., Grade (A.), June 9th.

Flt. Lts. to be Flt. Lts. :—N. H. Wood, Grade (A.), from (S.O.), Sept. 8th; H. J. Lister, Grade (B.), from (S.O.), Aug. 15th.

Lt. W. T. Hope-Hawkins to be actg. Capt. whilst empld. as Capt., Grade (A.), April 1st, 1918.

The following Lts. are graded for purposes of pay and allowances as Capts. whilst empld. as Capt., Grade (A.) :—G. Baillie, C. E. Nightingale, J. H. Mackie, P. H. Paul, A. G. Ridgon, May 1st.

Lt. F. R. Wilkins is graded for purposes of pay and allowances as Capt. whilst empld. as Capt., Grade (A.), from (Ad.), May 1st.

Lt. H. B. Hawker is graded for purposes of pay and allowances as Capt. whilst empld. as Capt., Grade (B.), June 12th.

Flying Officer F. J. Cooke is graded for purposes of pay and allowances as Flt. Lt. whilst empld. as Flt. Lt., Grade (B.), from (S.O.), Sept. 22nd.

Sec. Lt. (Hon. Capt.) F. C. Marsh is graded for purposes of pay and allowances as Capt. whilst empld. as Capt., Grade (B.), May 1st.

Lt. A. J. McNab, M.C., to be Lt., Grade (A.), from Grade (B.), June 25th, 1918.

Flying Officer C. G. Wigglesworth, A.F.C., to be Flying Officer, Grade (A.), from (Airship), Sept. 8th.

Flying Officer S. Empsall relinquishes the grading for pay and allowances as Flt. Lt. on ceasing to be empld. as Flt. Lt., Grade (A.), Sept. 8th.

Lt. R. J. Copley relinquishes the grading for pay and allowances as Capt. on ceasing to be empld. as Capt., Grade (B.), June 11th.

Lt. A. J. McNab, M.C., to be Lt., Grade (B.), from (O.), April 27th, 1918.

Flying Officer T. H. Sills to be Flying Officer, from (S.O.), Sept. 30th.

Sec. Lts. to be Lts :—R. W. Ellis, Sept 28th, 1918 (substituted for notification in "Gazette," March 7th); H. Edwards, May 14th.

Sec. Lts. to be Lts., without the pay and allowances of that rank :—M. Thompson, June 11th, 1918; F. E. P. Langton, Oct. 5th, 1918; A. West, Dec. 4th, 1918 (substituted for notification in "Gazette" of March 7th).

Pilot Officers to be Flying Officers without pay and allowances of that rank :—H. S. Whitley, Aug. 5th; G. A. Slater, Aug. 27th.

The following Sec. Lts. are graded for purposes of pay and allowances as Lt. whilst empld. as Lt., Grade (A.) :—W. Dentith (to Sept. 22nd), J. Driscoll, A. A. Gardner, J. G. Wright, May 1st.

Pilot Officer (Hon. Flying Officer) J. C. Dyson to be Pilot Officer, Grade (B.), from (S.O.), Sept. 29th, and to be Hon. Flying Officer.

Sec. Lt. (Hon. Capt.) F. C. Marsh to be Sec. Lt., Grade (B.), from (Ad.), May 1st, and to be Hon. Capt.

Sec. Lt. H. Royston (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt., Grade (B.), Oct. 21st, 1918 (substituted for notification in "Gazette" of Dec. 20th, 1918, wherein this officer was shown under Admin. Branch).

Transferred to the unempld. list :—Lt. (actg. Capt.) W. T. Hope-Hawkins, Jan. 24th; Sec. Lt. (Hon. Lt.) J. E. Sierra, April 3rd (substituted for notification in "Gazette" of April 25th); Lt. A. West, April 16th (substituted for notification in "Gazette" of June 6th); Lt. D. Cairns, April 23rd; Lt. H. D. P. Jehring, May 27th; Lt. B. A. Gunner, June 11th; Sec. Lt. J. Macpherson, Aug. 28th; Maj. W. J. S. Lockyer, Lt. H. B. Long, Aug. 29th; Capt. G. N. Lindeman, Sept. 4th; Sec. Lt. E. Lancaster, Sept. 5th; Sec. Lt. J. Stevenson, Sept. 6th; Lt. W. Hall, Sept. 7th; Lt. E. M. Leete, Lt. R. Stewart, Capt. H. W. R. Trigg, Sept. 8th; Sec. Lt. H. A. Lyford, Lt. W. A. Lyon, Sec. Lt. E. M. McCormack, Sec. Lt. R. R. Stockwell, Lt. (Hon. Capt.) A. R. Thomson, M.C., Sept. 9th; Sec. Lt. G. H. Mansell, Sec. Lt. F. W. G. Ticehurst, Capt. G. E. Upton, Sept. 10th; Lt. M. P. Lewis, Sept. 12th; Lt. W. L. P. Gould, Sec. Lt. A. G. S. Lyford, Sept. 13th; Lt.-Col. R. H. Brand, O.B.E., Lt. P. Cairns, Sept. 15th; Lt. W. Woodman, Sept. 17th; Lt. L. V. Beckett, Sec. Lt. H. Miller, Sept. 18th, Lt. C. J. Ashdown, Lt. K. I. Goodman, Sept. 19th; Capt. T. Allen, Capt. J. Hammersley-Heenan, Lt. D. K. Leed, Sept. 20th; Sec. Lt. W. Adam, Lt. C. V. Anthony, Sept. 22nd; Lt. S. T. Heath, Maj. D. D. Milne, Sept. 23rd; Lt. C. Murchie, Sept. 25th; Sec. Lt. W. H. Johnson, Sept. 26th; Sec. Lt. (Hon. Capt.) P. J. Burns, Sec. Lt. (Hon. Capt.) E. R. Tongue Croxall, Sept. 27th; Sec. Lt. (Hon. Lt.) C. A. Assiter, Oct. 1st; Lt.-Col. E. G. O. Beuttler, O.B.E., Oct. 5th; Lt. P. L. Hill, Oct. 7th; Sec. Lt. J. Stewart, Lt. W. H. Stirling, Oct. 8th; Sec. Lt. E. G. Anness, Sec. Lt. (Hon. Lt.) W. V. Clemence, Lt. F. E. Godfrey, Oct. 9th; Sec. Lt. W. C. Francis, Sec. Lt. F. G. A. Terrill, Oct. 10th; Capt. G. G. McHardy, Oct. 12th; Capt. W. G. J. Wardle, M.B.E., Oct. 20th.

Lt. T. J. Stannage relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Aug. 1st. (Substituted for notification in the "Gazette" of Sept. 2nd.)

The notification in the "Gazette" of April 29th concerning Lt. W. T. Hope-Hawkins is cancelled.

The notification in the "Gazette of Feb. 14th concerning Lt. W. T. H. Hawkins is cancelled.

The notification in the "Gazette" of Aug. 26th concerning Lt. P. Cairns is cancelled.

The notification in the "Gazette" of Oct. 7th concerning Lt. P. Cairns is cancelled.

The notification in the "Gazette" of July 8th concerning Sec. Lt. E. H. Halley is cancelled.

The notification in the "Gazette" of July 25th concerning Sec. Lt. F. C. Logan is cancelled.

The notifications in the "Gazettes" of May 24th, 1918, Oct. 22nd, 1918, and June 27th concerning Lt. A. J. McNab, M.C., are cancelled.

The notification in the "Gazette" of Sept. 12th concerning Sec. Lt. A. G. Ridgon is cancelled.

MEDICAL BRANCH.—Capt. H. Harvey to be actg. Maj. while empld. as Maj., July 28th.

Capt. R. B. Lilly is transferred to unempld. list, Sept. 16th.

DENTAL BRANCH.—The surname of Lt. R. H. Moore is as now described and not "More" as stated in the "Gazette" of Aug. 8th.

MEMORANDA.—Lt. A. C. W. Williams is granted the hon. rank of Capt., Aug. 16th, 1918.

The following Probationary Flight Officers are granted Hon. Commns. as Sec. Lts. :—F. A. Lewis, Nov. 21st, 1918; G. N. S. Lane, April 24th; J. R. F. Cheese, March 8th; J. S. Stauffer, Sept. 28th.

The following relinquish their commns. on ceasing to be empld. :—Capt. A. Warnock (Capt and Ormr., Ox. and Bucks. L.I.), Oct. 3rd; Maj. R. Money, O.B.E. (K.O.R., Lancs. R.), Oct. 9th; Lt. A. V. Burbury, M.C. (Lt., Yorks. R.), Oct. 14th; Temp. Hon. Lt. H. Clark, Sept. 16th.

Transferred to unempld. list :—Lt. J. C. Watson, June 12th; Capt. H. J. Lister, from (S.O.), Aug. 20th; Capt. C. H. Beril, from (S.O.), Sept. 16th; Capt. (actg. Lt.-Col.) E. S. Halford, O.B.E., from (S.O.), Sept. 30th; Capt. A. M. Taylor, from (S.O.), Oct. 7th; Col. T. E. St. C. Daniell, C.B.E., M.C., from (S.O.), Oct. 8th.

The notification in the "Gazette" of Sept. 5th concerning Flt. Lt. C. E. Hodgson is cancelled.



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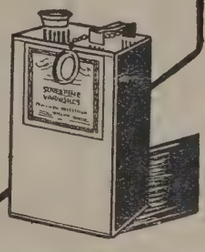
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PERSONAL NOTICES.

NAVAL.

DEATH.

PORTE.—J. C. Porte, C.M.G., late R.A.F. (Lieut.-Cmdr., R.N., retired, and late Wing Cmdr., R.N.A.S.) died suddenly on Oct. 22nd at his residence, 8, Norfolk Terrace, Brighton. He was the husband of Mynnie Porte and the son of the Rev. Dr. Porte, of the Old Priory, Steeple Morden, Royston.

ENGAGEMENT.

FANE—BACON.—On Oct. 1st, at St. Andrew's Church, Raveningham, Norfolk, Capt. Gerard Fane, D.S.C., R.A.F., was married to Constance Rhoda Elizabeth, daughter of Mr. and Mrs. Nicholas Bacon, of Raveningham Hall, by the Right Rev. the Bishop of Thetford, assisted by the Rev. T. Andrews, Vicar of the Parish.

BIRTHS.

ROBERTSON.—On Oct. 23rd, at 6, Nelson Road, Southsea, to the wife of Wing-Comdr. E. D. Maxwell Robertson, R.A.F. (H.M.S. "New Zealand")—a daughter.

ST. JOHN MURPHY.—On Oct. 25th, at 4, Cambridge Road, Bournemouth, Winifrid (née Blackstone), wife of Surgeon-Commander J. St. John Murphy, R.N. (attd. R.A.F.)—a daughter.

VEREY.—On Oct. 12th, at Hall Place, Weybridge, Surrey, the wife of Major D. R. Verey, D.S.C., late R.A.F., of a daughter.

MILITARY.

DEATHS.

BRISCO-OWEN.—Clarence Morland Brisco-Owen, M.C. (and Bar), K.I.H., late Captain R.F.C., died on Sept. 12th at Rawul Pindi, India, of cholera. He was the only son of the late M. Brisco-Owen, Haulvre, Beaumaris.

HOLTOM.—Sec. Lieut. Jack Nicholson Holtom, R.F.C., who was killed in action on Oct. 22nd, 1916, was the youngest son of Mrs. Amy Holtom, 64, Sutherland Avenue, Maida Vale. He was 23 years of age.

MASON.—Pte. Leonard Alfred Mason, South Staffs, formerly of R.F.C., who was officially reported missing in France on Oct. 12th, 1917, is now officially reported presumed killed in action on that date. He was the husband of M. Winifred Mason, of Putney, S.W.15.

PIXLEY.—Captain Reginald George Hewett Pixley, M.C., 7th London Brigade, R.A.F., attached R.F.C., reported missing on June 4th, 1917, is now privately ascertained to have been killed in action on that date. He was the younger son of Major and Mrs. Stewart A. Pixley, of Woking, and was 24 years of age.

MARRIAGES.

COLLINS—RUSSELL.—On Oct. 20th, at St. James', Paddington, Capt. Athol D. Collins, Worcestershire Regiment, and R.A.F., eldest surviving son of D. George Collins, C.C., Shirley Park, Croydon, was married to Agnes Annie Russell, only daughter of Mrs. Russell, Downham, Norfolk, by the Rev. C. Scott.

FORBES—DRAKE.—On Oct. 15th, at All Souls, Langham Place, Maj. Leslie F. Forbes, M.C., R.A.F., second son of Mr. and Mrs. J. Webster Forbes, Birchfield, Birmingham, was married to Nora Phyllis, daughter of Mr. and Mrs. W. E. Drake, Goodwick, Pem.

KENNEDY—MOSS.—On Oct. 16th, at S. John's Church, Windermere, Capt. Norman McLeod (late A.O.D. and R.A.F.), eldeset surviving son of Mr. and Mrs. J. Y. Kennedy, of 16, Freeland Road, Ealing, was married to Winifred Hardwick, youngest daughter of the Rev. and Mrs. John Miles Moss, of Helm, Windermere, and Winthwaite, Sidmouth, by the Rev. P. B. Mercier, M.A., Vicar of Seascale, assisted by the Rev. T. B. A. Saunders, M.A., Vicar of the parish.

WINCH—MAIS.—On Sept. 18th, at St. Stephen's Church, Ealing, Lieut. Hubert Edward Winch, R.F.A., R.A.F., was married to Dorothy Beatrice Mais, of Jamaica.

BIRTHS.

BAYLY.—On Oct. 14th, at 40, Granada Road, Southsea, to the wife of Major L. J. Bayly, R.G.A., R.A.F.—a daughter.

BEAUFORT.—On Oct. 8th, at Steephill, Jersey, the wife of Major Victor Beaufort, O.B.E., M.C., Devonshire Regiment and R.A.F., of a daughter.

JACKSON.—On Oct. 16th, at Winchelsea, to Kathleen (*née* Wansey), the wife of Major A. H. Jackson, the Sherwood Foresters, and R.A.F.—a son.

PILLERS.—On Oct. 26th, at Leamington Spa, the wife of Major R. Kingsley Pillers (Northants Regt., attd. R.A.F.), of a daughter.

AIR FORCE.

DEATHS.

MOLES.—Percival Fitz-Patrick Moles, late R.A.F., the only child of George and Eily Moles, of Shrubbery House, Lydd, Kent, died on Oct. 9th, after a short illness. He was 19 years of age.

RALLI.—Lieut. Eustace John Ralli, R.A.F., died on Oct. 13th at the R.A.F. Auxiliary Hospital, Swansea, as the result of injuries received while night-flying on May 8th, 1918. Mr. Ralli was flying that night on the air defence of London. He was the only son of Capt. and Mrs. Stephen Pandeli Ralli, of 43, Great Cumberland Place, W., and was 21 years of age.

ENGAGEMENTS.

ADES—McINTOSH.—The engagement is announced between Lieut. Esmond Selby Ades, R.A.F., second son of Mr. and Mrs. Ades, of South End House, Croydon, and Marjory Ailsa ("Bobbie"), only daughter of Mr. and Mrs. Walter McIntosh, The Poplars, Ryde Vale Road, Balham.

HODSOLL—TOMLIN.—The marriage arranged between Flight Lieut. E. J. Hodsoll, R.A.F., and Miss Joyce Tomlin, of 67, Elm Park Gardens, will take place on Saturday, Nov. 22nd, at St. Peter's, Cranley Gardens, at 2 p.m.

WAKEFIELD—LEWIS.—A marriage has been arranged, and will take place on Nov. 19th, at St. George's, Hanover Square, between Flt. Lieut. W. W. Wakefield, R.A.F., eldest son of Roger William Wakefield, M.D., and Mrs. Wakefield, of Winder, Cark-in-Cartmel, and Rowena Doris, daughter of Llewelyn Lewis, M.D., and Mrs. Lewis, Maesyrhaf, Neath.

WHITELOCK—BRYNING.—The engagement is announced between Sqdn. Leader A. T. Whitelock, R.A.F., son of Mr. T. R. Whitelock, Barnsley, Yorkshire, and Frances Mary, daughter of the late Edward Bryning, J.P., Kirkham, Lancashire.

MARRIAGE.

BARRACLOUGH—WILSON.—On October 22nd, at St. Clement's Church, York, John C. Barraclough, son of Dr. and Mrs. Barraclough, of Lowestoft, was married to Kathleen M. R. Wilson, daughter of the late the Rev. H. A. Wilson (Vicar of Rufforth) and Mrs. Wilson, of Scarcroft Hill, York.

GLOVER—BEVIS.—On Saturday, Oct. 17th, at St. Thomas's Church, Portsmouth, Lieut. William Henry Glover, R.A.F., of Fareham, was married to Elsie Jennie Bevis, daughter of Mr. and Mrs. A. W. Bevis, of Portsmouth, by the Rev. L. David, M.A.

BIRTHS.

CABLE.—On October 1st, at a nursing home in Teignmouth, South Devon, the wife of Lieut. L. Cable, R.A.F., of a son.

HOLLAND.—On Sept. 29th, at Rosario de Santa Fé, Argentine, to Cicely, wife of Capt. S. H. Holland, late R.A.F.—a daughter.

KEYMER.—On October 6th, at the Old House, Airesford, Hants, the wife of the Rev. B. W. Keymer (R.A.F.), of a daughter (Diana).

SCOREY.—On Oct. 13th, in London, to the wife of Serjt.-Maj. W. J. Scorey, R.A.F., M.S., of 25, Hugh Street, S.W.1—a son.

WINDELER.—On Tuesday, Oct. 14th, at 21, Eldon Road, Kensington, W.8, to Linda Harley, wife of B. C. Windeler (late Major, A.F.C., R.A.F.)—a son.

A CHANGE OF ADDRESS.

The Aircraft Transport and Travel, Ltd., of 27, Buckingham Gate, S.W.1, wish it to be known that their offices have been removed to 25-27, Old Queen Street, London, S.W.1.

AN AMALGAMATION.

It is announced that the businesses of Brown Bros., Ltd., London, and James Thomson and Son (Motor Factors), Ltd., Edinburgh, have amalgamated. Mr. J. Albert Thomson, chairman and managing director of the Edinburgh company, becomes one of the managing directors of Brown Bros., Ltd., and several of the London company's directors will join the Edinburgh board.

"SHELL" AT THE MOTOR EXHIBITION.

At the Motor Exhibition which opens at Olympia in November, the Shell Marketing Co., Ltd., will exhibit packages for containing and the distribution of petrol throughout the United Kingdom under their following well-known brands:—"Shell" Motor Spirit, which is well known for its suitability for high-class and general motoring; "Shell" Aviation Motor Spirit, which is an especially high-grade spirit for aviation purposes and for the highest-grade touring cars; "Crown" Motor Spirit, which is especially adapted and used for all classes of commercial vehicles and heavy lorry traffic; "Swan" Spirit, which is used for generating-gas plants.

NOV. 5, 1919.

THE AEROPLANE

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ON OUR SUPERFLUOUS NAVY.

It would appear that their Lordships of the Admiralty are very seriously perturbed about the future of His Majesty's Navy because of certain recent developments in the use of aircraft. One calls them recent developments rather because they have only recently penetrated the Navy's intelligence than because they are in fact recent so far as aircraft themselves are concerned. Rumour has it, in fact, that the Navy is gravely considering whether it shall take over the whole of the seafaring portion of the R.A.F., or whether it shall persist in its old obtuse ways until it is itself taken over by the R.A.F. Which is to say that the Navy's intelligence is at last grasping the fact that the Navy as at present constituted is an expensive superfluity.

One has dared to hint in this paper at such a state of affairs at various times during the past few years, but it has taken until the last few weeks for the idea to have any effect on our warriors of the sea, and the story of how they have been forced to think is worth telling. Albeit the story is probably very inaccurate in detail, it is believed to be reasonably true in its general outline, and so it deserves to be told, if only as a yarn.

The Cause of Conversion.

The story goes that a certain strong detachment of our Fleet was lying in harbour near a certain R.A.F. Station which happened to possess a few aeroplanes adapted to the carrying and dropping of torpedoes. The R.A.F. people, ever anxious to amuse the Navy, proposed to the Admiral commanding the Fleet that they should make an attack on his ships with dummy torpedoes on a certain morning, and the Admiral, with that careless *bonhommie* so characteristic of the British sailor, consented to be their target.

So, on the morning agreed, the merry *matelôts* stood to their guns, prepared to abolish—in theory—these funny flying people who thought that they could dispute with the British Navy the Command of the Sea. And, as they swept the horizon from which the torpedo-droppers must arrive, there appeared high in the heavens three or four harmless little aeroplanes, far too high to drop torpedoes or to make good aim with bombs.

Then, a mile or two to windward of the Fleet, there were seen a number of small splashes in the water. In a few seconds there arose from these splashes a thick and mephitic smoke which drifted down wind onto the Fleet and enveloped it in a dense fog. And, as the fog began to clear away, there came thud after thud against the anchored ships, and with a roar of engines half a squadron of aeroplanes swept over their mastheads and away up into the sky out of range before the astonished *matelôts* had time to train a gun on them.

The aeroplanes had scored seven hits out of nine shots, and theoretically had sunk or permanently disabled seven ships without losing an aeroplane. And as a result, to quote a ribald aviator, the Big Brass Hats at the Admiralty are now held in suspension by a perfectly vertical blast.

The Dawn of Intelligence.

Whether one regards the aeroplanes concerned in this affair as being analogous to the Cross in the Sky which converted Constantine the Great, or merely as Balaam's ass arguing with its master, the fact remains that the Navy has been given furiously to think, and from what one hears there seems to be something resembling the dawn of intelligence in the King's Senior Service.

The coming of Earl Beatty to the Admiralty has also tended to brighten the minds of the officials in that august establishment. Admiral Beatty being an Irishman—and a County Wexford man at that, Wexford priding itself on being "the model county"—it is natural that he should have a quicker wit and a more practical mind than the majority of Senior Naval Officers.

There is a certain type of mind which is capable of seeing far ahead in a nebulous way, but is quite incapable of appreciating at its full value and of using the means immediately to hand. We have had lamentable examples of the working of this type of mind in the recent self-exposures of Lord Fisher and Sir Percy Scott. Each of them has bleated loudly about his faith in flying. The latter has even delivered himself of the startling prophecy that aircraft will command the air and the sea beneath. But, barring Lord Fisher's encouragement of the "Blimp" type of airship—as submitted to him by Mr. Holt Thomas and Mr. E. T. Willows conjointly—one cannot recall that either of these eminent writers has ever done anything to aid the immediate development of aircraft.

Admiral Beatty, on the other hand, from the moment when he assumed a position of importance in the Grand Fleet, set to work to encourage the aircraft people. And when he was appointed to the command of the whole Fleet, on the opportune removal of Admiral Jellicoe, the position of the R.A.F. was vastly improved, in spite of the great drawback of being an alien Service working in the ships, instead of being part and parcel of the Navy as was the R.N.A.S.

It was under Admiral Beatty that deck-flying and torpedo-dropping were given a fair chance. It was under his régime that kite-balloons with the Fleet increased and multiplied like rabbits. It was he who realised, before all other senior officers, that the Fleet of the future must depend for its safety entirely on its aircraft.

A Logical Sequence.

It must follow as a logical sequence in the practical Irish mind of such a man as Lord Beatty that, if the existence of the Fleet is to depend on its aircraft, then the aircraft and the personnel which operate them must be part and parcel of the Navy.

To locate a couple of deck-flying aeroplanes, with pilots, observers, technical officers, N.C.Os., and men of the R.A.F., on a cruiser or battleship is about as sensible as putting the personnel of a "heavy" battery of the Royal Garrison Artillery on board a ship to work its guns. One does not doubt the probability that the

R.G.A. would improve the ship's shooting, but their existence on board would not be over-pleasant, and their dual administration by the Admiralty and War Office would certainly upset the routine of the ship.

The Question of the Day.

No man can serve two masters, and aircraft personnel on board ship cannot serve the Admiralty and the Air Ministry. Either the ship and the aircraft which it carries must belong to the Admiralty, or the aircraft and the ship which they use as a home and as a stores depot must belong to the Air Ministry. Either the aircraft must go where and when the N.O. commanding the ship desires, or the ship must go where and when the O.C., R.A.F., desires. And the whole outfit must belong to the Service which controls the movements of the whole. The question to be decided is: Which Service is to control the other?

It is demonstrable that, though the Navy cannot exist without aircraft, a seagoing Air Service can exist without the Navy as at present constituted. Therefore on the face of it there seems to be a strong argument in favour of putting the Navy under the control of the Air Ministry. But, the Navy being the pet of the British public and the Air Ministry being, deservedly, its *bête noir*, it is obvious that such a thing could not be. Let us therefore examine the question in some detail, and in the light of practical examples.

If There Had Been!

When Admiral Sir Doveton Sturdee's very superior ships sank the squadron of the gallant Admiral von Spee off the Falkland Islands they did so because the British guns began hitting at 17,000 yards or so, at which range the German guns were incapable of reaching the British ships, in spite of their excellent shooting. But suppose that instead of consisting of inferior fighting ships von Spee's squadron had been composed of seaplane-carriers, armed with torpedo-droppers of the type which recently theoretically abolished a British squadron, as related at the beginning of these notes. Von Spee's torpedo-planes could then have attacked the British ships at any distance they pleased, and must inevitably have sunk them.

There is an added advantage about the torpedo-dropper in that it can attack successfully when visibility is so bad that superiority of range in guns is of no advantage. Therefore, whether at long or short range, the torpedo-dropping aeroplane flown from the deck of a ship can beat the big gun.

The Dover Patrol.

Let us take another example. It is an axiom that a gun in a fort can always beat a gun afloat. This was proved beyond question at the Dardanelles, and again by the abject futility of the operations of Admiral Bacon's much-advertised "Dover Patrol" against the Belgian Coast. The best his ships could do was to steam up to the coast in the morning mist, fire blindly at the coast, and then run away before the Tirpitz Battery and the other big German shore guns got onto them.

Anybody who has skirted the Belgian coast between Dunkerque and Flushing can see that practically no damage has been done in Belgium, except by the Army's operations at Nieuport. The rest of the coast hardly seems to have known that there was a war on.

But if, instead of all that amazing waste of money on monitors and other ships with big guns, the Dover Patrol had been adequately equipped with bombing and torpedo-dropping aeroplanes, the German positions along the Belgian coast could have been bombed till they became untenable, every German warship which tried to use the harbours at Ostende and Zeebrugge could have been torpedoed where she lay, and every submarine which tried to lie up in the docks and canals could have been destroyed with depth-charges.

Guns versus Aeroplanes.

Thus it must be evident, even to a naval intelligence, that the long-range naval gun is useless in future either for fleet actions or for use against positions on land.

Parenthetically, one may observe that the Army discovered in the first day or two of the attack on Gallipoli that the Navy's shooting was useless against the Turks on the peninsula. Further, though we have heard a good deal about the work of the Navy in support of the "loyal" Russians against the Bolsheviks, both on the Arctic fronts and on the Baltic coast, it would seem that the few seaplanes carried by the ships have done much more good than have all the naval guns.

A big gun costs very much more than an aeroplane. In fact, a single shell for the biggest guns costs approximately as much as a single-seater scout. When a shell has burst it may or may not have done damage, but an aeroplane, when it has dropped its bombs or its torpedo, remains a weapon of offence, in that, having demoralised its foes and having done damage, considerable or inconsiderable, it can return to the scene in a few seconds and carry on the good work with its machine-guns.

If it be admitted that the day of the big naval gun is past, it may be claimed that the day of the heavily armoured fighting ship is also done. One believes that naval "experts" deny that it is possible to armour against torpedo attacks, and if heavy armour is useless against torpedoes, then the battleship may as well be abolished.

Thus we come to a Navy composed entirely of ships of the type of "Furious," lightly armoured, very fast, and equipped with quantities of aeroplanes, bombs, and torpedoes. Their only guns would be those required for anti-aircraft and anti-submarine work.

Political Pull.

From the abolition of surface ships of present type it would naturally follow that the Navies of the World would go to the other extreme and produce submarine battleships. Already, it is said, our big submarines carry 12-inch guns, and there is nothing except the cost to prevent the building of a submarine as big as the biggest battleship and carrying 17-inch guns, if people are still so foolish as to believe in big guns.

If the armament firms whose directors disbelieve in aircraft and still believe in big guns decide to use their political pull in favour of their gun-foundries instead of the aircraft departments which some of them have stupidly shut down since hostilities ceased, no doubt we shall have these submarine battleships foisted upon us. Whether we do or not would seem to depend largely on whether the aircraft firms, aided by the aircraft departments of the armament firms, have more political pull than the gun-foundry interests.

In any case, the aeroplane armed with bombs and depth-charges can keep a fleet of submarine warships under the water just as easily as it can drive a fleet of surface ships off the face of the water. No force of submarines will ever dare to show their periscopes near any coast or any fleet which is adequately supplied with aircraft.

The New Submarine Aircraft.

But there is an opportunity for a new type of submarine and a new type of aeroplane which will do much to complicate the existence of the big seaplane-carriers of the future.

Very early in this war, when the subject of bombing Germany was being much discussed, and a peculiarly futile R.N.A.S. expedition was about to be sent to

Eastern France to bomb the Rhine towns, the ingenious Mr. Pemberton Billing propounded a very much better scheme. His idea was to build a special type of flying-boat with the engine in the hull, and the wing-structure to fold down and inwards, so that the whole machine could be packed into a coffin-like box very little bigger than the hull of the boat. This machine was to be carried in a water-tight compartment built onto the hull of a submarine.

A flotilla of submarines thus equipped were to go secretly into the Baltic, meet off the German coast, and release their flying-boats, armed with bombs, for a raid on Berlin, which is only a matter of 100 miles from the coast in a straight line. A similar flotilla was to dive into the Helgoland Bight and raid Hamburg—it will be remembered that our submarines habitually dived into the Ems and Jade.

A Simple Proposition.

It was a delightfully simple idea, like all Mr. Pemberton Billing's schemes. He actually had a hull built for such a flying-boat, and designs were got out for the folding-wing structure, which opened on a system something like that of a "Jazy-tongs" or a "one-man hood" on a motor-car.

According to the plan, the machine was packed in its compartment all ready for flying, loaded with petrol and bombs. The submarine emerged. The lid was taken off the box. The aviator took his seat and wound a handle which pulled up all the wing-structure into position. The submarine then submerged, leaving him floating. He then started up his engine and flew off.

That was how the scheme worked in theory, and one can see no reason why it should not work in practice, if tackled by a clever designer. Unfortunately, it was not adopted. Perhaps the technical "experts" prevented the scheme from reaching the higher authorities. Perhaps the high authorities—as so often happens in the Navy—had not the intelligence to understand the scheme.

Whether it be adopted in future or not, there is in it the basis of a very dangerous weapon for the next war. Therefore one commends it to the Naval Authorities of to-day. Whoever holds the Command of the Air, there will always be difficulty in preventing a submarine aircraft-carrier from sneaking up in the morning mist, releasing its aeroplane with bombs or torpedoes, and getting away home before it is caught by the defending aircraft.

The Command of the Air.

It is hoped that one has made it clear that whoever holds the Command of the Air will also hold the Command of the Sea. Also, it is fairly obvious that whoever holds the Command of the Sea controls the existence of the British Empire. And, lest the existence of the British Empire should seem but a trifle to our good democrats and trade unionists of to-day, one would point out that whoever holds Command of the Sea also controls the food supplies of the population, including the politicians, the trade unionists, and the Bolshevists. Therefore this is a matter which concerns intimately even our journalists, despite the superior attractions of divorce cases and the latest extravagances of jazz.

Some years ago Major-General Sir David Henderson, then something of a power in connection with aviation, was pleased to sneer at those who believed in the Command of the Air, and declared that such a command could not exist. Not long afterwards Major-General



A view of the Admiralty Arch, Trafalgar Square, the National Gallery and the surrounding district photographed from an Airco biplane. The Admiralty itself is disappearing in the right-hand bottom corner.

Hugh Trenchard, and later Major-General John Salmond, proved that such a Command could and did exist. Thus the Army was taught to recognise the possibility and the value of the Command of the Air.

Unfortunately the Navy never had such a lesson during the war. And the one of our few existing statesmen who believes firmly in Air Power, namely Mr. Churchill, will have nothing to do with the future of the Navy. That is unless he can carry through his great and thoroughly sound scheme for a War Ministry which will control the Admiralty, War Office, and Air Ministry as one team. It remains to be seen, therefore, whether Lord Beatty and his immediate assistants will be able to secure control of the Naval side of aeronautics, or whether the Naval section of the Air Ministry will have to expand gradually till at last it is bigger and stronger than the Navy proper.

The Financial Aspect.

From most points of view it would be better for the Navy to take over all Naval aeronautics, and especially from the financial point of view. If the Air Ministry retains control it will mean that the paltry sum of money voted for the R.A.F. will have to pay and equip the Naval units and will have to pay for all experiments in Naval aircraft. And that means that there will be no real progress in Naval aeronautics for years to come.

If, on the other hand, the Navy takes over what is by all the laws of common sense its proper job, it will pay for everything out of the Navy Vote, as Mr. Churchill did when he built up the R.N.A.S., saved the Aircraft Industry alive, and so ultimately provided the aircraft matériel which saved the British Army in France. And, as one has already remarked, the Navy is the particular pet of the British Public, so there can never be any difficulty about getting enough money out of the Treasury for Naval aeronautics, though there is the greatest difficulty in getting it for the R.A.F.

On the other hand, there is certainly the danger that, if the Navy takes over Naval aeronautics, the Treasury may insist on making such a cut in the R.A.F. Vote (as representing the reduction in cost by transferring the Naval side to the Navy) that it may become impossible to carry on the Air Ministry at all. Whether that would be any loss is a matter which may be debated, but it is certain that it would be better to scrap the Air Ministry than to starve the development of Naval aeronautics so as to provide funds to maintain the Air Ministry. It is also certain that the development of Naval aeronautics has been starved during the past two or three years, ever since the Air Board and the Air Ministry in succession prevented healthy competition between the Supply Departments of the two Services.

Therefore, as the future safety of this country and its food supplies depend on the Command of the Air over the sea even more than on its Command of the Air over land, it seems to be more important that such money as can be secured for aeronautics should be spent on developing the Naval rather than the Military side. And one says this without in the least ignoring the vital importance of developing the aircraft needed by the Army, whose aeroplanes towards the end of the war were painfully behind the times.

Conflicting Interests.

Money must be spent on building and equipping a great Naval Air Fleet. If the Navy is charged with that task we may get the Fleet we need, for the Navy can then with a clear conscience spend money on aircraft and aircraft-carrying ships alike. But if the job is left to the Air Ministry we shall get very little in the way of Naval aircraft: at any rate compared with what we need.

If by any chance the Air Ministry chose to spend the bulk of its available money on Naval Aircraft, it would be trying the Admiralty rather high to expect it to spend millions on aircraft-carrying ships which would, when built, be manned by and operated in the interests of another and junior Service. Can anyone see Their Lordships scrapping a programme of battle-cruisers and super-Dreadnoughts so as to provide a dozen ships for R.A.F. ship-planes?

It hardly seems reasonable that they should do so. They would in fact be much more likely to continue to produce elaborated versions of the warships of to-day. Which is only another reason why the ships, and the aircraft which they carry, and the personnel which runs them both, should all belong to the same Service.

The Lessons of War.

As one suggested at the beginning of these notes, either the Navy must take over and develop Naval aeronautics, or it must degenerate into an expensive superfluity. When one considers what the Navy proper, as distinct from its piratical branches the destroyers and submarines, did in the Great War (so-called) one begins to think that it has been an expensive superfluity for many years.

At best our big ships have been only a bluff which we put over the Germans. All the real work of protecting our food supplies was done by destroyers, armed passenger-boats, tramps, and trawlers, and the great majority of the personnel of these were R.N.R. and R.N.V.R. What those who wore the R.N. uniform had to do with winning the war was very little, and some of them did a great deal towards losing it.

If we had had no Battle Fleet and no Cruiser Fleet at all, but if we had had a big fleet of torpedo-dropping aeroplanes (costing in all about as much as two cruisers) we could have kept the German Fleet as successfully bottled up as we did by our bluff with our Grand Fleet. More than that, we could have "dug the rats out of their holes," as Mr. Churchill proposed to do before he was intrigued out of office. And it would have been our torpedo-planes which would have done it, as Mr. Churchill intended.

It was not the fault of the R.N. officers that so few of them ever saw any real war. And it will not be their fault if in the next war they, in turn, are bottled up in a superfluous fleet. They were all anxious enough to go to war, but the stupidity of our gilt-edged book-writing admirals prevented them.

The R.A.F. itself came into being chiefly through the machinations of Naval officers, and not through any of the R.F.C. people, all of whom were proud to belong to the finest Service in the World. The R.N.A.S. contained two classes of Naval officers, firstly those who were too brainy for the Navy and were impatient of the Navy's ways as dictated by stick-and-string admirals, and secondly those who were too stupid for the Navy and whose only hope of success in life was to go somewhere else for a job. Both classes wished to get out of the Navy, and so, as extremes meet, they combined in pulling strings at home till the R.A.F. was formed, merely because the soldiers were to busy making war to do anything drastic to stop them. Thus the R.N.A.S. was destroyed.

Now the Navy, by means of Naval aeronautics, has the opportunity of becoming a live and useful Service. If it loses this opportunity it will remain a superfluous and expensive Service till, under the pressure of the World's progress, by way of war as usual, it is taken over by the Royal Air Force. One commends its fate to its consideration.—C. G. G.

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NAVAL & MILITARY AERONAUTICS

[The " Official Gazette " Notices will be found on p. 1623.]

GREAT BRITAIN.

COURT CIRCULAR.

BUCKINGHAM PALACE, Oct. 31st.

The Right Hon. Winston Spencer-Churchill, M.P. (Secretary of State for War and Air), had an audience of the King this morning. . . .

The Prince Albert, attended by Major Louis Greig, received His Imperial Majesty the Shah of Persia on his arrival at Dover on behalf of the King. . . .

Naval and Military Guards of Honour were mounted on the Pier where the Shah was also received by the Senior Naval Officer, Dover, the General Officer Commanding Eastern Command, and the Air Officer Commanding Southern Area. . . .

The King met His Imperial Majesty on arrival at Victoria Railway Station.

There were also present at the station representatives of the Royal Navy, the Army, and the Royal Air Force. . . .

In the evening the King and Queen gave a Banquet in honour of the Shah of Persia, at which the Prince Albert was present, and the following had the honour of being invited :—The Right Hon. Winston Spencer-Churchill, M.P. (Secretary of State for War and Air), and Mrs. Spencer-Churchill, Air Marshal Sir Hugh Trenchard, Bt. (Chief of the Air Staff).

NAVAL.

ADMIRALTY APPOINTMENTS.

The following appointments have been made :—

OCT. 30TH.—Lieut.-Comdr.—R. G. Duke, to "Argus," Oct. 19th.
Oct. 31st.—Engr. Lt.-Comdr.—G. Morgan, to " Pegasus," Oct. 30th.

* * *

OPERATIONS IN RUSSIA.

It is reported that on Oct. 26th a British seaplane was shot down off Kronstadt and captured by the Bolshevists. A C.M.B. which was sent out to help the crew arrived too late.

DEMOBILISED.

H.M. Seaplane-carrier "Empress" (Comdr. C. V. Robinson, R.N.) has returned to England from the Eastern Mediterranean and will be paid off at Chatham. She will then be refitted for commercial use. "Empress" was one of the three cross-Channel steamers which were requisitioned by the Admiralty in early 1914 and fitted out as seaplane-carriers. With her sister-ships "Engadine" and "Riviera," "Empress" took part in the air raid on Cuxhavn and Wilhelmshavn on Christmas Day, 1914, but the most part of her war service has been done in the Eastern Mediterranean.

NO. 8 SQUADRON REUNION.

Number 8 Naval (208 R.A.F.) Squadron's Reunion Dinner on November 1st was a great success. Something in the region of 200 officers and men were present and the number of men who turned up provided the strongest possible evidence of the esteem in which the three successive C.O's—Squadron Commander Bromet, Major Draper, and Major Smart—were held by those under them. All three C.O's were present, with Squadron-Leader Bromet in the chair.

In addressing those present, the Chairman made the interesting proposal that the Squadron should form a kind of little Co-operative Society on its own account, so that those who were doing well in the World might lend a hand to help comrades who were down on their luck. The proposal was received with enthusiasm, and as soon as the scheme has been properly developed one hopes to refer to it more fully. In the meantime those who are interested are invited to communicate with Mr. F. Hammond (late of the Transport Section, No. 8 Squadron), at No. 10, Ashbourne Grove, East Dulwich, S.E.

AIR FORCE.

THE FREEDOM OF THE CITY.

On Oct. 28th Capt. H.R.H. the Prince Albert, K.G., R.A.F., received the Freedom of the City of London.

A ROYAL VISIT.

On Nov. 3rd H.M. the Shah of Persia, accompanied by Capt. H.R.H. the Prince Albert, K.G., R.A.F., visited the Royal Aircraft Establishment at Farnborough.

R.A.F. OFFICERS' BOARD.

The Air Ministry announced on Oct. 31st that a Selection Board has been formed in order to advise the Air Council as to the award of promotions to post-war R.A.F. officers, and to decide the procedure to be followed in future for the periodical selection of officers for promotion. The following are the members of the first Board :—

Air Marshal Sir H. M. Trenchard, Bart., K.C.B., D.S.O.
Rear Admiral C. F. Lambert.
Air Vice-Marshal Sir J. M. Salmond, K.C.B., C.M.G., C.V.O., D.S.O.
Air Vice-Marshal A. V. Vyvyan, C.B., D.S.O.
Secretary—Squadron Leader H. L. Jackson.

THE FLYING SERVICES FUND.

The following letter has been written by H.R.H. Prince Albert, K.G. :—

I am appealing for further subscriptions to the Flying Services Fund, which is administered by the Royal Aero Club.

This Fund was established by the Club in 1914 for the benefit of officers and men of the R.N.A.S. and R.F.C. (now the R.A.F.) who were incapacitated on active service, and for the widows and dependents of those who were killed.

The expenses of administration are borne by the Royal Aero Club, and all subscriptions are devoted entirely to those requiring relief.

The subscriptions received amount to £15,000 and the sums which have been expended to date in grants, allowances and the education of children amount to £6,000. The monthly liability for grants, allowance, etc., is about £400, and the education of over 300 children of dependents calls for an increasing expenditure commensurate with their ages. The Committee are most anxious to ensure a proper education for the children of all dependents, and it is mainly for this purpose that further subscriptions are required

It is estimated that the necessities of the Fund will require it to be administered for at least ten years, and in view of the very real assistance we have been enabled to give to so many deserving and distressing cases, I appeal to all to subscribe liberally to this Fund.

Subscriptions should be forwarded to Lord Kinnaird, K.T., Hon. Treasurer, Flying Services Fund, Barclays Bank, Ltd., 4, Pall Mall East, London, S.W.1, or to me at the Royal Aero Club, 3, Clifford Street, London, W.1.

(Signed) ALBERT, Chairman.

The Royal Aero Club, 3, Clifford Street,
London, W.1. Oct. 30th, 1919.

AT ST. RAPHAEL.

On Oct. 28th Capt. Llewellyn, R.A.F., left St. Raphael for Taranto.

It was reported from St. Raphael on the same date that Lieuts. Combes and Crichton, R.A.F., who had left ten days previously for Taranto, were missing. This statement another paper contradicted, but nothing official has been announced.

From St. Raphael comes the news that Major Maclaren, R.A.F., who left there on Oct. 24th, has arrived in Egypt, his destination, and also that Lieut. Alfred Sinclair, R.A.F., of the Royal Air Force Flying School has left in a seaplane for Egypt via Pisa.

H.M. AIRSHIPS.

It is now understood that H.M.A. R.32, R.33, and R.34 are expected at the Howden Air Station, Yorks, in the course of a few days.

R.A.F. RUGBY.

On Saturday Nov. 1st, the R.A.F. Rugby football team played the Old Merchant Taylors at the Old Deer Park, Richmond. The result was : O.M.T., 1 goal 3 tries—14 points; R.A.F., 1 goal 1 try—8 points.

The game was a very close, hardly contested one, in which combination proved the deciding factor. The Air Force were not together at all and were very scrappy. The forwards played a good game in the open, but were not together in the tight scrum and did not control the ball in the loose scrums. The ball was very slow in coming away from the R.A.F. scrum, thus hardly giving the three-quarters a chance. The O.M.T. played a good hard game and thoroughly deserved their victory.

The R.A.F. team was : Flg. Officer Damant, full-back; Flg Officer Smith, Flt. Lt. Thomas, D.F.C., Sqdn. Leader Neale, M.C., Sqdn. Ldr. Evill, D.S.C., three-quarter backs; Flying Officer Dalziell, Flying Officer Farrington, D.S.O., half-backs; Flt. Lt. Wakefield, Flt. Lt. Thom, A.F.C., Flt. Lt. Simpson, Flt. Lt. Munday, Flt. Lt. Seroggs, Flt. Lt. Whitworth, Flying Officer Rose, and Serjt. Smith, forwards.

BROOKLANDS.

A correspondent writes :—

A small fire broke out on the aerodrome on Sunday last (Oct. 26th), when one of the few remaining wooden buildings, used as a cookhouse and messroom, was destroyed. The Wey-



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bridge Fire Brigade luckily succeeded in preventing the fire from spreading to the hangars and other buildings—J. F. S.

To 27 Squadron.

A 27 Squadron (B.E.F.) reunion dinner will be held in London on Dec. 13th.

As all addresses are not known, would officers who have not received information, but who are desirous of attending, please communicate before Dec. 1st with Capt. E. C. Raworth, Lenzie House, East Parade, Harrogate?

To 56 Squadron.

The members of 56 Squadron who subscribed for the purchase of the silver model aeroplane presented to the late Major J. T. B. McCudden, V.C., D.S.O., M.C., M.M., in 1918 by the Squadron in honour of his splendid work with the Squadron, will be interested to hear that after much travelling about with the Squadron abroad, the model has now come into the possession of Mr. W. H McCudden—Major McCudden's father.

Mr. McCudden is, of course, very glad to have the model and wishes to acknowledge to all those who subscribed to its purchase his appreciation of their good feeling towards his late son.

FRANCE.

Lieut. Boussod, of the Military Aeronautics Service, arrived at Casablanca on Oct. 24th in order, it is stated, to find a suitable place between Kenifra and Mazagan for the erection of an airship hangar. It is rumoured that the Government intend to open an airship service over the circuit France-Morocco-Algeria-Tunis-France.

Algerian Affairs.

It is reported from Paris that one of the four French escadrilles which have reached Teniet-el-Hatel was attacked by a strong force of Beni Warain. A squadron of aeroplanes thereupon bombarded the villages of the neighbourhood, while a detachment made a sortie. The rebel chief, El Rogui, was seriously wounded and his troops were dispersed.

ITALY.

The Rome-Tokio Flight.

The Italian correspondent of The Aeroplane writes:—

The Rome-Tokio regularity flight seems likely to come off towards the end of November. The name of Commander Casagrande is now mentioned as a likely chief for the trip, and certainly some two or three Caproni triplanes—not biplanes as was incorrectly printed in a recent number of The Aeroplane—will accompany the SVAs. These, at any rate, are to carry parachutes, one believes of a new Italian design.

Commander Casagrande took a large part in the "Giovane Italia" work of landing men behind the Austrian lines. One who took part in this very sporting sideline tells me that the more dangerous members of the conspiracy landed from the seaplanes by ropes onto treetops. They carried enormous sums of money, and signalling was carried out by the display of washing—not always on washing day. The local habit of drying sheets on the ground assisted things happily.

Aviation in Libia.

Colonel Prandoni, who was in command of the very first squadron flights on Farmans carried out in this country years before the war, is now C.O. in Libia. As might have been reckoned upon, a lot of organising is being done in that colony. Some flights of unusual interest were recently chronicled in The Aeroplane.

An aerial survey of the routes from Rome to Asmara (Eritrea) is being undertaken. The Ministry of Transports is to be congratulated.—T. S. H.

RUSSIA.

Official Communiques (Bolshevist).

Oct. 31st.—In the Finnish Gulf coastal region there has been an artillery duel. In the course of the fighting an enemy aeroplane, which was correcting the fire, was brought down.

A recent message from Odessa to the "National Tidende" stated that an agreement has just been concluded between the Russian North-West Army and England, according to which England will support Yudenitch's action against Petrograd by supplying aeroplanes, tanks, etc.

The Attack on Krasnaya Gorka.

On Oct. 28th a combined naval and military attack upon the fortress of Krasnaya Gorka was opened. The visibility being poor, it was not possible to use aeroplanes for artillery observation. An aerial attack was made on the fortress before the bombardment opened and one hundred and forty 20-lb. bombs and forty 65-lb. bombs were dropped. It is reported that two barracks were destroyed and other damage done, but this is not official. It is also stated that the anti-aircraft defences of this town and Kronstadt give evidence of German gunners, guns, and shells.

The correspondent of the "Times" newspaper, writing on Oct. 30th from Björkö, of the British Naval Force co-operating with the Esthonians, says concerning the Krasnaya Gorka:—

"A photograph just taken shows that the westernmost six-inch battery has been badly smashed by air bombs, but the recent anti-aircraft fire was too accurate to allow a severe bombardment by the machines at our men's disposal.

"Indications of the presence of Germans in the fortress of Krasnaya Gorka have been noted by our flying men, who report that the guns are carefully treated and that the fortifications are in good repair.

"The British air force, which numbers less than a squadron, is under Major Donald, the well-known Rugby football player, while the machines are in the direct charge of a South African, Lieut. Fairweather. The seaplanes are carried in the "Vindictive," and are under Capt. Grace, son of the famous cricketer."

TURKEY.

It is reported from Turkey that an aeroplane which recently descended at Kovno contained as passengers Lieut. von Geisner, Talaat Pasha and Djemal Pasha. Two other Germans were in the machine besides the first named, and all are said to have been attempting to escape.

A local newspaper, giving the information under reserve, says that the report is current there that Talaat and Djemal, fearing that the German Republic would hand them over to the Entente Powers, had recently decided to escape and to join Enver in Turkestan or Transcaucasia *via* Soviet Russia.

THE AUSTRALIAN AEROPLANE COMPETITION.



THE ALLIANCE AEROPLANE COMPANY'S ENTRY FOR THE AUSTRALIAN AEROPLANE COMPETITION.

This machine is an Alliance P.2, built by the Alliance Aeroplane Co., Ltd. It is fitted with a 450 h.p. Napier "Lion," is said to have a speed of 135 m.p.h., and is equipped with two wireless sets. The non-stop range of the machine is 3,000 miles. Details for comfort have been so carefully considered that even the wings and struts have been painted green to be restful to the eyes. The pilot and navigator are respectively Lieut. Roger Douglas, M.C., D.S.M., Aus.F.C., and Lieut. Ross, Aus.F.C.

The Alliance Entry.

Two pilots of the Australian Flying Corps were ready to start their flight to Australia on Oct. 31st, but the weather was not good enough. They are Lieut. Roger Douglas, pilot, and Lieut. Ross, navigator. Their machine is an Alliance P.2, built by the aeroplane company of that name, and is fitted with a 450-h.p Napier "Lion" engine.

Lt. Douglas enlisted in the A.I.F. at the beginning of the war, and was at the landing on Gallipoli with the Australian Machine-Gun Battalion. In France, as a serjeant, he was awarded the D.C.M. at Pozieres in 1916, and after receiving his commission in the field he gained the M.C. at Polygon Wood in Sept., 1917. He then joined the Aus. F.C., and after doing good work in France, instructed on S.E.5s. He also passed through a navigation course at Andover.

Lieut. Ross received his commission and pilot's wings in Oct., 1916. He was with the Aus. F.C. in France until Sept., 1918, when he was wounded whilst in a squadron of S.E.5s. He has had considerable training in navigation.

Both men have been working together since the Armistice. Lt. Douglas conceived the idea of flying home in 1916, and

From the early days of aviation

The "Bristol" Aeroplanes

have been famous for

QUALITY
RELIABILITY
and
ENDURABILITY

The
"BRISTOL" FIGHTER
Type F2.B.



In September, 1917, a "BRISTOL" Fighter was delivered from the "BRISTOL" works and put into commission in the fighting area. It was unfortunately landed in Holland and soon afterwards was acquired by the Dutch Government. From that time until now, though in continuous use by Dutch pilots, it has never been repaired or renovated in any way, and every unit is exactly as when it left the "BRISTOL" works. Even the "Cellon" dope has never been renewed.

"BRITAIN'S
PIONEER
AIRCRAFT
CONSTRUCTORS."

THE
BRITISH & COLONIAL
AEROPLANE CO., LTD.
FILTON - BRISTOL.

Telegrams: "Aviation, Bristol." Codes: A.1., A.B.C. & Moreing. Telephone: 3906 Bristol.



Lieut. Roger Douglas, M.C., D.C.M. (left), the pilot, and Lieut. Ross, the navigator, of the 450 h.p. Napier-Alliance biplane.

immediately the Armistice was declared he set out to obtain a machine capable of doing the journey.

He has had some weeks' experience in flying an Alliance aeroplane fitted with a 450-h.p. Napier engine, and is confident that he could not have secured a better machine for this flight. It is particularly steady in the air, has ample reserve of power, and the engine, with many remarkable performances to its credit, can be relied upon to do all that is asked of it.

Sufficient food will be carried to last for five days. The machine is said to have a non-stop range of 3,000 miles.

THE VICKERS ENTRY.

Vickers, Ltd., have entered a standard Vickers-Vimy-Rolls bomber (two Rolls-Royce Eagle Mark VIII engines), which will be piloted by Capt. Ross Smith, M.C., D.F.C., A.F.C., and his brother, Lieut. Keith Macpherson Smith. Both Capt. and Lieut. Smith were born and educated at Adelaide, South Australia.

At the outbreak of war Capt. Ross Smith enlisted in the 3rd Australian Light Horse as a private, and sailed with the first Australian Expeditionary Force, landing in Egypt in December, 1914, and after four months on Gallipoli he gained his commission. In October, 1916, he transferred to 67 (Australian) Squadron, R.F.C., as an observer, and qualified as a pilot in Egypt in July, 1917. He then rejoined his old squadron, now known as No. 1 Squadron, Australian Flying Corps, stationed in Southern Palestine, and remained there until the Armistice

In December, 1918, he accompanied Major-Gen. Sir W. G. H. Salmond, K.C.M.G., C.B., D.S.O., and General A. E. Borton, C.M.G., D.S.O., A.F.C., on the first flight from Cairo to Calcutta, and after arriving at Calcutta proceeded with General A. E. Borton on his reconnaissance for aerodromes in Burma, Siam, Malay States, and the Netherland East Indies. He returned to England about a month ago.

Lieut. Keith Macpherson Smith, R.A.F., will act as reserve pilot and observer. On arrival in England during 1916 he joined the R.F.C. as a cadet, shortly after becoming a pilot, and was serving as an instructor in the North of England until the Armistice.

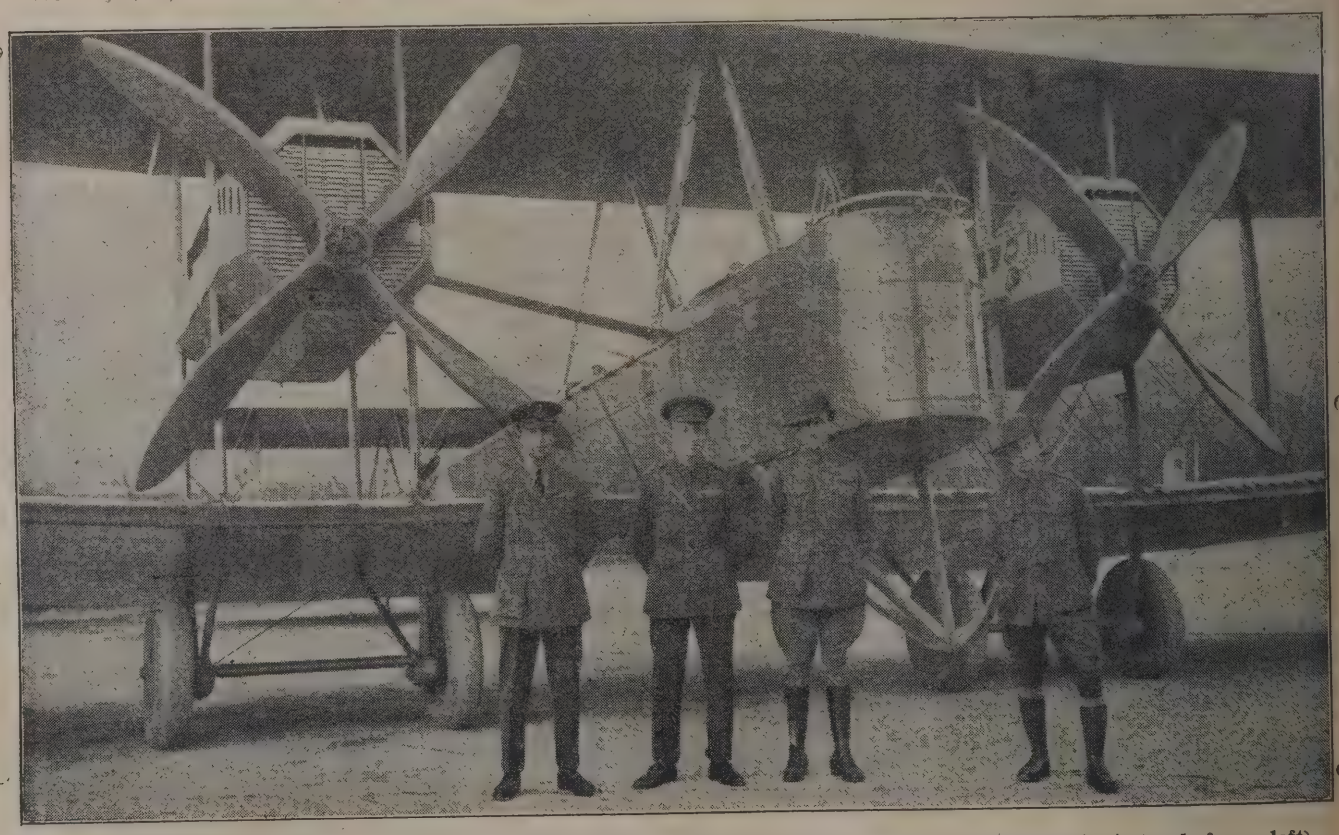
Capt. Ross Smith and his brother will be accompanied by Serjt. J. W. Bennett, A.F.M., M.S.M., and Serjt W. H. Shiers, A.F.M., who will act as mechanics. Both have seen service with the R.F.C. and both accompanied Major-Gen. Salmond, General Borton, and Capt. Ross Smith on their original flight to the East, and afterwards served in the recent Afghan campaign.

The aeroplane is identical with those supplied to the Royal Air Force, and is similar to the machine used by Capt. Sir John Alcock, K.B.E., D.S.C., except that for this flight a smaller petrol capacity is required. Petrol is drawn from the main petrol tanks by two Vickers Mark II centrifugal petrol pumps and delivered to the service tank, which forms a section of the top plane, whence it falls by gravity.

The general dimensions of the aeroplane are as follows:—span, 67 ft.; overall length, 42 ft. 8 in.; overall height, 15 ft. 3 in.; gap, 10 ft.; chord, 10 ft. 6 in. The maximum speed is over 100 miles per hour and the cruising speed is about 90 miles per hour. The weight of the machine empty is 3 tons, and the total weight fully loaded is nearly 5½ tons.

THE SOPWITH MACHINE.

Capt. Matthews, who left England on Oct. 21st, is held up by fog and rain near Cologne



The Vickers' "Vimy" biplane (two 375 h.p. Rolls-Royce engines) on which Captain Ross-Smith (second from left), Lieut. Keith Smith (first), Serjeant Bennett (third), and Serjeant Shiers (fourth), are attempting to fly from England to Australia.

THE PILOT OF THE SOPWITH-JUPITER RACER,
Mr. H. G. HAWKER,

SAYS

"THE ENGINE IS THE SMOOTHEST RUNNING RADIAL I HAVE EVER SEEN. THERE WAS NO VIBRATION OBSERVED ON ANY WIRE OF THE MACHINE.

AS REGARDS POWER, I CAN ONLY SAY WE HAVE HAD THE ALMOST UNIQUE EXPERIENCE OF FINDING EVERY PROPELLER TURNING AT MORE THAN ITS DESIGNED SPEED."



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GREAT BRITAIN.

THE TELEGRAPHIC ADDRESS OF CIVIL AVIATION DEPARTMENT.

It is notified by the Air Ministry that the telegraphic address of the Civil Aviation Department, Air Ministry, is now: "Aircivil, Airministry, London."

The telegraphic address "Civiatory, Estrand, London" has been cancelled.

THE CONTINENTAL AIR SERVICES.

THE AIRCO SERVICE.

Aircraft Transport and Travel, Ltd., have completed their tenth week of regular flying on the London-Paris service. Out of 154 flights scheduled, 147 have been successfully accomplished. Only one flight has been prevented altogether, and six others have been interrupted, three owing to weather and three on account of mechanical breakdown. The service has been carried out on thirteen days noted officially as unfit for flying.

Date.	Type.	Pilot.	Left Hounslow	Arr. Paris.	Left Paris.	Arr. Hounslow.	Pass.
Oct. 27th	D.H. 4a	Lt. Shaw	12.30 p.m.	2.19 p.m.			0
	D.H. 4a	Lt. Tebbit	2.30 p.m.	4.30 p.m.			2
	D.H. 16	Maj. Patteson			12.30 p.m.	Lympne 3.49 p.m.	4
Oct. 28th	D.H. 4a	Lt. McMullin	12.30 p.m.	2.55 p.m.			2
	D H. 9	Lt. Chattaway	12.50 p.m.	3.15 p.m.			0
	D.H. 4a	Lt. Lawford			12.30 p.m.	3.30 p.m.	1
Oct. 29th	D.H. 16	Capt. Baylis	12.35 p.m.	2.45 p.m			0
	D.H. 4a	Lt. Tebbit			12.30 p.m.	Biggin Hill 3.15 p.m.	1
	D.H. 4a	Lt. Shaw			12.30 p.m.	Alighted in sea.	1
Oct. 30th	D.H. 9	Lt. Powell	12.30 p.m.	3.10 p.m.			1
	D.H. 4a	Lt. McMullin			12.30 p.m.	2.45 p.m.	2
Oct. 31st	D.H. 4a	Lt. Shaw	12.30 p.m.	2.45 p.m.			1
	D.H. 9	Lt. Chattaway			12.30 p.m.	3.30 p.m.	1
Nov. 1st	D.H. 9	Lt. Campbell-Orde	12.30 p.m.	3.15 p.m.			1
	D.H. 4a	Lt. Shaw			12.30 p.m.	5.00 p.m.	0

On Oct. 27th the wind attained a velocity of from 40-50 m.p.h. Major Patteson, flying from Le Bourget with four passengers, owing to the strength of the gale landed at Lympne, near Folkestone, at 3.40 p.m. The passengers and parcels proceeded to town by rail. The emergency arrangements to meet such occurrences worked quite well, the Railway Co. delaying a train to enable the passengers and goods to be taken on board.

On Oct. 29th there were snowstorms, high-velocity winds, and bad visibility, one of the worst days experienced since the opening of the Airco service. The D.H.4a, piloted by Lieut. Tebbit from Le Bourget with one passenger, alighted at Biggin Hill, near Bromley Kent, at 3.15 p.m., owing to the stress of weather.

A similar machine, also flying from Paris, piloted by Lieut. Shaw, with one passenger, was compelled to alight in the sea close beside a small coasting vessel, the "Harlech," the crew of which took pilot, passenger, and parcels on board. The steamer put into Weymouth on the morning of the next day, and the express goods, after being passed by Customs, were sent to London by rail. The only inconvenience suffered by the pilot and passenger was wet feet. The machine was lost.

On Nov. 1st Lieut. Shaw left Le Bourget with express parcels. He was forced to land at Lympne owing to a broken petrol pipe. After making the necessary adjustment the pilot proceeded on his journey and reached Hounslow at 5 p.m.

THE HANDLEY PAGE SERVICE.

On account of the gale on Oct. 27th the Handley Page machine flying from Paris landed at Marden, in Kent. The journey took 4½ hours. On the same day Capt. W. L. Hope flew from Hounslow to Brussels in 2 hr. 25 min.

On Oct. 28th two women, aged respectively 75 and 73, flew from Brussels to London in a gale in 5 hours.

During the week ending Oct. 29th the Handley Page aeroplanes carried 38 passengers and 2,172 lb. of freight on the London-Paris route. In the same period 21 passengers were carried on the London-Brussels service, with 630 lb. of luggage.

On Oct. 30th the machine which left Paris at 11.15 a.m. during a snowstorm reached Hounslow at 2.45 p.m.

On Oct. 31st freight was carried to Belgium for the first time, the restrictions having been removed. On that day 15 passengers and 657 lb. of freight were carried on the London-Paris and Brussels routes. The machine flying from Brussels to London did the journey in 2 hr. 15 min.

From Nov. 3rd the Handley Page machines were scheduled to leave Hounslow for Paris and Brussels at 11 a.m. instead of at noon. Passengers will be picked up at the Piccadilly Hotel by motor-car at 9.30 a.m.

THE B.A.T. SERVICE.

On Oct. 27th all the machines on the Continental-London services were unable to make Hounslow the first landing-place in their flights from the Continent. There was a gale of 40-50 m.p.h. The British Aerial Transport Co.'s commercial machine, piloted by Major C. Draper, landed at Lympne, in Kent, having flown from Amsterdam.

THE LONDON-PARIS BEST.

The following letter has been received:—

Sir,—May we point out, with reference to the letter from Messrs. Martinsyde in your last issue, that we had no intention of claiming that Capt. Gathergood's 1 hr. 20 min. flight from Hounslow to Le Bourget on Oct. 16th was a speed record as between London and Paris. Obviously, in view of the 1 hr. 15 min flight of the Martinsyde from Hendon to Buc, with which of course we were familiar, it was not.

Capt. Gathergood's flight was made in connection with the daily operation of the London-Paris air express, and in issuing to the Press our usual nightly bulletin we added a few lines chronicling this flight and pointing out that 180 miles an hour—the average speed attained by Capt. Gathergood—was the fastest so far attained on the London-Paris route: meaning quite obviously the route over which we are flying daily between Hounslow and Le Bourget, and which is of course, in effect, the only route which aircraft now traverse commercially.

A copy of our bulletin, as printed in the news columns of the "Times," is appended herewith for your perusal. Had it been our intention actually to claim a London-Paris speed record the wording of our paragraph would, of course, have been very different.

In the page advertisement in the technical Press, of which Messrs. Martinsyde specially complain, though here again there is no claim to a record, the fact that for the sake of brevity the preceding paragraphs from the "Times" announcement were omitted might, it could perhaps be argued, make it less clear that what we were claiming was merely the fastest time between Hounslow and Le Bourget; and if any misapprehension should have arisen in this regard we desire naturally to express regret.

(Signed) ARTHUR E. TURNER,
Director.

Copy of Airco Bulletin mentioned above:—

LONDON-PARIS AIR EXPRESS.

Two specially chartered Airco machines, in addition to the scheduled 12.30 p.m. service, were required yesterday to deal with the passengers and parcels from London to Paris.

The machine on the 12.30 p.m. service from Paris, carrying passengers and express goods, alighted at Hounslow at

London-Paris
Air Express

Summary of First Ten Weeks' Flying.

August 25th, 1919, to November 1st, 1919.

Flights Scheduled	154
Flights accomplished	147
Prevented by weather	1
Interrupted by weather	3
Interrupted by mechanical defects	3
Number of Miles flown	37,750
Average Speed (M.P.H.)	105

The following is a summary from official reports of the weather flown through during these ten weeks.

Days favourable for flying	17
„ unfavourable for flying	30
„ noted officially as "unfit" for flying	13

LONDON:
AIRCRAFT TRANSPORT & TRAVEL, LTD.,
25-27, Old Queen Street, S.W.1.

Full particulars regarding rates and freights can be obtained from Aircraft Transport and Travel, Ltd., 25-27, Old Queen Street, S.W.1, or from the American Express Co., Queen Street and Haymarket; Thos. Cook & Son, Ludgate Circus, E.C., and 38-39, Piccadilly, W.; General Transport, Ltd., 52, Cruiched Friars; J. Jackson & Sons, 7-8, Charing Cross, and King William Street, E.C.; Henry Johnson & Sons, 18, Byward Street, and Beak Street, W.; Lepaerial Travel. Piccadilly Circus (Criterion Corner); Carter Paterson & Co., 6, Maddox Street, W., and 3, Cannon Street, E.C.; and Hernu, Peron & Co., 98-100, Queen Victoria Street, E.C.

PARIS:
COMPAGNIE GÉNÉRALE TRANSAERIENNE,
118, Champs Elysées.

2.54 p.m., after having combated successfully a 50-miles-an-hour wind in the Channel.

A racing Airco machine, piloted by Capt. Gathergood, leaving for Paris at 12.30 p.m. with some specially urgent dispatches, accomplished the flight from Hounslow to Le Bourget in 1 hr. 20 min., at the rate of 180 miles an hour, which is the greatest speed attained so far on the London-Paris route.

THE BLACKPOOL-MANCHESTER SERVICE.

The daily air service between Blackpool, Southport, and Manchester carried out during the recent summer by A. V. Roe and Co., Ltd., came to an end on Sept. 30th. Out of 222 flights scheduled, 194 were accomplished. Twenty-eight were prevented by weather and none interrupted by mechanical trouble. The total number of miles flown was 8,730.

The service was started three and a half weeks after civil flying was legalised in Great Britain. It was the first daily service by air to be instituted in this country and to be mentioned in railway guides.

At noon each day at least one Avro left the sands at South Shore, Blackpool, and headed for Southport, which was reached at 12.15 p.m. At 12.45 the machine descended at Alexandra Park, Manchester. The return flight started from Manchester at 2 p.m. The fare was five guineas for a single and nine guineas for a return ticket.

By degrees the service became popular and before long it was paying its way.

Whatever the Post Office may think, the people of Lancashire have no doubts as to the reliability of an air service carried out by Avro aeroplanes.

DOVER.

A Fairey seaplane belonging to Lieut.-Col. G. L. P. Henderson, M.C., A.F.C. (late R.A.F.), was wrecked on Dover beach in a gale on Oct. 30th. Col. Henderson started on a flight from Southampton to Amsterdam on the previous day, and had landed at Dover on account of the bad weather.

HALIFAX.

Mr. Herbert Sykes, O.B.E., of the Central Aircraft Company, arrived at Lightcliffe, near Halifax, on the afternoon of Oct. 26th, after a long flight from London. A temporary aerodrome was laid out in Stoney Lane, Lightcliffe, and a flying week was held.

Two machines, one piloted by Mr. Sykes, left Northolt aerodrome on Oct. 25th in very bad weather, heavy rain and fog. A landing was made at Bedford, and owing to difficulties it was decided to spend the night at Huntingdon.

The journey was resumed on the next day and the machines landed at Lightcliffe at 5.10 p.m.

On Oct. 27th Mr. Sykes made an exhibition stunting flight over Halifax.

LONDON.

HENDON.—On Saturday, Nov. 1st, Teniente Fernando de Mendoza and Teniente Fernando Navarro Capdevile, members of the Spanish Aviation Mission at present in this country, accompanied by Lieut.-Col. Spenser Grey, D.S.O., visited Hendon for the purpose of inspecting the machines of the British Aerial Transport Company. Major C. Draper, D.S.C., exhibited the B.A.T. saloon passenger and commercial aeroplane and also the B.A.T. Bantam. The visitors were greatly impressed with both machines, especially the evolutions of the Bantam.

HOUNSLOW.—The Air Ministry announced on Oct. 30th: The following "Notice to Airmen" has been issued:—

"Hounslow aerodrome is temporarily equipped for night-flying. Each evening, for a period at sunset, a lighthouse in the aerodrome will give three flashes every ten seconds in the following order: flash, one second; eclipse, one second; flash, one second; eclipse, one second; flash, one second; eclipse, five seconds. Ground searchlights and landing flares will also be displayed.

"These lights will be provided at any time during the night if notification is made to Hounslow that machines intend to land, or if a machine is heard in the air. These arrangements are subject to alteration, of which due notification will be given."

The mechanism of the lighthouse does not differ substantially from that of those used at aerodromes overseas during the war. It is of French origin and burns acetylene gas. The vertical beam is thrown from the flame reinforced by powerful reflectors. The lamp is so designed that there is no glass immediately above the burner.

The lighthouse is at present in an experimental stage. The next station to be equipped for night-flying will be Lympne.

NORTHOLT.—On Oct. 31st the Basuto chiefs who are on a visit to this country were taken up for flights at the Northolt Aerodrome. The Paramount Chief is named Griffith. Both he and his fellow-chief, Suko, are of bulky build.

It took several air mechanics to get Griffith into his flying kit, and as there was not a suit large enough for Suko he had to be wrapped in white overalls. Both chiefs laughed so heartily while they were being strapped up that their hilarity threatened to hold up the flight.

They were eventually wedged into the cockpit, and soon after leaving the ground encountered a heavy rain-storm. Griffith ducked behind the wind-screen, but Suko could not get all his massive frame under cover and was stifled by the rush of air and rain. Being a practical man he covered his nose with his goggles and thereafter thoroughly enjoyed the half-hour flight.

The Paramount Chief said he was very proud of being the first of his race to fly. The rest of the party were taken up for shorter periods.

WINDERMERE.

It has been decided to keep the Avro seaplane station at Bowness open during the winter. In addition to taking up passengers, Capt. Howard Pixton is prepared to train a limited number of pupils during the winter. Capt. Pixton is almost the *doyen* of all pilots now regularly flying. His own flying ticket dates from 1910, in which year he joined Mr. A. V. Roe and went with him to America. Capt. Pixton won the Schneider Cup in 1914, and has also won many other prizes for flying contests.

CANADA.

CIVIL AERODROMES.

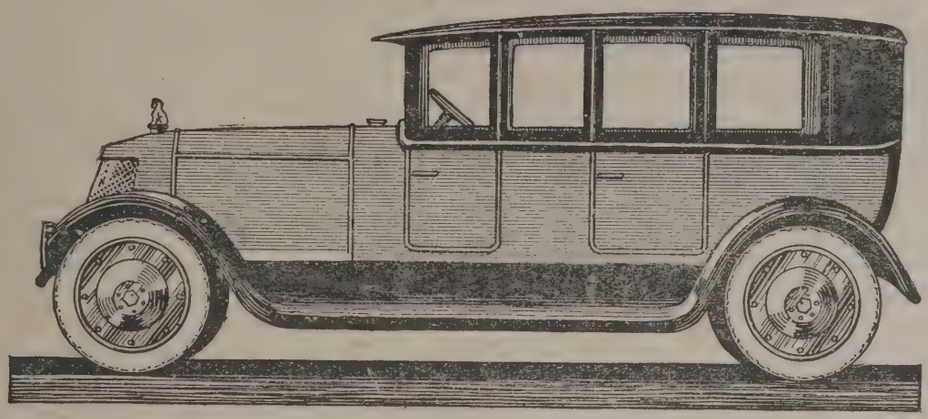
Colonel Biggar, vice-chairman of the Canadian Air Board, has announced that municipalities will be expected to erect their own landing grounds for aircraft. Saskatoon has already a civic aerodrome.

CREATING A PRECEDENT.—The first of the inhabitants of Basutoland to fly were Griffiths, the Paramount Chief (in front) and Suko, his fellow-Chief. In very unpleasant weather of mist and rain they made a half-hour's flight over London in an Avro biplane owned by the Central Aircraft Co., at Northolt on Oct. 31st. On account of his massive stature, tight lacing was necessary to get Griffiths into flying kit. Suko was too large for ordinary clothes and had to be rigged up in a capacious dustcoat. Dressing the Chiefs for the flight took half an hour, as they were very ticklish, and their continued hilarity almost prevented them from going up at all.



The ARMSTRONG SIDDELEY Six Cylinder Car

R.A.C. Rating 29·5 H.P. *Treasury Tax £8 8 0*



Olympia Stand 72.

THE new Armstrong Siddeley 6-cylinder car is of entirely original design and embodies the experience gained during the past four years in the production of aircraft engines aggregating over 2,000,000 (two million) horse-power.

¶ You cannot buy a better car.

¶ It is a motor carriage of high efficiency, stately appearance, ample power, and constructed of the best materials. It is light. It is comfortable. It is dependable. It runs smoothly, silently and is easily managed.

¶ Maintenance costs are small. Three years' free inspection.

¶ The low price at which it is sold is made possible by its simple design and by quantity production.

PRICE of CHASSIS EQUIPPED WITH Disc Wheels and one Spare Rim; four 820 by 135 Rubber Studded Tyres; Specially designed Wings; Scuttle Dash with Instrument board; Lucas Engine Starter and Electric Lighting, complete with 5 Lamps, **£720**

Saloon Double Phæton (as illustrated) ... £1,000

ARMSTRONG SIDDELEY MOTORS LIMITED, COVENTRY.

Formerly The Sidde'ey Deasy Motor Car Co., Ltd.

(Allied with Sir W. G. Armstrong Whitworth & Co., Ltd.)

London: 10, Old Bond Street, W.1.

You cannot buy a better car

Godbolds

SOUTH AFRICA.

A combination of important interests connected with commercial aviation has been effected by the amalgamation of the South African Aerial Transports, Ltd., and the South African Aerial Navigation Co., the result of which is that Colonel Armes, C.M.G., Major Miller, D.S.O., and Captain H. Tatton will direct the policy of the South African Aerial Transport, Ltd. The additional technical staff includes Major Honnett, Major Young, D.F.C., Captain Ross, D.F.C., Bar., Lieut. Thompson, D.F.C., and Lieut. Rutherford.

The Johannesburg "Star" of Oct. 2nd stated that flying would be undertaken in Johannesburg within a fortnight. The machines they have at present are Avro biplanes with 110-h.p. Le Rhône engines, and carry certificates of airworthiness issued by the British Air Ministry. As the company receives further machines the services will be rapidly extended.

The company's offices will be situated at 26-29, Exploration Buildings, Johannesburg.

CHINA.

The Purchase of Vickers' Aeroplanes.

The Chinese Government have purchased 100 "Vickers-Vimy-Commercial" biplanes for use in commercial aeroplane services. Their speed is 100 miles an hour and the endurance five hours. They carry sixteen passengers (in addition to the pilot) or one and a half tons of goods.

DENMARK.

The Danish correspondent of THE AEROPLANE writes :—

The first instance of commercial aerial photography work has now taken place here, the Sleswig pilot Schmidt having flown over Slesvig with a photographer, who took views in a Sablatnig biplane of the Danish Air Express Co. for a book to be issued in commemoration of the return of Sleswig to Denmark. A mechanic and one of the authors of the work were passengers in the flight.—E. H.

FINLAND.

It is stated in the "Times" of Nov. 1st that an air route covering practically the whole length of Finland has been started from Sortavala on the Lagoda to Murmansk. British and French aeroplanes are said to be used.

FRANCE.

Landing-grounds in France.

The Société de Navigation Aérienne has made a list of landing-grounds in France available for general use. The list is as follows, but it must be understood that the places enumerated are not the only aerodromes in France, but are those which are entered in the books of the S.N.A.

1. Landing-grounds without accommodation or fuel store :—Avignon (Pujaut), Lille (Rouchin), Angers, Angoulême, Bar-le-Duc, Buc, Chambéry, Chaumont, Commercy, Evreux, Joigny, Le Mans, Montelimar, and Nice.

2. Unoccupied landing-grounds with accommodation :—Ambérieu, Orly, Amiens (Bertangles), Belfort (Chaux), Colmar, Douai, Epinal, Habsheim, Hageneau, Le Perthe, Besançon (Le Valdehon), Maubeuge, Neu-Brisach, Ochey, Sarreguemines, Schlestadt, Strasbourg (Neuhof), Thionville, Toul, and Villeneuve-les-Vertus.

3. Military landing-grounds occupied and with accommodation and fuel store :—Avor, Le Bourget, Cazaux, Chateauroux, Clermont-Ferrand (Aulnat), Courban, Dijon, Etampes, Metz (Frescaty), Issoudun, Istres, Luxeuil, Lyon, Nancy (Mabzeville), Pau, Romilly, Saint-Cyr, Saint-Dizier, and Tours. In this category should be included seaplane stations (French Navy) : Aubagne, Brest (Guiparas), Cherbourg (Monteburg), Rochefort, and Saint-Raphael.

4. Landing-grounds of the S.N.A. with accommodation and fuel store :—Bordeaux (Theynac) and Le Bourget.

A Paris-Casablanca Flight.

Lieut. Boussotrot, who piloted the Farman "Goliath" in the attempt to reach Dakar, left Tousseus-le-Noble on Nov. 1st, flying the tiny Farman biplane "David" (40 h.p. engine). He is alone and intends to fly to Casablanca *via* Bordeaux, Biarritz, Saint Sebastien, Vittoria, Madrid, Cordova, Seville, Gibraltar, Tangiers, and Rabat. If he reaches Casablanca safely he intends to make a tour throughout Morocco calling at Mogador and Agadir. Later he will return to Paris by Gibraltar, Barcelona, Madrid, Perpignan, Toulouse, Marseilles, Avignon, Lyon, and Dijon. No special preparations are made for this flight, and he will be for a space a genuine tourist of the air. He is to keep a careful diary of his flight in order that his experiences may be of value to others.

Aerial Navigation Firms.

The following list of French companies engaged in aerial navigation, extracted from "L'Auto," is published for information :—

Société des Avions H. et M. Farman, 167, Rue Silly, Billancourt.

L'Aero Navale, 46, Rue de Villier, Levallois-Perrot.

Compagnie des Messageries Aériennes, L. Breguet, 2, Rue Galilée, Paris.

Compagnie Générale Transaérienne, M. Amand, 28, Avenue Carnot, Paris.

Compagnie Aérienne Française, M. Ballyguier, 89, Rue Cambon, Paris.

Syndicat du Réseau Aérienne Transafricain, MM. de Valitch and Cohen, 126, Rue de Provence, Paris.

Compagnie des Transports Aériens en Guyane, M. Dutertre, 6, Rue de Hanovre, Paris.

Compagnie des Grands Express Aériens, M. T. Villiers, 3, Rue d'Anjou, Paris.

Compagnie de Navigation Aérienne, M. Latecoère, 182, Boulevard Haussmann, Paris.

Société des Transports Aéronautiques du Sud-Ouest, M. Gindner, 24, Rue Grange-Batelière, Paris.



The Salon de l'Aeronautique.

A Handley Page aeroplane is to be exhibited at the Sixth International Aircraft Exhibition which will open at the Grand Palais, Paris, on Dec. 19th.

A Paris-Metz Air Service.

The Italian correspondent of THE AEROPLANE writes :—

In the course of a speech recently pronounced at Rome, Col. Piccio, Aviation Attaché at Paris, stated that last June he carried out a 500-kilometre flight three times weekly between Paris and the Rhine Provinces (Metz). The trip took three hours, and was continued regularly for the whole month without any let or hindrance, the route flown over being Paris, Chalons, Metz, and the Rhine, leaving Orly

G R

By direction of the Disposal Board

AIRCRAFT DISPOSAL DEPARTMENT

MINISTRY OF MUNITIONS.

BESSONEAU HANGARS.

A quantity of the above are available in different parts of the country. These Hangars are constructed with an exceptionally strong wooden frame-work, easily and quickly erected. No foundation is required and they are covered with strong weatherproof canvas, and besides being suitable for aircraft would be also suitable as temporary buildings.

A typical size of Hangar is **60 ft. by 60 ft. by 13 ft. high.**

The locality, together with any further information required, may be obtained from the—
CONTROLLER, AIRCRAFT DISPOSAL DEPARTMENT, WELCOME CLUB, EARL'S COURT, (nearest Station—West Kensington District).

Telephone—Western 4950. Telegrams—Clearhouse, Aerosupply, London.

IMPORTANT.—Note change of address from York House, Kingsway, to Earl's Court, as above.

NOTE.—For further particulars of other Government Property for sale see "SURPLUS" price 3d., at bookstalls, or by quarterly subscriptions of 2s. post free, payable in advance to the Director of Publicity, Ministry of Munitions, Whitehall Place, London, S.W 1.

G. R.

MINISTRY OF MUNITIONS.
By Direction of the Disposal Board.
(Lands and Factories Section.)

FOR SALE.

WYE AERODROME,

KENT.

Area: About 86¾ Acres.

For disposal as a whole, or the buildings and the land on which they stand, without the Aerodrome itself.

The BUILDINGS are of CORRUGATED IRON, BRICK and WOOD; the Flight Sheds Corrugated Iron with wood frames, tarmac floor, concrete foundations. Electric Light Plant, Water Supply including Storage Tank. Permanent tarmac roads. Asphalte Paths.

In addition to its use as an
AERODROME,
the Buildings are suitable for
FACTORY, SANATORIUM,
STORAGE, TRAINING INSTITUTION,
and many other similar purposes.

The site is occupied by the Government under the Defence of the Realm Regulations and can, if necessary, be acquired under and subject to the provisions of the Defence of the Realm (Acquisition of Land) Act, 1916.

For further particulars, apply to Disposal Board D.B.1.a 3, Room 135, Charing Cross Buildings, Villiers Street, London W.C.2.

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MINISTRY OF MUNITIONS.
By Direction of the Disposal Board.
(Huts and Building Materials Section).

For Sale by Tender.

KITE BALLOON SHEDS AND COVERS.

Tenders are invited for the following

At No. 16, Kite Balloon Base, Menefield, near Plymouth.

6 Kite Balloon Sheds and Covers,
96 ft. by 36 ft. by 35 ft.
Wooden Frame, Canvas Covers.

Tender Forms, permits to view, and full particulars may be obtained on application to the AREA DISPOSAL OFFICER, 27, High Street, Salisbury. Telegrams:—Hutments, Salisbury.

NOTE.—For particulars of other Government Property for sale, see "SURPLUS," price 3d., at all bookstalls, or by quarterly subscription of 2s. post free, payable in advance to the Director of Publicity, Ministry of Munitions, Whitehall Place, London, S.W.1.

on Monday, Wednesday, and Friday, returning on the alternate days. Radio-telegraphic and meteorological stations ensured the safety of the service, which was thus highly successful.—T. S. H.

FLOWER TRANSPORT.

The Danish correspondent of THE AEROPLANE writes :—

On Nov. 6th a French aerial transport service of flowers is to be started to Denmark, as a Copenhagen firm has contracted with Breguet to have the Paris-Casablanca pilot, M. Roget, to fly, accompanied by a mechanic, with one intermediate landing in Holland, to the Danish capital in one day. Halt a ton of Nizza flowers will be carried for a payment of 12,000 frs., which includes the right of a return load of 200 kg. or two passengers.

It should be possible to sell flowers sent in this way more cheaply than home-grown roses and gilli-flowers. If successful, this aerial flower service will be established as a regular feature.

MANAGERS OF AERO-STATIONS.

Certain aviators in France are demanding that the following qualifications shall be possessed by all entering for the examination which is to be held for the selection of managers for the new series of aero-stations now being laid out throughout France :—(1) To have been pilot; (2) to have passed a stated period at the front or in hospital owing to wounds received in action; and (3) to have been decorated or mentioned in dispatches.

THE PARIS-MELBOURNE FLIGHT.

M. Poulet is now at Avlona, where he has been detained by the bad weather.

GERMANY.

The Danish correspondent of THE AEROPLANE writes :—

A NEW AIR TRAFFIC COMPANY.

The negotiations for months *re* the formation of a commercial aviation enterprise in Bavaria have now taken the final form of "The Bavarian Air Traffic Co., Ltd.," with a capital of 500,000 marks (£25,000 normal value), by the co-operation of the following firms : Bavarian Rumpler Works in Augsburg, Bavarian Air Lloyd, Bavarian Aircraft Works, Bavarian Motor Works and Gotha Aircraft Works. The new concern will carry out no direct service. This will be carried out by the above-mentioned companies. The Air Traffic Co. will limit its activities to organising development of the enterprise, to propaganda, daily and technical work, besides co-operation with other concerns.

The Bavarian Government will not participate directly in the new enterprise, but has supported it by granting it the exclusive concession rights for aerial business transport of passengers and mail and for photography work within Bavaria. For this work a "Bavarian Photo Co., Ltd.," has been formed chiefly by the co-operation of the photographic industry.

The Army authorities are to sell aeroplanes, aerodromes, with works and equipment, to the concern on favourable conditions. The passenger fares have not been fixed so far, but 10 pfennings (1½d.) is to be paid for letters beyond the ordinary stamp, and a dispatch fee is to be paid extra if express service is asked for. The price for paper-sending has not been settled yet, but is likely to be fixed at 10 marks (10s.) per kilo.

ANOTHER NEW COMPANY.

A "Southern Germany Aerial Navigation Co." for Württemberg and Baden is under preparation, to be formed mainly by the Zeppelin concern and the Daimler Motor Works. A close co-operation of the "Southern Germany Aerial Navigation Co." and "The Bavarian Air Traffic Co., Ltd.," is being arranged. Their main task will be to bring out first the true commercial aeroplane; for, as German military aircraft is a thing of the past, the outlook is for going ahead at commercial aviation, as German papers express in their comments when saying : "It is no secrecy that the successful military aeroplane cannot straightaway be employed as a commercial aircraft."

A NEW ZEPPELIN.

Words to the following effect are contained in a note in the German aero-paper "Illustrierte Flug-Welt" : "The Zeppelin concern has completed a giant airship for oversea voyages of the dimensions of a war cruiser."

THE ANTICS OF THE "BODENSEE."

The very favourable results of the first month's service of the airship "Bodensee" are now available, as she has between Aug. 24th and Sept. 23rd carried 1,300 persons in 30 voyages of 208 hours' duration, thereby covering a distance of 20,006 kilometres without any incidence (incidents ?).—HI.

The Bodensee on a voyage from Friedrichshafen arrived at the aerodrome near Berlin at 6.30 p.m. on Nov. 2nd. About thirty persons were in the airship. The wind was very strong. No order was given for landing the vessel, and the crowd who were holding the landing ropes appeared to be the friends of the passengers in the airship, with the exception of some half-dozen officials.

The Bodensee nose-dived five times, and bumped the ground three. One of the people on the ground was killed and five were injured. The Zeppelin then ascended, the lights went out and she vanished. When the airship was being held down the passengers were able to speak to their friends on the ground. One lady was heard to tell her husband that they had had a very bad voyage, and that she would never undertake it again.

The Hamburg-Amerika Line afterwards issued the information that the vessel was safe, and came down in the Harz Mountains. All the passengers were saved. The ship was not seriously damaged, and will return under its own power.

GREECE.

A Handley Page machine, piloted by Capt. W. Shakespeare, arrived at Athens on Oct. 30th after a journey by stages from London. The machine is visiting Greece for the Aviation Exhibition in Athens.

Bad weather delayed the progress of the machine, and during its flight down the Italian coast from Pisa to Rome it encountered a severe wind-storm which threatened to divert its course over the Mediterranean. The stages of the journey were London-Paris-Lyons-Gulf of Genoa-Pisa-Rome-Benevento-Taranto-Athens.

HOLLAND.

AT THE E.L.T.A. AERODROME.

Capt. Hinchcliffe and Mr. Shanks are still over in Holland with their Avros, but the weather has been too bad of late to permit of much flying. In the intervals Capt. Hinchcliffe finds occupation and amusement in negotiations with the Customs authorities over the valuation of material.

They are still using the E.L.T.A. Aerodrome, which is now a most deserted place, overshadowed by the presence of Herr Fokker, who has purchased all the exhibition buildings and the fencing surrounding the aerodrome. The rivalry of commercial aeroplanes seems to be no less keen than were the contests of the war.

A four-engined Handley Page aeroplane, which had been exhibited at the E.L.T.A., flew from Soesterberg, Amsterdam, to Hounslow on Oct. 30th in 2½ hours.

SWITZERLAND.

On Oct. 19th about 3,000 people assembled at Echallens, not far from Lausanne, for a flying meeting. Mr. Bradley, chief pilot of the Ecole Aero, flew over on his Avro at 2.30 p.m., and before landing gave a performance of trick flying, ending in three successive loops. Passengers were then taken up, among them many ladies and several people of note in the place. All were delighted with the machine and the pilot. The Avro was kept busy for 3½ hours, and when the meeting was over a passenger booked a seat for the flight back to Lausanne.

On the following Sunday a meeting was held at Geneva on the football ground, from which one of the goals was removed to make landing space. The ground does not seem to have been too good, however, as "La Suisse" writes that the "biplan Avro" shaved over the poplars bordering the cliffs of the Arve and pulled up about a dozen metres short of the other goal-posts.

The booking of passenger seats was brisk, and most of the passengers "ont demandé a faire des loopings."

Capt. Bradley made several exhibition and passenger-carrying flights at Nyon on Nov. 2nd. Whilst flying with a passenger he crashed while trying to avoid overhead electric cables. The pilot and passengers were only slightly injured, but the machine was destroyed.

UNITED STATES OF AMERICA.

ANOTHER CROSS-ATLANTIC PRIZE.

A Frenchman, who has resided for many years in New York, has offered a prize of 125,000 francs (nominally £5,000) to the first aviator who flies from New York to France or France to New York. The Aero Club of America is drafting the regulations.

Either a seaplane or aeroplane may be used for the flight which must be made between May 20th, 1919, and May 20th, 1924. The entrants must be subjects of one of the Allied Powers, and must hold the pilot's certificate of the F.A.I. The entrance fee of £46 must be paid to the Aero Club of America, and should be forwarded with the notice of entry at least 14 days before the entrant intends to attempt the flight. He must also inform the Club of the point from which he intends to start and (approximately) the area in which he proposes to land.

If an aeroplane is used the point of departure must be within 50 miles of Paris or New York. A single machine must be used for the flight.

AERONAUTICAL ENGINEERING

SUPPLEMENT TO "THE AEROPLANE"

INCORPORATING AIRCRAFT ENGINEERING, AERODYNAMICS, AIRCRAFT FINANCE AND COMMERCIAL AERONAUTICS AND MATTERS PERTAINING TO THE AERONAUTICAL ENGINEER AND THE AIRCRAFT TRADER.

THE WEEKLY COMMENTARY.

A first instalment of an article describing the products of the Marine Aircraft Experimental Depôt at the Isle of Grain appears in this number.

This article and the accompanying illustrations are published by permission of the Director of Research, the Air Ministry, who has placed a large number of the photographs at the disposal of THE AEROPLANE for this purpose.

The work carried out at this establishment has never been widely advertised and is generally little known, but, as this article indicates, a large amount of useful experimental work was carried out, and some very original machines were produced there during the war.

A brief history, profusely illustrated, of the German seaplanes designed and built by the Friedrichshafen Flugzeugbau during the late war will be found on page 1609 *et seq.* German seaplanes are of even greater interest than are German land machines, if only because very little was actually seen of them during the war, and the number of captured specimens—in any recognisable state—was almost nil.

The Martinsyde two-seater machine which is to attempt the Australian flight is illustrated and described on page 1596.

A note on the Italian-built semi-rigid airship bought by the British Admiralty appears in this issue.

THE WORK OF THE MARINE EXPERIMENTAL AIRCRAFT DEPOT, ISLE OF GRAIN.

By Capt. W. H. SAYERS, Late R.A.F.

At the outbreak of war the Isle of Grain Air Station was one of the largest of the seaplane stations of the Royal Naval Air Service. During the first six months or so of hostilities it was regarded as an important war station, and in addition to seaplane patrols it provided a reception depôt for seaplanes, and a fitting-out establishment for the earlier seaplane-carrier ships. Its proximity to Sheerness Dockyard and to Short Bros.' works at Eastchurch and Rochester—then practically the only source of seaplane supplies—particularly fitted it for that purpose

Grain Repair Depot.

Even before August, 1914, it had been decided to make Grain Island something more than merely a seaplane station, and it was intended to establish there the Royal Naval Air Service Repair Depôt. This project survived the beginnings of war, and what had been early in 1914 the Salvation Army Congress Hall in Kingsway, purchased by the R.N.A.S. during that summer, was re-erected at Grain some hundred yards from the Air Station proper, and equipped with tools, power plant, and drawing-office. It was commissioned under Squadron Commander G. W. S. Aldwell, R.N., as the R.N. Aeroplane Repair Depôt early in 1915, as an entirely separate command. The Port Victoria Station Hotel was commandeered and converted into quarters for the men, and the Royal Corinthian Yacht Club-house was used as the officers' mess. This establishment became known as Port Victoria to distinguish it from the adjacent Air Station.

Although the establishment continued to be known as the Repair Depôt for some considerable time, very little repair work was carried out there. For a short time in its early history it was nicknamed the Royal Naval Tail Plane Factory, because for some months its only productions were a series of new tail units for various machines which had been found in service to be insufficiently stable.

A notable incident of this phase of its career was the evolution from the Sopwith "Schneider" of the "Baby" seaplane, involving the abolition of warping wings and the substitution of ailerons, the fitting of an entirely new tail unit of considerably greater area, and some modification to the floats.

Thus Port Victoria Repair Depôt was gradually diverted from its proposed functions and turned into a purely experimental workshop.

The Experimental Armament Department.

During the latter part of 1915 a second shed at Port Victoria intended as an extension to the Repair Depôt was erected, but it was annexed by an Armament Experimental Department for their workshops.

This department, although it was in many ways more akin to the Repair Depôt than to a war station, was placed under the command of the Grain Air Station, with Lieut.-Commander Robertson as the head of the department.

The Test Flight.

At a date early in 1916 the third of the Grain experimental sections had its origin in the shape of one single Flight Sub-Lieutenant, attached to Port Victoria for discipline, but under the orders of K Section, Air Department. This officer—one F. E. Sandford, now Squadron Leader in charge of what was then Port Victoria—constituted the Seaplane Test Flight.

At the end of 1916 Wing Commander Aldwell was transferred to the command of the Dunkirk Repair Depôt, Grain Repair Depôt was placed for discipline under Grain Air Station, with Squadron Commander H. M. Cave-Brown-Cave as O.C. Repair Depôt. By this time Port Victoria had grown to three large sheds, the original shed being now machine and fitting shop only, a further shed served as an erecting shop, and the third was a running shed with one aisle partitioned off as a drawing-office.

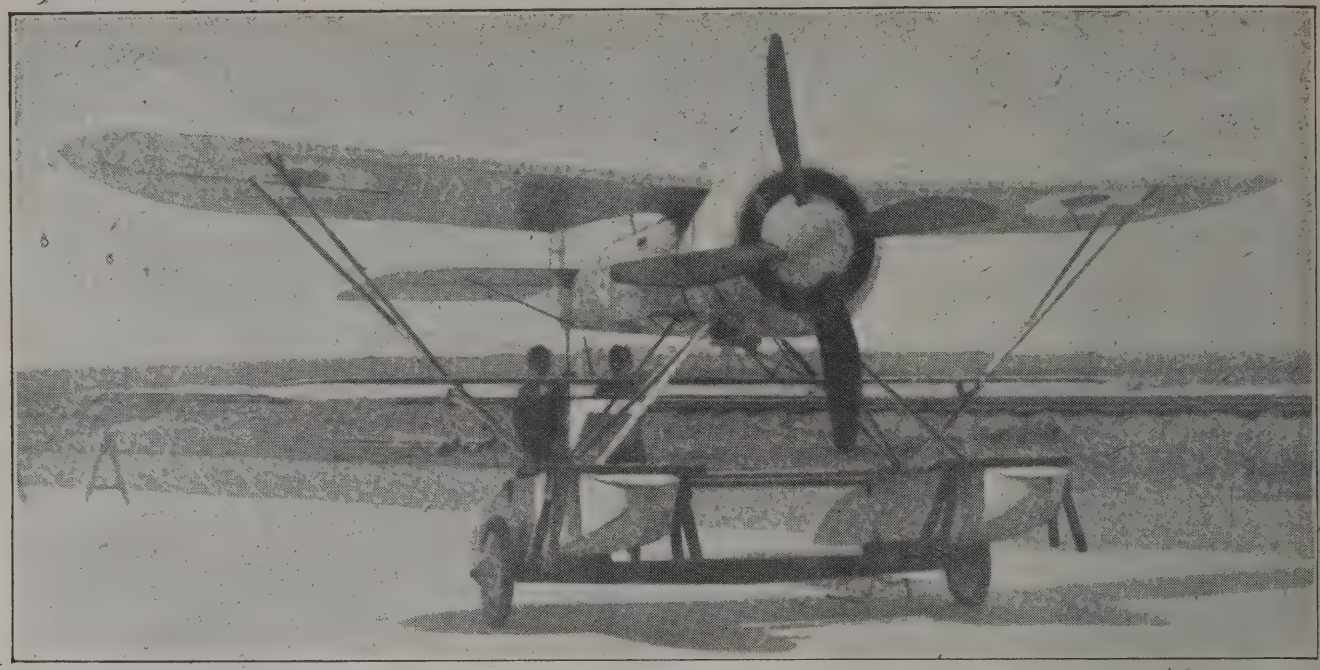
The Test Flight became a separate department under Squadron Commander Travers, and had been allocated sheds at the Air Station—now declining in importance as a war station—and Grain as a whole became practically a seaplane experimental station and acceptance depôt under the command of Wing Commander (Major, R.M.L.I.) C. E. Risk.

At this date the R.N.A.S. possessed a test flight for land machines at Eastchurch, with Squadron Commander H. R. Busteed in command.

On the formation of the Air Board it was decided that all future land machines should be tested at Martlesham, and Commander Busteed was transferred to Grain, succeeding Commander Cave-Brown-Cave at the Experimental Construction Depôt, as Port Victoria was now officially named.

Grain had now become the Naval Aircraft Experimental Depôt, uniting under a single command Experimental Construction Depôt, Seaplane Test Depôt, and Experimental Armament Section. In addition it was used to some extent as a seaplane acceptance depôt.

Wing Commander Risk was succeeded in the command of Grain by Wing Commander L'Estrange Malone, Wing Commander E. F. Briggs, and finally by Wing Commander Busteed. Squadron Commander Robertson was raised to Wing Commander and translated to the Bolo House, and was succeeded at the Experimental Armament Depot by Lieut.-Commander Chalmers, R.N.V.R., who held the position, as Major, R.A.F., till after the conclusion of hostilities.



P.V.2 (100 h.p. Mono Gnôme engine), the first machine completely designed and constructed at Grain in her original form.

Squadron Commander Travers also received merited promotion and was translated to the Technical Department, being succeeded in the command of Test Depôt by Squadron Commander (later Major) M. E. A. Wright, and on Col. Busteed's accession to the whole command, the original test flight pilot at Grain, then become Major F. E. Sandford, succeeded as the officer commanding the Experimental Construction Depôt. Since the armistice other changes have occurred, but the above outline serves to indicate the general history of the establishment during the war.

Of the three main departments into which the Station was divided, the work of the Experimental Construction Depôt (known as E.C.D.) is probably the most generally interesting.

A good deal of the work done by the Armament Depôt was extremely important, dangerous, and at times amusing, but the nature of its work cannot here be described in detail for obvious reasons.

Except in very general terms the present writer is unable to do justice to the experimental work of the technical officers of the Test Depôt, but it is hoped that a description of some of their trials in the work of devising methods of measuring aeroplane performance will one day be forthcoming.

Experimental Machines Built by E.C.D.

The most important step in the diversion of the Port Victoria Repair Depôt from its original purpose was due to the initiative of Squadron Commander J. Seddon, R.N., as he then was, of K Section, Air Department, Admiralty. The habit, persistent for long after, of attempting to fly Sopwith "Baby" seaplanes with two 65-lb. bombs attached to them was then in its infancy, but Commander Seddon had even then realised that the "Baby" was not really up to the work. What was really needed was a seaplane of about the same overall dimensions as the "Baby" which, carrying the bomb load, should possess a getting-off and landing speed no higher than that of the "Baby" and a considerably greater ceiling.

P.V.1.

A study of certain N.P.L. wing tests convinced him that a wing section might be developed giving much higher lifts than those usually employed, and that with such a wing the desired machine might be produced by some sacrifice of top speed.

The matter was referred to Port Victoria and it was decided, early in 1916, to experiment by converting a Sopwith "Baby" and fitting it with high lift wings.

The result of this experiment was a curious machine known as P.V.1, which consisted of a Sopwith "Baby" fuselage and chassis, equipped with a pair of heavily cambered wings of the same total surface as the original wings, but of greater aspect ratio and with a fair stagger, and a pair of enlarged floats.

As it was desired to carry out the trials in the shortest possible time, and as the machine was meant purely as a wing test and not as a war machine, no attempt was made to save weight in the structure. The old wing root spars in the fuselage were sawn off flush and their remains left *in situ*, the wings were put on where they gave the pilot the best view, and the machine's centre of gravity was adjusted to the new wings by putting lead into the floats.

Thus when complete the weight was nearly 300 lb. more than that of the "Baby," and yet with an additional 300 lb. of lead as load P.V.1 with 100-h.p. got off and landed at 35 knots and took her 600 lb. total of added weight to over 8,000 ft. and was entirely free from "sogginess."

True the top speed was only 67 knots—but that was little worse than had been hoped for, and rather better than was feared. The minimum speed and climb were, however, at least as good as had been expected.

This machine was kept at Port Victoria for some time and was used for experimental purposes. Amongst other trials she was once taken off a truck on the Grain railway siding in the course of some of the earliest tests connected with the problem of catapult gears for shooting machines off ships' decks. Eventually she was sent to Calshot as a preliminary training machine for "Baby" seaplane pilots.

Early Deck Landing Trials.

At about the same date the Repair Depôt began experimental work on deck landing devices. The first of these—an inclined wire-rope way to be fitted over the stern of the ship—was tried and a B.E. fitted with a special chassis was actually landed thereon. This idea was dropped in favour of sandbags attached to ropes stretched across the landing deck and an attachment to the machine which picked up successive ropes during the process of pulling up. This line of experiment went as far as the manufacture of all the fittings for test on a standard Avro, but was then dropped for nearly eighteen months, and later developments of this line of work will be dealt with in future instalments.

P.V.2.

The idea of designing a bomb-carrying seaplane of the "Baby" type at Grain was abandoned in the belief that the "Hamble Baby" would supply the need, and Grain was instructed, at the instance of Commander Seddon, to design a small, fast seaplane for Zepp.-strafing. The special features of this machine was to be its armament—one two-pounder Davis gun, which had to be carried over the upper plane, to be clear of all wing bracing, and yet accessible to the pilot for loading. A low landing speed—not more than 40 knots—the ability to reach and cruise at 10,000 ft., and a high speed of approximately 80 knots were asked for, with three hours' fuel, 10 rounds of ammunition, and a 100-h.p. Mono. Gnôme engine.

Commander Seddon suggested that a monoplane with the P.V. high-lift wing would meet the case, and actually the machine designed was almost a monoplane. The upper wing sprung from the top rail of the fuselage, with a lower plane of much smaller span and chord beneath the fuselage, carried therefrom by short centre section struts. The wing bracing consisted of a steel tube strut from the float chassis to the lower wing, and thence two struts to front and rear spars on the upper wing on each side.

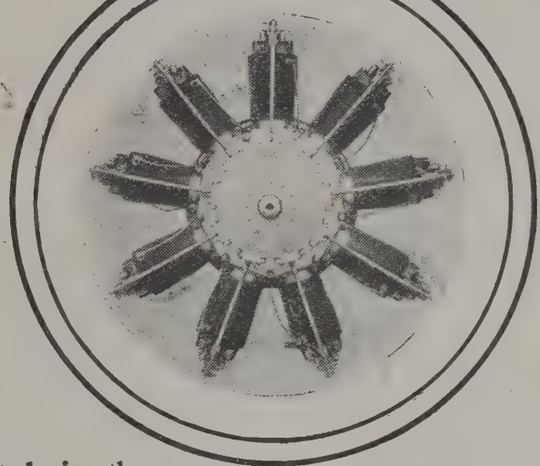
The lower wing was really used more as a stiffener for the main bracing struts than as a lifting surface.

Ailerons, which washed out from the normal wing camber at their inner ends to a pronounced reflex curve at the tips, were fitted to the upper wing only.

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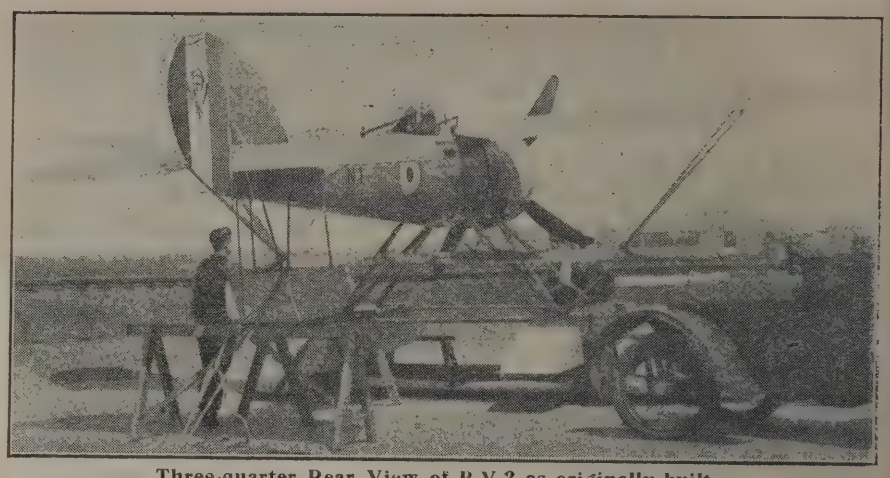
There were neither flying, landing, nor incidence wires in the structure, the wing lift being transmitted *via* the s... tubes to the chassis and thence to the fuselage.

The fuselage was of the usual wire-braced type, carrying a 100-h.p. Mono Gnôme at its front end, and faired out to a circular section which gradually washed out aft the wings.

The pilot's seat was just behind the upper rear spar, and was fitted with t usual "joystick" control, instrument board, etc.

Apart from the wing structure the machine was of conventional design, and illustrations are given which show the general arrangement.

Particular attention was paid to reducing head-resistance throughout, and a method of fairing circular tube struts by enclosing them in three-ply sheaths, steamed and die-pressed to form a single-piece fairing, was developed for this machine.



Three-quarter Rear View of P.V.2 as originally built.

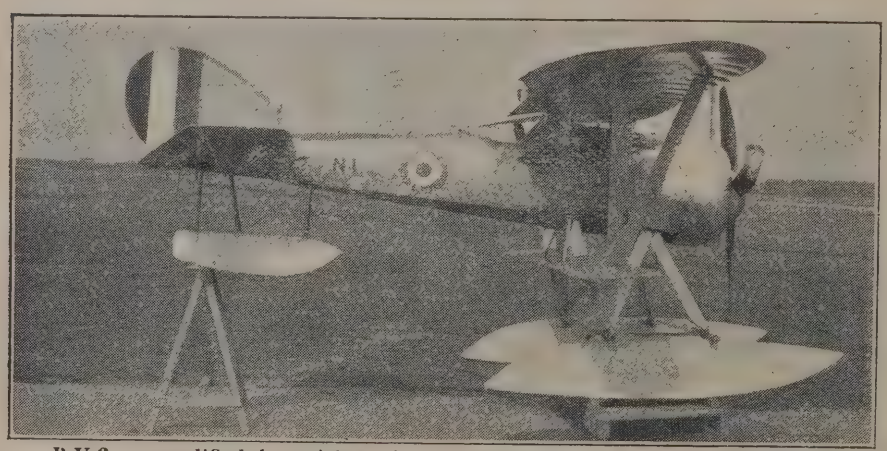
The machine was flown for the first time in June, 1916, giving promising results, but suffered from defective lateral control traced to the very long ailerons which extended nearly to the body, flexing when they were operated.

These were reduced to half their length and stiffened, which effected a complete cure.

Seaplane testing in these days was in its infancy, and the reported high speed of 83 knots was probably too high. Nevertheless the machine flew uncommonly well, and its landing speed, which certainly did not exceed the 38 knots given, was remarkable considering the loading of 9.5 lb. per sq. ft. This machine (N.1) was known as P.V.2, and was of the dimensions given in the attached specification :—

SPECIFICATION.

Type of machine	Seaplane scout.
Name or type number of machine	P.V.2 (original).
Purpose for which intended	Zeppelin-strafing.



P.V.2 as modified by raising the top plane to improve the Pilot's view.

Span	top, 27 ft.; bottom, 19 ft.
Gap	3 ft. 6 in.
Overall length	22 ft.
Maximum height	8 ft. 4 in.
Chord	top, 5 ft. 6 in.; bottom, 2 ft. 6 in.
Total surface of wings	168 sq. ft.
Engine type and h.p.	Mono Gnôme 100 h.p.
Weight of machine empty	1,087 lb.
Disposable load apart from fuel	200 lb.
Total weight of machine loaded	1,590 lb.
Load per sq. ft.	9.5 lb.
Weight per h.p.	15.9 lb.
Tank capacity in gallons	petrol, 30; oil, 9.
PERFORMANCE—	
Speed low down	*72 knots.
Landing speed	38 knots.
Climb—	
To 3,000 ft.	5 min.

A MODIFICATION.

By the time the machine was ready, however, the Davis gun had relapsed from favour—to reappear later on it is true, but not in this story. It was therefore decided to fit two Lewis guns on the wings and make a fighter seaplane of it. However, test pilots complained of the blanketing by the upper plane before them of the view when alighting, and the machine was therefore modified by raising the upper wing 1 ft. to the level of the pilot's eyes, and inserting a centre section of such a span as would keep the inter-wing struts in their original line. This alteration was greatly delayed by other work, but eventually the modified machine was tested in early 1917 and was greatly liked by those who flew it.

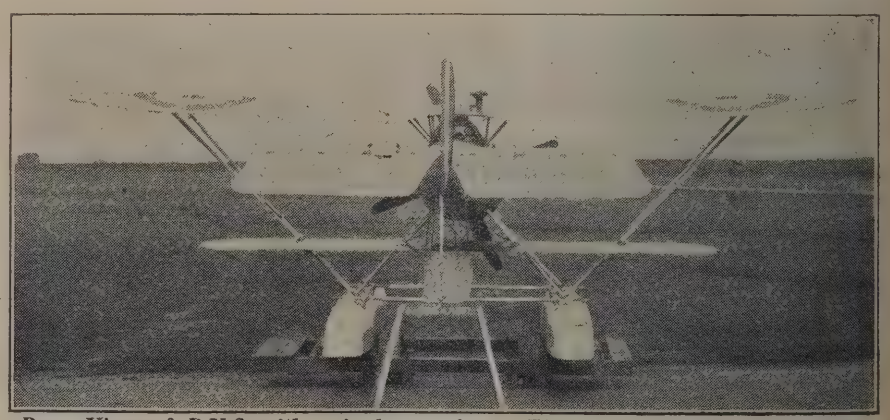
SPECIFICATION.

Type of machine	Seaplane scout.
Name or type number of machine	P.V.2 (bis.).
Purpose for which intended	Fighting.
Span	top, 29 ft.; bottom, 19 ft.
Gap	4 ft. 6 in.
Overall length	22 ft.
Maximum height	9 ft. 4 in.
Chord	top, 5 ft. 6 in.; bottom, 2 ft. 9 in.
Total surface of wings	180 sq. ft.
Engine type and h.p.	Mono Gnôme, 100 h.p.
Weight of machine empty	1,211 lb.
Disposable load apart from fuel	192 lb.
Total weight of machine loaded	1,702 lb.
Load per sq. ft.	9.5 lb.
Weight per h.p.	17 lb.
Tank capacity in gallons	petrol, 30; oil, 9.
PERFORMANCE—	
Speed low down	*72 knots.
Landing speed	38 knots.
Climb—	
To 3,000 ft.	6 min.
To 10,000 ft.	*35 min. 36 sec.

* Official test report figures. Actually realised a speed of 81 knots and a considerably better climb on later tests.

THE P.V.4.

Early in 1916 the Armament Section asked Port Victoria if they could design a two-seater fighter in which a gun could really be used. Sketch designs of a two-seat pusher



Rear View of P.V.2 with raised top plane. This view gives an excellent idea of the wing-bracing.

The Success of the R.34.

Extract from General Maitland's Log:

MIDNIGHT—

"*As we lay in our hammocks we listened to the rain beating pitilessly down on the outer cover of our trusty ship of the air, and our feelings, despite the weather, are those of complete confidence and security.*"

The success of this history-making trans-Atlantic flight and of the subsequent long distance voyages under adverse weather conditions, was largely contributed to by the fact that her cover was finally doped by our **SCHEME H.2.** which was applied

ON THE TOP

of the ordinary dope, thus rendering the cover weather-proof and water repellant.

SPECIAL DOPE H.2

is manufactured entirely by

THE BRITISH CELLULOSE & CHEMICAL MFG. CO., LTD.

the largest manufacturers of Cellulose in the World, and has been supplied exclusively by them to the British Government for the final doping of the outer cover of

R.32, R.33, R.34.

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Works: SPONDON, DERBY.

Telephone: Regent 4045 (Three lines).



Half Side View of P.V.4 (110 h.p. Clerget). Note the Linton Hope Floats.

land machine with the 110 Le Rhône were prepared, and after some discussion were developed in detail. These designs never materialised—in that form—for they attracted the attention of certain higher authorities, who demanded a seaplane of somewhat similar arrangement for reconnaissance work, to carry wireless, a Lewis gun, and eight hours' fuel. An engine, known as the Smith "Static" radial, weighing 380 lb. and giving a guaranteed h.p. of 150 on a very low fuel and oil consumption, was promised for this purpose.

On the engine's promised performance it was estimated that the required load could just be carried within the limits of performance specified—40-80 knots and 5,000 ft. in 15 min.—and the machine known as P.V.4 was put in hand.

The number P.V.3 had been allotted to an Admiralty design which actually was built elsewhere, and the number remains unoccupied.

The whole structure of the machine was manufactured by the autumn of that year, but the promised engine never materialised. In the middle of 1917 the machine was put together with a 110 h.p. Clerget engine, the installation whereof led to a number of complications due to the extremely compact general arrangement of the machine and the much greater overall length of the Clerget engine, whose carburetter was in the midst of what should have been fuel tanks and whose airscrew hub was nearly a foot further aft than that of the intended engine.

As eventually put together for trial purposes the machine weighed 2,400 lb. with pilot, passenger, Lewis gun, and four hours' fuel. The span was 32 ft. and the total surface 220 sq. ft., and with a loading of nearly 11 lb. per sq. ft. and 22 lb. per h.p. the machine showed a top speed of about 70 knots and possessed a discernible climb—not a discreditable showing under the circumstances.

One very serious defect in the machine was due to the very close proximity of the airscrew to the tail plane, which, coupled with the change in the position of the centre of gravity, caused by the change of engines, made it impossible to balance the machine both with engine on and engine off. With a tail setting giving correct balance in the full blast of the propeller, the machine was tail-heavy with the engine off, and lost all longitudinal control below about 55 knots.

This could very easily have been remedied by redesign of the tail plane, but the machine was not thought of sufficient importance for this alteration to be made.

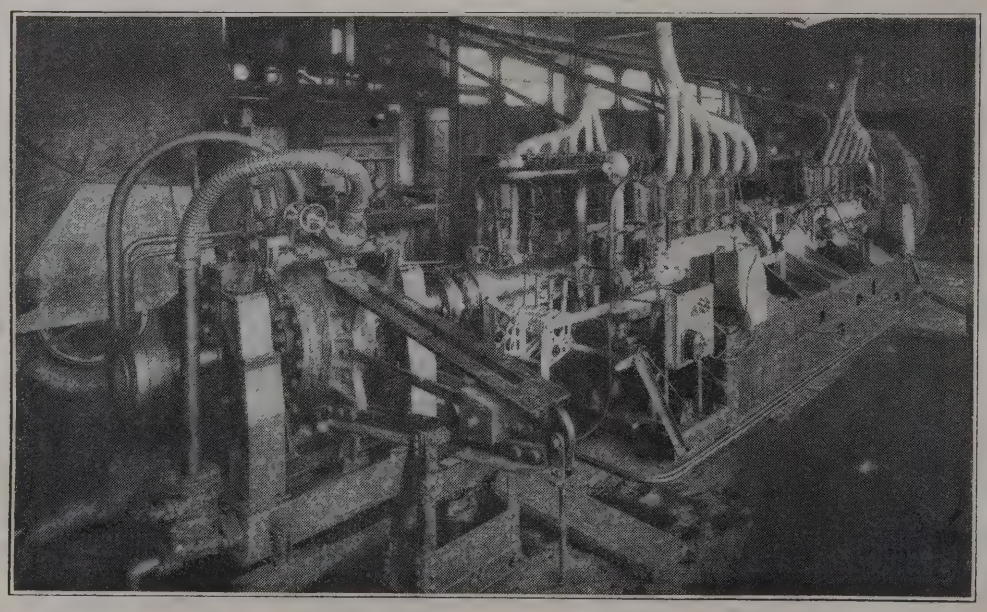
This characteristic led to her alightings being quite picturesque affairs, and incidentally afforded an excellent strength test of the experimental Linton Hope type floats with which she was fitted.

Though the type has never been perpetuated, it represents one of the most satisfactory general arrangements for a fighting and reconnaissance machine which has ever flown. Both seats are ahead of the wings, and the upper plane is on the nacelle top rails. The observer has an absolutely clear view over the whole hemisphere ahead and over a complete quarter-sphere to the rear above the wing level, and could use a gun freely over the whole range of vision. Given a reasonable weight per horse-power—*i.e.*, a modern power plant—and a very high performance could be obtained from the type.

(To be continued.)



Three-quarter Front View of P.V.4. This gives an idea of the excellent view and field of fire from the front seat.



THE POWER UNIT OF THE LINKE-HOFFMANN BIPLANE.

The accompanying photograph represents the four 260 h.p. Mercédès engines, which form the power plant of the Linke-Hoffmann R.2 "Giant" aeroplane (described in THE AEROPLANE of July 30th, 1919)—together with the airscrew drive gear—assembled on the test bench. Particularly interesting is the brake to which the plant is coupled—a Heenan and Froude hydraulic dynamometer of British manufacture.

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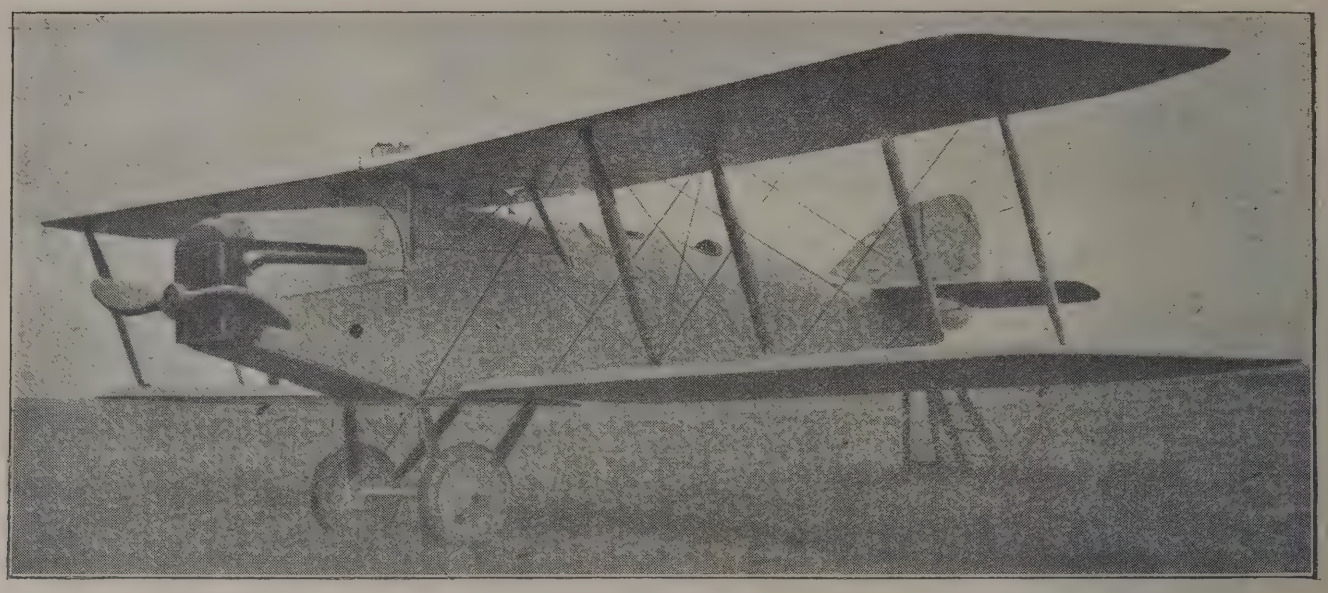
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THE AUSTRALIAN MARTINSYDE.



The Martinsyde A.S. Machine (275 h.p. "Falcon" Rolls-Royce engine) for the Australian flight.

The machine in which Capt. Howell will make his attempt to fly to Australia is, with a few exceptions, the standard Martinsyde type "A.1" especially designed for commercial purposes. The Australian machine has a slightly larger tank capacity than the standard, enabling it to remain in the air over 10 hours. The fitting of these tanks has not involved any structural alterations. The machine is a biplane fitted with a single Rolls-Royce Falcon III engine of 275 h.p. Its main dimensions are :—

Length overall	27 ft. 5¼ in.
Span (extreme)	43 ft. 4 in.
Chord	6 ft. 6 in.
Gap	5 ft. 6 in.
Tail plane	Adjustable
Area of top planes (all in, including C. section)	272 sq. ft.
Area of bottom planes (all in)	250 sq. ft.

In addition to the extra petrol, spare engine and machine parts, tool kits, etc., weighing about 1,000 lb. are carried.

The machine carried this weight very comfortably, and so loaded the most economical cruising speed is the high one of 100 miles per hour. The machine is remarkable in that although it has a very high maximum speed—130 m.p.h. (faster than many fighting scouts in 1918)—it has the very low landing speed of 40 m.p.h , enabling it to land in a very small confined space.

These two factors, high cruising speed and low landing speed, are of tremendous importance in a journey of this kind, the high cruising speed cutting down the flying time between stops, and the low landing speed facilitating landing on the many indifferent aerodromes en route.

Faith is not being pinned entirely to these qualities. Even a helicopter cannot land on mangrove swamps or volcanoes. Capt. Howell has spent some time in the East Indies, and the difficulties which are confirmed by General Borton's report are not unknown to him.

Floats of a special design have been constructed, and with but very little labour the land carriage can be removed and the floats attached. These floats have been tested and dispatched to Calcutta, where the change will be made.

The machine is equally efficient with floats as with a land carriage, and on test it was found to maintain the normal cruising speed. Capt. Howell does not place much reliance in instruments. In the course of some 2,000 hours' flying under various conditions, and on many types ranging from scouts to twin-engined bombers, he has tried out many and various instruments, and is convinced that the minimum number is the best. With the exception of the main compass, which is of special pattern, only standard instruments are fitted. The pilot will take his own navigating instruments.

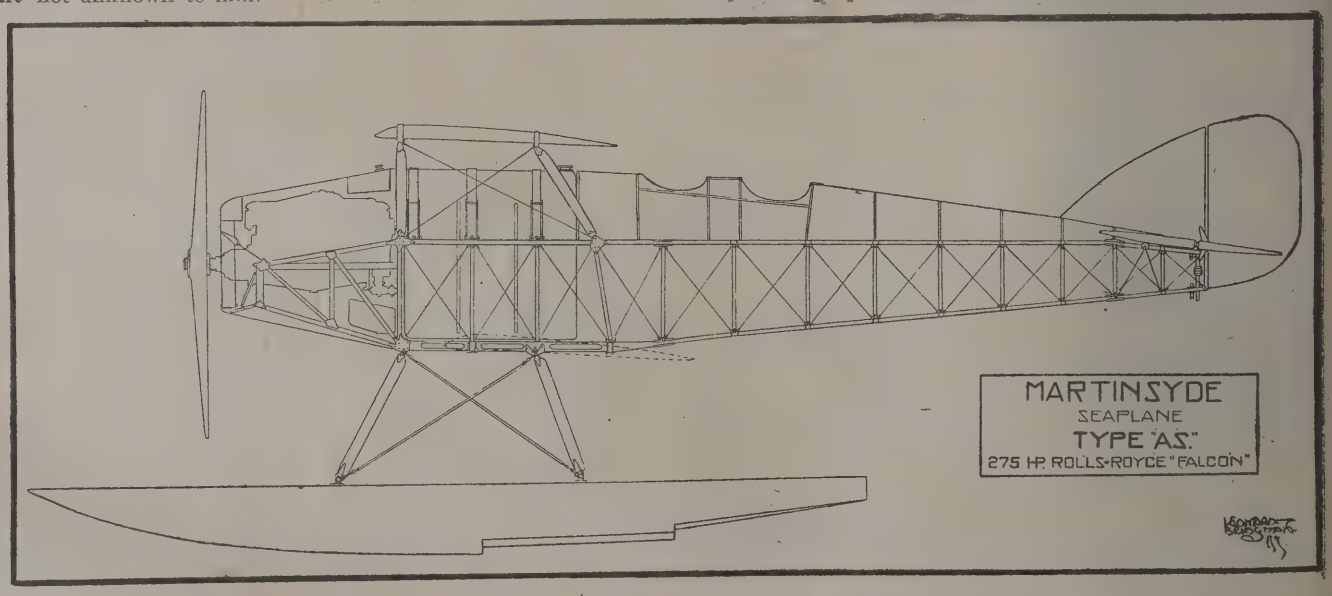
The fuselage of the machine is deep in section and the pilot and mechanic have plenty of protection. As, however, this machine is meant for hard work no attempt has been made to fit cabins as on the "A.1" passenger type.

An airscrew is among the spares carried on the machine, and, with those distributed to the various stopping places, should enable any but the biggest repairs to be accomplished.

AN AERONAUTICAL MOLESWORTH.

The review of Mr. A. W. Judge's "Handbook of Modern Aeronautics" published in The Aeroplane of Oct. 22nd has apparently given the impression in some quarters that the book as a whole is some five years out of date.

The reviewer wishes to put it on record that this applies solely to the sections in regard to which the particular criticism was made, that is to such aerodynamic statistics as the properties of aerofoils as determined by model tests, and to strength calculations and the like, which actually form only a very small proportion of the whole.—W. H. S.



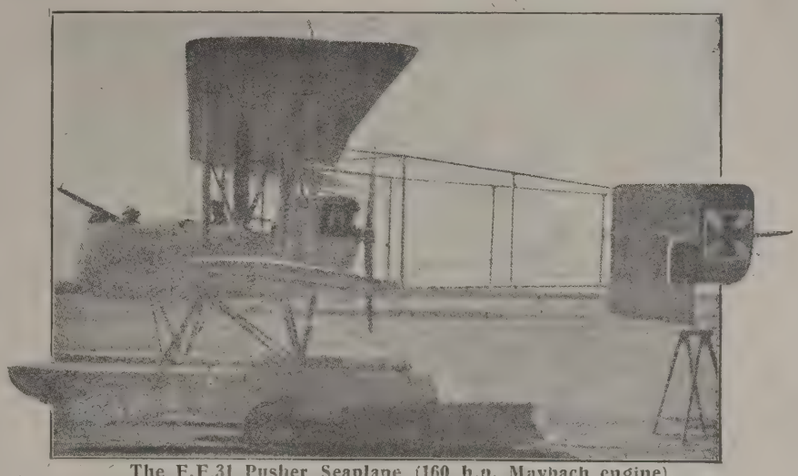
THE GERMAN FRIEDRICHSHAFEN SEAPLANES.

By ERIK HILDESHEIM.

Formed in 1912 as a branch of the Zeppelin Airship Building Co. at Bodensee, the Friedrichshafen Flugzeugbau ("F.F.") was the first German aircraft works devoted solely to seaplanes, and was during the war one of the two chief contractors to the navy, the other one being the Brandenburg Company, the Sablatnig and the Gotha firms coming next.

F.F. seaplanes were built under licence also by the L.F.G., Sablatnig, and Travemünde works. In all, 20 different models were produced—viz., the F.F. Nos. 29, 31, 33, 33B, 33E, 33F, 33H, 33J, 33S, 33L, 34, 35, 39C, 40, 41A, 43, 44, 48, 49C, 64—two of which were pushers, sixteen being ordinary tractors, and two twin-engined seaplanes developed from the Friedrichshafen land model.

The first seaplane, F.F.29, equipped with a 120-h.p. Mercédès motor and intended for bombing, was still of the pre-war type, with the observer in the front cockpit, with a gravity half-hour's flight emergency tank hanging in the cabane, and with the radiator above and



The F.F.31 Pusher Seaplane (160 h.p. Maybach engine).



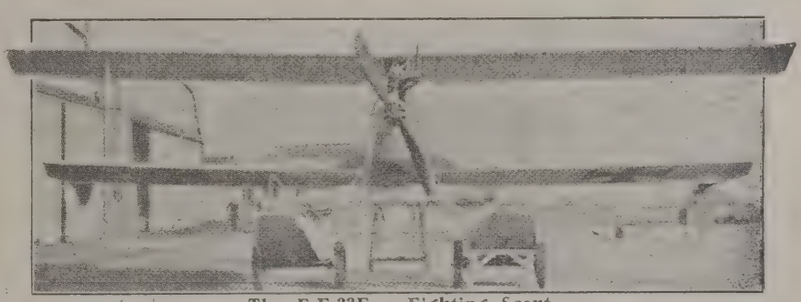
The F.F.33 Bombing Seaplane (120 h.p. Mercédès engine).

supported from the cylinders. F.F.33 was an identical seaplane except for the floats, which applies again to the 33B version.

In these machines the boat-form bows were abandoned and a stern with flared bottom was adopted. The pilot and observer changed places, and the latter was provided with a gunring, as the seaplanes were used for scouting. The "Hazet" type strip radiator fitted on the side was employed and a 160-h.p. Maybach engine installed.

33E is again very similar to the above-mentioned models, being equipped with a 150-h.p. Benz engine and having a front radiator mounted at the leading edge of the top plane. The floats had by now increased so much in length that during the production of this seaplane the tail float could be abandoned. 33E was provided with wireless and employed either for bombing or scouting, or for both services, and was the first Friedrichshafen aircraft with the characteristic twin tail fin (both above and below the body) and balanced rudder.

33F is again a development of the 33 type with reduced dimensions to improve controllability, and was the first German naval fighting scout. A further improvement was the 33H variation with shortened body and redesigned ailerons and floats, aiming at reduced head resistance. Yet the main change was a new cabane and the provision of load struts between the floats, duplicating the cable wiring so that the gunner could fire between the screw circle and



The F.F.33F, a Fighting Scout.



The F.F.8, with 240 h.p. Maybach engine.

the inner set of struts without fearing a breakage if the cable wiring here should be shot through.

The 33J was the direct successor to the 33E, especially seaworthy and equipped with a 150 h.p. Benz motor and wireless for scouting. It was employed on board the raider cruiser "Wolff" and was superseded by 200 h.p. seaplanes from military points of view only, being maintained as the chief German naval training machine, as the model 33S.

For scouting it developed into the type 39C of increased dimensions to suit the new 200 h.p. Benz power plant, the top planes being further provided with an increased stagger.

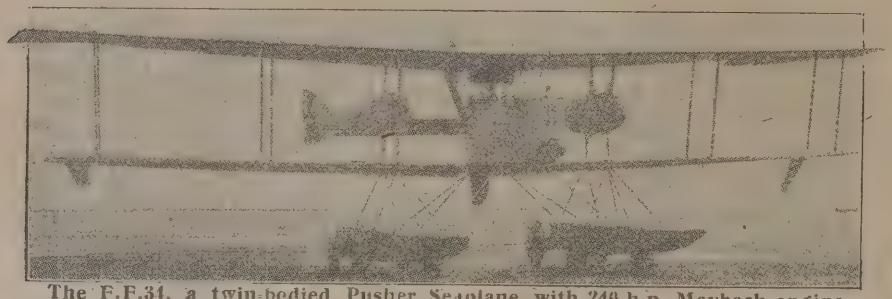
In time this seaplane was improved as the F.F.49C model of pronounced Hunnish aspect from the efforts of paying high attention to seaworthiness. This type was in service for two years up to the end of the war and satisfied German demands of seaplane performance with a speed of 140 kilometres per hour and a climb to 6,000 ft. in 25 to 30 min., as the seaplane would most often fly at low heights.

It is quoted that this model often rescued and flew with the crews of other seaplanes, and that the crew of a Friedrichshafen 49C patrol seaplane with wireless was rescued after a week's drifting at sea, when all hopes had long been given up.

The 49B model was identical but for the adoption of the front observer cockpit with aiming device, as the model was turned out for bomb dropping.



The F.F. Reconnaissance Seaplane, Type F.F.33E. (150 h.p. Benz engine).



The F.F.31, a twin-bodied Pusher Seaplane, with 240 h.p. Maybach engine.

The second seaplane model to be turned out by the Friedrichshafen works was a pusher biplane with 160-h.p. Maybach motor, the F.F.31 model, bearing much resemblance to the Vickers gun-'bus, with its fixed tail fin. Here, too, the gunner-observer with his bombs sat in front, as the model was primarily intended for patrolling. Once again later another pusher biplane was brought out for the same object, being the F.F.34, equipped with a 240-h.p. Maybach engine and wireless, which was of the empty twin-fuselage design made of three-ply wood. An experimental model was the F.F.40, with twin tractor-screw drive by a 240-h.p. Maybach motor, which was satisfactory but for the excessive weight of the transmission gears.

Another experimental Friedrichshafen seaplane was the F.F.44, with single screw driven by the same power plant through a spur-wheel reduction gear.

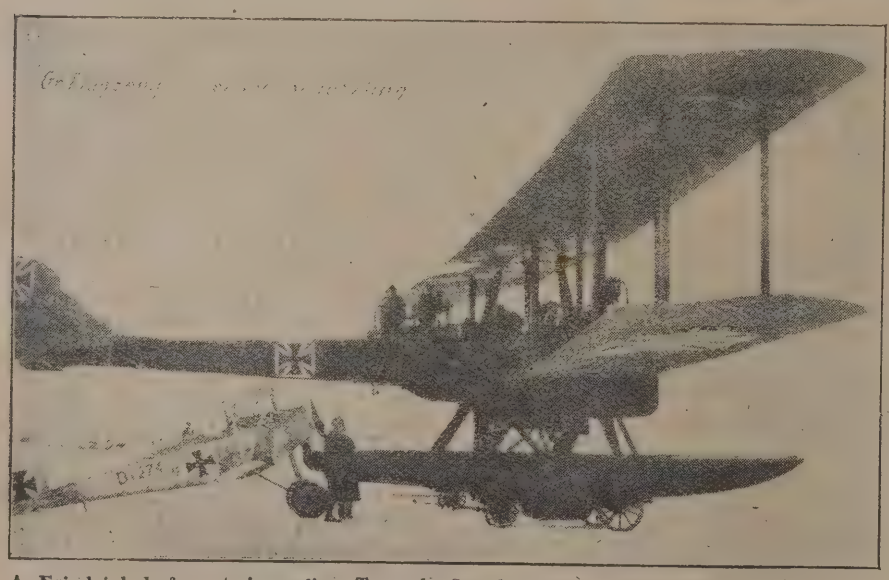
F.F.33L was a further development of the H version, equipped with a 150-h.p. either Benz or Mercédès motor, and was used for fighting, representing a compromise between performance and seaworthiness.

The F.F.43 was produced as a single-seater fighter, its chief feature being that the eyes of the pilot were level with the main top plane spar to afford a good view above and below the top planes.

The F.F.48 model was turned out as a two-seater fighting seaplane for long flights, fuel being carried for 5½ hours. A 240-h.p. Maybach engine and one fixed and one turnable machine-gun were installed, forward firing of the latter between the screw circle and the inner strut sets being possible.



Twin-engined Seaplane. Model F.F.35 (two 150 h.p. Mercédès engines).



A Friedrichshafen twin-engine Torpedo Seaplane and the captured Nieuport which acted as escort.

The twin 150 h.p. Mercédès-engined F.F.35 model was the first two-motored Friedrichshafen G class seaplane, the engines being mounted in A struts on the lower planes, independent of the interplane strutting. To protect the tail unit well from the sea the fixed plane, as well as rudder and elevator, were raised above the fuselage end, the latter being made of three-plywood with a vee-bottom to act as float support and thus reduce shock stresses on the body in rough sea. Another feature was that in this aircraft all main plane fuselage and float fittings were machined from solid steel forgings.

From the experience of the land-going F.F.G. class bombers the naval authorities ordered special torpedo-carriers, being mainly the F.F.41A model equipped with two 150 h.p. Benz motors mounted in V struts. Experience showed this twin-engined seaplane to be seaworthy.

To provide the scouting seaplanes with better facilities for defence the F.F.59C model was provided with in-



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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

creased interior strut distance, leaving out the wiring for better front firing of the rear gun. The last Friedrichshafen seaplane type during the war, the F.F.64, was designed on the results obtained with the "Wolff" air-raider. This seaplane was equipped with a 160 h.p. Mercédès motor, and for hoisting on board ships and for easy complete dismantling was made to fold its wings.

This record of achievement on the part of a single firm would seem to show—or rather emphatically to confirm what is otherwise known—that the German authorities assessed the seaplane more nearly at its true value than did the British.

The Friedrichshafen seaplanes performed extremely well in service in the North Sea, and were generally reported to be faster than the British seaplanes which were in service against them.

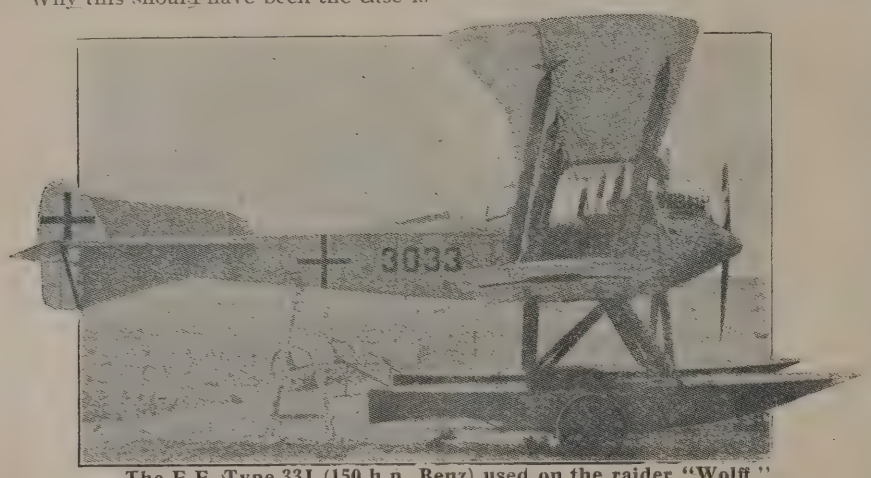
Why this should have been the case is not particularly obvious from the illustrations given herewith, since the machines show no striking features of design.

They are generally of clean design, and their floats appear to have been designed with an eye to low resistance, but it seems probable that in the main they owed their advantage over their opponents to the fact that the Germans did not load their seaplanes up with all sorts of gadgets as did the R.N.A.S., but confined them to their designed load, and that the German authorities were as quick as possible in putting improved types into service.

At least the German naval authorities seem to have had a fairly clear idea of what types of machines were required for war purposes, and to have persisted in the development and improvement of machines of those various types—a policy in rather marked contrast to that of their British rivals.



The F.F. Model 41A Torpedo-carrier (two 150 h.p. Benz engines).



The F.F. Type 33J (150 h.p. Benz) used on the raider "Wolff."

Finally, the main figures are compiled of a few of the out-standing Friedrichshafen naval aircraft :—

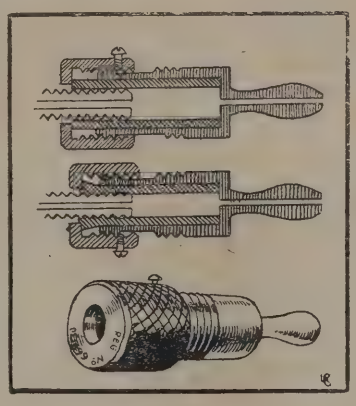
Type.	Max. Length.	Max. Span.	Height without trolley.	Distance between Floats	Float Volume.	Horizontal Speed	Speed when leaving water.	Climb.	Flight Duration.	Weight empty without water.	Useful Load.
F.F. 33J	10.3 m	16.7 m.	3.7 m	3.77 m	1 750 litres	115-125 km.	80 km.	1,300 m. in 25 min.	5 hrs.	1,045 kilos	540 kilos
F.F.33L	8 95 ,,	13 2 ,,	4 ,,	2.82 ,,	1,400 ,,	130-140 ,,	85 ,,	2,000 m. in 30 min.	3½ ,,	940 ,,	475 ,,
F.F.41A	13.7 ,,	22 ,,	4.65 ,,	4.5 ,,	3,850 ,,	115-125 ,,	85 ,,	1,000 m. in 25 min.	5 ,,	2,300 ,,	1,370 ,,
F.F.49C	11.6 ,,	16.7 ,,	4 ,,	3.97 ,,	2 300 ,,	130-140 ,,	80 ,,	2,000 m. in 30 min.	5½ ,,	1,485 ,,	650 ,,

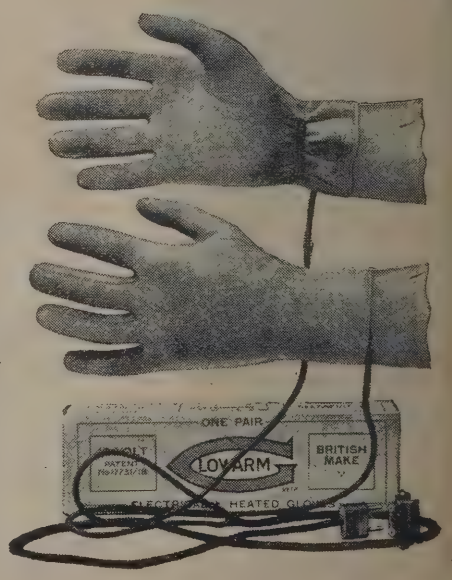
TWO INTERESTING NOVELTIES.

Brown Bros., Ltd., are to show two interesting novelties on their stand at the Olympia Motor Show which can be of use to both motorists and aviation firms, aviators, etc. These are the "Glowarm" gloves and the "Boyce" lightning tyre-valve connector.

The "Glowarm" electrically-heated gloves are made of a kind of stockinette material into which are interwoven the very flexible elements made from a special alloy. The current is usually supplied by the lighting system and the gloves give off a gentle and steadily increasing warmth which is exceedingly comfortable. They are supplied for 6 and 12 volts, and are obtainable in three sizes (large, medium, and small). Complete with cable and two-pin plug, socket and clip, the price is 30s. per pair.

The "Boyce" lightning valve connector is an improved form of push-on adaptor which eliminates the screwing and unscrewing of pump connectors to tyre valves. The connector is wired onto the pump flex in place of the present fitting and when it is desired to attach to the valve the attachment is pushed on, and by giving the knurled union a turn the short length of rubber tubing is compressed into the tyre valve thread and firmly locks it. To disconnect it is only necessary to give the union a turn in the opposite direction. Its action can be seen in the accompanying sketch. The price of this handy little fitment is 3s. 6d.





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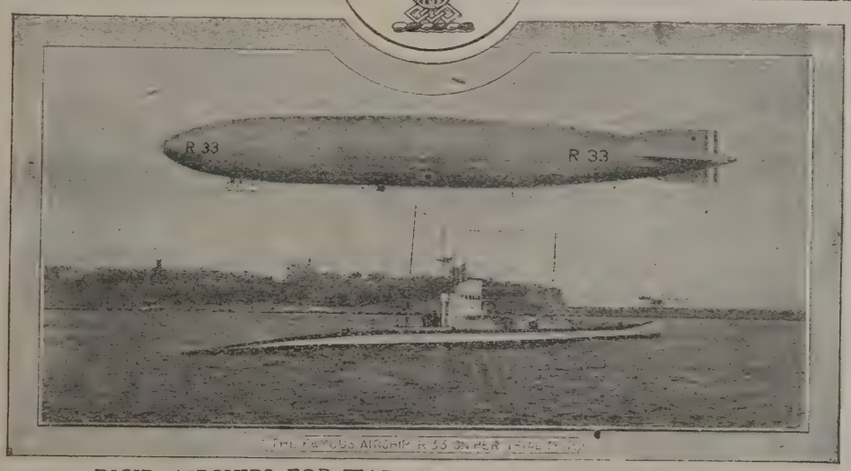
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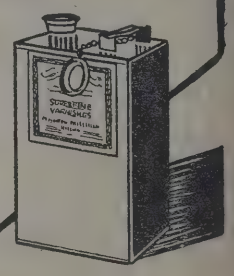
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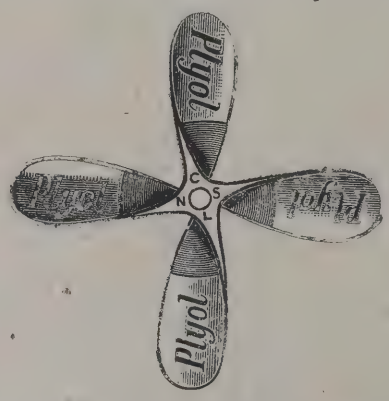
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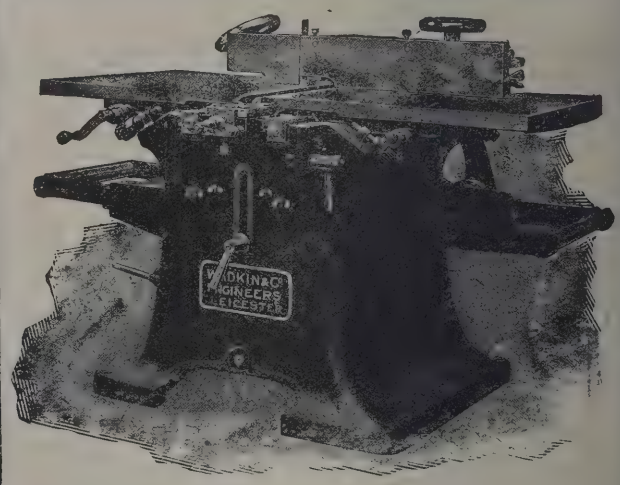
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THE NAVAL AIRSHIP S.R.1.



The Italian-built semi-rigid S.R.1 acquired by the Admiralty.

As is well known to anybody who is interested even in the smallest degree in airships, this form of aircraft is of three distinct types—(1) the rigid, (2) the semi-rigid, (3) the non-rigid. These three types all have their separate characteristics and differ very radically from each other.

The rigid, of which the German Zeppelin has been the leading example and which has been developed to a high state of efficiency in this country, consists of a rigid framework composed of wood, duralumin, or some other suitable material, which contains a number of chambers or balloons filled with gas. The semi-rigid is an adaptation of a non-rigid envelope which is reinforced by the addition of a rigid keel from which the principal weights, such as engines and cars, are suspended, and its advantage over the non-rigid comprises its resistance to buckling in the event of the envelope losing pressure.

The non-rigid airship has its weights suspended from the envelope itself and consequently requires an internal pressure slightly in excess of the pressure of the air without to maintain its shape.

Since the early days of British airships, production has been confined entirely to the first and third of these types. The rigid has been exploited for ships of a huge size, while for small ships whose duration of flight could be limited the non-rigid type was selected as being simple in construction and therefore quick and inexpensive to build.

The semi-rigid has been neglected entirely since the days of the Army airships "Beta" and "Gamma," which, though not strictly speaking of this design, employed a long boom in which the car and engines were incorporated.

The Italians, on the other hand, throughout the whole period in which they have been concerned with airships, have relied almost entirely on the semi-rigid principle. Airships of various sizes and different models have been constructed, ranging from the D.E. type of 92,000 cubic feet capacity to the Forlanini of 635,400 cubic feet. The Italians, it must be confessed, appear to be very satisfied with their results, and do not apparently possess any intention of experimenting with the other types, with the possible exception of the rigid.

In the spring of 1918 the Naval authorities in this country came to the conclusion that, however satisfied they might be with the airships which they had built and were building, it would be wise for experimental reasons to acquire, if possible, one of the latest types of semi-rigid ships as employed by the Italians.

With this object in view a party of airship officers visited Italy to inspect the various ships in commission and to report on their suitability for work with the Naval airship squadrons.

On the return of this party it was decided that a ship of the "M" class should be purchased, and three officers and an airship crew were sent over in the late summer of the same year to be present while the ship was inflated and rigged.

This airship was given the number of S.R.1 (semi-rigid 1) and was finally completed about the end of September.

The M class of airship is one of the most successful which has been designed by the Italians and has achieved everything that was expected of it. For several reasons, however, apart from experimental purposes, it is not likely to be of any value to our airship service, as, owing to its design, its speed is, comparatively speaking, slow, and in endurance is not to be compared with the "North Sea," the nearest airship to it in size which we possess.

Its design and construction is so totally different to any airship with which we in this country are familiar that a few words of description will probably prove of considerable interest.

The Italian airships, although all are of semi-rigid design, follow two distinct lines of thought in that the keel, which reinforces a non-rigid envelope, is constructed on two entirely different principles.

In the first system the keel is completely rigid, either enclosed within the envelope or external to it, and assists in maintaining the shape of the envelope.

In the second system the keel is hinged or is in effect a series of rigid links and comparable to the chain employed in cycles. The shape of the ship is therefore maintained by envelope pressure and not by the keel, but the latter, owing to its resistance to compression, enables a lower pressure to be maintained than is possible in the purely non-rigid type of airship.

S.R.1 is designed in accordance with the second of these systems.

The keel is composed of high-tensile steel tubing built up into triangular girder sections, and all connections are universal joints provided with lubricated ball joints which leave it quite free to bend in a vertical plane. This keel is carried throughout the entire length of the ship and is enclosed within the envelope.

It is attached by means of flexible cables secured to the cross girders, which, meeting in pairs in the form of inverted Vs, pass through the ballonet through gastight sleeves to a point about two-thirds of the envelope's height. Here these wires again separate and the two ends are attached to canvas bands suspended from each side of the envelope near the top. Parabolic wires are also provided, sewn to the envelope, which are connected at each end to the side girder lengths of the keel. The keel is covered underneath by a canvas covering sewn to the envelope and laced together at the centre line.

The envelope has six gas compartments and is of a total volume of 450,000 cubic feet. The gas compartments have diaphragms of varnished silk, while the envelope itself is built of two-ply fabric covered with a thin coat of aluminium dope. One single ballonet of approximately 200,000 cubic feet is fitted to the bottom of the envelope and extends throughout its entire length. Fourteen air-valves, fitted with opening and closing controls, are situated along the bottom of the envelope. Air is admitted through a shutter type of valve situated in the nose. Each gas compartment has two valves, making a total of 12, and a ripping patch on the top.

The M ship is fitted with a top and bottom stabilising fin

composed of girder work covered with canvas, and the elevators and rudders are constructed on the box principle, as is universally adopted in all Italian airships.

The car is by no means commodious, and for flights of long duration involves the crew in great discomfort. The frame is made entirely of high-tensile steel tubing, the joints being formed of nickel steel, and the flooring is of wood. In the car are carried, in addition to the machinery, all the petrol, oil, and water ballast required for flight. Bombs, machine-guns, and ammunition are also disposed in the cars, so that it can be readily understood that a very great weight is concentrated in one place, and that a large number of suspensions are required to distribute the load throughout the length of the envelope. These have a tendency to decrease the speed of the ship, but owing to the prevailing winds being light, and for other reasons, speed is considered not to be of paramount importance in the Italian Service.

The forward portion of the car is utilised as a navigating compartment, and here are placed the various instruments, and the controls are accordingly led to this end. The engines—in this case two 200-h.p. Maybachs—are situated amidships on the port and starboard sides, each driving a single propeller astern of the car through a system of gearing and a long tubular shaft.



The Car of S.R.1.

The transmission, according to British ideas, appears to be very heavy and cumbersome, the drive being taken through these long shafts, which introduce universal joints and clutches, which are necessary as the propellers are fitted with adjustable blades for giving variable speed and reverse. The tendency in more recent ships is to dispense with this system and to employ a direct drive with propellers of a fixed pitch.

The car is suspended by means of 16 cables on either side, which, with the exception of the foremost one, are all attached to the side girders of the keel. These are supported in turn by the parabolic wires in the envelope before-mentioned.

In conclusion a summary of the leading dimensions will give some idea of the size of the ship. The same dimensions are also included for the North Sea airship, which will enable interesting comparisons to be made.

	M Type.	North Sea.
Length	290 ft.	262 ft.
Overall width	58 ft.	56 ft. 9 in
Overall height	72 ft.	69 ft. 3 in.
Disposable lift	7,700 lb.	8,500 lb.
Maximum speed	46.5 m.p.h.	57.5 m.p.h.
Capacity	450,000 cu. ft.	360,000 cu. ft.

S.R.1 was flown over to England by a British crew shortly before the signing of the Armistice. During the flight very bad weather was experienced, and, as no shed was available in France in which she could be housed, she had to be moored out in the open whenever it was necessary to descend to replenish fuel.

Fortunately, no disaster was experienced, and the ship arrived finally at her destination, Pulham, in Norfolk.

It escorted the German submarines into Harwich Harbour on the occasion of their surrender, and was seen fairly recently over London when she flew over the metropolis to assist in the Victory Loan. Her peculiar appearance on that occasion caused considerable interest and curiosity. This was not surprising, as no airship like her had been seen over this country before.

AN IMPRESSIVE PUBLICATION.

A. V. Roe and Co., Ltd., who may safely claim to be the pioneers of British aviation, have now attained to the dignity of issuing a large and elaborate catalogue of their productions. It is produced with a magnificence which would not be unworthy of the motor trade at its most prosperous period, and the style of the illustrations appears to follow rather the custom of the motor trade in that instead of being "straight" photographs of the firm's machines, the original photographs have been touched up with wash so that they lose a certain amount of that convincing quality which is obtained from a really cleverly taken photograph. Nevertheless, because of this, the catalogue may carry more weight with those who are accustomed to ordinary commercial catalogues.

The catalogue contains a foreword which gives a short history of the Avro firm. One could have done with more of this history, and something might have been said about the various pilots who, from time to time, have made Avro history, which has been almost always equivalent to making the history of British aviation.

A very fair idea of the shapes of the different types of Avro machines is given on a couple of pages illustrating the evolution of the Avro aeroplane from 1902 to 1915, but one cannot help remarking that a very few pounds extra spent on a more artistically minded artist would greatly have improved these pages. Quite apart from the fact that the pictures themselves are as flat as a foot-print, there are, one believes, technical inaccuracies in the drawing of the machines.

Nevertheless, the catalogue is sufficiently impressive, though one takes leave to state that nothing can possibly impress prospective customers half as much as personal experience of the excellent flying and the equally excellent design and construction of the Avro aeroplanes themselves.

TO CAR OWNERS.

Readers of this paper who own cars, and perhaps more especially those readers who are engaged in selling second-hand cars, will be interested in a composition put on the market by Brown Brothers, Limited, Great Eastern Street, E.C. This composition is called "Radiator Neverleak," and is guaranteed to stop any ordinary leak in a radiator. The composition itself in a liquid and readily mixes with water, and the makers guarantee it to contain no acid or chemical which will injure or clog the cooling system.

It operates by forming a kind of plug—or perhaps one should rather say a species of icicle—on the outside of the leak. This plug, when dry, is insoluble in either hot or cold water or alcohol. "Neverleak" is used simply by adding it to the water already in the radiator, and after the leaks have been stopped it is not necessary to change the water, so that the amount of "Neverleak" which has not actually come into operation remains in the radiator to seal automatically any fresh leaks which may occur.

The composition is sold in two sizes of tins, one at 2s. 6d. for radiators not holding more than three gallons, and one at 3s. 6d. for radiators holding from three to eight gallons. As a comfort to the car user the utility of "Neverleak" is obvious, and as an aid to the seller of second-hand cars its use is perhaps still more obvious.

BY ERROR.

Owing to a printer's error it was stated in The Aeroplane of Oct. 29th, on page 1518, that the price of "Aeroplane Structures," by Mr. A. J. S. Pippard and Capt. J. L. Pritchard was 2s. net. The correct figure is 25s. net.

AIRCRAFT IN PARLIAMENT

HOUSE OF LORDS.

Earl CURZON (the Secretary of State for Foreign Affairs) on October 28th made the following reference to the activities of the Royal Air Force in the course of a speech made in reply to Lord Sydenham on questions relating to the Peace Treaty with Afghanistan.

The Afghans committed a series of acts of unprovoked aggression on the Indian frontier. We were compelled to retaliate. We bombed some of the towns in the interior, and thereupon the Afghans sued for an armistice. In consequence a conference took place at Rawal Pindi, which eventuated in an agreement.

The following is extracted from the answers to questions which the Earl of Wemyss asked the Government on October 30th:—

EAST FORTUNE AIR STATION.

The Marquess of LONDONDERRY said he could assure the noble Earl that the Air Ministry were as fully alive to the interests of economy as the noble Earl himself. At the date of the Armistice there were sixteen airship stations in the United Kingdom. The Admiralty originally intended to retain four rigid airship stations, but in view of the necessity of greatly reducing the programme it was decided that only one station (*i.e.*, Howden) should be retained. Howden would accommodate two ships of the R38 type and one of the R34 type, whereas East Fortune could accommodate only one ship of the R38 type.

With regard to weather conditions at East Fortune, the wind was often a serious difficulty to navigation, coming as it did from the mouth of the Forth The high ground in the vicinity of East Fortune, known as North Berwick Law, constituted a serious danger to airships coming low to find an aerodrome. Howden was more suitable for the airships which they were entitled to contemplate for the future.

The huts and sheds at Howden were of a semi-permanent type To substitute permanent structures would cost £60,000, while to transport the airship sheds at Howden to East Fortune would cost £250,000. The total amount of public money spent on East Fortune from August, 1916, to September 30th, 1919, was £567,700. There were still outstanding liabilities on account of contractors' claims and balances of accounts which were estimated at £35,000. It was anticipated that these claims and balances would be brought to a close at a comparatively early date. Of the total expenditure of £567,700 on East Fortune, the sum of £77,330 had been paid since the Armistice. A certain amount of that payment was due to commitments before the Armistice.

He wished the noble Lord to bear in mind that it was no cheaper to give up a contract when by carrying it out it would add to its value for the purposes of the Disposal Board.

Lord WEMYSS said the reply had been very full and fair. He asked leave to withdraw the motion.

* * *

HOUSE OF COMMONS.

The following oral answer was given on October 28th:—

ROUTE TO EGYPT (CASUALTIES).

Sir WILLIAM JOYNSON-HICKS (*by Private Notice*) asked the Under Secretary of State for the Air Ministry whether his attention had been called to the statements recently made by Col. G. L. P. Henderson as to the serious number of deaths to pilots on the new air route to Egypt, and whether he can make a full statement to the House in regard to the whole position?

The UNDER SECRETARY of STATE for AIR (Major-Gen. Seely): I cannot go into detail within the limits of a Parliamentary answer, but I shall be glad to make a full statement on the first possible occasion.

The broad facts are these:- In the spring and early summer the War Office communicated to us the urgent demands of Egypt for aircraft of large size and endurance in order to cope with the situation, which was described as critical. At the end of March the request was for as many Handley Page machines as could possibly be spared, and at the end of April they telegraphed urgently for additional squadrons. In view of the fact that no Handley Page machine had ever been packed and sent by sea, it was decided that the machines must be sent by air to meet the critical emergency, although considerable risks were necessarily involved.

At the end of April the first squadron was ordered to proceed, and special measures were taken to assist the move of this squadron. An officer with a special and practical knowledge of the route was sent out to arrange for facilities such as landing-grounds, spares, petrol, etc. Flying-boat escorts based on Taranto at first and then on Alexandria were also arranged. The squadron left on May 3rd.

On account of the accidents which occurred, an officer was then stationed at each aerodrome on the route, whose primary duty it was to assist machines in getting through. Great difficulty, however, was experienced by these officers in getting messages by telephone or telegram through in time for action to be taken, and also in getting the necessary spares to the points required, owing to the difficulty of transport. Train communication was equally ineffective. A further difficulty was that owing to rapid demobilisation it was impossible to get the best qualified personnel within the time available.

It was further arranged that replacements for the three squadrons who had gone to Egypt should be sent by air by the staging method. Two pilots and a few mechanics were stationed at each staging aerodrome. At the present moment fifty-one Handley Page machines have left for Egypt; of these twenty-six have arrived, ten are on later stages of the route, and fifteen have been written off.

A month ago the Chief of the Air Staff requested that a special committee of inquiry should be instituted, composed of officers outside his own Department, and that inquiry is now proceeding. I should here like to emphasise the fact that the making of this route had nothing whatever to do with civil aviation, the whole being organised by the Service side. One machine crashed badly and four lives were lost. Three other bad accidents occurred, involving four fatal and four non-fatal injuries.

This loss of life is greatly to be deplored, but it must be borne in mind that the situation was critical, and that prompt action was essential. I am advised that the sending of these machines by sea would have meant that they could not have been ready for action until many months after they were required.

Sir W. JOYNSON-HICKS: Having regard to the very large loss of life and large cost involved, would not the right hon. Gentleman consider the desirability of having a more independent inquiry than that by some officers of the Air Service?

Major-Gen. SEELY: This inquiry is as independent as it can be. The Chief of the Air Staff realised that it was important to have as independent an inquiry as possible a month ago, owing to the accidents involved in transporting this great number of machines over a practically untried route. The officers who are investigating it—I think they must be officers, because practically everyone who understands the air has been in the Air Service during the War—are outside the Department of the Chief of the Air Staff and are quite independent of that Department.

An HON. MEMBER: Who are they?

Major-General SEELY: I know some of them. If the hon. Member will put down a question I will give him full details. The fullest inquiry will be made, and if it be found that a mistake has been made by anyone concerned, from myself downwards, I need hardly say appropriate action will be taken.

Mr. STEWART: How many of the Air Force are missing?

Major-Gen. SEELY: The machines lost—fifteen—have been totally written off and others have been damaged. The total casualties so far are what I have given.

Mr. HOUSTON: When the right hon. Gentleman says fifteen machines have been written off does he mean that these machines have crashed?

Major-Gen. SEELY: It means that they are of no further use—either fallen into the sea or so broken up that they are of no use. Twenty-six have arrived.

The following written answers were given on Oct. 28th:—

BLANDFORD CAMP.

Major-Gen. SEELY, replying to Major Colfax, said that about fifty women are conveyed by lorry from Blandford to the camp. They return home by Service train. The women staff are of two categories—mobile and immobile. The former are housed in the camp. The terms of service of the latter do not allow this to be done compulsorily. As the Records Office is shortly to be moved from Blandford, it is not considered desirable to substitute and train fresh mobile staff to take the place of the latter. Reductions in personnel are continuously taking place, and the women staff show a reduction of 37 per cent. between July 31st and Sept. 30th.

The construction of the railway from Blandford to the camp was started in July, 1919 [1918?], and the line was first used for traffic in February, 1919, whilst still under construction

AIR STATIONS.—ORKNEY AND SHETLAND.

Major-Gen. SEELY, replying to Sir W. Joynson-Hicks, said that the air stations in the Orkneys and Shetlands have been, or are being, closed down with the exception of two. No new huts are being built, but at one of the stations to be retained wooden huts from other stations in the Orkneys and three small aeroplane sheds are being re-erected.

There are three air stations in the Orkney Islands; one of these is being closed down as speedily as possible. There are eight air stations in the Shetland Islands. The personnel of these stations was 292 officers and 1,836 airmen. There are now 21 officers and 305 airmen. As soon as all valuable stores have been evacuated the two stations which are being retained will be placed in charge of care and maintenance parties, except during the months when the fleet is exercising, at which times the personnel will be temporarily increased.

It is not possible without an unjustifiable expenditure of labour to give the total expenditure at those stations during the war on flying and to give the cost per hour of flying. No large quantities of stores have been left in the open, but Major-Gen. Seely is having further inquiries made on the point.

A Court of Inquiry was held in the spring of this year into the causes for deficiencies in the stores of the Shetland Wing. The Court found that, owing to the difficulties experienced in the administration of these outlying stations, the system of storekeeping was in certain instances imperfect, with the result that the book and actual stocks did not agree, both deficiencies and surpluses being shown. The amount of the deficiency was about £1,000.

WOODSFORD AERODROME.

Dr. MACNAMARA, replying to a question Major Colfox asked the Under-Secretary of State for Air, said that he had been asked to reply as the Woodsford Aerodrome is in Admiralty occupation. The completion of the aerodrome as an airship station has been abandoned. A few minor works are still in hand to complete the buildings required for use by the Admiralty. Special workmen's trains are not being run; they were stopped on Sept. 13th. The approximate total cost of the aerodrome will be £185,000. The station is to be used for the temporary storage of machinery. As regards the land, the farm tenant has never been dispossessed of the portion referred to, and is still in occupation. The requisition cannot, however, be withdrawn until the question of the ultimate disposal of the station is settled.

The following oral answer was given on October 29th:—

GERMAN AIRCRAFT.

Sir F. HALL asked the Under Secretary of State for Foreign Affairs if the German Government have been required to furnish particulars of all aircraft and air materials sold or exported since the Armistice; and to pay its value by January 31st, 1920; if the Allies have any definite information that Germany has sold or exported aircraft or air materials to Sweden, contrary to her undertakings; if so, why no practical steps have been taken sooner to prevent such action; and what means will be adopted to ensure that information furnished under this head by Germany in accordance with the requirements of the Allies will be accurate?

Mr. HARMSWORTH: This question is receiving the consideration of the Peace Conference, who are taking all the necessary measures on the matters raised by the hon. and gallant Member.

Sir F. HALL: Is the hon. Gentleman aware that sales of aeronautical material have taken place in Sweden for and on behalf of Germany; who has received the proceeds of those sales; and has the Supreme Council of the Allies declared these sales null and void?

The following written answers were given on October 29th:—

AIRCRAFT FACTORY, FARNBOROUGH.

Mr. HOPE, replying to a question asked the Under Secretary of State to the Air Ministry by Sir W. Joynson-Hicks, said: I have been asked to answer this question. The present strength of the personnel at the Royal Aircraft Establishment, Farnborough, is 2,330, of whom 237 are trade lads and 356 are women. Reductions in staff are continuing, and it is anticipated that the strength will eventually be reduced to 1,200. It is proposed that the factory shall be used in future as an experiment and research establishment for the investigation of aerodynamical and aero-engine problems.

AIRCRAFT PRODUCTION AND INSPECTION DEPARTMENTS.

Mr. HOPE, replying to Sir W. Joynson-Hicks, said: The Aircraft Production Department, of which the Aircraft Inspection Directorate forms a part, is still in existence. The total headquarters staff is 1,932; the annual cost in salaries being £422,897. These figures include the staffs of the three Directorates of Supply, Research, and Inspection, together with the Accounts Branch and other common ser-

vices. The staff of the Aircraft Inspection Directorate alone numbers 300, of which the annual cost is £88,507.

EAST FORTUNE STATION.

Major.-Gen. SEELY, replying to Mr. John Hope, said: I am informed that the payments made for works, buildings, land, machinery and plant, etc., from the date of the Armistice to September 30th have amounted to £77,000. The cost of maintaining the aerodrome in peace time may be estimated at £29,000, but it is difficult to estimate the saving entailed in giving up the station in other directions, as that would depend on the amount of personnel and material transferred to other airship stations.

NO. 2 NORTHERN AIRCRAFT DEPOT.

Major.-Gen. SEELY, replying to a question by Sir W. Joynson-Hicks, asking how many men are employed at No. 2 Northern Aircraft Depot, said: This repair depot is being closed down. The strength at present is 894, or 33 per cent. less than it was at the end of September. The strength will be reduced to a care and maintenance party by the middle of next month. Since October 15th, when repair work ceased, the staff have been employed in clearing up and concentrating stores for disposal.

RECORD DEPARTMENT, BLANDFORD.

Major-Gen. SEELY, replying to Sir W. Joynson-Hicks, said that the number of women clerks and typists employed at Blandford on September 30th, 1919, was 669. Special trains are still run from Bournemouth.

STORES DEPOT, MILTON.

Major-Gen. SEELY, replying to Major D. Davies, said: No. 3 Stores Depot, Milton, near Didcot, is used for the storage of aeroplane spare parts, raw material, soft goods, and canvas hangars. The strength at the present time is 1,648, and it is intended to reduce this number by December 1st next to 1,221. This is one of the three stores depots which it will be necessary to retain for the Royal Air Force.

ORDNANCE SURVEY (AERIAL PHOTOGRAPHY).

Lieut.-Col. MOORE-BRABAZON asked the Under Secretary of State to the Air Ministry what steps, if any, have been taken to use the experience obtained during the War in aerial photography for mapping purposes towards revising and helping in ordnance survey work in England, in view of the fact that so many maps are now out of date?

Major-Gen. SEELY: The Board of Agriculture is responsible for Ordnance Survey Maps. A Committee, with representatives of the War Office, Admiralty, and Air Ministry, have been considering the general question of maps, including those specially required for air purposes, for which, undoubtedly, aerial photography will be of the greatest value.

The following written answers were given on October 30th:—

ROYAL AIR FORCE.—AIR STATIONS.

Major LANE-FOX asked the Under Secretary of State for Air what is the present staff employed at the aerodromes at Tadcaster and Sherburn-in-Elmet, respectively; what has been the average monthly cost of these aerodromes during the past three months; what useful purpose have they fulfilled; and what is the policy of the Government as to their continued existence?

Major-Gen. SEELY: At September 30th, 1919, the number of staff employed at these stations was as follows:—

Tadcaster	242
Sherburn-in-Elmet	89

The average monthly cost during the last three months (July to September) has been £5,700 and £1,700 respectively. This has been greatly reduced during the present month. These stations are being utilised as headquarters for the storage of standard aeroplanes, and can be used for civil aviation purposes. They are to be closed down when the valuable stock now stored there has been evacuated.

Mr. R GWYNNE asked the Under Secretary of State for Air for what purpose the air station at Polegate is still being retained; when the airships were removed; how many men and women were employed there in June last; and how many are employed there at the present time?

Major-Gen. SEELY: As the responsibility for lighter-than-air craft has now been transferred to the Air Ministry, my right hon. Friend the First Lord of the Admiralty has asked me to reply to this question. The airship station at Polegate is being closed down. At the moment it is used for the storage of small airships and stores which are in course of transfer to the Disposal Board. As soon as these have been disposed of the station will be evacuated. The strength at the dates mentioned by my hon. Friend was as follows:—

	June 30th, 1919.	Oct. 28th, 1919.
Royal Air Force—		
Officers	5	2
Other ranks	24	22
W.R.A.F.	15	—
	—	—
	44	24

Four of the personnel (at October 28th) are employed on meteorological duties at Beachy Head.

ROUTE TO EGYPT (LOSSES INQUIRY).

Sir W. JOYNSON-HICKS asked the Under Secretary of State for Air who are the officers making inquiry into the recent losses on the Egypt Route, and if evidence is being taken on oath?

Major-Gen. SEELY: The Members of the Committee of Inquiry referred to by my hon. Friend are as follows:—

President: Air Vice-Marshal F. L. Ellington, C.B., C.M.G., C.B.E., Director-General of Supply and Research, Air Ministry.

Mr. G. B. Cockburn, O.B.E., Head of the Accidents Branch of the Department of the Controller-General of Civil Aviation, Air Ministry.

Air Commodore H. R. M. Brooke-Popham, C.B., C.M.G., D.S.O., A.F.C., Director of Research, Ministry of Munitions.

Air Commodore A. R. Borton, C.M.G., D.S.O., A.F.C.

The last-named officer has had great experience of the work to be investigated by the Committee. He has flown in a Handley Page machine over the route to India and has surveyed part of the route on to Australia. The Committee is not taking evidence on oath.

THE ROYAL AERO CLUB.

GOLF MEETING.

Addington Golf Course, near Croydon, Tuesday, November 18th, 1919, commencing at 9.30 a.m.

MORNING ROUND.—Eighteen holes, under handicap medal round. First prize, value £10, presented by Lt.-Col. F. E. McClean and Lt.-Col. J. T. C. Moore-Brabazon, M.P. Second prize, value £5, presented by Mr. E. W. Touboul.

AFTERNOON ROUND.—Eighteen holes under handicap. Bogey. First prize, value £10, presented by Mr. Stanley May. Second prize, value £5, presented by Lt.-Col. Charles Jarrott.

Handicap limited to eighteen. Entries close Thursday, November 13th, 1919, at 6 p.m. No entrance fee. Members wishing to compete are to forward their names to the Secretary, giving name of golf club and handicap.

November 3rd, 1919. HAROLD E. PERRIN, Secretary.

THE ROYAL AERONAUTICAL SOCIETY.

(SCOTTISH BRANCH).

Sir William Beardmore presided as chairman at a meeting of the Scottish branch of the Royal Aeronautical Society held in Glasgow on Oct. 29th. In the course of the proceedings it was announced that the Council in London had elected Sir William Beardmore, General James G. Weir, Dr. T. Blackwood Murray and Professor J. D. Cormack of the Glasgow University as Fellows of the Society.

The Chairman said that already over 140 members had joined the Scottish branch. Their immediate aim was a membership of 1,000, and when that was attained the Society would be on a self-supporting basis To carry on the work in the meantime the Council proposed to raise an initial establishment fund.

Professor Cormack, who was largely responsible for aircraft equipment and supply during the war, delivered the inaugural address. He pleaded that women ought to be admitted to membership. He did not think that a single aeroplane had been built in Scotland before the war. But during the war a total of 2,250 aeroplanes of seven types were constructed in the country.

The R.34 was a feather in the cap of Glasgow. Flying-boat hulls were constructed on the Clyde and elsewhere, and 2,127 aero engines were constructed. He felt that those who had been pilots or observers should be provided with opportunities of meeting together.

THE METEOROLOGICAL OFFICE.

It is expected that at an early date the reorganisation which will combine the Meteorological Office with the weather services of the Air Ministry, the Navy, and the Royal Engineers will be effected under the Department of the Controller-General of Civil Aviation. The arrangements for this amalgamation are now practically complete. Sir Napier Shaw, the present Director of the Meteorological Office at South Kensington, will be the Director.

The headquarters of the amalgamated services will be at the Air Ministry, Canada House, Kingsway. It is understood that the forecasting department and other departments of the Meteorological Office will be transferred from South Kensington to the Air Ministry, while the statistical department and the library will remain at the present office in Exhibition Road.

The British Rainfall Association, which was founded in 1860, and which has been a very successful private enterprise, will come under the Director of the Meteorological Office, but it is expected that its special work will continue to be carried on at Camden Square.

The combined services will be in close touch with all the Colonial and foreign observatories, and the Air Minister will assume Parliamentary responsibility for the new combined department.

"BLINDED."

The following letter was addressed to the "Times" by Admiral of the Fleet Lord Fisher of Kilverstone, and appeared in that print on Oct. 31st:—

Sir,—It is said of the Jews that "their eyes are blinded to this day" to what is, to us Christians, so transparent a truth. That can be said of the politicians, Parliament, and the public.

It's as clear as daylight that future war at sea absolutely precludes the use of any vessel of war that can't go under water, because aircraft will compel it. So why keep any of the present lot? Not only that, but you've got also to scrap all the admirals and superior officers because they won't do for the new job! Put them all in some museum—like Greenwich Hospital. (Keep the submarines and Co.)

All you want is the present naval side of the Air Force—that's the future Navy—only costing a few millions!

But what is one to say of the Army Estimates being over four hundred millions sterling one year after the most devastating Armistice the world ever heard of? (Are we at war? Who with?) The Navy Estimates the year we built the Dreadnoughts and had war in sight with Germany for certain were only 38 millions sterling!

Four hundred and five millions now for the Army—35 millions then for the Navy! What a contrast. Is the whole nation blinded like the Jews?

And yet "the Articles of War" which were read by the captain in old days (when I first came to sea) every Sabbath Day in the Navy had this preamble in the Act of Parliament:—

"It is upon the Navy whereon, under the good Providence of God, the wealth, peace and safety of this kingdom doth chiefly depend" (or words to that effect).

Yours, FISHER.

EXTRACTS FROM "THE LONDON GAZETTE."

GREAT BRITAIN.

MILITARY.

WAR OFFICE, Oct. 27th.

REGULAR FORCES.—OVERSEAS FORCES.—CANADA.—E. ONTARIO R.—Temp. Lt. G. D. Gillie, M.C., ceased to be secd. to R.A.F. (Sept. 21st) (substituted for "Gazette" notification May 28th, page 6016, incorrectly describing date as May 15th); Temp. Lt. A. E. de M. Jarvis, D.F.C., relinquishes his commn. in the O.M.F.C. on appt. to a Short Service commn. in the R.A.F. (Oct. 9th).

WAR OFFICE, Oct. 28th.

TERRITORIAL FORCE.—INFANTRY.—4TH BN., GLOUC. R.—Sec. Lt. D. Jones to be Lt., and to remain secd. R.A.F. (May 1st); Sec. Lt. W. H Hadfield to be Lt. (May 1st).

6TH BN ARG. AND SUTH'D HIGHRS.—Lt. W. A. S. Brown is secd. for service with R.F.C. (April 23rd, 1916).

WAR OFFICE, Oct. 29th.

REGULAR FORCES.—CORPS OF ROYAL ENGINEERS.—Temp. Sec. Lts., from R.A.F., to be temp. Lts.:—C. W. Pidcock, H. N. Thornton, Sept. 30th. Temp. Sec. Lts., from R.A.F., to be temp. Sec. Lts.:—F. E. West, Sept. 30th; E. A. Stratton, Oct. 6th.

WAR OFFICE, Oct. 30th.

REGULAR FORCES.—ROYAL REGIMENT OF ARTILLERY.—R.H. AND R.F.A.—Lt. C. R. Robbins, M.C., D.F.C., resigns his commn., Oct. 31st, and is granted the rank of Capt.

WAR OFFICE, Oct. 31st.

REGULAR FORCES.—MEMORANDUM.—Observer Officer C. Lillicrap, from R.A.F., to be temp. Lt. for duty with I.W.T., Oct. 16th.

WAR OFFICE, Nov. 1st.

TERRITORIAL FORCE.—INFANTRY.—2ND BN., LOND. R.—Sec. Lt. J. Oliver to be Lt., and remain seconded (R.A.F.), May 1st; Sec. Lt. W. F. List to be Lt., and remain seconded (R.A.F.), May 1st.

AIR FORCE.

AIR MINISTRY, Oct. 24th.

R.A.F.—The classification of Maj. H. J. Newton-Clare, O.B.E., is "T," and not "S.O.," as stated in "Gazette" of Aug. 1st.

The classification of Capt. F. Workman, M.C., is "T," and not "A," as stated in "Gazette" of Aug. 1st.

The classification of Capt. K. R. Park, M.C., is "A," and not "T." as stated in "Gazette" of Aug. 1st.

The classification of Capt. W. P. Groves is "S.O.," and not "T." as stated in "Gazette" of Aug. 1st.

The classification of Capt. G. L. Hunting is "S.O.," and not "T." as stated in "Gazette" of Aug. 1st.

The classification of Capt. A. A. B. Thomson, M.C., is "A.," and not "S." as stated in "Gazette" of Aug. 1st

The classification of Lt. J. M. McEntegart is "S.O.," and not "T." as stated in "Gazette" of Aug. 1st.

The classification of Lt. H. C. Pyper is "S.O.," and not "Ad." as stated in "Gazette" of Aug. 1st.

The classification of Lt. H. O. Long is "O.," and not "Ad." as stated in "Gazette" of Aug. 1st.

The notification in "Gazette" of Sept. 5th concerning Capt. H. W. G. Jones, M.C. (A.), is cancelled. (The notification in "Gazette" of Aug. 1st is to stand.)

Staff Officer, 3rd Class (P.).—Flt. Lt. H. R. Kavanagh, M.B.E., Oct. 15th, vice Flt. Lt. H. H. Clarke.

FLYING BRANCH.—Flt. Lt. J. A. Hartcup to be Flt. Lt. (A.), from (S.O.), Sept. 10th.

Flt. Lt. (actg. Sqdn. Ldr.) N. G. Stewart-Dawson, D.S.C., relinquishes the actg. rank of Sqdn. Ldr. on ceasing to be empld. as Sqdn. Ldr. (A. and S.), Oct. 15th.

Pilot Officer J. L. Airey to be Flying Officer, Aug. 7th.

The following relinquish their commns. on ceasing to be empld.:—Sec. Lt. C. Maddox (Sec. Lt., Welsh R.), July 14th; Lt. (Hon. Capt.) O. M. Greg (Capt., R. War. R.), Sept. 18th; Lt. E. J. Dease (Sec. Lt., Rif. Brig.), Lt. M. Tod (Lt., Black Watch), Sec. Lt. (Hon. Lt.) C. R. A. Wallis (Lt., R.G.A.), Oct. 8th; Capt. W. McKay (Lt., Sea. Highrs.), Lt. F. Coxen (Lt., R.F.A.), Oct. 13th; Lt. R. S. Butler (E. Surr. R.), Oct. 14th; Capt. C. Gordon-Davis (Capt., N. Staff. R.), Maj. A. P. Pargiter, M.C. (Capt., R. Ir. Regt.), Oct. 15th.

Transferred to unempld. list:—Sec. Lt. N. P. Aldred, Sec. Lt. B. R. Brinton, Sec. Lt. R. H. Cole, Sec. Lt. J. W. Grier, Sec. Lt. W. J. Hoxworth, Sec. Lt. E. A. Hunt, Sec. Lt. E. L. R. King, Sec. Lt. D. F. MacArthur, Sec. Lt. F. G. McGinn, Sec. Lt. D. G. Moore, Sec. Lt. C. C. Mounce, Sec. Lt. D. Saple, Sec. Lt. H. Smart, Sec. Lt. N. W. Squire, Sec. Lt. H. H. Thomson, Sec. Lt. H. A. Zinck, Sec. Lt. W. L. Warke, Sec. Lt. H. O. Wyse, Feb. 1st; Lt. W. W. Scott, Feb. 6th; Sec. Lt. F. W. Elliott, Feb. 28th; Lt. G. R. Savage, March 1st; Capt. L. D. Bawlf, March 20th; Sec. Lt. J. E. Jennings, April 2nd; Lt. A. W. Cameron, Lt. G. D. Floyd, April 15th; Lt. G. C. Logan, April 17th; Sec. Lt. A. V. Bonner, Lt. G. K. Trim, April 19th; Sec. Lt. W. J. Tudhope, April 23rd; Sec. Lt. C. H. Stephens, April 25th; Sec. Lt. J. C. Fyfe, Sec. Lt. C. E. Nicholas, May 1st; Lt. F. F. H. E. Kolligs, May 12th (substituted for notification in "Gazette" of Sept. 5th, wherein this officer's name was shown as "F. H. E. Kolligs"); Sec. Lt. J. A. Mackay, May 16th; Lt. H. J. MacDonald, May 20th; Sec. Lt. E. M. Wintham, May 21st; Capt. B. D. Hobbs, D.S.O., D.S.C., June 3rd; Lt. H. J. Richardson, June 16th; Sec. Lt. W. R. Birch, Sec. Lt. T. L. Harding (substituted for notification in "Gazette" of Aug. 26th), July 12th; Lt. A. M. Jackson, July 19th; Lt. A. F. Woodward-Gregory, July 22nd; Lt. C. Turner, Aug. 2nd (substituted for notification in "Gazette" of Sept. 5th, wherein this officer was described as a Sec. Lt.); Sec. Lt. F. J. S. Clayden, Aug. 4th; Sec. Lt. G. M. Hay, Aug. 7th; Capt. M. Lewis, Aug. 14th; Sec. Lt. H. R. A. P. Watson, Aug. 19th; Lt. H. L. Tamplin, Aug. 22nd; Sec. Lt. F. H. White, Aug. 29th; Sec. Lt. C. W. R. Hodges, Sec. Lt. L. P. Jackson, Aug. 30th; Sec. Lt. H. P. Hodges, Sept. 1st; Lt. A. Hill, Sec. Lt. N. E. D. Hutchinson, Capt. F. P. Holliday, D.S.O., M.C., A.F.C., Sept. 3rd; Lt. W. Henson, Sept. 4th; Sec. Lt. F. Ibbotson, Lt. T. W. Jay, Sept. 5th; Sec. Lt. J. M. Brunton, Sec. Lt. E. R. Hiscocks, Lt. R. K. Jenkins, Lt.-Col. F. H. Jenkins, O.B.E., M.C., Sec. Lt. H. Hollick-Kenyon, Sept. 6th; Sec. Lt. W. H. Clarkson, Lt. W. E. Hazelton, Sept. 7th; Lt. F. E. Gritton, Lt. J. H. Hedding, Lt. J. W. Milner, Sept. 10th; Lt. A. C. Hill, Sept. 11th; Sec. Lt. F. W. Hill, Sept. 15th; Sec. Lt. R. N. G. Macey, Sept. 16th; Sec. Lt. W. Lee, Sept. 17th; Lt. H. R. Hollis, Lt. A. W. M. Horne, Sec. Lt. D. L. Nicholas, Sept. 18th; Lt. J. B. Bales, Lt. J. Beattie, Lt. F. B. Champness, Lt. F. E. Hills, Sec. Lt. A. J. Hunt, Lt. J. O. Stead, Sept. 19th; Sec. Lt. E. G. Cook, Sec. Lt. C. S. Hosegood, Sept. 20th; Sec. Lt. I. Browning, Sept. 21st; Sec. Lt. I. S. Bellis, Sec. Lt. A. W. Higgett, Lt. G. D. Wigley, Sept. 22nd; Lt. G. R. Burge, Sec. Lt. A. G. Hill, Lt. R. S. Holloway, Sec. Lt. O. Lane, Sec. Lt. G. A. Lynch, Lt. W. St. J. Scott-Scott, Lt. A. Siddall, Sec. Lt. F. Van-Praagh, Sec. Lt. C. N. Yelverton, Sept. 24th; Sec. Lt. H. N. V. Barnes, Sec. Lt. S. N. Giroux, Sec. Lt. N. O. Harvey, Lt. A. H. Harris, Sec. Lt. E. S. Marsh, Lt. F. A. Shipham, Sept. 25th; Lt. S. C. Barker, Lt. D. V. Hodgson, Sec. Lt. F. G. Hughes, Sec. Lt. A. C. James, Capt. D. G. Murray, Sec. Lt. H. Nattrass, Sec. Lt. H. Plackett, Lt. J. H. Reeves, M.C., Capt. C. Ryder, Sec. Lt. W. N. Shuttleworth, Sec. Lt. H. Suter, Sept. 26th; Lt. C. D. W. Payley, Sec. Lt. B. H. Henwood, Sec. Lt. W. Hunt, Lt. M. F. Sutton, Sept. 27th; Lt. F. H. Allchurch, Sec. Lt. F. W. Ball, Lt. E. P. Cavanah, Sec. Lt. E. R. Clayton, Capt. A. G. Moore, Sec. Lt. W. M. Munshaw, Lt. C. Seedhouse, Sept. 28th; Lt. J. S. Heagerty, Lt. R. Main, Lt. L. C. Pockney, Sept. 29th; Lt. S. E. Wise, Sept. 30th; Sec. Lt. E. Maloney, Oct. 4th; Lt. J. E. G. Hassall, Sec. Lt. R. N. Hesketh, Lt. T. C. Owen, Oct. 8th; Lt. K. W. J. Hall, Lt. E. Jackson, Lt. E. A. Locke-Waters, Oct. 9th; Sec. Lt. E. G. A. Breed, Sec. Lt. P. E. Clarke, Sec. Lt. F. W. Dunnett, M.C., Sec. Lt. V. Foster, Lt. R. Musgrave, Lt. A. J. Warwick, Sec. Lt. S. H. Wells, Oct. 10th; Maj. P. L. Holmes, D.S.C., Lt. R. J. Hook, D.F.C., Sec. Lt. (Hon. Lt.) J. Jackson, Lt. S. H. Ware, Sec. Lt. E. Young, Oct. 11th; Lt. W. S. Campbell, Lt. J. R. Field, Capt. E. S. Goodwin, A.F.C., Lt. S. H. Spencer, Lt. J. M. Walker, Oct. 12th; Lt. P. E. H. Van-Baerle, Oct. 13th; Lt. D. J. Dorey, Sec. Lt. G. A. Evans, Lt. O. D. Freeman, Sec. Lt. H. P. N. Gubbins, Lt. A. Jerrard, V.C., Lt. A. C. A. Scates, Sec. Lt. R. B. Stock, Lt. H. E. Symons,, Oct. 14th; Sec. Lt. J. O. Armes, Lt. S. F. Baker, Lt. L. J. Bayley, Sec. Lt. T. V. Callard, Sec. Lt. A. S. Draisey, Capt. J. O. Groves, Lt. V. G. Hinds, Lt. J. J. W. Nicholson, D.F.C., Sec. Lt. A. E. Sell, Sec. Lt. E. S. Smyth, Lt. E. R. Stranger, Sec. Lt. L. Timmons, Sec. Lt. S. T. Tipper, Sec. Lt. F. Wood, Oct. 15th; Sec. Lt. E. B. Cross, Oct. 17th; Lt. R. S. Higgens, Oct. 20th; Capt. H. F. S. Drewitt, M.C., A.F.C., Oct. 21st; Lt. W. D. Bostock, Sec. Lt. (Hon. Lt.) G. N. Thomson, D.F.C., Sec. Lt. J. Woods, Oct. 22nd; Sec. Lt. J. E. Hofman, Sec. Lt. J. V. Melvill, Sec. Lt. W. H. Oldfield, Oct. 23rd.

Lt.-Col. C. M. P. Brabazon, O.B.E. (Maj., Irish Gds.), relinquishes his commn. on account of ill-health contracted on active service, Oct. 22nd.

Capt. S. H. Long, D.S.O., M.C. (Lt., Durh. L.I.), resigns his commn. and is granted the rank of Maj., July 31st (substituted for notification in "Gazette" of Aug. 8th).

Lt. H. A. Miller relinquishes his commission on account of ill-health contracted on active service, and is granted rank of Capt., Aug. 15th.

Lt. (Hon. Capt.) E. Fletcher (R.A.S.C.) (T.F.), relinquishes his commission on account of ill-health caused by wounds, and is permitted to retain rank of Capt., Oct. 6th.

Lt. D. Bonnard relinquishes his commission on account of ill-health, and is permitted to retain his rank, Oct. 14th.

Sec. Lt. (Hon. Lt.) T. A. Evans relinquishes his commission on account of ill-health contracted on active service, and is permitted to retain rank of Lt., Oct. 15th.

The following Sec. Lts. relinquish their commissions on account of ill-health, and are permitted to retain their rank:—R. L. MacLeod (caused by wounds), Aug. 14th; P. Evans (contracted on active service), Oct. 15th; L. V. Nicol (contracted on active service), Oct. 16th.

The notification in "Gazette" of July 18th concerning Sec. Lt. H. G. Souchon is cancelled.

The notification in "Gazette" of July 29th concerning Sec. Lt. R. Blanchard is cancelled.

The notification in "Gazette" of Aug. 12th concerning Sec. Lt. W. A. Peggs is cancelled.

ADMINISTRATIVE.—Flying Offr. A. Anderson to be Flying Offr. from (O.), Aug. 10th.

Sec. Lt. (actg. Capt.) J. W. Jones to be Lt. (April 2nd, 1918), and to retain actg. rank of Capt. until April 30th (substituted for notification in "Gazette" of March 7th.

Sec. Lt. C. S. Broughton is graded for purposes of pay and allowances as Lt. while employed as Lt., May 1st.

Sec. Lt. T. F. T. M. Williams (late Gen. List, R.F.C., on prob.), is confirmed in rank as Sec. Lt., July 2nd, 1918.

Sec. Lt. (Hon. Lt.) L. A. W. Knight relinquishes his commission on ceasing to be employed, April 11th (substituted for notification in "Gazette" of June 3rd, wherein this officer was shown under flying Branch).

Transferred to the unemployed list:—Lt. F. G. C. Fison, Jan. 22nd; Lt. H. Munro, Jan. 31st; Sec. Lt. A. H. Black, Feb. 7th; Lt. G. H. Simpson, May 1st; Lt. A. Macnamara, June 23rd; Capt. E. E. R. Heathcote, Aug. 1st, Sec. Lt. G. R. Hill, Aug. 29th; Capt. C. Le C. Browning, Sec. Lt. R. St. G. Chester-Master, Sept. 1st; Sec. Lt. R. M. Cobb, Sept. 4th; Lt. C. Jeffs, Sept. 13th; Sec. Lt. J. W. Heath, Sept. 14th; Lt. A. D. Jack, Sept. 15th; Lt. D. I. B. McCullock (Yorks R., T.F.), Sept. 19th; Capt. H. J. Smith, Sept. 20th; Lt. A. E. Helton, Sept. 22nd; Capt. S. H. Alston, Lt. S. J. Martin, Sept. 23rd; Lt. (Hon. Capt.) H. A. de F. Furber, Sec. Lt. T. L. J. Jackson, Sec. Lt. R. Douglas Smith, Lt. W. C. Steward, Sept. 24th; Lt. J. Illingworth, Sec. Lt. H. J. Oram, Sept. 25th; Sec. Lt. A. M. Adam, Sec. Lt. J. W. Hughes, Sept. 26th; Sec. Lt. G. Murray, Sept. 27th; Lt. H. Dandy, Sept. 28th; Lt. A. Cattanach, Sept. 30th; Sec. Lt. R. S. Davidson, Oct. 6th; Lt. O. C. Anderson, Lt. H. J. Clark, Sec. Lt. H. Day, Sec. Lt. J. Hart, Maj. L. F. W. Wilson, Oct. 10th; Sec. Lt. W. B. Fox, Oct. 11th; Lt. J. H. Cross, Lt. T. Whitaker, Oct. 12th.

Lt. C. W. King relinquishes his commission on account of ill-health and is permitted to retain his rank, Sept. 28th; Sec. Lt. A. C. Baldwin relinquishes his commission on account of ill-health contracted on active service, and is permitted to retain his rank, Oct. 16th.

The notification in "Gazette" of April 8th, concerning Sec. Lt. W. Lee is cancelled.

TECHNICAL BRANCH.—Capt. (Hon. Maj.) A. Crook is to be actg. Maj. while employed as Maj., Grade (A.), May 1st.

Flight Lt. C. F. Pallott to be Flight Lt., Grade (A.), from (S.O.), Sept. 29th.

Flying Offr. L. T. Sanderson to be Flying Offr. (Grade (A.), from (S.O.), Oct. 20th.

Flying Offr. J. W. Gardner relinquishes the grading for pay and allowances of Flight Lt. on ceasing to be employed as Flight Lt., Grade (B.), Oct. 11th.

Sec. Lt. F. G. Eckford is graded for purposes of pay and allowances as Lt. while employed as Lt., Grade (A.), May 1st.

The following Sec. Lts. are graded for purposes of pay and allowances as Lts. whilst employed as Lts., Grade (B), May 1st:—F. Adams, (Hon. Lt.) H. Allsebrook, R. Fell, H. Haworth, F. Hembley, (Hon. Lt.) R. Kearton, C. H. N. Nunn, C. G. A. Foole, W. R. Tuddenham (substituted for the notification in "Gazette" of Aug. 19th, wherein the above offrs. were shown as graded for purposes of pay and allowances as Capts., whilst employed as Capts., Grade (B.).

Sec. Lt. G. T. Godfrey to be Lt., June 3rd (since demobilised).

Pilot Offr. (Hon. Flight Lt.) E. O. Sonderbye relinquishes the grading for pay and allowances as Flying Officer on ceasing to be employed as Flying Offr., Grade (B.), Oct. 11th.

Pilot Offrs. to be Flying Offrs., without pay and allowances of that rank:—H. J. Bagge, A. R. Caldicott, W. Morgan, G. V. Russell, Oct. 1st.

Transferred to unemployed list:—Capt. T. M. Wilson, Jan. 1st (substituted for the notification in "Gazette" of May 13th); Lt. G. T. Godfrey, June 5th (substituted for the notification in "Gazette" of June 24th); Lt. E. Vredenburg, Aug. 9th; Sec. Lt. J. De La M. C. Powley, Aug. 14th; Lt. A. R. Hungerford, Sept. 3rd; Sec. Lt. W. G. Hastie, Sept. 6th; Sec. Lt. A. H. Hollingdale, Sept. 8th. Lt. L. Howe, Sept. 9th; Lt. W. J. Hembry, Sept. 10th; Lt. C. Lambert, Sept. 11th; Lt. F. S. Mockford, Sept. 15th; Lt. A. H. Varian, Sept. 16th (substi-

tuted for the notification in "Gazette" of Oct. 10th, wherein he was shown as Sec. Lt.); Lt. T. H. Birdsall, Sec Lt. G. H. Winckworth, Sept. 19th; Lt. F. E. Bayley, Sec. Lt. L. Comer, Sept 26th; Lt. G. C. Bailey, D.F.C., Sept. 23rd; Sec. Lt. (Hon. Lt.) W. Burchall-Crookes, Sec. Lt. L. B. Mackinlay, Sept. 24th; Lt. B. Z. Simpson, Capt. W. W. Tullis, Sept. 25th; Sec. Lt. F. Woombell, Sept. 26th; Maj. S. J. V. Fill, O.B.E., Sept. 28th; Lt. H. J. Finer, Sept. 29th; Maj. H. A. Cox, Lt. D. A. Parker, Capt. W. O. Pearce, Sept. 30th; Sec. Lt. C. L. B. Voge, Oct. 8th; Lt. H. B. Dell, Lt. G. E. Hawksley, Oct. 9th; Lt E. D. Aldridge, Lt. W. Birtwhistle, Sec. Lt. G. T. H. Field, Lt. H. Howard, Maj. H. C. Wakefield, Oct. 10th, Lt. H. W. G. Drummond, Lt. E. N. G. Exton, M.C., Lt. W. Towell, Oct. 11th; Lt. C. J. Miln, Lt. W. G. Seager, Lt. A. B. West, Oct. 14th; Capt. N. B. Tomlinson, Oct. 16th; Sec. Lt. (Hon. Capt.) W. G. P. Cobbett, Oct. 23rd.

Lt. L. S. Newns relinquishes his commission on account of ill-health (contracted on active service), and is granted the rank of Capt., Oct. 14th.

Lt. R. B. Ashcroft, M.C., (Lt., Notts and Derby R.), relinquishes his commission on account of ill-health (contracted on active service), Oct. 2nd.

The surname of Sec. Lt. J. B. Meikle is as now described, and not "Meilke," as stated in "Gazette" of Sept. 12th.

The notification in "Gazette" of July 29th concerning Lt. P. N. Shone is cancelled.

The notification in "Gazette" of Oct 21st concerning Sec. Lt. (Hon. Lt.) C. A. Assiter is cancelled.

MEDICAL BRANCH.—Transferred to the unempld. list:—Lt. E. F. Wilson, Sept. 25th; Capt. A. H. Wade, Lt. E. E. Rollins, Sept. 27th.

The initials of G. S. Marshall are as now described and not G. F. as stated in "Gazette" of June 3rd.

The surname of H. B. B Greene is as now described and not as shown in "Gazette" of Aug. 29th.

DENTAL BRANCH.—Lt. G. O. Roper to be Lt., from (K.B.), June 22nd, 1918 (substituted for the notification in "Gazette" of June 28th, 1918, in which he is shown under Medical Branch).

The following are granted temp. commns. as Lts.:—C. A. E. Cook, June 10th, 1918 (substituted for notification in "Gazette" of June 25th, 1918, in which he is shown under Medical Branch); K. Batten, July 19th, 1918 (substituted for notification in "Gazette" of July 26th, 1918, in which he is shown under Medical Branch).

The Christian names of Stanley Gordon Smith are as now described and not as shown in "Gazette" of Aug. 20th.

CHAPLAINS BRANCH.—Transferred to unempld. list:—The Rev. T. L. Beveridge, Sept. 2nd; the Rev. N. T. Hopkins, B.A., Sept. 3rd; the Rev. E. C. Storr, M.A., Oct. 11th.

The notification in "Gazette" of Sept. 26th, concerning the Rev. A. J. N. Saunders is cancelled. ("Gazette" of June 27th to stand.)

MEMORANDA.—The following temp. appointment is made:—Wing Cmdr. R. Gordon, C.M.G., D.S.O., and to be actg Group Capt. without pay and allowances of that rank whilst specially empld., Oct. 25th.

P.F.O. E. Hobbs is granted an hon. commn. as Sec Lt., May 30th.

The following Cadets are granted hon. commns. as Sec. Lts.:—181108 H. Ward, Jan. 14th; M2/181159 B. B. Clarkson, Feb. 5th; 60464 H. C. Smart, Feb. 17th; 31205 E. R. McColgan, March 2nd; 128369 H. F. O. Farrell, March 25th; 4084 W. M. G. Greenhill, Aug. 9th; P/13041 H. K. Kelly, Aug. 30th; 949000 W. T. Dowden, Sept. 26th.

Transferred to unempld. list:—Lt. L. Timks, from (S.O.), Sept. 17th; Sec. Lt. B. F. Browne, from (S.O.), Sept. 30th; Maj. W. Higginbotham, Sec. Lt. W. S. Sholl, from (S.O.), Maj. N. Sladden, from (S.O.), Oct. 11th; Lt. J. G. Spencer, from (S.O.), Oct, 12th; Lt. J. B. Sharples, M.B.E., from (S.O.), Oct. 23rd.

R.A.F.—The following officers have been granted short service commns. in the ranks stated, with effect from Oct. 24th. They will retain their seniority in the substantive rank last held by them prior to the grant of the short service commn., except that officers gazetted to a rank lower than their previous substantive rank will be placed at the head of the list of officers of the rank to which they are now gazetted, and will retain seniority relative to each other in accordance with their previous position on the gradation list.

In the case of officers now gazetted Flying and Observer Officer from Pilot Officer, seniority will date from the date of Gazette.

Squadron Leaders.—H. G. Atkinson, O.B.E. (T.), E. M. Bettington, O.B.E. (T.), H. C. Fuller (A'ship).

Flight Lt. (from Squadron Leader).—J. R. Howett (A.).

Flight Lts.—F. R. Alford, M.C. (T.), J. E. M. Atherley (Ad.), J. C. Atkinson (T.), V. H. Baker, M.C., A.F.C. (A.), C. Boumphrey (A. and S.), H. G. Bowen (A.), T. G. Bowler (A.), W. S. Caster, M.C. (A.), F. H. Coleman (A.), N. R. Cook, D.S.C. (A. and S.), E. J. Cooper, D.S.C. (A. and S.), L. G. Le B. Croke (O.), B. C. H. Cross, D.F.C. (S.), C. B. Dalison, A.F.C. (A and S.), R. E. H. Daniel (T.), G. G. Dawson (T.), E. E. Deans, D.S.C. (A. and S.), J. C. O. Dickson, D.F.C. (A.), J. L. L. Duffus (T.); G. H. Errington (Ad.), E. C. W. Fitzherbert, D.S.C. (T.), A. W. Fletcher, A.F.C. (A. and S.), W. E. C. B. C. Forsyth (S.), M. B. Frew, A.F.C., D.S.O., M.C. (A.), S. Frost (T.), W. E. Gardner, D.S.C. (A.), T. R. Hackman (A.), E. St. C. Harnett, O.B.E. (S.O.), H. Hemming, A.F.C. (A.), L. A. Hervey (A.), T. E. B. Howe, A.F.C. (A.), H. M. Ireland, D.F.C. (A.), H. C. Irwin, A.F.C. (A'ship), C. H. B. Jenner-Parson, D.F.C. (A.), H. C. Irwin, A.F.C. (A'ship), C. H. B. Jenner-Parson (A.), J. H. O. Jones (A.), F. C. Lander, A.F.C. (A. and S.), A. Latimer (T.), F. H. Laurence, M.C. (A.), A. S. G. Lee, M.C. (A.), A. L. Lingard (T.), W. H. Mackenzie, A.F.C. (A.), W. Man, D.F.C., (A. and S.), G. J. Monson-FitzJohn (T.), A. D. Newbury (T.), T. H. Newton, D.S.C. (A. and S.), G. M. F. O'Brien, D.S.C. (A. and S.), A. H. Peck, D.S.O., M.C. (A.), A. R. T. Pipon, D.S.C. (S.), W. A. Powell (T.), E. R. Pritchard (A. and S.), A. D. Pryor (A.), P. C. Purser, M.C. (A.), H. G. P. Rees (T.), C. B. Ridley, D.S.C. (A.), A. Roberts (T.), E. P. Roberts, M.C., D.C.M. (A.), A. Roulstone, M.C. (A.), H. P. Rushforth, M.C. (A.), L. C. Shoppee, D.S.C. (A. and S.), E. W. Simpson (S.O.), A. C. Snow (T.), R. L. Stevenson, M.B.E. (A.), D. Stewart, A.F.C., (A.), T. O. Stud, D.F.C. (A.), T. W. Tattersall, M.B.E. (T.), M. Thomas, A.F.C. (A.), T. F. W. Thompson (A.), E. F. Turner (T.), G. E. Walker (A.), W. H. De W. Waller, A.F.C., (A.), D. E. Ward (T.), G. F. P. Warren (T.), L. Whitworth, A.F.C., (A'ship), H. E. P. Wigglesworth, D.S.C. (A.), F. T. Williams, M.B.E. (A.), E. A. E. Wood (T.), W. P. Woodcock (T.), R. A. Young (Ad.).

Flying Officers (from Flight Lts.):—F. J. W. Mellersh, A.F.C. (A.), G. A. H. Pidcock (A.), J. W. Pinder, D.F.C. (A.), W. W. Wakefield (A.).

Flying Officers.—P. E. D. Addis (Ad.), B. C. Akehurst (T.), A. F. Alexander (A.), C. T. Anderson, D.F.C. (A.), M. H. Armstrong (T.), G. Baillie (T.), A. C. Bayley (A.), W. Bentley, D.F.C. (A.), H. C. Black (A.), G. N. Blennerhassett, M.C. (A.), G. H. Boyce (A. and S.), T. Brewin (A.), R. F. Browne, D.F.C. (A.), G. M. Bryer, A.F.C. (A.), J. Burdett (T.), V. W. Burgess, A.F.C. (A.), F. O. Burnley (T.), W. J. Burr, M.C., D.C.M., M.M. (A.), M. H. Butler, D.F.C. (A.), S. L. Cannon (A.), R. L. Cantle (T.), D. V. Carnegie, A.F.C. (A. and S.), B. R. Carter (S.), O. E. Carter, M.C. (A.), I. R. Cassidy (T.), T. W. Cave, M.C. (T.), J. S. Chick, M.C. (A.), F. W. Clarke (T.), P. J. Clayson, M.C., D.F.C. (A.), R. Clowes (A.), J. H. Cooper, M.C. (A.), W. R. Cox, M.C., A.F.C. (A.), R. C. Creamer, D.F.C. (A.), P. H. Cummings, D.F.C. (A.), C. C. K. Dagg, A.F.C. (A. and S.), G. D. Daly (T.), A. J. Dawes (Ad.), S. Dawson, D.F.C. (A.), M. C. Dick (A.), H. H. Down, A.F.C. (A.), G. F. Drudge (T.), W. F. Dry (T.), D. L. Evans, M.C., D.F.C. (A.), N. Fitzgerald Eager (A.), S. S. Flook, D.F.C. (A.), A. H. Flower (A.), G. J. Fowler, A.F.C. (A.), G. Fox-Rule, D.F.C. (A.), C. S. Fulton (S.O.), A. V. Gash (Ad.), J. M. Glaisher, D.F.C. (A.), S. Graham, M.C., A.F.C. (A.), E. G. Green, M.C. (A.), L. W. R. Grubb (A.), W. Halford, D.F.C. (A.), R. Hall (T.), J. H. H. Halliwell (A.), W. Halliwell (Ad.), L. Hamilton, D.F.C. (A.), W. F. Hamilton (A.), H. N. Hampton, D.F.C. (A.), P. Harris (A. and S.), L. G. Harrison (A.), R. Harrison, D.F.C. (A.), J. R. R. Harvey, M.M. (A. and S.), G. E. Havelock-Sutton, M.C. (Ad.), G. S. L. Hayward, M.C. (A.), A. F. Hempel (A.), V. E. R. Hill (T.), G. S. Hodson, A.F.C. (A.), H. L. Holland (A.), R. Hood (A.), G. V. Howard, D.F.C. (A.), G. N. Humphreys (A.), N. W. Hustings (A.), J. W. Hustwaite (Ad.), R. M. Johnson (A. and S.), A. L. Jones (A.), B. C. Jones (A.), O. J. F. Jones-Lloyd (A.), G. Kidd (A. and S.), A. G. Lamplugh (A.), R. H. Latham (T.), A. Leach, M.C. (A.), E. M. Ling (T.), L. F. Lipscomb (T.), H. G. W. Lock (A.), L. W. Lowen (A.), H. T. Lydford, A.F.C. (A.), E. P. Mackay (A.), I. C. R. Mackenzie (A.), J. M. McEntegart (S.O.), J. McFarlane, M.C. (A.), E. C. McKenzie-Martin (T.), J. A. McLaren, M.C. (Ad.), E. J. McLoughlin (A.), F. McQuistan, D.F.C. (A.), P. M. McSwiny (A.), G. H. Martingell, A.F.C. (A.), W. K. Mercer (A.), G. F. Moody (A. and S.), G. A. Morgan, A.F.C. (A.), C. P. Murchie (T.), W. G. Murray (T.), C. E. Nightingale (T.), M. J. Norton (Ad.), A. J. Packham (T.), L. H. Pakenham-Walsh, D.F.C. (A.), M. T. S. Papenfus, D.F.C. (A.), L. F. Peaty (T.), L. F. Pendred, D.F.C. (A.), C. Pilkington, A.F.C. (A.), S. L. G. Pope (A. and S.) W. G. Preston, D.F.C. (A.), S. L. Quiene, M.C. (A.), R. J. Read (A.), A. R. M. Richards (A.), H. N. C. Robinson, M.C. (A.), R. C. Rodger, M.C., D.C.M. (A.), F. H. Rowan (T.), H. St. C. Roy, M.C. (T.), G. Scarrott (Ad.), H. E. Searson, D.F.C. (A.), F. H. Shales (A.), T. MacM. Shields, D.F.C. (A.), W. Sidebottom, D.F.C. (A.), F. H. Sims (Ad.), W. M. Smith (A. and S.), C. B. S. Spackman, D.F.C. (A.), D. A. Stewart, M.C., D.F.C. (A.), J. S. Stubbs, A.F.C. (A.), S. Symonds (T.), A. R. Thompson (T.), A. C. Townsend, A.F.C. (A.), W. E. Townsend (T.), E. E. Turner, D.F.C., D.S.C. (A.), R. H. Tweedy (T.), E. A. B. Urmston (A.), E. C. Usher (A. and S.), G. O. Venn (A.), T. V. Villiers (T.), L. E. Vine (T.), A. W. S. Wagner (Ad.), H. de W. Waller (A.), J. W. Wallwork, M.C. (A.), E. A. M. Waterton (A.), F. N. Whiteley (A.), G. W. M. Whitton (T.), C. G. Wigglesworth, A.F.C. (A'ship), T. M. Williams, M.C., D.F.C. (A.), H. E. Winch (A.), A. E. Woodbridge (A.), E. C. B. Wright (A. and S.), S. G. Wybrow (T.), W. M. Yool (A.), H. N. Young, D.F.C. (A.), E. L. Zink (A.).

Observer Officers.—P. J. Bradley, C. P. M. B. Caillard, P. A. Cockeram, M.C., E. J. Garner, A.F.C., O. R. Gayford, D.F.C., R. Hamilton, M.C., A. J. Insall, N. H. Jenkins, D.F.C., D.S.M., H. Smith, D.F.C., A. C. Stevens, J. C. Tulock, W. S. Watson.

Flying Officers (from Pilot Officers).—A. J. Adams (T.), F. Adams (T.), L. W. Allen, M.C. (T.), W. Allen (T.), A. T. J. Anderson (A. and S.), W. Bagnall (T.), A. A. W. Barron (T.), E. A. J. Brown (A.), B. G. Bryan (T.), A. C. S. Buist, M.C. (A.), S. D. Carpenter (T.), A. E. Case (T.), P. Christopherson (T.), C. C. Clark (T.), E. H. Colman (A.), F. H. Davis (T.), H. H. Ffrench (Ad.), W. Frederick (T.), W. H. Golder, D.S.M. (T.), K. C. L. Gorringe (A.), G. A. Gowler (A.), G. R. St. C. Gwynne-Timothy (A.), O. T. Hazell (A.), B. E. Herbert, D.C.M. (A. and S.), S. Herbert, (T.), J. F. Herd (T.), O. A. P. Heron, D.F.C. (A.), W. E. Humphreys (T.), J. H. Huxley, D.F.C. (A.), J. D. Jackson (A.), P. J. R. King (A.), F. Kirk (A.), G. Lacey (T.), W. E. Lowrie (T.), F. J. Magee (T.), E. Marsden (T.), M. H. McErlean (A.), R. C. Michaelson (A. and S.), J. W. Mitchell (T.), L. G. Morris (T.), F. C. North (T.), F. A. O'Brien (T.), E. S. Osborn (T.), J. Owen, D.F.C., M.M. (A.), G. T. H. Pack (T.), L. A. Parker (T.), S. H. Potter (A.), C. Roper (S.), J. Sewell (T.), I. C. Slater (A.), J. H. Slater, M.B.E. (T.), H. A. Smith (T.), G. R. B. Smyth (A.), F. R. Steggall, D.C.M. (A.), H. H. Storrs (A.), F. J. Tadman, C.G.M. (T.), A. J. H. Taylor (A.), E. Taylor (T.), R. M. Thomas (T.), S. Upton (T.), H. Webb (T.), F. H. Whitmore, D.S.C. (T.), H. B. Williams (A.).

Observer Officers (from Pilot Officers).—A. W. Bloy, H. J. Collins, W. C. Day, M.C., J. H. Gray, T. P. T. Jones, B. J. Paget, F. Thomasson, D.F.C., M.M., G. I. Thomson, D.F.C.

The classification of Flt. Lt. G. W. Robarts, M.C. (S.O.), is as now described, not (A.) as stated in the "Gazette" of Oct. 10th.

The second Christian name of Flying Officer Rupert Chandos Bryant (A.) is as now described, not Charles, as stated in the "Gazette" of Sept. 12th.

The notifications appearing in "Gazettes" of the dates indicated below, appointing the following officers to short service commns. are cancelled:—Flying Officer F. L. Barnard (A.), Flying Officer A. Grimshaw (A.), Flying Officer P. D. Robins (A.), Observer Officer J. C. Wallace, Sept. 12th; Flt. Lt. J. H. D. M. Campbell (S.O.), Oct. 10th.

The following officers are granted short service commns., with effect from Aug. 1st, not Oct. 10th, as stated in "Gazette" of the latter date: Flt. Lt. H. Cooch, A.M.I.E.E. (T.); Flt. Lt. E. L. Johnstone, A.F.C. (A'ship); Flt. Lt. A. J. Osborn (S.O.).

AIR MINISTRY, Oct. 28th.

R.A.F.—PERMANENT COMMISSIONS.—The attention of Officers named in this "Gazette" is directed to Air Ministry Weekly Order No. 866 of 1919, relating to the grant of permanent commns. and to the new rates and conditions of pay and other emoluments.

The following are granted permanent commns. in the R.A.F. in the ranks stated, with effect from Aug. 1st:—

Sqdn. Ldrs.—P. A. Shepherd (S.), G. F. H. Faithfull, O.B.E. (S.O.), M. E. A. Wright, A.P. (T.), J. C. M. Lowe, A.P. (T.).

Flt. Lts.—C. J. MacKay, M.C., D.F.C. (A.), J. Pearce, O.B.E. (T.), H. K. Thorold, D.S.C., A.F.C. (A.), A. Coningham, D.S.O., M.C., D.F.C. (A.), N. C. Spratt (A.), J. O. Andrews, D.S.O., M.C. (A.), A. Lees (A.), D. O. Mulholland, A.F.C. (A.), W. A. C. Morgan, M.C. (A.), F. H. M. Maynard, A.F.C. (A.), G. B. A. Baker, M.C. (A.), E. J. D. Routh (A.), R. H. M. S. Saundby, M.C., A.F.C. (A.), J. K. Summers, M.C. (A.), N. B. Fuller, M.B.E. (A.), M. R. N. Jennings, M.C., A.F.C. (A.), G. E. Godsave (T.), R. S. Aitken, M.C., A.F.C. (A.), J. A. Slater, M.C., D.F.C. (A.), R. W. Channel, M.C. (A.), J. F. A. Day, A.F.C. (A.), J. B. Walmsley, D.F.C. (A.), R. G. E. Fulljames, M.C. (A.), N. Keeble, D.S.C. (A.), W. D. Thom, D.F.C. (A.), F. St. J. Wooliard, A.F.C. (A.), A. H. Orlebar (A.), A. B. Shearer (A.), H. W. Evens (S.), L. M. Bailey, A.F.C. (A.), L. O. Brown, D.S.C., A.F.C. (A. and S.), P. D. Robertson, A.M. (T.), A. R. Mackenzie (A.P. (T.)), D. S. Don (A.), C. K. Chandler, M.B.E. (T.), G. W. Biles, D.F.C. (A. and S.), V. R. Scriven, A.F.C. (S.), W. S. Magrath (A.), P. E. Gwyer, M.B.E. (T.), D. Colver, D.F.C. (A.), M. A. J. Orde (T.).

Flying and Observer Officers.—H. M. Massey, M.C. (S.O.), C. O. B. Beale, D.S.O. (A.), C. A. Stevens, M.C. (A. and S.), C. R. Steele, D.F.C. (A.), W. A. K. Dalzell (A.), S. M. Kinkhead, D.S.C., D.F.C. (A.), P. H. Mackworth, D.F.C. (A. and S.), W. H. Park, M.C., D.F.C. (A.), A. L. Chick, A.F.C. (A.), C. T. Black (A.), E. R. C. Scholefield, D.C.M. (A.), F. Williams, M.C., D.F.C. (A.), I. Cullen, A.F.C. (A.), F. W. Broadberry, M.C. (A.), N. S. Dougall, D.F.C. (O.), A. M. Wray, M.C., A.F.C. (A.), E. E. F. Loyd (A.), J. W. Mullen (O.), W. Sharpe, A.F.C. (A.), I. H. P. McEwen (A.), H. S. P. Walmsley, M.C. (A.), C. H. Arnison, M.C. (A.), H. E. Walker, M.C., D.F.C. (A.), G. C. O'Donnell, D.F.C. (A.), H. L. Rough, D.F.C. (A.), H. H. Sharp (T.), J. J. Ll. Williams, M.C. (A.), C. L. King, M.C., D.F.C. (A.), T. S. Horry, D.F.C. (A.), C. H. H. Bilney (A. and S.), G. A. Pennington (A. and S.), J. Ll. Findlay, M.C. (A.), S. T. B. Cripps (A.), E. B.

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Jones (A.), J. R. F. Randell, D.F.C. (A.), G. Y. Tyrrell, M.C. (A.), J. W. Turton-Jones (O.), W. H. Poole, A.F.C., M.M. (A.), C. Rapley (T.), F. G. Brockman (T.), H. Nelson (T.), F. G. Porter (O.), P. J. Parry (A.).

Capt.—E. C. Emmett, M.C., D.F.C. (A.).

The notification appearing in "Gazette," Sept. 16th, appointing Flying Officer P. H. Mackworth, D.F.C., to a Short Service Commn. is cancelled.

The following temp. appts. are made at the Air Ministry:—Staff Officer, 1st Class (Medical).—Wing Comdr. H. Cooper, D.S.O., Sept. 6th.

Staff Officers, 2nd Class (Medical).—Flt. Lt. (actg. Sqdn. Ldr.) J. A. Giles, Flt. Lt. (actg. Sqdn. Ldr.) H. A. Treadgold, Sept. 6th

FLYING BRANCH.—Sec. Lts. to be Lts.:—L. Radford, Sept. 15th, 1918; T. O. Harvey, G. G. Ross-Smith, Nov. 2nd; F. H. Solomon, Jan. 29th; J. R. McL. Keil, May 17th.

Sec. Lt. R. Boyle to be Sec. Lt. (O.), from (Ad.), May 27th, 1918.

6564 Flt. Cadet C. Goatcher is granted a temp. commn. as Sec. Lt. (O.), Sept. 9th, 1918.

Flt. Cadet G. A. Vincent is granted a temp. commn. as Sec. Lt. (A. and S.), Nov 8th, 1918.

The following Flt. Cadets are granted temp. commns. as Sec. Lts. (O.):—175516 A. S. Farquhar, 173527 W. Porter, Oct. 20th, 1918 (substituted for the notification in the "Gazette" of Feb. 14th, wherein the above Cadets were appointed with effect from Oct. 25th, 1918).

The following relinquish their commns. on ceasing to be empld.:—Sec. Lt. H. D. Giblett, May 19th; Lt. W. R. McCoo, July 18th (substituted for notification in the "Gazette" of June 3rd); Lt. W. A. Peggs (Lt., Sherwood For.), July 24th; Sec. Lt. (Hon. Lt.) H. B. Kennedy (Lt., Can. Field Art.), Aug. 1st; Lt. (Hon. Capt.) C. O. Lilly, D.S.O. (Capt., Dorset R.), Aug. 28th; Lt. P. J. Long (Capt., R.A.S.C.), Sept. 1st; Lt. G. D. A. Heys (Lt., R.G.A.), Sept. 19th; Capt. A. D. Gaye (Capt., Hereford R.), Sept. 20th; Lt. (Hon. Capt.) P. A. Smith (Capt., Dur. L. Inf.), Sept. 22nd; Sec. Lt. F. Haveland (Lt., R.G.A.), Oct. 9th; Lt.-Col. G. F. Montague (Comdr., R.N.), Oct. 12th; Lt. (Hon. Capt.) R. S. B. Beckett (Capt., Gurkha Rif.), Oct. 13th; Lt. H. R. Eycott-Martin, M.C. (Lt., R.E.), Lt. S. G. Glover, D.C.M. (Lt., R. Ir. Fus.), Oct. 14th; Lt. A. W. Hawkins (Lt., Yorks R.), Oct. 17th; Sec. Lt. B. Bear, M.M. (Lt., E. Yorks R.), Oct. 18th; Lt. H. V. Saunderson (Lt., R.F.A.), Oct. 20th, Sec. Lt. (Hon. Lt.) A. J. R. Napier (Lt., Ches. R.), Lt. T. H. J. Wright (Lt., Seaf. Highrs.), Oct. 21st; Sec. Lt. (Hon. Lt.) G. E. Clavey (Lt., R.F.A.), Oct. 24th.

Transferred to unempld. list:—Sec. Lt. W. V. Ashforth, Sec. Lt. A. W. McElroy, Sec. Lt. C. H. Meyer, Sec. Lt. M. C. Oliver, Sec. Lt. J. W. Phillips, Sec. Lt. F. R. Rutley, Sec. Lt. H. M. Sheppard, Feb. 1st; Lt. W. H. Fair, Feb. 20th, Sec. Lt. J. Kelly, Feb. 27th; Lt. W. S. Lighthall, D.F.C., March 1st; Sec. Lt. C. E. Smith, March 2nd; Lt. (Hon. Capt.) P. J. Slater, D.F.C., March 16th; Lt. J. S. Forgie, April 1st; Lt. H. P. Salter, April 7th; Capt. W. W. Rogers, M.C., April 19th; Lt. M. C. Healey, M.C., April 25th; Sec. Lt. H. C. Mills, May 1st; Capt. R. H. Sharp, D.F.C., May 8th (substituted for notification in "Gazette" of July 18th); Lt. F. C. Shirtcliffe, May 12th (substituted for notification in "Gazette" of July 18th); Lt. J. A. Jackson, May 19th; Maj. A. De B. Brandon, D.S.O., M.C., May 29th; Lt. G. N. Moore, D.F.C., June 1st; Sec. Lt. E. H. Dodds, June 26th (substituted for notification in "Gazette" of June 20th); Lt. R. N. Smith (substituted for notification in "Gazette" of July 29th), Sec. Lt. W. G. White, July 12th; Lt. I. M. Maclean, Aug. 14th; Sec. Lt. C. W. Gillies, Aug. 18th; Capt. M. S. Marsden, Aug. 20th; Lt. W. Strang, Aug. 26th (substituted for notification in "Gazette" of Sept. 9th, wherein the above officer was shown as Sec. Lt.); Lt. E. F. Maillard, Sec. Lt. (Hon. Lt.) J. D. Muir, Aug. 29th; Lt. W. H. McNeilly, Maj. R. H. S. Mcaling, Sept. 1st; Sec. Lt. J. McGilchrist, Sept. 2nd; Sec. Lt. A. J. R. Murray, Sept. 4th; Lt. F. H. Dear, M.C., Capt. G. Donald, D.F.C., Sept. 5th; Sec. Lt. C. Darbyshire, Sec. Lt. (Hon. Lt.) J. B. MacGill, Sec. Lt. N. L. Mayle, Sept. 6th; Lt. W. Mitton, Sept. 8th; Lt. E. A. Clear, M.C., Lt. R. Jones, Sec. Lt. W. L. Miller, Sec. Lt. D. K. Moore, Sec. Lt. A. Mulholland, Lt. J. W. Templeman, Sec. Lt. C. A. Vanweise, Sept. 10th; Sec. Lt. W. H. Pearce, Sept. 11th; Sec. Lt. E. F. Mattock, Lt. H. B. Maund, Sept. 24th; Lt. W. W. Mackinlay, Lt. S. R. Payne, Sept. 15th; Sec. Lt. R. Fox, Capt. N. Kemsley, A.F.C., Sept. 19th; Sec. Lt. E. F. Darker, Sec. Lt. L. E. G. Judge, M.C., Lt. A. V. I. Roberts, Sec. Lt. W. Wilson, Sept. 20th; Lt. M. MacEwan, M.C., D.F.C., Sept. 21st; Lt. J. A. A. Douglas, Sept. 22nd; Maj. B. S. Benning, Sept. 24th; Lt. H. C. Cooke, Sec. Lt. R. Johnston, Sec. Lt. C. F. Williams, Sept. 25th; Lt. E. C. Bredin, Sec. Lt. E. W. Chess, Lt. W. B. Day, Sec. Lt. E. C. Dearth, Sec. Lt. H. C. Wright, Sept. 26th; Sec. Lt. M. R. Dynes, Sec. Lt. G. A. Elliott, Lt. J. A. Galbraith, Sept. 27th; Sec. Lt. D. Croft, Sec. Lt. H. E. Dobson, Sec. Lt. M. A. Vachon, Sec. Lt. A. G. J. Whitehouse, Sept. 28th; Lt. S. H. Bell, Sec. Lt. N. M. Foggo, Lt. J. D. Vance, Lt. F. Wood, Lt. S. S. Woodman, Sept. 29th, Lt. W. V. Joslen, Oct. 1st; Lt. R. Johnstone, M.C., Oct. 3rd; Lt. A. V. Hurley, Oct. 4th; Lt. R. M. Swyer, Oct. 7th; Sec. Lt. E. S. Burns, Lt. C. H. Jones, Lt. P. A. Marriott, Oct. 8th; Lt. S. A. H. Bowyer, Sec. Lt. J. A. Bramley, Lt. E. M. Brown, Sec. Lt. E. A. Burbidge, Lt. D. P. Capper, Lt. V. H. Clift, Lt. P. B. Cooke, Sec. Lt. D. M. Fraser, Lt. G. T. Griffith, Sec. Lt. L. Joslin, Lt. G. E. Rolleston, Sec. Lt. J. V. Scottorn, Capt. F. J. Terrell, Lt. G. W. Thorpe, Capt. B. Weil, Lt. W. H. Whitlock, Sec. Lt. E. Wrangham, Lt. D. Young, Oct. 9th; Lt. H. W. Auerbach, Lt. L. S. Birch, Lt. H. C. Black, Lt. G. F. Blackburn, Lt. B. R. Carter, Lt. H. J. Crampton, Capt. C. Dunlop, Maj. E. N. Fuller, Lt. J. S. Giffard, Lt. R. M. Jamison, D.F.C., Lt. A. R. Latham, Sec. Lt. A. C. Lloyd, Lt. H. C. Marr, Lt. E. W. R. Matthews, Sec. Lt. R. R. Mutton, Sec. Lt. J. E. Phelps, Lt. A. F. Pope, Sec. Lt. J. Rae, Lt. W. A. Ramsay, Sec. Lt. A. P. Roberts, Sec. Lt. W. H. Stiles, Lt. E. Sturman, Lt. (Hon. Capt.) R. K. Thomson, Sec. Lt. J. W. White, Oct. 10th; Sec. Lt. B. I. Beal, Lt. J. A. Craig, D.F.C., Lt. W. E. Davies, Capt. A. Duguid, A.F.C., Sec. Lt. J. C. Dunbar, Sec. Lt. P. Fish, Sec. Lt. J. H. Gill, Lt. B. W. Godfrey, Sec. Lt. E. B. Lewis, Sec. Lt. G. E. McManus, Sec. Lt. P. C. Mason, Lt. A. T. Maxwell, Sec. Lt. S. C. Millar, Sec. Lt. S. A. C. Newnham, Sec. Lt. A. J. Spencer, Sec. Lt. L. W. G. Ward, Oct. 11th; Capt. J. A. B. Ball, Sec. Lt. R. Bretherton, Lt. C. W. Brown, Lt. A. C. Jones, Lt. J. H. Low, Lt. D. P. Wilson, Oct. 12th; Sec. Lt. G. W. Yallop, Oct. 13th; Lt. J. L. Bell, Sec. Lt. F. W. C. Body, Lt.-Col. the Hon. A. S. Byng, D.S.O., Lt. (actg. Capt.) L. Clarke, A.F.C., Capt. E. G. Cleverly, Lt. T. L. Coates, D.F.C., Lt. F. G. Davies, Maj. I. H. B. Hartford, A.F.C., Lt. J. L. Mayer, D.F.C., Lt. R. J. Thompson, Lt. E. T. Treglown, Lt. R. Turner, Oct. 14th; Sec. Lt. R. Bower, Sec. Lt. T. Burton, Lt. D. P. Davidson, Lt. C. Davies, Oct. 15th; Sec. Lt. (Hon. Lt.) R. A. Edminson, Oct. 17th; Lt. (Hon. Capt.) A. F. B. Broadhurst, Oct. 18th; Sec. Lt. H. G. Souchon, Oct. 19th; Sec. Lt. N. R. Lightbody, Oct. 22nd

Lt. (actg. Capt.) L. J. Mann, M.C. (Lt., R.A.S.C.), relinquishes his commn. on account of ill-health, and is permitted to retain the rank of Capt., Feb. 8th (substituted for notification in the "Gazette" of Feb. 7th).

Lt. A. C. E. Gregory relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, Oct. 18th.

Lt. W. J. H. Courtis (Lt., Devon R.) resigns his commn., Oct. 24th.

Sec. Lt. H. P. Brumell relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain his rank, July 12th (substituted for notification in the "Gazette" of Sept. 30th).

Sec. Lt. (Hon. Lt.) C. C. Loretto is antedated in his appointment as Sec. Lt. (Hon. Lt.) (O.), Aug. 8th, 1918.

The initials of Lt. L. A. Tapper are as now described, and not "L. J. A.," as stated in the "Gazette" of Sept. 5th.

The notification in the "Gazette" of Oct. 10th concerning P.F.O. A. J. Mantle, D.F.C., is cancelled.

The notification in the "Gazette" of April 29th concerning Sec. Lt. F. H. Snoxell is cancelled. ("Gazette" notice of May 30th to stand.)

The notification in the "Gazette" of May 2nd concerning Sec. Lt. S. Pile is cancelled.

The notification in the "Gazette" of July 18th concerning Sec. Lt. N. Sillars is cancelled.

The notification in the "Gazette" of Aug. 12th concerning Sec. Lt. (Hon. Lt.) H. B. Kennedy is cancelled.

The notification in the "Gazette" of Sept. 5th concerning Lt. S. Hill is cancelled.

The notification in the "Gazette" of Sept. 16th concerning Lt. A. McD. Dunlop is cancelled.

The notification in the "Gazette" of Oct. 3rd concerning Lt. C. H. Archer is cancelled.

The notification in the "Gazette" of Oct. 15th, 1918, concerning F./Cdt. R. S. Nicholl is cancelled.

The notification in the "Gazette" of May 21st, 1918, concerning Sec. Lt. E. H. Bullen is cancelled.

The notification in the "Gazette" of June 24th concerning Lt. E. L. Sutcliffe is cancelled.

The notification in the "Gazette" of Oct. 17th concerning Sec. Lt. W. W. Smith is cancelled.

ADMINISTRATIVE BRANCH.—Sec. Lt. T. F. T. M. Williams to be Lt., June 13th.

Transferred to unempld. list:—Sec. Lt. W. R. Souter, Feb. 25th (substituted for the notification in the "Gazette" of April 4th, wherein this officer was shown under "Flying Branch"); Sec. Lt. J. Roberts, March 7th; Sec. Lt. W. R. Thornton, May 1st; Sec. Lt. J. Martin, June 2nd (substituted for the notification in the "Gazette" of July 4th); Lt. H. W. Piper, June 30th; Sec. Lt. T. N. Drake, Aug. 20th; Sec. Lt. A. D. Miller, Sept. 1st; Sec. Lt. H. Kaye, Sept. 2nd; Lt. H. W. Eyton-Jones, Sept. 6th; Lt. C. W. Dyer, Sept. 11th; Sec. Lt. C. J. Richardson, Sept. 14th; Lt. H. H. Jones, Sept. 17th; Sec. Lt. A. A. M. Durrant, Capt. F. Rooks, Sept. 18th; Sec. Lt. E. R. Tremlett, Oct. 7th; Lt. W. H. Bundock, Lt. R. M. Ward, Oct. 9th; Sec. Lt. C. E. Briant, Lt. L. E. Anstey-Bennett, Sec. Lt. F. W. McClive, Capt. A. F. Marlowe, Lt. W. J. Matthews, Oct. 10th; Lt. A. Colling, Sec. Lt. R. H. Hollingdale, Lt. F. E. Lefevre, M.C., Lt. D. Menzies, Sec. Lt. C. E. Shirley, Oct. 11th; Sec. Lt. W. H. Jones, Oct 12th; Sec. Lt. J. McGilley, Oct. 13th; Lt. (actg. Capt.) J. E. B. Cochrane, Oct. 14th; Lt. L. T. Wire, Oct. 15th; Capt. R. Hunter, Oct. 16th; Lt. M. J. V. Blood-Smyth, Oct. 19th.

Lt. D. H. Rudd relinquishes his commn. on account of ill-health (contracted on active service), and is permitted to retain his rank, Oct. 2nd.

Sec. Lt. F. Nicolls relinquishes his commn. on account of ill-health, May 20th (substituted for notification in "Gazette" of Jan. 31st).

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—I. C. Bannister, July 1st (substituted for notification in "Gazette" of July 1st); G. B. Blake (contracted on active service), Sept. 28th.

The surname of Flt. Lt. F. F. Loyd is as now described, and not "Lloyd," as stated in "Gazette" of Sept. 26th.

The notification in "Gazette" of Sept. 19th concerning Sec. Lt. G. B. Blake is cancelled.

TECHNICAL BRANCH.—Pilot Officers to be Flying Officers, without the pay and allowances of that rank:—H. E. Davies, F. W. Todd, Oct. 1st.

Lt. C. L. Cleburne (Lt., Hampshire Aircraft Park, T.F.) relinquishes his commn. on ceasing to be empld., March 9th.

Transferred to unempld. list:—Lt. F. Gilbert, Feb. 21st; Capt. A. C. Smith, April 9th; Sec. Lt. A. W. Tipp, April 16th; Lt. J. E. Macloghlin, April 19th; Sec. Lt. G. Lee, May 29th; Lt. B. C. Woodward, Aug. 2nd; Sec. Lt. J. V. Martyn, Sept. 2nd; Lt. W. R. Kells, Sept. 4th; Sec. Lt. R. S. MacCormac, Lt. J. H. Mackie, Sec. Lt. W. Marshall, Sept. 8th; Lt. S. S. Dixon, Sept. 10th; Lt. G. B. Monkman, Sept. 14th; Sec. Lt. J. O. Miles, Sept. 15th; Sec. Lt. (Hon. Lt.) E. W. C. Catling, Sept. 16th; Sec. Lt. F. R. Johnson, Capt. B. G. McCormick, Sept. 20th; Lt. R. M. Weaver (substituted for notification in "Gazette" of Oct. 7th, wherein this officer's rank was shown as Sec. Lt.), Lt. C. E. Channing, A.F.C., Sept. 22nd; Capt. H. S. Brown, Sec. Lt. J. J. B. Campbell, Sec. Lt. J. R. Johnson, Sept. 23rd; Lt. P. T. Creswell, Capt. O. H. Mason, Sept. 27th; Lt. J. Butterfield, Sept. 28th; Lt. E. S. Cohen, Oct. 7th; Sec. Lt. W. Littlejohn, Oct. 8th; Lt. J. A. Atkinson, Sec. Lt. W. B. Chippendale, Sec. Lt. E. G. Pugh, Maj. F. C. Rowe, Oct. 9th; Sec. Lt. B. D. Anderson, Lt. T. V. A. Davison, Sec. Lt. A. T. Davis, Sec. Lt. P. A. Edmonds, Sec. Lt. C. H. Hare, Sec. Lt. (Hon. Lt.) R. Nicolle, Lt. A. H. Prior, Lt. A. J. O. Spiers, Capt. B. O. Warren, Oct. 10th; Lt. N. A. Ayres, Lt. H. Berridge, Lt. A. R. Butler, Sec. Lt. E. L. Hocking, Sec. Lt. R. J. M. Platt, Oct. 11th; Lt. S. Beeby, Sec. Lt. A. Elson, Oct. 12th; Maj. T. G. Clarson, Sec. Lt. W. H. Sayer, Sec. Lt. J. J. Shuley, Oct. 13th; Lt. C. W. Bentley, Lt. F. A. Bracher, Sec. Lt. F. Calnan, Lt. A. H. Desforges, Capt. C. G. More, Sec. Lt. F. W. Osborne, Sec. Lt. V. P. Pereth, Oct. 14th; Lt. (actg. Capt.) B. R. Bostock, Sec. Lt. C. M. Byham, Capt. K. D. Doyle, Oct. 15th.

Lt. E. A. B. Carter (Mddx. R., T.F.) relinquishes his commn. on account of ill-health (contracted on active service), and is granted the rank of Capt., Jan. 25th (substituted for notification in the "Gazette" of Jan. 24th).

The initials of Lt. R. J. Murchison are as now described, and not "R. T.," as shown in "Gazette" of Sept. 30th.

MEDICAL BRANCH.—Transferred to unempld. list:—Lt. L. Patchett, Feb. 24th; Lt. W. J. Lytle, Oct. 6th.

WOMEN'S ROYAL AIR FORCE.—Dep. Admin. V. Dening reverts temporarily to rank of Asst. Admin. on ceasing to be empld. as Dep. Admin, Sept. 26th

Asst. Admin. (actg. Dep. Admin.) V. M. Orrock reverts to substantive rank on ceasing to be empld. as Dep. Admin., Oct. 1st.

Asst. Admin. (actg. Dep. Admin.) M. C. Grantham reverts to substantive rank on ceasing to be empld. as Dep. Admin., Oct. 1st.

Dep. Admin. (actg. Admin.) D. C. Muir, M.B.E., reverts temporarily to rank of Asst. Admin. on ceasing to be empld. as Dep. Asst. Comdt., Oct. 1st.

The following officers relinquish their appts. on account of ill-health:—Deputy Administrators.—Mrs. G. E. Dickinson, Sept. 16th; Mrs. J. B. Bowmer, Sept. 26th; E. M. P. Grubb, Sept. 29th.

The following officers relinquish their appts. at their own request:—Asst. Commandant II.—Mrs. M. Edwards, O.B.E., Oct. 6th.

Asst. Administrators.—M. G. Ilwaine, June 12th; Mrs. I. M. Banks, Aug. 23rd; E. M. Phillips (actg. Dep. Admin.), Sept. 16th; G. Vernon (Dep. Admin., actg.), Sept. 18th; J. K. Mountford-Smith (actg. Dep. Admin.), Sept. 19th; I. M. Lea, Sept. 24th; Mrs. H. H. M. Shepstone, Mrs. E. H. Foster, Sept. 26th.

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The following officers relinquish their appts. on completion of service :—Administrators.—P. A. Taylor, Aug. 29th; Mrs. L. M. Parker, Sept. 15th; F. G. Hunter, Sept 23rd; Mrs. C. T. Bayley (D.A.C.), M.B.E., Sept. 30th.

Dep. Administrators.—E. K. Alexander, Sept. 19th; B. Brentnall, Sept. 25th.

Asst. Administrators.—R. H. Gibson, Sept 11th; Mrs. N. Allen, Sept. 13th; B. M. Howard, Sept. 16th; D. V. Carter, Sept. 17th; Mrs. N. A. M. Barnett (actg. Dep. Admin.), Sept. 19th; N. C. Pemberton, Sept. 20th; M. Panniers, Sept. 22nd; E. C. Edwards (actg. Dep. Admin.), M. E. F. Machin, Sept. 23rd; M. M. Anderton, J. V. Campbell, Sept. 24th; Mrs. F. Mackay, K. Jowett, F. M. H. Whitefield, E. M. Rabone, D. F. Forbes-William, Sept. 26th; N. M. Foxall, Sept. 29th; C. B. Collas, Sept. 30th; Mrs. J. Longhurst, Oct. 1st; E. M. Pasley, Oct. 7th; C. H. Service, Oct. 8th; H. H. Butcher, M. Farmer, M. Pearce (actg. Dep. Admin.), Oct. 10th; Mrs. A. G. Leeson, Oct. 11th.

MEMORANDA.—The following Oversea Cdts. are granted temp. commns. as Sec. Lts. with effect from Feb. 15th, and relinquish such commns., with permission to retain the rank, from the day following termination of the standardised voyage in the case of those claiming immediate repatriation, and from the day following demobilisation in England in all other cases :—9438 T. S. Duncanson, 24548 D. H. Strutt.

The following Temp. Hon. Lts relinquish their commns. on ceasing to be empld. :—J. A. Foster, Sept. 2nd; G. G. Bradshaw, H. R. Fulford, Sept. 16th; E. Johnson, C. F. Woodgate, Oct. 16th; T. Kimpton, Oct. 18th.

Lt. (actg. Capt.) W. J. C. Kendall, M.C., is transferred to unempld. list, from (S.O.), Oct. 9th.

Lt.-Col. C. F. de S. Murphy, D.S.O., M.C. (Maj., R. Berks R.), resigns his commn., and is granted the hon. rank of Brig.-Gen., Sept. 17th. (Substituted for notification in the "Gazette" of Sept. 16th.)

Capt. (actg. Maj.) W. T. Blake (Oxon and Bucks L.I.) relinquishes his commn. on account of ill-health, and is granted the rank of Maj., May 13th. (Substituted for notification in the "Gazette" of May 27th.)

The surname of 12767 Cadet M. M. Ffinch is as now described, and not "Finch," as stated in the "Gazette" of Oct. 7th.

The initials of Flt. Lt. H. R. Kavanagh, M.B.E., are as now described, and not "H. B.," as stated in the "Gazette" of Oct. 17th.

The notification in the "Gazette" of July 18th concerning 19916 Cadet H. Simpson is cancelled.

AIR MINISTRY, Oct. 31st.

R.A.F.—The following promotions are made :—Air Commodores—Group Capt. H. R. M. Brooke-Popham, C.B., C.M.G., D.S.O., A.F.C.; Group Capt. E. M. Maitland, C.M.G., D.S.O., A.F.C., Aug. 4th; Air Commodore A. V. Vyvyan, C.B., D.S.O., to be Air Vice-Marshal, Oct. 10th.

Air Commodores.—Group Capt. (actg. Air Commodore) B. H. H. Cooke, C.M.G., C.B.E., D.S.O., relinquishes the grading for pay and allowances as Air Vice-Marshal, Oct. 18th.

FLYING BRANCH.—Lt.-Col. C. F. de S. Murphy, D.S.O., M.C., to be Lt.-Col. (A.), from Group Comdr., June 5th.

Flt. Lt. H. A. Tweedie to be Flt. Lt. (A. and S.), from (S.O.), Sept. 15th.

Lt. C. G. Ferrell is graded for purposes of pay and allowances as Capt. whilst empld. as Capt. (A. and S.), June 21st.

Lt. I. L. Roy to be Lt. (A.), from (T.), June 1st, 1918.

Sec. Lts. to be Lts. :—J. H. Manicom, M.C., Nov. 30th, 1918 (since demobilised); W. C. Treen, M.C., D.F.C., April 1st (since relinquished commn).

Pilot Officers to be Flying Officers :—W. Smith, Oct. 1st; W. G. Freel, Oct. 24th.

P.F.O. C. E. Usher-Somers (late R.N.A.S.) is granted a temp. commn. as Sec. Lt. (A.), Aug. 14th, 1918; 305019 Flight Cadet A. Wilson is granted a temp. commn. as Sec. Lt. (O.), Aug. 26th, 1918.

The following relinquish their commns. on ceasing to be empld. :—Lt. S. C. P. Slattery (Lt., Ox. and Bucks L. Inf.), Sept. 11th; Sec. Lt. J. L. Fletcher (Sec. Lt., Dorset R.), Oct. 13th; Lt. H. Kirby (Lt. E. Kent R.), Oct. 15th; Lt.-Col. A. C. E. Marsh (Maj., R.F.A.); Capt. C. C. Waddington (Capt., Hamp. R.); Lt. (Hon. Capt.) T. R. Wells, M.C. (Capt., Punjabis), Oct. 16th; Maj. R. G. H. Murray, M.C. (Maj., Gurkha Rifs.), Oct. 21st; Capt. R. H. Shears (Capt., Shrops. L.I.); Lt. C. E. Jessell (Lt., Wilts. R.), Oct. 22nd; Maj. J. E. Hume, D.S.O. (Capt. Conn. Rangers), Oct. 23rd; Lt. E. P. Manson, M.C. (Lt., Midd'x. R.), Oct. 25th.

Transferred to unempld. list :—Sec. Lt. S. Lestrade, Sec. Lt. N. H. Petrimoulx, Sec. Lt. J. W. Pilgrim, Lt. W. Sidebottom, Sec. Lt. E. G. Smith, Feb. 1st; Lt. C. H. Smith, March 13th; Lt. F. G. Pym, April 7th, Sec. Lt. W. J. Goddard, April 8th; Sec. Lt. D. Smith, April 16th; Lt. G. Sevell, April 22nd; Sec. Lt. (Hon. Lt.) W. Taylor, April 23rd; Lt. L. C. R. Alexander, Lt. I. D. Cameron, Lt. A. M. Kinnear, M.C., May 1st; Sec. Lt. G. E. Warren, May 18th; Sec. Lt. W. A. Spence, May 20th (substituted for notification in the "Gazette" of May 25th); Lt. I. Holliday, May 31st (substituted for notification in the "Gazette" of June 27th); Sec. Lt. R. L. Palmer, June 2nd; Lt. H. Shaw, June 5th (substituted for notification in the "Gazette" of Aug. 22nd wherein this officer was shown under Admin. Branch); Lt. E. F. Erzinger, July 14th; Lt. E. R. W. Millar, July 29th (substituted for notification in the "Gazette" of Aug. 1st); Lt. J. V. Wischer, Aug. 19th; Sec. Lt. (Hon. Lt.) J. Clarke, M.C., Sept. 5th; Sec. Lt. D. J. Ancott, Lt. G. R. Stafford, Sept. 11th; Sec. Lt. F. R. Salomon, Sept. 12th; Capt. F. G. Andreae, A.F.C., Sept. 13th; Lt. H. F. S. Kilby, Sept. 22nd; Lt. P. D. Kirk, Sept. 23rd; Lt. L. Rawlinson, Sept. 27th; Sec. Lt. W. Saunders, Sec. Lt. S. S. Scott, Sept. 28th; Lt. G. F. Manning, Lt. E. R. Watt, Sept. 29th; Capt. M. Hunter, Oct. 7th; Lt. C. G. Ferrell, Lt.-Col. F. M. Roxby, O.B.E., D.F.C., Oct. 8th; Lt. J. H. Forbes, Lt. G. B. Holmes, Lt. A. T. Isbell, Lt. W. B. Kelly, Lt. W. C. Marsh, Oct. 9th; Lt. B. Archer, Sec. Lt. H. W. Bush, Lt. A. C. Collier, Sec. Lt. V. C. Cordingley, Lt. H. Etterley, Lt. J. W. Foreman, D.F.C., Lt. A. H. Carland, Lt. W. T. Gilson, Sec. Lt. C. C. Graham, Sec. Lt. R. L. Henning, Lt. E. A. Hodgson, Lt. D. G. MacKenzie, Lt. E. C. Netherton, Lt. F. R. Oddy, Lt. G. F. Frecar-Read, Sec. Lt. H. J. Roberts, Lt. S. Seed, Lt. C. B. S. Spackman, D.F.C., Capt. A. C. Stevens, Capt. E. J. Travers, Oct. 10th; Sec. Lt. J. Gargan, Lt. J. N. Gladish, Lt. A. C. Godfrey, Sec. Lt. C. M. Hill, Maj. J. L. Jackson, M.C., Lt. J. H. Mainwaring, Lt. F. H. Rowe, Lt. A. N. Stratton, Sec. Lt. R. Stuart, Oct 11th; Lt. E. E. Arnold, D.F.C., Sec. Lt. J. Drake, Sec. Lt. (Hon. Lt.) J. Fenwick, Lt. G. Gilham, Lt. P. D. Robins, Lt. E. H. Russell, Lt. C. R. Smythe, Capt. H. F. Stackard, Oct. 12th; Lt. P. D. Baker, Lt. J. C. Joynt, Lt. J. C. Langford, Sec. Lt. C. M. Pavey, Lt. R. D. S. Sparkes, Lt. L. A. Wilkins, Oct. 13th; Lt. W. P. Delamere, Lt. C. A. M. Furlonger, Sec. Lt. J. A. Hinchcliffe, Lt. F. J. Islip, Sec. Lt. A. E. Roberts, Lt. C. S. Sivil, Oct. 14th; Lt. D. S. Allison, Lt. W. E. Holland, Lt. L. Kent, Sec. Lt. E. F. Pittaway, Lt. R. W. Thrower, Oct. 15th; Lt. E. Belbin, Sec. Lt. G. A. Body, Lt. H. G. Davis, D.F.C., Sec. Lt. A. H. Griffiths, Lt. C. H. Harwood, Lt. R. W. Parkinson, Lt. A. F. Scroggs, Lt. (Hon. Capt.) R. L. Thomas, Lt. G. E. Tugwell, Oct. 16th; Sec. Lt. S. Barker, Capt. H. Brokensha, Sec. Lt. C. W. Joughin, Lt. (Hon. Capt.) F. T. R. Kempster, D.F.C., Capt. L. G. Scott, Sec. Lt. A. Shepherd, Oct. 17th; Lt. C. Allday, Sec. Lt. H. L. Bellamy, Sec. Lt. H. O. Brown, Lt. F. G. C. Dickinson, Capt. R. G. Gould, M.C., Sec. Lt. R. L. Seymour, Sec. Lt. T. H. Swann, Oct. 18th; Lt. N. McC. Anderson, Lt. A. W. Birch, Oct. 19th; Sec. Lt. P. F. Bovingdon, Sec. Lt. C. J. T. Boys, Sec. Lt. (Hon. Lt.) H. B. Elwell, Sec. Lt. A. M. Verity, Lt. F. Woolley, D.F.C., Oct. 22nd; Lt. S. W. Carline, Capt. (actg. Maj.) C. R. Carr, Sec. Lt. A. A. B. Chipper, Sec. Lt. W. A. Hammerton, Lt. C. D. Skinner, Sec. Lt. J. E. Wooding, Oct. 22nd; Lt. E. C. Slaght, Oct. 29th.

The following Capts. relinquish their commns. on account of ill-health contracted on active service, and are permitted to retain their rank :—D. G. Young, Oct. 24th; J. M. Heap, Oct. 27th.

Capt. H. Hemming, A.F.C. (Lt., Worc. R.), resigns his commn., Nov. 1st.

Lt. D. E. P. Chaplin (Lt., R.H., R.F.A.) resigns his commn., Sept. 10th (substituted for notification in "Gazette" of Sept. 9th).

Lt. O. C. Holleran relinquishes his commn. on account of ill-health caused by wounds, and is granted the rank of Capt., Sept. 26th.

Lt. J. C. Wilson, D.F.C., relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, Oct. 23rd.

Sec. Lt. F. B. A. Punnett relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, Sept. 28th.

Sec. Lt. (Hon. Lt.) C. J. Swatridge (Lt., Notts. and Derby R.) resigns his commn., Oct. 25th.

The initials and rank of Lt. W. E. B Holland are as now described, and not "Lt. (actg. Capt.) W. E. Holland," as stated in "Gazette" of May 6th.

The notification in "Gazette" of April 1st concerning Sec. Lt. (Hon. Lt.) G. J. Williams is cancelled (notification in "Gazette" of April 4th to stand).

The notification in "Gazette" of April 8th concerning Lt. W. J. Goddard is cancelled.

The notification in "Gazette" of June 6th concerning Sec. Lt. R. J. Palmer is cancelled (notification in "Gazette" of Aug. 29th to stand).

The notification in "Gazette" of July 29th concerning Lt. W. Adamson is cancelled.

ADMINISTRATIVE BRANCH.—Wing Comdr. A. C. H. MacLean to be Wing Comdr., from (S.O.), Oct. 9th.

Lt. J. B. V. Clements, D.F.C., to be Lt., from (O.), Nov. 23rd, 1918 (substituted for notification in "Gazette" of Feb. 4th).

Sec. Lt. I. Holliday to be Lt. (since demobilised), May 8th.

Pilot Officer (Hon. Flying Officer) L. Miller to be Pilot Officer (Hon. Flying Officer), from (S.O.), Sept. 24th.

Transferred to the unempld. list :—Sec. Lt. J. S. McLay, Feb. 4th; Sec. Lt. S. D. Connolly, March 30th; Sec. Lt. W. W. Smith, July 12ht; Sec. Lt. H. V. N. Bankes, Sept. 26th; Lt. G. Knight, Sec. Lt. S. A. Saunders, Sept. 29th, Sec. Lt. F. G. Simpkins, Oct. 7th; Sec. Lt. L. E. Falla, Sec. Lt. E. L. Henry, Lt. R. T. Kelly, Oct. 9th; Sec. Lt. W. F. Blackman, Lt. T. H. Butler, Lt. H. E. K. Eccles, M.C., Lt. H. W. Holmes, Sec. Lt. E. P. Pearce, Lt. J. Saunders, Oct. 10th; Lt. G. A. Hutchinson, Sec. Lt. (Hon. Maj.) R. E. Pole, Oct. 11th; Sec. Lt. F. H. M. Francis-Hawkins, Sec. Lt. H. Silvester, Lt. R. S. Swanton, Oct. 12th; Sec. Lt. D. J. Evans, Sec. Lt. G. R. La Cecilia, Lt. W. O'Toole, Sec. Lt. J. Sherowitz, Oct. 14th; Lt. (Hon. Capt.) R. Elphick, Capt. W. F. Routley, Capt. E. R. Slaney, Sec. Lt. (Hon. Lt.) E. A. Jones-Stewart, Oct. 15th; Lt. (Hon. Maj.) A. A. Bridgewater, Lt. (Hon. Capt.) E. Codyre, Sec. Lt. A. T. Guinevan, Lt. A. G. Hearnden, Sec. Lt. C. E. Hutchence, Lt. H. A. Plater, Lt. G. Thomson, Sec. Lt. D. A. Willmott, Oct. 16th; Capt. A. H. W. Wall, O.B.E., M.C., Oct. 18th; Lt. H. Shaw, Oct. 19th; Sec. Lt. H. Sharkey, Lt. C. J. Sharpe, Oct. 22nd; Lt. A. D. Tatham, Oct. 24th.

Capt. (actg. Maj.) W. J. King (R. Muns. Fus.) relinquishes his commn. on account of ill-health (caused by wounds), May 16th.

Capt. P. G. Pullon (Ches. R., T.F.) relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain his rank, Oct. 20th.

Sec. Lt. T. Collins relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Oct. 23rd.

The initials of Lt. F. W. Alderton are as now described, and not "W. F.," as stated in "Gazette" of Feb. 14th.

The notification in "Gazette" of Oct. 3rd concerning Lt. J. R. M. Tweddell is cancelled ("Gazette" of July 29th to stand).

TECHNICAL BRANCH.—Lt. M. P. Mullery to be actg. Capt. whilst empld. as Capt., Grade (A), from Aug. 28th, 1918, to April 30th.

The following Lts. are graded for purposes of pay and allowances as Capt. whilst empld. as Capt., Grade (A) :—M. P. Mullery, from May 1st to May 15th.

H. A. Adams, from (S.O.), May 13th (substituted for notification in the "Gazettes" of May 30th and July 15th).

Lt. I. L. Roy to be Lt., Grade (B), from (A), April 4th, 1918 (substituted for notification in the "Gazette" of May 7th, 1918).

Lt. F. C. Rayson to be Lt., Grade (B), from A'ship, July 17th (substituted for notification in the "Gazette" of Sept. 5th).

Sec. Lts. to be Lts. :—P. S. Riach, April 15th, 1918 (without pay and allowances of that rank prior to May 1st, 1918); C. C. Parrott, Jan. 29th (without pay and allowances of that rank prior to March 13th) (substituted for notification in the "Gazette" of April 4th); Sec. Lt. (Hon. Lt.) C. J. Poole is graded for purposes of pay and allowances as Lt. whilst empld. as Lt., Grade (B), from May 1st to July 31st.

Sec. Lts. to be Lts. without the pay and allowances of that rank :—J. Butcher, G. G. Hargrave, April 2nd, 1918.

Sec. Lt. S. Graves to be Sec. Lt., Grade (B), from (A.), June 7th.

Transferred to the unempld. list :—Sec. Lt. H. E. Brain, Sept. 13th (substituted for notification in the "Gazette" of Sept. 30th); Capt. F. H. Burgess, Sept 15th; Lt. J. W. Askham, Sept. 17th; Lt. M. V. Barton, Sept. 25th; Sec. Lt. J. O. H. Norris, Sept. 27th; Sec. Lt. H. J. Kibble, Capt. G. Sykes, M.B.E., Sept. 28th; Lt. R. M. Baird, Sept. 30th; Capt. H. G. Harrison, Oct. 8th; Maj. S. T. Baker, Sec. Lt. A. Shepheard, Oct. 9th Sec. Lt. (Hon. Lt.) J. C. Boughton, Sec. Lt. W. S. Hay, Lt. M. E. Holroyd, Sec. Lt. R. H. Nicol, Lt. W. B. Rayner, Lt. H. F. Wilkinson, Oct. 10th; Sec. Lt. J. A. Anderson, Lt. A. W. Armstrong, Sec. Lt. A. A. Gardner, Sec. Lt. (Hon. Lt.) H. Hellier, Capt. J. Honey, Lt. P. H. Paul, Capt. W. H. B. Sandes, Lt. (Hon. Capt.) C. Shears, Lt. C. R. Heber-Trevor, Oct. 11th; Capt. G. E. Lucksted, Maj. R. Orme, Oct. 12th; Capt. H. R. Lecomber, O.B.E., Lt. T. C. Martin, Lt. J. G. Peacock, Oct. 13th; Lt. L. E. Heather, Sec. Lt. E. S. Olney, Oct. 14th; Lt. C. A. Brook, Sec. Lt. H. L. Vahey, Oct. 15th; Lt. (actg. Capt.) J. R. Frankish, M.B.E., Sec. Lt. M. Thompson, Lt. W. S. Vale, Sec. Lt. H. S. Whitley, Capt. C. W. Willcox, Oct. 16th; Capt. T. J. Hamp, Capt. H. L. Hill, Capt. W. H. Sharpe, Capt. R. C. Shortt, Lt. C. J. Strother, M.B.E., Oct. 17th; Lt. T. McI. Mackay, Sec. Lt. J. E. Tyrrell, Maj. S. M. Cleverley, Oct. 18th; Capt. C. Fairbairn, Lt. N. V. Harle, Capt. R. Stephenson-Peach, M.B.E., Sec. Lt. F. C. Warren, Oct. 21st; Sec. Lt. R. C. Carline, Capt. J. K. Fryer-Smith, Oct. 22nd; Lt.-Col. H. Burchall, D.S.O., Lt. J. R. Shanks, Sec. Lt. (Hon. Lt.) A. E. Thorne, Lt. F. Tingle, Sec. Lt. E. T. E. Welburn, Oct. 23rd.

Capt. H. Lancaster (Norf. R.) relinquishes his commn. on account of ill-health, Oct 20th.

The notification in "Gazette" of April 29th concerning Sec. Lt. (Hon Lt.) R. W. V. Midlane is cancelled.
The notification in "Gazette" of June 3rd concerning Sec. Lt. (Hon. Lt.) R. W. V. Midland is cancelled.
The notification in "Gazette" of May 30th concerning Sec. Lt. G. R. Wills is cancelled.

MEDICAL BRANCH.—Transferred to the unempld. list:—Capt. R. B. Adams, Sept. 10th; Capt. (actg. Maj.) J. M. Kirkness, Sept. 13th; Capt. S. G. Smith, Sept. 28th (ssubstituted for notification in "Gazette" of Oct. 10th, wherein this officer was shown as Lt.); Capt. A. D. Kennedy, Oct. 9th.

MEMORANDA.—The following temp. Hon. Lts. relinquish their commns. on ceasing to be empld.:—J. B. Mitchell, R. K. Roberts, J. P. Tweedy, Sept. 16th; E. D. Burley, H. E. Portsmouth, H. E. G. Rowley, R. G. Sharp, Oct. 16th.

Transferred to the unempld. list:—Sec. Lt. P. Gent, from (S.O.), Capt. J. E. A. Greatorex, from (S.O.), Lt. P. E. Stubbs, from (S.O.), Oct. 14th; Lt.-Col. F. R. Drake, C.B.E., from (S.O.), Capt. R. G. Mitchell, O.B.E., from (S.O.), Sec. Lt. E. A. Cogswell, from (S.O.), Lt. J. E. D. Samuel, from (S.O.), Oct. 15th; Capt. H. E. Weaver, from (S.O.), Oct. 16th; Capt. E. H. Haworth, from (S.O.), Oct. 17th.

Sec. Lt. G. P. Pinney relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Oct. 8th.

The notification in the "Gazette" of Oct. 10th concerning temp. Hon. Lt. (Hon. Capt.) W. S. Kellar is cancelled.

PERSONAL NOTICES.

NAVAL.

ENGAGEMENT.

HARDMAN—BUSHBY.—The engagement is announced between Capt. Edmund Parfitt Hardman, D.F.C., son of the late John Bernard Hardman, of Edgbaston, Birmingham, and Mrs. Hardman, of 25, Fitzgeorge Avenue, London, and Betty, youngest daughter of the late Percival White Bushby and Mrs. Bushby, of Torquay, and youngest step-daughter of Capt. Arthur P. James, R.N., of Braydon Hall, Minety, Wiltshire.

BIRTH.

READ.—On Nov. 3rd, at 4, Grove Road, Frindsbury, Rochester, to the wife of Capt. S. J. Read, R.A.F. (Payr. Lt., R.N.)—a daughter.

MILITARY.

ENGAGEMENT.

CAVE—PIGGIN.—The engagement is announced of Capt. T. Walford Cave, M.C., R.F.A., R.A.F., eldest son of the Rev. Thomas Cave, vicar of St. James, Handsworth Wood, Birmingham, and Gwendolin Mary, only daughter of Herbert H. and Mrs. Piggin, of Hendon Hall, N.W.

AIR FORCE.

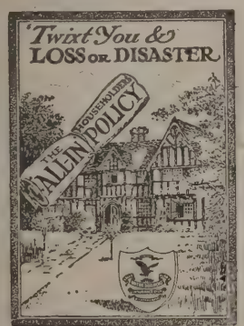
DEATH.

KNIGHT.—Capt. Gerald Fetherston Knight, R.A.F., who died at the R.A.F. Hospital, Eaton Square, on Oct. 30th, was the son of Robert Lynam and Lena Fetherston Knight, and the grandson of the Rev. Robert Knight, late of "Stanmore," Torquay. His death was caused by illness contracted while a prisoner in Germany. Some two years ago Capt. Knight escaped into Holland from the prisoners' camp at Strösken, and his experiences are described in his book "Brother Bosch," which was published recently.

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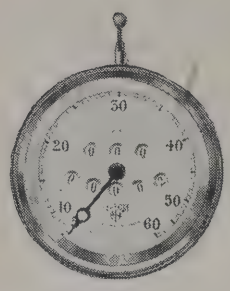
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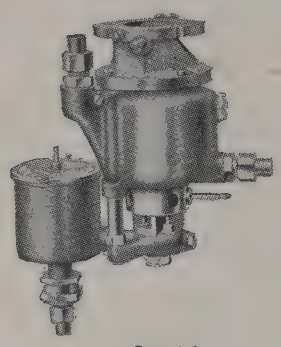
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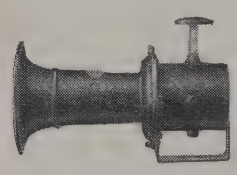
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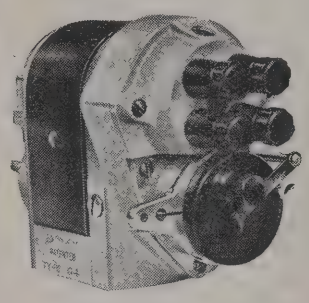
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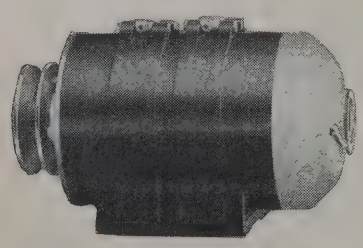
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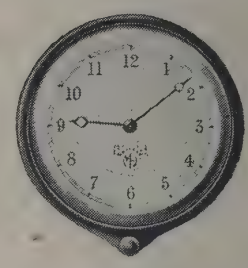
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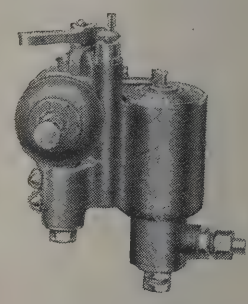
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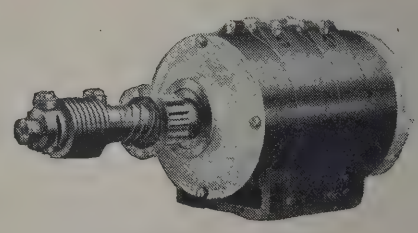
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OLYMPIA. STAND 138, ANNEXE.

GRAY CO.

NOTES ABOUT THE OLYMPIA MOTOR SHOW.

THE OLYMPIA MOTOR SHOW.

Many of the firms primarily engaged in aeronautical work are also interested in the automobile industry, and it is therefore thought desirable to publish the following notes for their information. The Motor Show which will open on Nov. 7th has additional interest in that it is the first to be held since 1913. The public have had little opportunity to estimate the progress made in motor engineering in the intervening years.

All the firms whose work is outlined in the following notes have during the war been engaged in aeronautics and have contributed ably to the successes attained by the Royal Air Force. The influence of the experience gained by these firms in aeronautical matters has served to add improvements to engines and car bodies which were already excellent in their way.

THE CULT OF PERFECTION.

As a schoolboy learnt to recognise a car by the radiator form, so a connoisseur in motor-carriages could tell, by the look of good taste and refinement in a coach body, the product of the Regent Carriage Co. It is, perhaps, natural that a firm, who had attained perfection in the old-fashioned craftsmanship handed down to them from the days when woodworking was a great British art, should be in a position at the outbreak of war to reorganise their extensive shops for the construction of aircraft and commence straight-away on production work.

Much of our success in the air has been due to the excellent work put into our machines by skilled artisans who have been accustomed to turn out fine jobs long before the A.I.D. existed. In the early days of the war, Mr. Myles Scarff, the able managing director of the Regent Carriage Co., realised that his firm with so experienced a staff would become a valuable asset to the nation, and, consequently, reorganised and expanded the works. As a result they were soon in a position to, and did turn out many types of aircraft, thousands of motor-lorries, ambulances and aeroplane trailers.

The firm manufacture all the metal parts for their work, and although the factory was replete with all types of wood-working machinery, every new labour-saving device placed on the market was carefully studied, and, if found satisfactory, it was installed within model workshops.

As an instance of their painstaking and thorough methods, the varnishing room can be taken as an example. The room contains the most approved and modern heating apparatus, and has a specially constructed floor so as to make it quite dustproof. Before a coach-body is varnished, both coach and room are thoroughly swilled down with a water-hose so as to remove every particle of dust. Even the workers must cover or remove all woollen articles of apparel before working in this room.

With their pre-war experience, and the result of the knowledge gained in building aircraft, where they have learned how bodies can be made lighter, stronger and more artistic in appearance, the British public can rely on the Regent Carriage Co. to hold its own against any competition, American or otherwise, and that it will contribute in keeping British industry and commerce in its premier position throughout the world.

THE ARROL-JOHNSTON CAR AT THE OLYMPIA SHOW.

The Arrol-Johnston Co. is exhibiting two models at the Olympia Show—a "Victory" car and a new 15.9 h.p. car.

The "Victory" model has a four-cylinder engine, with a bore of 80 mm. and a stroke of 140 mm. The R.A.C. rating is, therefore, 15.9 h.p. Unlike earlier cars made by this company, overhead valves are used. The lubrication is automatic. A four-speed gear-box is fitted.

Both brakes operate on the rear wheels. Detachable steel wheels are supplied.

The body is an open five-seater, in which the driver's seat is adjustable, so that comfort is obtainable without adjusting one's own body to the design of the car. A C.A.V. lighting and starting outfit is supplied.

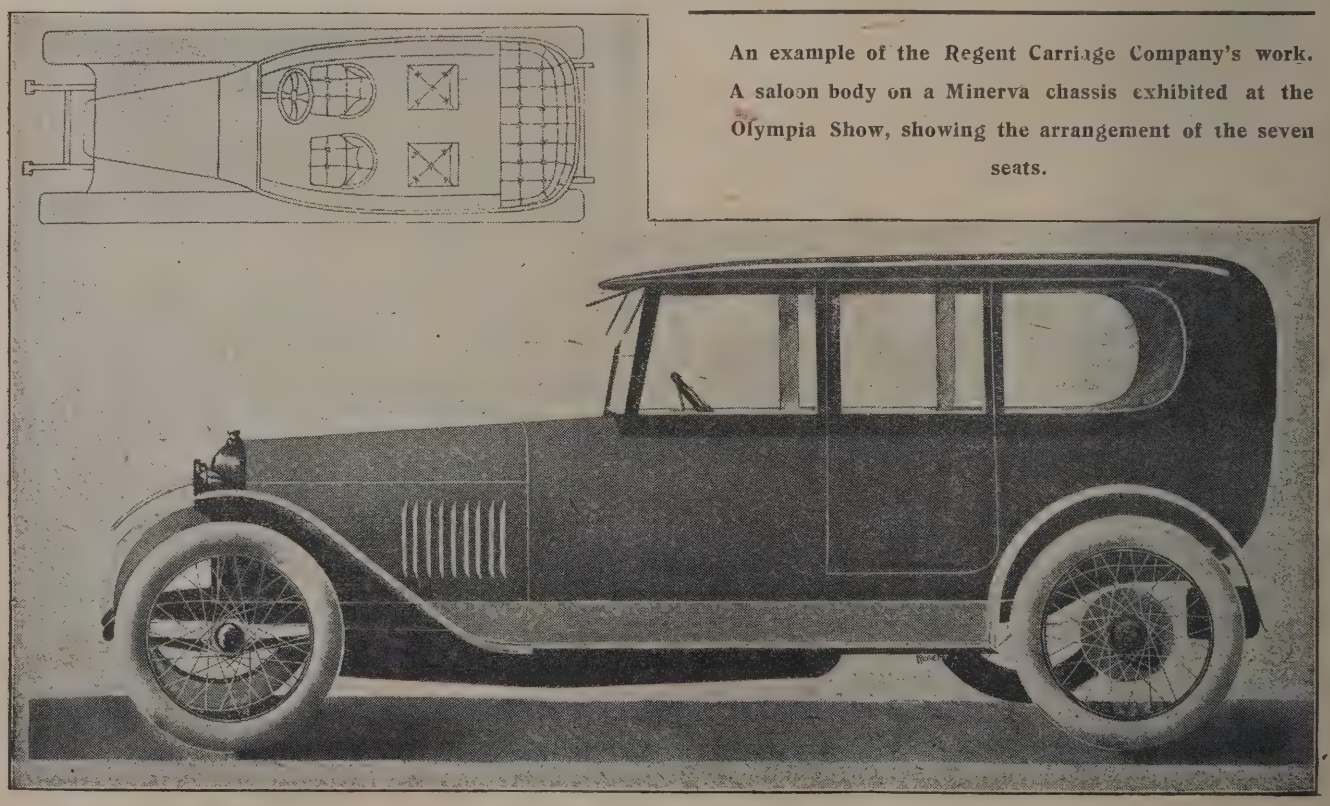
One of these cars has been supplied to H.R.H. the Prince of Wales, K.G.

The 15.9 h.p. model is that on which the Arrol-Johnston Co. has built its great reputation. The stroke is 20 mm. shorter than that of the "Victory" model, and overhead valves are not used. This car also has both brakes operating on the rear wheels. Electric lighting and starting are installed.

The Arrol-Johnston firm, which is one of the subsidiary companies of William Beardmore and Co., Ltd., has devoted its efforts during the war mainly to the building of aero engines, notably the B.H.P. Their experience in these matters cannot fail to have influenced the design and construction of their car engines.

THE SKOOTAMOTA.

At a recent board meeting of the Gilbert Campling Company, Ltd., the price of the A.B.C. Skootamota was considered, and it was decided to advance the selling price of each machine to 49 guineas.



An example of the Regent Carriage Company's work. A saloon body on a Minerva chassis exhibited at the Olympia Show, showing the arrangement of the seven seats.

THE EXHIBITS OF WILLIAM COLE AND SONS, LTD.

Another firm which during the war built aeroplanes for the Government is William Cole and Sons, Ltd. Their long experience of designing and building car bodies of the highest class naturally helped them in their war work in aeronautics. They have now returned to their original work, and three specimens of their skill will be exhibited at the forthcoming show. The description of these is given below.

A 30 h.p. Daimler (not the "light thirty") equipped with a standard Daimler electric light and starting set, also wire wheels; fitted with Cole four-seated Cabriolet body. The body covers the full length of the chassis. It is capable of seating six people quite comfortably, although only constructed with one door each side. The seating capacity is of the usual Cole arrangement, namely, detachable spring cushion at back, and two Cole patent sliding chair seats, which are of specially light construction, with patent undercarriage to give freedom of movement. These are operated at the side by means of a small trigger lever. Two very light folding chairs are also supplied to seat two extra passengers, the chairs when not required folding away in pockets at the back of the chair seats.

The Cole patent hood opens or closes in one movement. A special point in this connection is the ease of action and general simplicity considering the length of body. In spite of this length the appearance is the same as the standard four-seater type of body, which is comparable to a comfortable two-seater. The hood is covered with the best enamel leather; the interior is trimmed with the usual quartered and inlaid choice woods highly polished. The instrument board is of polished wood to match. A V-shape wind screen is fitted, with top portion of each side made to open.

A 25 h.p. Vauxhall, fitted with standard model four-seated Cabriolet. The general details are as above, with the exception of the wind screen, which is of the straight pattern. A special feature of this body is the front pillars, which are of very light wood construction. It provides seating accommodation for four or five people, and is trimmed in grey leather and cloth.

A 25 h.p. Talbot with Cole Standard Imperial Limousine Landaulette body. Frameless windows are fitted throughout, and are raised or lowered by special lever arrangement instead of glass strings. The seating inside is for four or five passengers, and one passenger can sit in front beside the driver.

INSTRUMENTS AND ACCESSORIES.

Before the war, S. Smith and Sons (M.A.), Ltd., were known as the foremost Motor Accessories House, not only in Great Britain, but throughout the world. During the war their entire output consisted of instruments for aircraft, and they claim to have produced more aviation instruments for the British and Allied Governments than any other firm. As a result of the experience thus gained they have been enabled to perfect their vast organisation for the production of post-war accessories.

At the Olympia Motor Show, which opens to the public on the 7th inst., S. Smith and Sons will show on their stand (No. 345) specimens of their complete and up-to-date range of motor accessories, and will include examples of the following Smith products:—Speedometers, revolution indicators, air speed indicators, motor-clocks, pressure gauges, petrol tank gauges, carburetters, starting and lighting systems, electrical, mechanical and bulb horns, mascots, canteens and interior fittings, tyre pumps, double acting jacks, and also M-L. magnetos, K.L.G. sparking plugs, Euk easy starters, etc., for which S. Smith and Sons (M.A.), Ltd., are the sole selling agents.

The M-L Magneto Syndicate, Ltd., for whom S. Smith and Sons are the sole selling agents, will have a separate stand (No. 346), where all types of M-L. magnetos will be exhibited and demonstrated.

In pre-war days the usual practice was for a man to buy his car, and then fit all the accessories at additional heavy cost, but the post-war principle and ideal, which is showing itself in the policy of some motor manufacturers to turn out cars "ready-for-the-road," will tend to make motoring much more popular in the days to come.

Before the war 13 out of 14 British car manufacturers standardising instruments fitted the Smith equipment, and there is no doubt that most of the post-war cars will be similarly fitted and equipped.

Every article has undergone a complete change in design, its quality consistently improved, the finish and durability perfected, its operation made absolutely reliable and prolonged, expensive and independent tests have proved them worthy of the paramount place as post-war accessories.

THE ANGLO-AMERICAN OIL CO., LTD., AT OLYMPIA.

The Anglo-American Oil Co. will be exhibiting all their grades of motor spirit, illuminating and fuel oils at the Olympia Motor Show which opens on Nov. 7th.

The range includes Pratt's "Aviation" spirit as used by the R.34 on its East Fortune-Mineola-Pulham flight; Pratt's "Perfection" spirit, in the familiar green can, suitable for all classes of motor vehicles and motor boats; "Taxibus" spirit; Anglo's benzol; "Victory" spirit, a well-balanced petrol-benzol blend for all types of cars; "White Rose," "Royal Daylight," and "Crown Diamond" refined oils for domestic uses; Anglo's vaporising oil for oil-engines and agricultural tractors, as used at the Lincoln Tractor Trials in September, 1919; fuel oil for bunkers, Diesel engines, steam-raising, etc.; gas oil for motor-boats; and "Valor Perfection" oil for cooking and heating stoves.

THE GOOD COMRADE.

In connection with the proposed Australian flight the Sopwith Co. were desirous of obtaining certain information respecting the running of the Rolls-Royce "Eagle VIII" engine with which their machine is fitted, and so got into communication with the Aircraft Manufacturing Co., Ltd., as being the aircraft firm who have had most experience with that engine, and asked if they would have any objection to their seeing the log-books, etc., of the engines used in the successful London-Paris service. Brig.-Gen. Festing very courteously replied that they could have access to any figures or information that would be of any use to them respecting the running of the "Eagle VIII" under various conditions.

It is indeed encouraging to see that such a spirit of sportsmanship exists even in this age of commercialism, but General Festing was ever a good comrade.

A SPORTING VENTURE.

BATTLEFIELD BUREAU, LIMITED.—Private company registered Oct. 9th. Capital, £3,000 in 2,000 8 per cent. part preference shares of £1 each and 4,000 ordinary shares of 5s. each. To carry on the business of tourist and shipping agents, hotel proprietors, owners of aerial, motor and horse conveyances, etc. The subscribers are:

	Shares, Pref.	Ord.
G. F. Rothschild, D.S.O., M.C., Stock Exchange, E.C., stockbroker	10	10
W. R. Edgar, Blenheim Works, Hammersmith, W.	10	10
G. Kingsford, Seccondu, Gold Coast Colony, solicitor	5	5
F. Ratto, 4, Elm Court, Temple, E.C., barrister	5	5
H. H. Beamish, 175, Piccadilly, W., newspaper proprietor	10	10

Table "A" mainly applies. Qualification, £100. Solicitor: W. H. Behrens, 3, London Wall Buildings, E.C.

QUICK DELIVERY.

The following letter has been received:—

Sir,—One hears a lot of the advantages of sending mail of all description by air; presumably the greatest merit of the aerial post is its supposed speed. In two recent experiences of mine this has proved its very drawback. I will quote the latter as an example. My brother in Paris sent over a small gift by air, as he particularly wished it to reach me in the course of the next three days (this was 11 days ago). The first intimation I had as to its arrival was an incorrectly addressed letter from a (foreign) firm of carriers, stating that if I would be "good enough to forward them the small sum of 7s. 6d. for clearance they would forward the parcel at once." Knowing that my brother must have paid all charges, I sent a post-dated cheque, asking for particulars of the charges referred to. I did not date the cheque late enough, however, and after waiting to cash it they wrote and informed me that these were the "usual charges," and enclosed a Customs form for me to fill up. I filled this up and returned it, and four days later received another form to fill up before a Commissioner for Oaths (another 1s. 6d.!). This I did and returned the form. I have not even yet received the parcel!

If these are the "quick" methods adopted by our civil aviation firms no wonder civilian flying is not "booming"! I for one shall certainly send all my mail by post in future, on the ordinary land and sea routes.

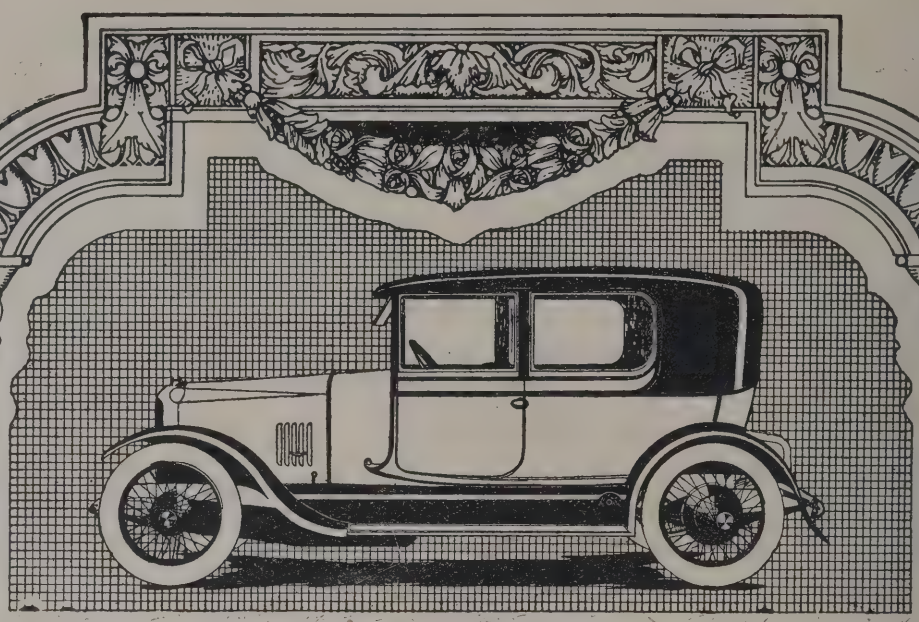
Further to the disadvantages related above, in neither case was I able to obtain any information as to where my parcel could be found should I wish to collect it myself, and my inquiries as to the whereabouts of the aerodrome upon which it was landed were politely ignored!

(Signed) "BOAZ."

[Further particulars concerning the circumstances related in this letter may be obtained by any aerial transport firm which knows that its methods of delivery are more rapid and reasonable than those mentioned.—ED.]

THE WHITEHEAD AERODROME CANTEEN CLUB.

The Feltham Justices on Oct. 27th made an order striking the Whitehead Aerodrome Canteen Club, Hanworth Park, off the list of registered clubs. An inspector stated that the firm had gone into bankruptcy, and that the works were closed.



Cole Carriages at Olympia

THE 4-SEATED C.C.C. ON 30 H.P. DAIMLER
THE 4-SEATED C.C.C. ON 25 H.P. VAUXHALL
AND
COLE IMPERIAL LANDAULETTE-LIMOUSINE ON 25 H.P. TALBOT

THE Cole Coupe Cabriolet—popularly designated the C.C.C.—is the master four-seated all-purpose carriage. It was the original idea of Wm. Cole & Sons, Ltd.—in conception, in execution, and in name. The C.C.C. created the fashion in the all-open or all-closed car at will; it leads the fashion; it leaves imitations ten years behind in beauty of design, graceful appearance and exquisite finish. It is incomparable in execution of workmanship.

THE series of Cole Imperial Coachwork represent the highest standard of the coachbuilders' art. Every design gives the requisite suggestion of modishness without exceeding the bounds of dignity; luxurious while retaining quiet distinction. An exclusive atmosphere surrounds every production, and bears the impress of ripe experience and master craftsmanship.

STAND No. 148.

WM. COLE & SONS, LTD., 235 HAMMERSMITH Rd., LONDON, W.6.
Coachbuilders to the Royal Family.

Prize Medallists
Paris, 1867; London, 1862 & 1873

Telephone:
Hammersmith, 1413, 1414, 1415

NOV. 12, 1919.

THE AEROPLANE

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ON ONE HUNDRED SQUADRONS.

It is an old saying that one has to go abroad to get news of things at home, and it is a very true saying. The latest example is a brief paragraph which appeared in the Paris paper "L'Auto" one day last week saying :—

"Le maréchal Wilson demandait a maintenir cent escadrilles á 18 appareils; le budget etait de 65 millions de livres sterling. Le gouvernement a reduit les escadrilles á 51 et le budget á 25 millions de livres. Sur ces 51 escadrilles, 13 sont employees dans les camps d'instruction, et sur les 38 escadrilles actives qui restent, 18 sont prevues pour la defense de l'Angleterre et 20 pour le resies de l'empire."

Leaving out what the Government has done according to the second part of the paragraph, this being interpreted means that Field-Marshal Sir Henry Wilson, Chief of the Imperial General Staff, has demanded that the British Army shall have at its disposal, ready for war at any moment, one hundred squadrons of military aeroplanes, as distinct from seaplanes, ship-planes, torpedo-planes, flying-boats, and other varieties of aircraft not suitable to co-operate with an Army in the Field.

Now, 'L'Auto" is a singularly well-informed paper. Also there has been a rumour to very similar effect floating about in other than R.A.F. circles for some time. Also, though one may not have a high regard for Sir Henry Wilson's political associates, one believes him to be a soldier of great ability and of a very enlightened outlook. And so the statement of "L'Auto" and the military rumour would seem to have a reasonable foundation of probability.

Furthermore, Sir Henry Wilson being in high favour among politicians in power at the moment—as one judges from the fact that Sir William Robertson, a very great soldier indeed, was displaced to make room for him, and that Sir Henry Wilson was made a Field-Marshal when Sir William Robertson, despite all his great services, was not—is very likely to have his way, despite all opposition from the Treasury, the Bolshevists, and the Pacifists. Therefore it seems worth while to discuss the hundred squadrons mentioned in the statement as being within the bounds of possibility.

The Three Services Again.

The mere idea of having a hundred squadrons for the Army alone naturally obliges one to consider the position of the Air Ministry in the case of such an eventuality. If the Army is to have those squadrons, are they to be part and parcel of the Army, or are they to be supplied to the Army by the Royal Air Force? The answer to the conundrum seems to depend largely on the solution of the problem propounded last week—namely, whether the Navy is to take over all the sea-going personnel and matériel of the R.A.F. and revive the Royal Naval Air Service, or whether the R.A.F. is to take over the Navy?

One has never been a believer in the ability of a single Air Force to do all the air work of the Navy and the Army, let alone the work proper to an Independent Air Force in addition. When a crowd of misguided politicians started the agitation for this single Air Force in 1916 one was strongly opposed to it, and one has never found any reason to alter one's opinion. The lamentable deterioration in quality of aviators and aircraft alike since the R.A.F. came into being in 1918 has confirmed one's first impressions of the evils of the single Air Force idea.

When this idea was first propounded in 1916, one stated definitely that a naval aviator ought to be a naval officer or rating, and that an aviator working with the Army ought to be a soldier, first, foremost, and all the time. A seaplane or an aeroplane is merely a vehicle conveying a sailor or a soldier on his lawful occasions. At the same time one expressed the opinion that there might be room for a Third Service, consisting of an Air Fleet for use on occasions when neither the Army nor the Navy was necessary, or to co-operate with the two senior Services in the general strategy of a war, but employing its own minor strategy and tactics.

The Three Services in Being.

Something approaching this state of affairs actually occurred in the last stages of the recent war. The Navy was co-operating, after a fashion, with the Army in a mild offensive against the enemy's coasts in Belgium, Bulgaria, and Palestine. The R.A.F. in France, under General J. M. Salmond, was to all intents and purposes part and parcel of the Army—even to the extent of local Army Commanders having power to suspend or supersede R.A.F. officers. The R.A.F. in the East, under General W. G. H. Salmond, was equally part and parcel of the Army in the East, though its sea-going units were a badly mishandled part of the Navy.

At the same time General Sir Hugh Trenchard's Independent Force, R.A.F., was an absolutely distinct Service, conducting its own campaign against the interior of Germany in accordance with the general strategy of the war, but entirely independent of the Army's strategy. On occasion the Independent Force took part in Army operations, as in preparing the ground for offensives by the French and American Armies in Alsace-Lorraine, but this was a precise parallel to the work of the Navy in bombarding the enemy's coastal positions, albeit the R.A.F.'s work was considerably more effective.

The Justification of the Independent Force.

The operations of the Independent Force were excellently planned and very well executed. That they were not superlatively well executed was no fault of the G.O.C., nor of his Staff, nor of the personnel of the I.F. Where they failed to do all that might have been done in the way of smashing the Rhine cities and bombing Berlin, the failure was due entirely to defective material. And that defective material was due altogether to the crazy idea of a single Air Force, which forced the Navy, the Army, and the Independent Force to depend for their aircraft matériel on a single line of supply, which

line was blocked at intervals by little groups of the most amazing fools or the most virulent knaves in the history of war.

In spite of this hindrance the Independent Force more than justified its existence. And there is no doubt that if hostilities had not come to a premature end the Independent Force would have acquired better matériel and would in the next six months have induced in the German people a very much more humble frame of mind than that in which they were when fighting ceased, and than that in which they are to-day.

Independent Command.

It must be evident, even to the comprehension of a politician, that the Command of the Air over an enemy country will produce a much more demoralising effect on the inhabitants of that country than can be produced by an Army hammering vainly on its frontiers, or by a Fleet innocuously blockading its ports, or by a perfectly peaceful Army of Occupation inhabiting an inconsiderable fringe of its territory.

Also, it would seem that this Command of the Air over an enemy country can only be won and held by an Air Force which is under a commander who is absolutely free from interference by any commander of a Fleet or an Army. If the Air Force to whom such a task is committed should be under the Admiral of a Fleet, it would inevitably be diverted to the uses of the Fleet, even under more favourable circumstances than those enshrouding the much-advertised British Navy. Similarly, if it were under the C.-in-C. the Army in the Field, the Air Force, or at any rate a serious part of it, would be diverted by the Army to uses within the theatre of war and the field of battle—that is to say, to the uses of Army strategy and tactics—for it became an axiom in the recent war that the Army could never have enough aircraft.

Thus one is convinced that for offensive operations a separate Air Force is essential to the Armed Forces of any nation.

Air Defence Forces.

When one comes to consider defensive operations one is met with stronger arguments against a Third Service for the Air. The brilliant success of the London Air Defence Area under General Ashmore has proved beyond argument that anti-aircraft defence is a distinct branch of the science of war, and that anti-aircraft defences must be a permanent institution in any country, just as coast defences are to-day.

Coast defences may now be abolished, seeing that half a dozen torpedo-planes can do more against a bombarding fleet than can a dozen coastal batteries of heavy guns. But batteries of anti-aircraft guns, with their accompanying search-lights and balloon aprons, and their co-operating squadrons of aeroplanes, and their specially trained personnel—each man being a specialist in his own line—under a unified and centralised command, are essential to the safety of every country.

The debatable point is whether these anti-aircraft defences should be part and parcel of the Army, or whether they should come under the commander of the Air Force of each country.

It is evident that whatever means are devised for the protection of cities at home against aerial attack will be equally valuable for the protection of ammunition dumps, hospitals, headquarters and other agglomerated institutions with the Army in the Field, and for the protection of the Fleet at sea, whether that Fleet shall consist in the future of obsolete battleships—as does the British Fleet to-day—or of high-speed aircraft-carriers as it will do in the future, if the Lord endows the Admiralty with intelligence. On the face of it, therefore, it would seem that, if only for efficiency in the working of the Adjutant-General's and Quartermaster-General's departments, the anti-aircraft defences should come under the Commander-in-Chief Home Forces. (*Note.*—One is aware that in this country there is a C.-in-C. the Forces in Great Britain and a G.O.C.-in-C. the Forces in Ireland, but one is discussing countries in general.)

But, as in fact neither the Navy nor the Army as such will have anything to do with defending a country against attacks from the air, it would seem permissible to argue that anti-aircraft defences should come under the C.-in-C. Air Forces at Home for operations, administration, and supply. If and when the defending Air Force is defeated in the air and an invading air fleet succeeds in landing considerable forces in a given country, then the Army of that country will come into action against the invaders, but that seems to be another question.

The Invasion of Great Britain.

As regards this country in particular, there are those who ask why we need trouble to prepare defences of any kind, seeing that our only enemies, the Germans, are adequately defeated and disarmed. Even that exceptionally able writer, Mr. Gerard Fiennes, the Navy's strongest defender, seems unable to believe that any other country can invade us by air.

All these writers seem to ignore the obvious war of the future, the great race-war against the Slavs.

We have seen in the recent fracas how the British Navy let us down and allowed the numerically inferior German Navy to acquire a complete command of the Baltic, thus cutting our communications with Russia and preventing us from nipping Bolshevism in the bud. Is it not evident that in the Slav War we shall again lose command of the Baltic?

For our own momentary peace of mind we have destroyed the German Navy, or at any rate we placed the German Fleet in such a position that it was destroyed by its own officers as the only way in which they as loyal servants of their Emperor could retain their honour. Likewise we have destroyed Germany's Air Fleet, the best in the world except our own. And for the pacification of the proletariat, who object to paying for health insurance and war insurance alike, we are rapidly destroying our own Air Fleet.

When the Slav Race combines against us, and brings into operation the Air Fleet which it can build without hindrance from the futile League of Nations in the inner immensities of Russia, there will be nothing, least of all our future friends and allies, the Germans, to prevent the Slavs from taking complete control of the Baltic. The Scandinavian nations are brave, but small. They may defend their fastnesses in the mountains, but they cannot hold their coastal plains. And the South-West corner of Norway is a pre-ordained jumping-off place for the aerial invasion of Great Britain.

Proofs from the Past.

Many months before this war a certain very amiable desperado, one Tryggve Gran, Norwegian sailor, Antarctic explorer, and later Major R.A.F., flew a Blériot with an 80 h.p. Gnôme from Aberdeenshire to Norway. His journey is to the Slav Air Fleet of the future what Louis Blériot's cross-Channel trip of 1909 was to the German aviators of 1915-1918. It is a very simple sum in proportion.

What kind of anti-aircraft defence would be necessary to prevent the landing of an air fleet in the vast open expanses of Aberdeenshire and Fifeshire? Mr. Fiennes remarks sarcastically that aerial invaders will need to carry "inconceivable cargoes of guns, munitions, and supplies." One may remind him that the German Riesenflugzeugen of 1918, which did so much damage to

certain Naval barracks and to certain eminently respectable houses in Maida Vale, carried cargoes of bombs which were "inconceivable" in 1914—except by those few of us who knew how aeroplanes would develop.

And, be it remembered, though Russia has been fairly futile in mechanical matters in this war, Russia none the less produced the first giant aeroplane. And Russia is the one country in the world which is entirely self-supporting in the matter of all the raw material necessary to build and operate an Air Fleet.

The lesson is fairly clear for all who have eyes to see. One has no hopes that these prophecies will have any effect on a blind and foolish people. Nor can one in this case very well hope to live to have the grim satisfaction of saying "I told you so," as one has had in the matter of one's prophecies made before the recent tribe-fight began. But perhaps some of one's very young readers of to-day will pay one the posthumous compliment of digging up these and other various remarks on the Slav War and saying, at any rate, "We were told so."

Our First Line Service.

All of which being so, and things being as they are, it seems very well indeed that the Army should want a hundred squadrons of aeroplanes of its very own, and that the Navy should be agitating internally to take over the sea-going side of the R.A.F. If these desires be gratified, one can see the possibilities of a real Third Service arising, free to concentrate its efforts on becoming the First Line of offence and defence of the British Empire.

With chiefs who are loved and trusted as are the chiefs of the R.A.F. to-day the Royal Air Force may well become worthy of its parent, the British Army. With Sir Hugh Trenchard as Chief of the Staff, with Sir John Salmond as commander of the active service branch, with General (or Commodore, if it be preferred) Longcroft training the rising generation in the tradition of the King's Service, with General (or Commodore) Webb-Bowen setting the Far Eastern units in the right path, with Sir William Salmond organising the forces for over-seas stations, and with other officers tried and trusted as the result of war experience, an Air Force free from the control of or responsibility to the Navy or Army may be built up to do its duty by King and Country.—C. G. G.

The Departure of General Seely.

Post Scriptum.—As this paper goes to press it is announced that General Seely has left the Air Ministry, to go none knows whither. General Seely is an honest man and a fervent of aviation, but he lacks practical common sense. Therefore one feels that his departure brings a step nearer the setting of the King's Flying Services on a proper footing.—C. G. G.

CONCERNING SCANDALS.

Even before the outbreak of the late war the armed Forces of the Crown provided the basis of large argument, and between those who extolled their virtues and those who belaboured their futilities there passed much inconclusive verbiage. Each side separately could produce on paper or in the spoken word apparently conclusive evidence in support of their attitude, and in the absence of a general public knowledge of the actual working conditions of the Army and Navy the side which could appeal most strongly to the prejudices of the British public obtained the larger hearing.

One point was noticeable, and that was the very small proportion amongst the disputants of those who held, or had held, any position of responsibility within the Forces in question.

Since August, 1914, this condition has been modified greatly, and, from Admirals of the Fleet to second lieutenants, persons who have been honoured by the grant of His Majesty's commission have publicly expressed the opinions which their experience within H.M. Services have engendered in their minds.

Within certain limits this is probably all to the good. It tends to remove the discussion of the merits or demerits of the Navy, the Army, and the Air Force, the efficiency of their organisation, the morality of their existence, and such like topics, from that academic sphere which is inhabited almost entirely by impracticable theorists, to a more mundane and useful level.

Unfortunately the desirable limits have been widely exceeded.

Salteenas in the Services.

Before the outbreak of war His Majesty's Services were in the main officered by gentlemen, together with a small sprinkling of those who, like Mr. Salteena of "The Young Visiters," were "not quite gentlemen, but you would hardly notice it."

The doctrine was generally firmly held by the former class that, as they were part of the whole, defects and deficiencies within that whole were matters which it was their business to rectify, to the best of their ability, from within, with the least possible publicity.

They were part of the Service; its defects were their defects, its improvement their duty, and its growing efficiency their reward.

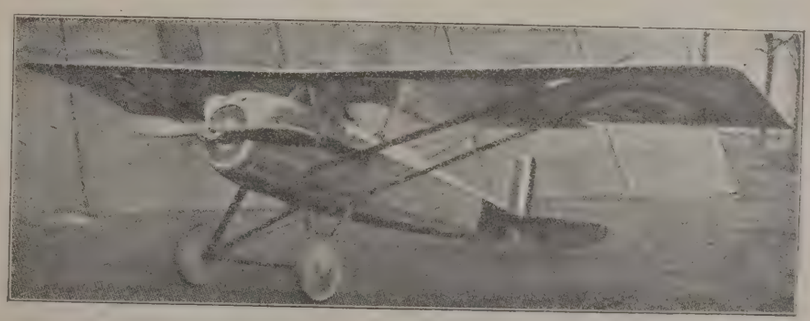
Since the war this state of affairs has altered very completely. The number of gentlemen holding His Majesty's commission increased; the number of "Salteenas" similarly honoured increased to an even larger extent; and a very large number of those of whom it could by no manner of means be truly said that "you would hardly notice it" were clothed in a little brief authority and the uniform of an officer.

The leaven of gentlemen no longer sufficed to preserve the accustomed decencies of the Services. Those of the last-named class who found that the habits of the particular arm to which they were appended involved them in inconvenience, loss, or a position of less dignity than that which they felt to be their due showed few hesitancies in exposing their personal grievances to the world at large.

THE GOURDOU-LESEURRE MONOPLANE.

This monoplane is almost entirely constructed of metal. Either an unsprung (as illustrated) or sprung undercarriage can be fitted. Surface, 17 square metres; loading, 42 kilos per square metre; engine, 180 h.p. Hispano-Suiza; speed near ground, 156 m.p.h.; climbs to 15,000 ft. in 17 minutes; officially stated factor of safety, 21.

It has done well in the Deutsch Cup Competition.



Their example has proved too much for the "Salteenas," and even some few amongst these who had escaped detection for years before the war have revealed themselves in their true aspect.

The Attraction of Scandals.

Thus the Press is daily replete with Navy, Army, and Air Force—particularly Air Force—scandals, which very generally appear to have their origin in the disappointed ambitions of the disgruntled.

Sometimes these are frankly an effort to secure recompense for an alleged wrong done to an individual. This type is sufficiently to be deprecated, but it is preferable to the more common type, which bears all the signs of being engineered with the general object of discrediting the Service involved as a means of obtaining satisfaction for its having assessed the authors of the agitation at their true worth.

The efficiency of the Navy, the Army, and the Air Force is a matter of public concern, and the pre-war absence of authentic information as to their condition had many drawbacks.

Had the present state of affairs no other result than to reveal how large a number of the adult male population of these islands are devoid of the instincts of decency, it were sufficiently regrettable, but unfortunately its effects are far wider.

It tends to discredit among the decently minded any honest effort to improve the efficiency of these Forces, and at the same time makes it impossible to appeal to the masses through the daily news-sheets.

A daily column entitled "More W.R.A.F. Scandals" will always draw more readers and influence more votes than will any considered and informed criticism of Air Ministry policy in regard to the organisation and equipment of the R.A.F., and personalities thus become of more practical importance than the efficiency of the Empire's defences.

The Return of Reticence.

A return to the pre-war standard of reticence upon the internal economy of His Majesty's Forces is now impossible, even were it desirable.

A very large proportion, and that generally the more intelligent and decent-minded, of the population of this country has served with those Forces during the war, and will have to so serve again if the next great war arrives as soon as it may.

Most of these people are no longer within the Services, and they are therefore debarred from lending internal silent support to their organisation and efficiency. At the same time it is manifestly to their interest and distinctly their business to secure, by any means in their power, that, if and when the next war does break out, the Forces of this Empire shall be properly organised and equipped, and that the many defects which marked our extemporised fleets and armies shall be remedied ere it is to late.

There is thus all the difference in the world between the making of scandals out of personal grievances and agitations in favour of reforms designed to promote the efficiency of the Royal Air Force, such as those which THE AEROPLANE is wont to father.

The drastic cutting down to which that body is now being subjected must inevitably lead to disappointment on the part of many of its members who find themselves left out of the list of permanent commissions.

It is also a matter for sincere regret on the part of all those who believe in the future of the Air Force and who wish to see it take its proper place amongst the Royal Services as the first line of Imperial Defence.

But it serves no good purpose to attempt to create a disturbance on the ground that A has been demobilised while B, of much inferior attainments, has been granted a permanent commission.

If B happens to have just one rare attainment necessary to the operation of the Force, whereas A does uncommonly well a number of things each one of which can, however, be better done by one other man, A can safely be dispensed with, whereas B cannot. This is unfortunate as far as A is concerned, but the interest of the Force comes first.

Research or Suicide?

It is from this point of view that attention is again drawn to the suicidal action of the Air Ministry towards the research sections of the Technical Department.

The impending doom of Martlesham Heath Testing Station, and the probability of Grain following it, have been noted and protested against already. It appears that the Navigational Experimental Establishment and the Wireless Research Station are to follow—if they have not in fact already been disbanded.

There is no doubt that a very large number of R.A.F. officers will hear of these facts with complete equanimity.

The average pilot will feel that it is but just that technical officers who won the war in their offices be asked to make room for those who risked their necks over the lines.

But the average pilot should take thought to himself and consider just how much he and the others of his kind, without the aid of the despised technical men, could do towards developing serviceable military or naval aircraft and their necessary equipment. Let him consider his own feelings if, at the end of ten years, he were asked to take the air against an up-to-date enemy air fleet, himself mounted on a machine the product of ten years' amateurism.

Militarism versus Commercialism.

Were this country possessed even of a healthy and flourishing Aircraft Industry sufficiently wealthy and enterprising to carry out the experimental work necessary to keep British aircraft design in advance of that of the rest of the world, a strong Technical Research Department attached to the Air Force would still be needed to attend to the purely military side of design and to the armament and equipment of aircraft for military purposes.

This feature of the R.A.F. organisation will become more and more necessary as the peace goes on. During the war aeroplane designers had no aim beyond the production of machines destined for war purposes. With the advent of peace their thoughts have turned to the modification of their designs to adapt them to commercial purposes, and assuming that the peace continues for ten years or so the great majority of designers will by then have entirely forgotten the special needs of military aircraft

Just as to-day they are offering converted war machines for transport work, they will then offer converted cargo-carriers for military purposes, unless the Air Ministry maintains a strong Technical Research Department to attend to the development of military aircraft and its equipment.

At the moment the Air Ministry is doing nothing of the sort. A small nucleus of administrative officers with technical knowledge is apparently to be kept, and quite rightly—but the efforts of this nucleus of a Technical Department to keep in the Service the trained specialist staffs of the actual research establishments is being opposed tooth and nail by the Personnel Department.

The Abandonment of Progress.

Although it were better that the Techuical Department remain as a nucleus of specialist administrators than that it should disappear entirely, the abandonment



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of actual research work will very seriously reduce its value.

The experience of the past five years shows conclusively that it is a relatively simple matter to pick men physically and mentally capable of becoming decent pilots, and that converting the raw material into the trained pilot is a fairly quick process.

The experience of the same period indicates that it is very difficult indeed to pick the right class of man to make a really good research officer, and that the organisation of a Government Department is entirely incapable of training men having those qualities with any certainty of success. It is just as essential that a technical officer should consider his Service before his own interests as it is with any other type of officer, but, particularly in the case of officers engaged on test or research work, it is extremely essential that they be men of knowledge, imagination, and of initiative.

Men possessing these latter characteristics are not amenable to discipline in the sense in which it is still understood in H.M. Services. They are not usually prone to refrain from doing that which they think ought to be done merely because in the opinion of their fellows that thing is amongst those "not done."

The Lessons of Discipline.

But one who possesses sufficient knowledge, imagination, and initiative to realise that a breach of discipline almost invariably does much more harm to the Service than any abuse which may be the motive of that breach, and that for the good of the Service he must content himself with such methods of fighting abuses as the customs of the Service provide, is a much more usefully disciplined officer than he who is merely controlled by the prevailing fashions. Good technical officers—in this sense—are rare, and if, as seems probable, the Air Ministry succeed in freezing out most of those who do exist, they will find it by no means easy to replace them.

This type of man does not flourish under official tutelage, and only suffers fools—then not gladly—when he is old enough to realise that they are necessary ingredients of a very mixed world, so that in his earlier years he is not particularly amenable to the kind of training served out at Cadet Schools. Therefore the R.A.F. need not imagine that it can produce the type as needed.

In all probability, when it has successfully demobilised all its capable technical officers, it will find it impossible to replace them at all.

Therefore in the interests of the Service it would be wiser to sacrifice pilots—even the best of pilots—since they are relatively easily manufactured, and to stick to the small number of really capable research officers who do exist—since these are rare and cannot be made to order.—W. H. S.

THE BRITISH AIRCRAFT COMPETITIONS OF 1920.

In connection with the British Aircraft Competitions for prizes amounting to £64,000, the Air Ministry announced on Nov. 10th the following list of engines for use by competitors have been approved by the Air Council. It will be left to the discretion of the judges to decide whether any new engine not included in this list fulfils the conditions of the competition.

A.B.C. (all types), Beardmore (100 h.p.), B.H.P., B.R.1, B.R.2, Cosmos (all types), Galloway Adriatic, Galloway Atlantic, Galloway Pacific, Green (all types), Napier Lion, R.A.F. (all types), Rolls-Royce (all types), Siddeley Puma, Sunbeam (all types), Wolseley Viper.

The competition will be held commencing on the following dates :—

Aeroplanes (small type), March 1st, 1920.
Aeroplanes (large type), May 1st, 1920.
Seaplanes (amphibians), Aug. 1st, 1920

The places at which the competitions will be held will be announced later.

Competitors must enter machines on or before the following dates :—

Aeroplanes (small type), Dec. 31st, 1919.
Aeroplanes (large type), May 1st, 1920.
Seaplanes (amphibians), April 1st, 1920.

The following publications in connection with these competitions will be available for issue towards the end of the month :—

British Aircraft Competitions 1920, Aeroplanes, Conditions and Tests (B.A.C. Form A).

British Aircraft Competitions 1920, Seaplanes (Amphibians), Conditions and Tests (B.A.C. Form B).

British Aircraft Competitions 1920, Notice to Competitors (B.A.C. Form C).

British Aircraft Competitions 1920, Rules and Regulations (B.A.C. Form D).

British Aircraft Competitions 1920, Entry Forms (B.A.C. Form E).

These papers will be obtainable from H.M. Stationery Office or from the Secretary (C.A.L.) Air Ministry.

THE FLIGHT TO AUSTRALIA COMPETITION

A Reuter telegram from Cologne, dated Nov. 3rd, stated :—

Capt. Matthews left the aerodrome at Cologne on Nov. 2nd and came down at Mayence, in the French occupied region. Capt. Matthews refuses to divulge his plans to anyone. He came to Cologne because he could get meteorological reports and information which he could not get in England.

The Blackburn Entry.

Capt. G. H. Wilkins, M.C., is the commanding officer and navigator of the Blackburn "Kangaroo" entered for the flight to Australia competition. He was second in command of the Stefanson Arctic Expedition in 1913-17. After the return of the expedition he was engaged as an Australian Army official photographer in France, Gallipoli, and Palestine. He is now under agreement as Chief of the Scientific Staff of the Cope British Imperial Antarctic Expedition which will leave England in about the middle of 1920.

The first pilot is Lieut. Val. Rendle, who was born in Brisbane. He joined the Queensland Volunteer Flying Corps in 1915 and was commissioned in the R.F.C. in March, 1917.

The second pilot is Lieut. D. R. Williams, who was a ferry pilot and instructor in the Aus.F.C.

Lieut. G. H. Potts is the engineer officer. He was with the Australian G.E.C. of Sydney and served as a gunner officer in the Aus.F.C.

The Australian Blackburn "Kangaroo" has been fitted up to take a crew of four with dual control. The tankage has been increased and the petrol system converted to gravity feed. Rolls-Royce, Ltd., have supplied two specially tuned 275-h.p. Falcon engines fitted with 12-point magnetos and special carburetters

THE GRAIN DINNER.

The dinner of officers and ex-officers of the Marine Aircraft Experimental Depot, Isle of Grain, which was held at the Café Royal Restaurant on Saturday, Nov. 8th last, was an extremely successful affair.

Something over eighty officers and ex-officers of the station were present, and the dinner was presided over by Wing Commander E. Featherstone Briggs, D.S.O., O.B.E. (Commanding Officer, 1917), supported by Wing Commander C. E. Risk, D.S.O., and Wing Commander H. R. Busteed, O.B.E., A.F.C., his predecessor and successor in the command.

Owing perhaps to a breakdown in a Pelmanised memory, the remaining O.C. Grain did not attend.

At the conclusion of dinner, the King having been duly honoured, the past, the present, and the future of Grain were eloquently discussed, described, and forecasted by sundry competent authorities to the entire satisfaction of all present, and it was unanimously decided that the Grain dinner be a recurring annual event.

It appeared to be the general opinion of those competent to judge that the continued existence of the Experimental Depot at Grain was now reasonably assured, but it was felt that, whatever fate befell the establishment, Grain both as a war station and as an experimental depot had made a permanent mark in the history of the naval use of aircraft, and that those who had been associated with its work would never forget it.

In connection with the continuance of this festivity, the secretary of the organising committee, Capt. L. A. T. Pritchard, mentioned that the collection of addresses from ex-members of the Grain staff had in the past presented great difficulties, and asked all present to leave their permanent addresses on their name cards.

If any of those present omitted to fulfil this request, or are in any doubt as to the legibility of the address so left, will they kindly send the information to Captain Pritchard at Wadham College, Oxford, before they have entirely forgotten the matter?

CONGRATULATIONS.

HANDLEY PAGE.—On Nov. 5th, at Lymes Holme, Stanmore, Middlesex, the wife of F. Handley Page, of a daughter.



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THE FUTURE OF FLYING DEPENDS ON RELIABILITY

The following is an extract from a leading Article in the DAILY MAIL, *October 9, 1919:—*

"A LANDMARK IN FLIGHT."

Flights scheduled ...	86	Interrupted by weather	1
Flights accomplished...	83	Interrupted by mechanical defect	1
Prevented by weather	1	Number of miles flown ...	20,750

"The above figures, reflecting the opening six weeks' activity of the London-Paris Air Express Service, need little elaboration. Reliability in the air has been achieved.

"At 12.30 p.m. each day from Paris and from London, the London-Paris Air-pilots have started off more punctually than many a train. They have averaged 106 miles an hour and covered the 250 miles systematically in 2¼ hours. The machines are a peace offshoot of the famous de Havilland bombers and the pilots—an all-important factor—are the cream of the R.A.F. Business men have booked up the service for a month ahead. The Company is aiming at an hourly schedule, but we believe its main immediate success will be in carrying mails at a speed by which it will be possible to get a reply, by tea-time, to a letter airmailed to Paris after breakfast.

"Reliability must be guaranteed the public. That it is so guaranteed emerges forcibly if we consider that the London-Paris stretch is the worst in the whole world for rapid weather changes, and that in the six weeks above tabulated only eight days were officially reported as 'favourable for flying.'"

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NAVAL & MILITARY AERONAUTICS

GREAT BRITAIN.

FROM THE COURT CIRCULAR.

BUCKINGHAM PALACE, Nov. 10th.

The President of the French Republic, accompanied by Madame Poincaré, arrived in London this afternoon on a visit to the King and Queen at Buckingham Palace.

The Prince Albert, attended by Major Louis Greig, received the President on his arrival at Dover, on behalf of the King.

The President and Madame Poincaré, accompanied by the Prince Albert, travelled by special train on the South Eastern and Chatham Railway to Victoria Station.

The King and Queen met the President and Madame Poincaré on arrival.

There were also present at the station: Representatives of the Royal Navy, the Army, and the Royal Air Force.

In the evening the King and Queen gave a banquet in honour of the President, who was accompanied by Madame Poincaré, at which the Prince Albert was present, and the following had the honour of being invited: The Right Hon. Winston Spencer Churchill, M.P. (Secretary of State for War and Air), and Mrs. Churchill, Air-Marshal Sir Hugh Trenchard, Bt. (Chief of the Air Staff).

NAVAL.

LIGHTER-THAN-AIR CRAFT.

As from Wednesday, Oct. 22nd, the airship service, with its stations, machinery, plant, and stores, was transferred from the Admiralty to the Air Ministry. This state of affairs has been threatened for some time past, the Government having decided during the summer to make the transfer. As airships are essential to a fleet at war, it was a foregone conclusion that such a purely naval affair as the airship service should be transferred to the R.A.F.

H.M.S. "ENGADINE."

His Majesty's Seaplane-carrier "Engadine" has arrived at Sheerness from the Mediterranean. She will be paid off at Chatham and refitted for commercial use.

H.M.S. "Engadine" is the most famous of the three cross-Channel steamers requisitioned by the Admiralty as seaplane-carriers at the beginning of the war. She took part in the air raid on Cuxhavn and Wilhelmshavn on Christmas Day, 1914, and was, one believes, the flagship of the three seaplane-carriers. In the much-disputed Jutland battle "Engadine" took part and gained a mention in dispatches therefor. She it was who sent up the only seaplane that took part in the battle, and to "Engadine" fell the honour of towing the disabled "Warrior" out of danger. Since that time she has been on active service in the Mediterranean, including, during the last few months, service against the Russian Bolshevists in the Crimea.

THE NAVAL WARRANT OFFICER AND THE R.A.F.

The formation of a new Service from sections of the two original Services in His Majesty's Armed Forces necessarily causes hardship to some of the personnel whose transfer is necessary if success is desired. But it is possible in most cases to remedy the genuine grievances by the drafting of special regulations to remove the anomalies which must arise from the sudden mixing of naval and military personnel.

The Naval Warrant Officers who have transferred from the Royal Navy to the Royal Air Force have in many cases suffered disabilities which could be removed by a small re-adjustment in the regulations governing these matters. There can be no recurrence of these cases as they all arise from the formation of the new Force. Future transfers will follow normal lines, and those who desire to be transferred must naturally abide by the consequences. Regulations will be in existence and will have stood the test of time. At present they are drafted as the occasion arises and there consequently is a high degree of incoherence.

To quote one case, there is an R.A.F. officer who in 1910 joined the Navy on a twelve years' agreement. Two years later he volunteered for service in the R.N.A.S. and became a Rigger, which he continued to be until the end of 1914. Early in 1915 he went to France, where he remained throughout the war. In 1917 he was promoted Warrant Officer 2nd Class. On the famous April 1st, 1918, he was transferred, in common with others, to the R.A.F. as a 2nd Lieut. (Technical) and became at a later date Lieut. (Acting). He applied for a regular commission but so far has not received one.

He has left the Navy and has thereby forfeited his chances of a pension. Unless he receives a permanent commission his Service life (in common with that of several dozen officers serving under exactly similar conditions) is over. His conduct has been excellent and his efficiency is unquestioned. Should not something be done to give this officer an opportunity of continuing in the Service for which he has so sincere a regard? If he is to return to the Navy—supposing that the Navy would agree to his return—his reversion from commissioned to warrant rank would be a quite unsuitable punishment for a constant adherence to the highest ideal of duty.

Would it not be well to stretch the rules and ordinances of the Personnel Department to the uttermost limit and so admit all the efficient promoted Warrant Officers to the permanent establishment of the Royal Air Force?

MILITARY.

ANOTHER WAR?

Owing to continued hostility on the part of the Waziris and Mahsuds in Afghanistan the Government of India has been forced to consider the adoption of punitive measures. The representatives of the tribes have been summoned to meet the Government to discuss the matter. As they refuse to appear and the Government's terms were refused, the tribes were given time to remove their women and children to a place of safety, when the country was subjected to an intense bombardment from the air. One questions the advisability of removing the women and children. According to certain frontier stories, the Afghan women can hold their own when it comes to atrocities.

Major-Gen. Climo, who took part in the recent Afghan campaign, will command the British forces, and many aeroplanes will be placed at his disposal besides the usual force of artillery, cavalry and infantry.

The aerial operations against the above-mentioned tribes began on Oct. 28th, when Wana was attacked by three De Havilland machines from Mainwali, and some 2,000 lb of bombs was dropped. A number of incendiary bombs was included in the equipment of the machines, and hits were observed. All the machines returned. A reconnaissance raid had been previously made on Oct. 25th, and according to one account nine bombs were dropped upon that occasion.

The tribesmen appear to have been duly impressed by the bombing of Wana, and quite a good deal of damage has been done.

A WHITE PAPER.

The following accusation is contained in the White Paper issued by the India Office on Nov. 5th. The White Paper deals principally with the supply of medical stores, etc., to the British force during the last Afghan war:—

"The arrival of squadrons of the R.A.F. without machines (there were no ships to carry the machines) had nothing to do with Indian arrangements nor the Secretary of State. It is for Air Ministry to fix the responsibility.

"As regards the obsolete machines of the squadrons in India on the outbreak of war, the General Officer Commanding, Royal Air Force, cabled to the Air Ministry on Jan. 23rd, 1919, and Feb. 25th, 1919, for their replacement by 'Bristol' fighters."

AIR FORCE.

DECORATIONS AND MORNING DRESS.

The following notice appears in the "London Gazette" of Oct. 31st:—

All members of the various Orders of Knighthood, etc., and all persons who have been awarded decorations and medals may, should they wish to do so, wear their Insigna, decorations, and medals with morning dress on official occasions and at public functions.

The ribbons of the Orders, decorations, and medals may be worn on all occasions at the discretion of the holder.

The method of wearing the Insignia of Orders, also decorations and medals, on official occasions and at public functions with morning dress is as follows:—

Knights Grand Cross, Knights Grand Commanders, Dames Grand Cross, Knights Commanders, and Dames Commanders

Should wear the Star only on the left breast of the coat or in a corresponding place on the dress, as the case may be.

Members of the Order of Merit, men who are Members of the Order of the Companions of Honour, Companions of the

several Orders of Knighthood, Commanders of the Royal Victorian Order, and men who are Commanders of the Order of the British Empire

Should wear the ribbon to which the badge is suspended under the tie, which should be a bow, the badge hanging about three-quarters of an inch below the bow.

Women who are Members of the Order of the Companions of Honour, Companions of the Distinguished Service Order, Officers of the Order of the British Empire, Members of the 4th and 5th Classes of the Royal Victorian Order, Members of the Order of the British Empire, persons who have been decorated with the Victoria Cross, the Royal Red Cross, the Distinguished Service Cross, the Military Cross, the Distinguished Flying Cross, the Air Force Cross, and persons who have been awarded medals

Should wear the badges, decorations, and medals on the left breast of the coat, or in a corresponding place on the dress as the case may be.

The method of wearing the ribbons of Orders, decorations, and medals, which will be the same in all cases, both for men and women, is as follows :—

A piece of the ribbon one and a half inches wide, or the width of the medal ribbon and half an inch in depth, mounted on a bar of metal in the form of a brooch, to be worn on the left breast of the coat, or in a corresponding place on the dress, as the case may be.

NOTE.—The above intimation only refers to morning dress.

PRESENTATION AEROPLANES.

On Saturday, Nov. 8th, the city of Birmingham presented an aeroplane to the Dominion of South Africa. This was Birmingham's contribution to the Imperial Air Fleet. The presentation took place at the Castle Bromwich Aerodrome, and among those present were Lord Desborough, the president of the Imperial Air Fleet Committee; Major-Gen. Sir F. H. Sykes, G.B.E., K.C.B., C.M.G.; and Air Commodore E. M. Maitland, C.M.G., D.S.O., A.F.C. During the ceremony a medallion was presented by the Hon. R. A. Blankenburg to Capt. Pott, D.S.O., a South African, for services rendered in the destruction of a Zeppelin off Hartlepool in 1916.

BOY RECRUITS FOR THE R.A.F.

The Air Council has asked the various education authorities to assist in recruiting boy learners for the R.A.F. The local education authorities nominate candidates on the grounds of educational attainments and general suitability, the idea being that boys of good education will thus be taught a trade and in time become skilled craftsmen.

Boys between the ages of fifteen and sixteen undergo three years' training in one or other of the skilled trades required in the R.A.F. and also receive a good general education, and at eighteen enter the R.A.F. for a further period of eight years. The syllabus for examination will be mathematics, English, history and geography, science, drawing. The first examinations are to be held in December with a view to the selection of seven hundred and fifty boys.

The scheme provides good prospects, for boys of character and ability, of early advancement to commissioned rank. And those who are not so fortunate will at least have the satisfaction of knowing that when their period of service is over they are skilled workers and able to earn their living in civil life.

RUGBY FOOTBALL.

On Saturday, Nov. 8th, the R.A.F. played Northampton with the following result :—R.A.F., 1 penalty goal—3 points; Northampton, 3 goals 2 tries—21 points.

This game opened at an exceedingly fast pace, and for the first twenty minutes very interesting play took place, the ball being at one end one moment and the other end the next, neither side gaining an advantage. The R.A.F. scored first, but Northampton immediately afterwards obtained a try, which was converted. The half-time score was 10—3.

In the second half Northampton crossed the R.A.F. line three times, while the R.A.F. did not score at all, although some excellent openings were made, and if the team had been together and in practice a score could hardly have failed to have been made more than once.

The R.A.F. forwards were excellent, especially in the loose, and for the three-quarters Flt. Lt. Thomas did some very fine saving and defence kicking. The R.A.F. especially want one or two fast and speedy wings. Northampton were unlucky in having three of their team crocked in the latter part of the game.

R.A.F. team :—Full-back, Flying Officer Damant; three-quarters, Wing Comdr. Playfair (left wing), Sqdn. Leader Neale, Flt. Lt. Thomas, and Flying Officer Smith (right wing); half-backs, Sqdn. Leader Smart and Sqdn. Leader Pulford; forwards, Flt. Lt. Wakefield, Flt. Lt. Simpson, Flt. Lt. Munday, Flt. Lt. Scroggs, Flt. Lt. Drew, Flying Officer Rose, Flying Officer Abbot, and Serjt. Smith.—W. W. W.

At Weybridge, Nov. 8th : No. 2 New Zealand General Hospital, Walton-on-Thames, 22 points; R.A.F. (Uxbridge), 3 points.—J. F. S.

AN APPEAL AND THE NEXT MATCH.

Will players and people interested in R.A.F. Rugby football please inform W. W. Wakefield, R.A.F. Depot, Uxbridge, the hon. sec., of any useful players of whom they may know?

The next match is at the Athletic Ground, Richmond, on Wednesday, Nov. 26th, against the United Services. Kick-off 2.45 p.m.

THE R.A.F. ARMAMENT SCHOOL DINNER.

All officers of the old Staff are invited to a Re-union on Dec. 5th, at the Connaught Rooms, Great Queen Street, Kingsway. Assemble 19.00; Dinner 19.30. Tickets £2 each are obtainable up to Dec. 1st from Major G. E. Smith, 10, Chevening Road, Brondesbury, N.W.6.

WANTED : A HOME.

Now that the various squadrons of the R.A.F. are settling down into something like permanent habitations, the squadron mascot habit is likely to become a permanent institution.

If any squadron wants a squadron pet with a history one can recommend it to apply to Mr. W. H. McCudden for the bull-dog "Bruiser," which was the property of the late Major J. T. B. McCudden, V.C., D.S.O., M.C., M.M., Croix de Guerre. "Bruiser" is rather big for a household pet but would make an excellent member of a squadron mess, and Mr. McCudden would rather that he remained in the R.A.F. than that he should become a mere civilian permanently.

Any squadron who would like to adopt "Bruiser" is invited to write to Mr. McCudden, c/o this office.

IRELAND.

It is understood from Irish sources that the Air Ministry has decided on establishing the headquarters of the Royal Air Force in the east of Ireland, at Gormanston, where an aerodrome was established during the war, and which still remains intact, with a number of very fine hangars and an abundance of workshops.

The Tallaght aerodrome is being closed down, sales of surplus stock are announced, and stores from that aerodrome and from Baldonnell will be removed to Gormanston, which is fifteen miles from Dublin.

The Gormanston aerodrome is free from surface water, as is a great deal of the neighbouring country, which is therefore very suitable for landing grounds. It is believed in the district that a passenger service will be started next year from England to Ireland, and that an aerodrome will be established in the vicinity of Gormanston.

FRANCE.

THE SAINT RAPHAEL-CASABLANCA FLIGHT.

The escadrille of flying-boats which has been waiting for some time to fly from Saint Raphael to Casablanca left the former place on Nov. 1st. Six started, but two returned later in the day owing to engine failure. Two of the remaining four reached Saint Sitges, 13 miles from Tarragona, and the last two Rosas on the same day.

ITALY.

The Italian correspondent of THE AEROPLANE writes :—

WAR PRODUCTION.

The following war figures are of interest. Italian works turned out 14,820 aero engines during the period 1915-18, half of these being Fiats, of which 4,000 were exchanged to the Allies for other useful wares. Some 500 or 600 were produced by several smaller firms—the Chiribiri, for instance, who just exceeded the latter figure, and the Ansaldo.

Towards the end of the war the price of 600 h.p. Capronis was advanced to 98,200 lire from about 75,000. The triplanes with bigger engines were, it has been stated, paid a rough 500,000 lire, not having reached the quantity production stage evidently at that period.

THE ROME-TOKIO FLIGHT.

Fiume reports that the wicked local Bora wind has destroyed a number of the aeroplanes pegged down there in want of sheds. Two of the Tokio flight machines are also *hors de combat* from the same cause. There still appears some likelihood of the Rome-Tokio coming on.

NEWS FROM ROME.

From Rome I learn that Col. La Polla, O.C. the Baracca aerodrome, was to stand for Parliament.

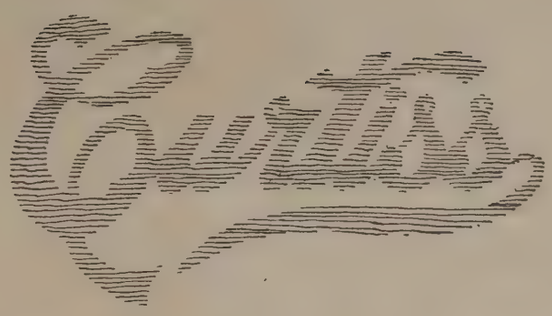
THE ENGINES OF T.34.

The six 500 h.p. San Giorgio motors of the new T.34 dirigible are of the Austro-Daimler type—as captured on a K. seaplane—built by Ansaldo.—T. S. H.

JAPAN.

THE AERIAL ARMS IN JAPAN.

The Army has in its possession several aeroplanes of European designs and construction. A Sopwith model and the



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AEROPLANES; HYDRO-AEROPLANES.

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Member Manufacturers' Aircraft Association

Farman E.40 are allocated to bombing work. The Nieuport and the Sopwith "Camel" are classed as fighting machines. Other aeroplanes in the possession of the Japanese Government are the Salmson, Spad, and Standard—presumably the latter is American in origin.

The Navy has one base at Yokusuka for seaplanes and aeroplanes.

An airship station is in existence at Toksuka, where a hangar of 400 ft. in length is in course of construction. Two airships of 124,000 cub. ft. capacity are on order from Vickers, Ltd.

The French aviation mission has opened a flying school at Gifu and two depots for bomb-dropping and observation training at Nogoya.

SPAIN.

Mr. F. P. Raynham, who recently took an F.4 Martinsyde two-seater, 300 h.p. Hispano-Suiza, to Spain, has been doing some exceedingly demonstrative work there. He has taken up a number of officers of the Spanish Royal Flying Corps, and all have been greatly impressed by the speed and climbing quality of the machine.

Recently he has been demonstrating the F.4 as a bomber. With a 315 lb. bomb she climbed to 1,750 metres in 5½ min. The merit of this performance is enhanced by the fact that the aerodrome of Cuatro-Vientos is itself at an altitude of 750 metres above the sea, and the performance is equal to climbing from that height to 2,500 metres in 5½ min., which, of course, is considerably better than climbing from sea-level to 1,750 metres in the same time. Considering that the machine was originally designed as a single-seater fighter, its performance as a bomber is quite extraordinary.

A Madrid-Tetuan Flight.

On Oct. 29th a cavalry lieutenant on a Breguet biplane flew from Madrid to Tetuan in 3 hours 30 min.

Three Breguet Biplanes for the Spanish Army.

Three Breguet bombing biplanes were delivered at Madrid towards the end of October by MM. Massot, Walbaum, and de Romanet, who had flown them from Paris.

SWEDEN.

The Danish correspondent of The Aeroplane writes :—

The Italian Naval Attaché at Stockholm has on behalf of his Government presented Sweden with a 260 h.p. Savoia and an 80 h.p. Macchi flying-boats.

It will be remembered that the Italian Lieut. Count Robinet recently continued his transcontinental river flight from Italy to Holland on to Copenhagen and Stockholm, from where he returned to Holland to lead some more Italian Naval aircraft, staying there, on a Scandinavian circuit. So the presented specimens are likely out of a squadron of four, which reached the Swedish capital via Esbjerg and Gothenburg, where they were arrested for landing too near a fortress, Count Robinet having his flying-boat damaged at the Swedish capital from flying into some telegraph wires and losing speed, repairs yet being carried out at the Royal Dockyard there.

U.S.A.

An American aerial squadron is said to be going to visit Brazil at the beginning of next year.

The Late Col. T. F. Dodd.

The death is announced from New York of Col. Townsend Dodd, U.S. Signal Service (Air Service), in an aeroplane accident at Bustleton, Pennsylvania, on Oct. 5th, 1919.

Born in 1886, he entered the Coast Artillery Corps as a lieutenant after two years as an engineer in the Civil Service in the Navy Department. He was already a B.Sc. of the University of Illinois.

On May 9th, 1913, he was posted to the First Aero Squadron, Signal Corps, at Texas City, and qualified as an aviator on Dec. 30th, 1913. Promoted captain on Sept. 8th, 1915, he took over command of a detachment, First Aero Squadron, at Brownsville, Texas. His intimate knowledge of engineering and his personal high ability made his opinion of considerable value to the Chief Signal Officer, who frequently consulted him. The University of Illinois having asked for his services as an instructor at an aviation school attached to that institution, the Chief Signal Officer replied that his services could not be spared, as he was then holding with credit the appointment of Department Aviation Officer, Southern Department, with the rank of major.

During the fracas with Mexico in 1916 he commanded the First Aero Squadron in the Punitive Expedition, and his experiences of aviation in that strange country with the strange machines then available make an instructive and amusing story.

In the summer of 1917 he went to France with the American Expeditionary Force, and was attached to General Pershing's staff as Air Service Officer. He did excellent work in the purchase of aircraft equipment and as a member of the Joint Army and Navy Aircraft Committee of the Aircraft Production Board.

While passing through England on his way to France, Major Dodd, as he then was, took the chair at that memorable Wilbur Wright Memorial Lecture delivered by Lieut.-Col. Mervyn O'Gorman. His speech on that occasion impressed everybody by its sound common-sense, and his charm of manner gave an excellent impression of the high quality of the aviation staff of the United States Army.

Promoted Lieut.-Col. on Aug. 5th, 1917, he became Colonel on Sept. 9th, 1918, and when Brig.-Gen. Mitchell became G.O.C. Air Service, Group of Armies, Col. Dodd was appointed to be his Chief of Staff.

In December, 1918, he was recommended for the award of the Distinguished Service Medal. Gen. Mitchell's minute in this matter concluded with the words: "Col. Dodd has been untiring in his devotion, and there is no officer with the A.S. who possesses a more complete technical knowledge of airplanes or is more familiar with the history of aviation in France, in which he has played so great a part."

On Nov. 14th, 1918, Col. Dodd was appointed Chief of the Air Service with the 3rd Army, but was unable to take up the appointment owing to a nervous collapse. After his recovery he was posted in January, 1919, to be in charge of the Paris Office of the Chief of the Air Service, American Expeditionary Force. Later he returned to the United States of America, where he was employed in the Office of the Director of Military Aeronautics, until in July last he took over command of Langley Field, Hampton, Virginia. When flying, on October 5th, from that place to Mineola, New York, he was killed.

Those who had the privilege of meeting Col. Dodd during his brief visit to this country deeply regret his death and offer their sympathy to his brother-officers and to his relatives.

Demobilisation in the U.S. Air Services.

The following figures are extracted from the U.S. "Air Service News Letter," dated Oct. 18th, 1919. The number and ranks of officers demobilised between Nov. 11th, 1918, and Sept. 13th, 1919, are shown :—

Strength on Nov. 11th, 1918.

	Maj.-Gen.	Brig.-Gen.	Col.	Lt.-Col.	Maj.	Capt.	1st Lt.	2nd Lt.	Total.
D.M.A. ...	1	1	37	81	271	905	4,381	13,011	18,688
B.A.P. ...	0	0	7	19	45	185	280	306	842
Spruce ...	0	0	1	6	22	119	181	695	1,024
Total ...	1	1	45	106	338	1,209	4,842	14,012	20,554

Strength on March 15th, 1919.

D.M.A. ...	0	1	33	86	189	647	2,065	3,848	6,869
B.A.P. ...	0	0	0	7	16	103	209	209	544
Spruce ...	0	0	1	1	5	24	15	47	93
Total ...	0	1	34	94	210	774	2,289	4,104	7,506

Officers Attached to Air Service.

1	1	0	0	5	12	81	111	211

Air Service Officers on Detached Service in the United States.

0	0	3	6	14	48	78	134	283

Losses Reported To-day.

Discharges	0	0	0	0	0	5	18	13	36

Discharges since March 15th, 1919.

0	1	8	18	82	466	1,660	2,730	4,965

Total Losses since March 15th, 1919.

0	1	15	39	118	527	1,871	2,980	5,551

Additions Reported since March 15th, 1919.

0	0	10	13	42	131	171	13	380

Net Losses since March 15th, 1919.

0	1	5	26	76	396	1,700	2,967	5,171

Strength To-day, Commissioned Air Service.

Maj.-Gen.	Brig.-Gen.	Col.	Lt.-Col.	Maj.	Capt.	1st Lt.	2nd Lt.	Total.
0	0	29	68	134	378	589	1,137	2,335

P.S.—S.O.S. No. 21,157, Sept. 13th, 1919 :—2 lieutenant-colonels, 3 majors, 33 captains, 41 first lieutenants, 34 second lieutenants. Total, 113.

The American View.

On Oct. 27th Senator Wadsworth, Chairman of the Military Affairs Committee of the Senate asked for a separate Air Service to raise U.S. Service aviation out of the position into which it has fallen since the Armistice.

At the same time he protested against the refusal of an appropriation of £3,000,000 demanded for Military aeronautics. He pointed out how far the United States had fallen behind France and England, both of which countries had recognised the commercial value of aviation.

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To see oursel's as ithers see us."—Burns.]

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An Army and Navy Balloon Race.

The following account of a Naval and Military balloon race is extracted from the U.S. "Air Service News Letter" dated Oct. 8th, 1919 :—

A Free Balloon Race between representatives of the Army and the Navy under the auspices of the Missouri Aeronautical Society was held on Sept. 26th, 1919, starting from St. Louis, Mo. Three balloons were entered representing the Army and three representing the Navy, each of 50,000 cubic feet capacity, using coal gas and each carrying one officer as pilot and one as aid. The object was to cover the greatest distance in any direction from St. Louis, and time was not a factor in the contest. Of the Navy balloons, one was unable to leave the park, owing to a leaking bag; one landed at Menon, Mich.; and the other, piloted by Lieut. Emerson, landed at Stittsville, Mich. Of the Army balloons, one was forced to land in the heart of St. Louis, after 20 minutes' flight; another landed at Green Bay, Wis.; and the third, piloted by Capt. E. P. Phillips with Lieut. B. T. Burt as aid, landed in the waters of Lake Michigan off Death's Door Bluff just north of Door Peninsula. The agreement was that in such an event the point on the shore line crossed just before reaching the water was to be taken as the end of the race, so that the farthest point credited to the Army balloon is the northernmost tip of Door Peninsula, and it appears from the incomplete information at hand that the result is practically a tie between Lieut. Emerson, of the Navy, and Capt. Phillips and Lieut. Burt, of the Army. The officials of the Coast and Geodetic Survey are computing the exact distance and to date the official announcement of the winner has not been made.

It is understood that all of the landings were without incident, except in the case of the Langley Field Pilot, Capt. Phillips and Lieut. Burt, whose landing presented a very narrow escape from drowning.

AIRCRAFT IN PARLIAMENT

HOUSE OF COMMONS.

The following written answers were given on November 3rd :—

ROYAL AIR FORCE—PERMANENT BUILDINGS.

Major-Gen. SEELY, the Under Secretary of State to the Air Ministry, in reply to Rear-Admiral Adair, said: It will be necessary to erect permanent buildings in substitution for hutting or temporary buildings at such air stations as are retained for the after-war Air Force. The number of stations so to be maintained is now under consideration, and I cannot, therefore, give the estimated cost at present.

CIVILIAN DISCHARGES.

Major-Gen. SEELY, replying to Mr. A. Short, said that the answers to the following questions were in the affirmative: That 1,433 civilians at present employed at No. 1 stores depôt, Kidbrooke, are to be reduced to 450 by the end of the year, and that the total number of between 6,000 and 7,000 employed by the Royal Air Force is to be reduced to 3,480 by the end of the year:

"In order to afford the men discharged better opportunities of obtaining employment, the desirability of spreading the discharges over as long a period as possible has already received very careful consideration. I have received two deputations on the matter and have discussed the situation fully with representatives of the men concerned. As a result the period has been appreciably lengthened. I much regret the hardship caused, but it is impossible to still further delay the discharges, in view of the very large reduction in the Air Force. The closest touch is maintained by the Air Ministry with the Ministry of Labour, and advanced information is given of impending discharges."

* * *

The following oral answers were given on Nov. 4th :—

LEAGUE OF OFFICERS.

Lieut.-Col. Sir FREDERICK HALL asked the Secretary for War if a considerable number of officers of the Royal Air Force who volunteered for service in Russia were sent out at short notice and without even the usual embarkation leave; if it was understood that they would be given leave privileges when opportunity occurred to make up for this; and if now on their return these officers, who in many cases have served long periods in the trying Russian campaign without any leave, are being demobilised and struck off the pay-sheets on their arrival back in this country.

Mr. PARKER (Lord of the Treasury): I have been asked to take this question. The reply to the first part is that owing to the urgency of the demands many officers were sent out at short notice, very few, if any, went without a few days' leave. To the second part, that no communication to the effect mentioned was made by the authority of the Air Ministry. The answer to the third part of my hon. and gallant friend's question is that all officers returning from Russia who had not been recommended for permanent or short-service commissions were informed that their demobilisation must be carried out as soon as they returned to this country; that the question of leave for service in Russia was being dealt with; and that if it was decided they were eligible for leave their demobilisation would be post-dated for the period sanctioned in order to enable them to draw pay for that period. Since then it has been decided to grant fourteen days' leave for each six months' service in Russia, and action is being taken to post-date the demobilisation of officers entitled to leave under this ruling. No leave is admissible for service of less than six months in Russia.

Sir F. HALL: May I ask the Secretary of State for the Air Department whether he is aware that in reply to a supplementary question a few days ago he informed me that these officers had not been summarily discharged, and that leave had been granted; and can he say whether if any of these officers have been discharged on their arrival in this country and have not had proper leave, he will take steps to see that in lieu of leave, since they are demobilised, they are paid for that period?

Mr. CHURCHILL: I will inquire into the matter. Certainly they should have their proper leave.

Sir F. HALL: Or pay in lieu of leave?

Colonel YATE: What is their proper leave? Is it not fair that an officer on demobilisation should be given twenty-eight days' grace the same as the men?

Mr. CHURCHILL: I will not say. I should like to refresh my memory.

* * *

The following written answers were given on Nov. 4th :—

SENIOR OFFICERS.

Major WARING asked the Under Secretary of State to the Air Ministry whether there are in command of the Air Force one marshal of the air and five air vice-marshals; if so, will he state what work can be found to keep these officers employed; and whether the command organisation and administration could be performed efficiently by fewer officers of high rank.

Major-Gen. SEELY: The reply to the first part of my hon. and gallant friend's question is that there is no marshal of the air at the present time, but that there are one Air Marshal and five Air Vice-Marshals, corresponding to one Lieut.-General and five Major-Generals. These officers are fully employed, and I do not consider that this small number of senior officers is excessive for so vitally important a service.

TRAINING AND STAFF—EGYPT

Major WARING asked the Under Secretary of State to the Air Ministry whether it is the intention to recommence flying training in Egypt; and, if not, what reduction it is proposed to make in the administrative staffs and units in that country, in view of the fact that only five active flying squadrons are now employed in that command.

Major-Gen. SEELY: It is hoped to recommence flying training in Egypt, but a final decision cannot be taken until the strength and constitution of the after-war Air Force is settled. The administrative staff was reduced early this year to what is considered necessary to deal with the units under the command of the Air Officer Commanding, Middle East, of which command Egypt forms a part.

AERODROMES (SHERBURN-IN-ELMET AND TADCASTER).

Major-Gen. SEELY, replying to Major Lane-Fox, said: Both these aerodromes are being used for the storage of standard-type machines and for civil aviation. Other accommodation is not at present available for the storage of these valuable machines, which would deteriorate is not constantly attended to. Tadcaster is also the station of a headquarters unit. Instructions have been given to close down both stations when cleared of stores. Sherburn-in-Elmet will, it is expected, be cleared by March 31st next and Tadcaster by the end of this year. When evacuated by the Royal Air Force both stations will be handed over to the Disposal Board for sale.

* * *

The following oral answer was given on Nov. 5th :—

UXBRIDGE ARMAMENT SCHOOL.

Major-Gen. SEELY, the Under Secretary of State for Air, in reply to Mr. Preston, said: There is no longer any armament school at Uxbridge. If my hon. friend is referring to the Royal Air Force depot at Uxbridge, the personnel on the strength of this depot (which comprises Headquarters, Southern Area, and Headquarters, No. 2 Group) is as follows:—Royal Air Force, officers, 93; airmen, 1,881 (of whom 1,561 are recruits); Women's Royal Air Force, 89 (of whom 49 are in course of being demobilised); civilian subordinates, 33; total, 2,096. It is intended that this shall be a permanent depot.

* * *

The following written answers were given on Nov. 5th :—

FERMOY CAMP.

Major-Gen. SEELY, replying to a question asked by Mr. Grundy, whether he was aware that 106th Squadron, mostly composed of young lads, is still under canvas at Fermoy, county Cork, with only boards to sleep on and a blanket covering, said: No. 106 Squadron was disbanded on October 8th last. However, regarding the detached flight of No. 105 Squadron now stationed at Fermoy, arrangements were made some weeks ago to accommodate this flight in buildings lent by the Army.

GRATUITIES (DEDUCTIONS FOR DEBT).

Major-Gen. SEELY, replying to Mr. Hogge, said: The Order granting war gratuities to airmen provides that, except in the case of airmen serving on a normal Service engagement, the gratuities shall be held liable to meet any public claim, Service debt, or Service claim.

AIRSHIP SHED, EAST FORTUNE.

Lieut.-Col. Sir JOHN HOPE asked the Under Secretary of State to the Air Ministry whether the steel airship shed constructed at East Fortune for R.34, at a cost of £250,000 is to be moved to Howden, or how this shed and five smaller airship sheds at East Fortune are to be disposed of.

Major-Gen. SEELY: It is not the intention to move to Howden Airship Station the rigid airship shed at East Fortune in which the R.34 is at present housed, and to which I assume my hon. and gallant friend refers. The cost of this shed was £160,000. This shed and the other two (not five) small airship sheds on the station, if not required for the purposes of civil aviation, are to be handed over to the Disposal Board.

STATIONS (RETENTION).

Major-Gen. SEELY, replying to Sir J. Hope, said: The retention of certain air stations has been decided upon and in the case of certain other stations a decision is awaiting the final settlement of the peace basis of the Royal Air Force. Construction work has been stopped on all stations other than those which it is definitely intended to retain, except in cases where a small amount of work has been necessary for the safety and preservation of buildings partially completed.

* * *

The following oral answers were given on Nov. 6th :—

THE UNDER SECRETARY OF STATE FOR AIR (Major-Gen. Seely), replying to Major Glyn, said: There have been surrendered by the Royal Air Force since the Armistice :—

(a) Stations consisting of land only (i.e., landing grounds and camping grounds), 124.
(b) Stations consisting of land and buildings (including ten transferred to other Departments), 122.
(c) Stations at which aerodromes have been released, whilst buildings are still required for Royal Air Force purposes, 6.

Arrangements are being made whereby civilian caretakers will, pending the sale of buildings, be placed in charge of stations cleared of Royal Air Force material, vacated by Royal Air Force personnel and handed over for disposal. In some cases Royal Air Force personnel remain in charge pending the appointment of civilian caretakers and in a few other cases the local police have been requested to exercise supervision over empty buildings.

It is a fact that when the Disposal Board are unable to take over stores the Royal Air Force personnel has to be retained to look after them, and that of course adds to the charge on the R.A.F., but the matter is now being finally considered, and I hope we shall avoid any delay in the future.

Major-Gen. SEELY, replying to Mr. Billing, said: The question as to which is the more costly is a very elaborate calculation between the R.A.F. and the civilian control, but there is obviously an advantage in handing it over to the civilian personnel in order that the small R.A.F. personnel retained may be engaged in their proper duties.

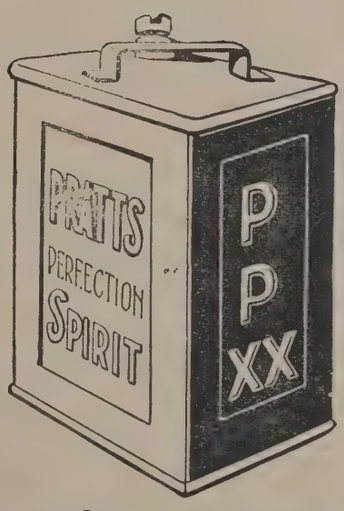
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GREAT BRITAIN.

The Aerial Mail Fiasco.

The first regular international air mail service in the world should have begun on Nov. 10th between London and Paris. The first regular air mail service in the world started in America over a year ago and has been flourishing ever since, but that is not an international service. Nor was the service carried out by the R.A.F. between Lympne and Cologne an international service, as the letters were only taken to and from the British Army and R.A.F. in occupation in Germany. Mails were carried from London to Paris by air during the late railway strike in this country, but that was no regular service.

The following announcement was made by the Post Office on Nov. 6th :—

The Postmaster-General has made arrangements for the establishment of an air mail service between London and Paris. The service will extend to Paris, France generally, Italy, Spain, Switzerland, etc., and will begin on Monday (Nov. 10th).

Registered and unregistered letters, postcards, packets of printed papers and commercial papers, and samples will be accepted for transmission. Parcels and insured correspondence will not be accepted. A special fee at the rate of 2s. 6d. per oz. will be charged in addition to the ordinary foreign postage and registration fee, where payable.

Correspondence for transmission by the Air Mail Service will be accepted daily (except Sundays) at the London post offices indicated below. Letters must be handed over the counter, and the latest times of posting will be as follows :—

G.P.O., King Edward's Building (11 a.m.); Threadneedle Street (10.45 a.m.); Lombard Street (10.45 a.m.); Parliament Street (10.45 a.m.); Charing Cross (10.50 a.m.); W.C. District Office (11.10 a.m.); W. District Office (11.15 a.m.); S.W. District Office (10.40 a.m.).

Registered correspondence must be at the post offices five minutes before the above times.

Arrangements will be made at certain provincial post offices for the acceptance of correspondence intended for transmission by the Air Mail Service. Such correspondence will be forwarded as express letters to London and will be dispatched by aeroplane on the following morning.

The correspondence will be conveyed to Paris by aeroplane, arriving in normal conditions in time for delivery in Paris in business hours the same day. Correspondence addressed to Paris will thus be accelerated by about 16 hours. Correspondence for places beyond Paris will be forwarded by the next available train. Correspondence for places in France will be delivered by express on arrival at the office of destination; correspondence for countries beyond France will normally be accelerated by 24 hours.

In the inward direction, correspondence posted in Paris in the morning will normally reach London in time for delivery in Central London (i.e., E.C., W.C., E.1, N.1, N.W.1, W.1, W.2, S.W.1 and S.E.1) during business hours on the same day. It will be delivered immediately on arrival by express messenger without additional charge. Correspondence for provincial towns will be forwarded by the next dispatch from London and will usually gain 24 hours in delivery.

If it is known in advance that flight will be impossible on any particular day, a notice to that effect will be exhibited at the offices mentioned above.

Responsibility for registered correspondence will be admitted under the usual conditions, otherwise correspondence will be accepted at sender's risk.

The Post Office "communiqué" calls for comment on more points than one. On the American aerial mail services such a saving in money (apart from time) was effected over the ordinary train transport that in the summer of this year the rate of postage was reduced to that of all other first-class matter.

It is certainly a sound scheme to fix such a rate that will bear reduction, but to make the rate 2s. 6d. per oz. is sufficient to prevent economical firms and all private persons from sending their mail by the air service. If the rate was decided upon by the Postmaster-General, it would almost appear that he wishes to show his critics that an air mail service is impossible.

If the rate was fixed by Aircraft Transport and Travel, Ltd., why do they charge 2s. 6d. per *oz.* when they will carry freight to Paris at the rate of 3s. 9d. per *lb.* if it weighs over 150 lb. and is carried for five or six days in the week?

"Parcels . . . will not be accepted." This seems fairly obvious, as no one would send parcels to Paris at 2s. 6d. per oz. by post when they may be sent at—at the most—7s. 6d. per lb. by the Airco service.

It seems absurd to have eight stated Post Offices only at which letters may be posted. There can be few difficulties in the way of collecting the letters from any Post Office where they would be specially stamped "air mail." The sorting would delay the letters, but they could always be posted in time to catch next day's mail.

Motor-cyclists will collect the air mail at the various stated post offices and convey it to Hounslow Aerodrome. The Airco machine will arrive at Le Bourget at approximately 2.45 p.m., and the mail again will be conveyed by motor-cycle to Paris, where the letters should be delivered by about 4 p.m.

The air mail will reach Paris in time to be put on the express trains leaving for Italy and Spain at about 8 p.m. or 9 p.m. Thus the letters will be delivered twenty-four hours earlier than by the ordinary post.

Those who have done any flying will know that it is seldom possible to know if the weather will enable a flight to be carried out some hours later, therefore one hopes that a notice that the flight is impossible will be exhibited on every occasion when the service has to be cancelled.

The Bréguet biplanes of the Compagnie Générale Transaérienne are to carry the air mails as well as Aircraft Transport and Travel, Ltd.

One can only hope that a sufficient number of persons will send their correspondence by the air mail service to justify its existence, and that the high rate of postage will be reduced.

Lieut. McMullin (ex-R.A.F.) left Hounslow Aerodrome at 12.30 p.m. on Nov. 10th with eight bags of mails, although the aerodrome commander reported the weather as "totally unfit." The machine was embellished with "*G.R.*" streamers on struts and tail. After staying in the air for five minutes the pilot landed and reported complete invisibility. It is extremely unfortunate that the air mail service has been started in November, the worst flying month of the year.

Civil Aerodromes

The Air Ministry announced on Nov. 8th that the following lists of aerodromes are issued as an addition to or amendment of the lists recently published.

List C. (Aerodromes temporarily retained for Service purposes.)

Amendments.

The following aerodromes have been transferred to List E and are now published in that list :—

Aerodrome.	Nearest Railway Station.	Nearest Large Town.
Leighterton	Tetbury	Stroud
Lopcombe Corner	Grateley	Salisbury
Rendcomb	Foss Cross	Cirencester

List D.—(a) Aerodromes licensed for all types of Aircraft.

Aerodrome.	Location of Aerodrome.	Nearest Large Town.
Cricklewood	Cricklewood	London

List D.—(b) Aerodromes licensed as "Suitable for Avro (504K) and similar types of aircraft" only. Except in very few instances accommodation does not exist. The licences have also in the majority of cases been issued for limited periods only.

Aerodrome.	Location of Aerodrome.	Nearest Large Town.
Billesley	Yardley Wood Road	Birmingham
Altrincham	Woodlands Park	Altrincham
Rugby	Polo Ground, Spring Hill Farm	Rugby
Chester	Race Course	Chester

A Visit to America.

Major-General Sir F. H. Sykes, G.B.E., K.C.B., C.M.G., Controller-General of Civil Aviation, has arranged to visit Canada, the United States, and, if possible, Newfoundland. The object of his journey relates to the development of international civil flying.

THE CONTINENTAL AIR SERVCES.

The Airco Service.

The London-Paris service has now been running for 11 weeks. Out of 166 scheduled flights, 149 have been successfully accomplished. Eight flights have been prevented altogether, owing to weather. Six flights have been interrupted owing to weather and three interrupted owing to mechanical defect.

(*Continued on page* 1691.)

AERONAUTICAL ENGINEERING

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INCORPORATING AIRCRAFT ENGINEERING, AERODYNAMICS, AIRCRAFT FINANCE AND COMMERCIAL AERONAUTICS AND MATTERS PERTAINING TO THE AERONAUTICAL ENGINEER AND THE AIRCRAFT TRADER.

THE WEEKLY COMMENTARY.

The description of the work of the Experimental Depot at Grain is continued in this issue.

Two seaplanes of some interest are described, and the first authentic account of the two "Kittens" with the two-cylinder A.B.C. engines is given. These machines are fairly well known by name, but the accounts which have been circulated concerning them have been very incomplete and generally inaccurate.

Illustrations and descriptions—parallel to those given last week of the Friedrichshafen machines—of the Gotha seaplanes are given in this issue by Mr. Hildesheim.

Gotha seaplanes were less heard of in this country than were those of the F.F. Company, but there seems to have been little difference in the number of types produced by the two firms.

Illustrations of a number of recent Roland machines, manufactured by the L.F.G. Co., of Adlershof, appear on page 1685 *et seq.*

Most of the machines are of the single-seat fighter type, of distinctly German appearance, and many of them are—even for German machines—extremely eyeable.

THE WORK OF THE MARINE EXPERIMENTAL AIRCRAFT DEPOT, ISLE OF GRAIN.—(*continued.*)

By Capt. W. H. SAYERS, Late R.A.F.

Very shortly after the laying down of the original designs of P.V.4, Port Victoria was asked by the Air Department to submit a design for a single-seat seaplane to a specification known as N.2.B. This called for two 65-lb. bombs carried within the fuselage, four hours' fuel, machine-gun and ammunition, an alighting speed not exceeding 40 knots and a top speed of 85 knots at 6,500 ft. The engine specified was the same 150-h.p. Smith "Static" as proposed for P.V.4.

Assuming the engine performance, it was believed that the conditions could be complied with, and two designs were got out to meet the case.

P.V.5 and P.V.5a.

One—known as P.V.5—was a modified P.V.2, with a large upper wing and a small lower one, rigid bracing to the chassis and no lift wires, a high-lift wing section and a wing loading of 10 lb. per sq. ft.

The second design—P.V.5a—was of normal design, equal upper and lower wings and cable bracing. The wing loading was considerably reduced and a high-speed wing section was used. The intention was to make as close a comparison as possible between the wing-and-a-half type with heavily loaded wings and the normal type of biplane, and to determine whether in full-size work the hopes of the designer for the former type would be fulfilled.

Towards the end of 1916 both these machines were in an advanced stage of construction, and with P.V.4, were being held up by the non-arrival of their engines.

At that time P.V.4 was considered to be important, and Wing Commander Aldwell (as he then was) paid a visit to the Engine Section of the Air Department and made urgent representations in the matter.

A promise of engines immediately was forthcoming which materialised some week or so later in the form of one 150-h.p. Hispano-Suiza and one 190-h.p. Rolls-Royce. Neither of these two engines could by any means be fitted to P.V.4, but the 150 h.p. Hispano-Suiza was eventually, after sundry modifications, installed in P.V.5.

At the fusion of the Supply Departments of the R.N.A.S.

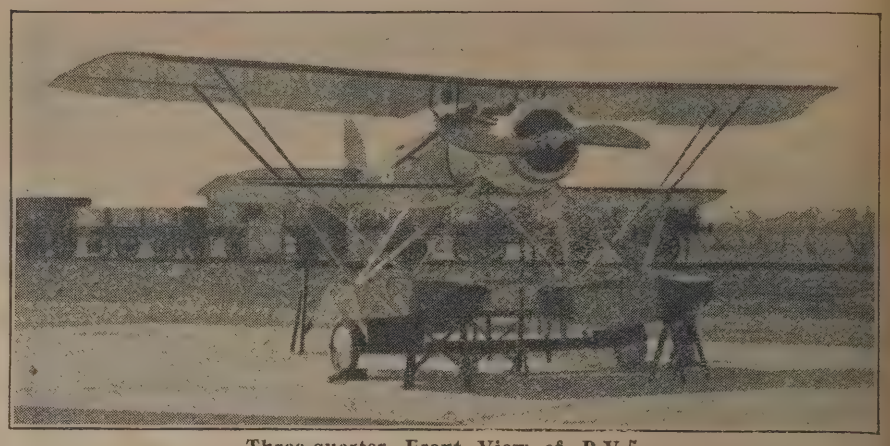


P.V.5 (150 h.p. Hispano-Suiza engine) afloat.

and the R.F.C. under the Air Board the policy of experimental aircraft building at Grain was very nearly abandoned, but it was decided to carry on P.V.5 and to drop P.V.5a.

As originally designed P.V.5 and P.V.5a were to be fitted with Linton Hope type floats, but in the case of P.V.5 these were abandoned in favour of floats of pontoon construction with outwardly sloping bottoms intended to produce the shock-reducing qualities of a V-bottomed float and at the same time keep the spray out of the airscrew.

This modification was due to Squadron Commander (now Wing Commander in command at Grain) Busteed, and fulfilled the expected purposes admirably. These particular floats were, however, extremely unfortunate.

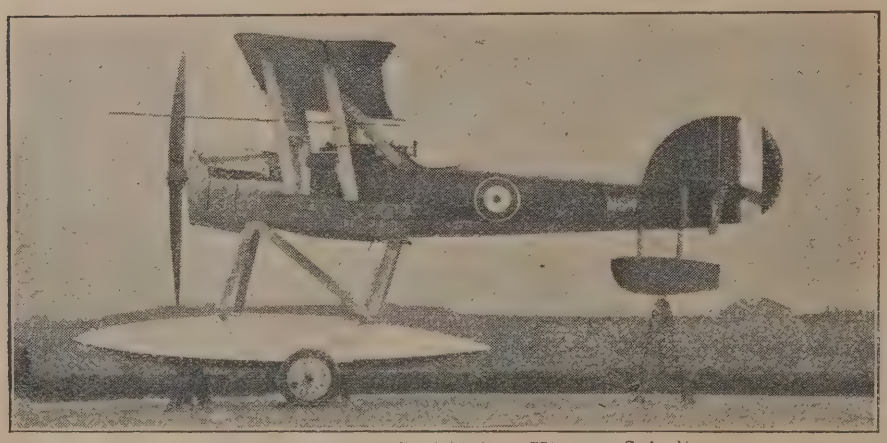


Three-quarter Front View of P.V.5.

On alighting after her first flight some square feet of bottom ripped off one float and the machine capsized. She was salved with surprisingly little damage and rebuilt. Serious trouble was encountered thereafter in getting her onto the special trolley demanded by the shelving float bottom, as unless the floats were in exactly the right place very serious bending stresses were set up in the cross-tubes of the chassis, and through them in the whole wing structure.

For similar reasons it was impossible to beach the machine.

Eventually, at the end of an official test flight, the machine turned over on her nose while taxying—an accident generally ascribed to the floats being insufficiently far forward, but which was actually caused almost entirely by a singular and inexplicable error of judgment on the part of one of the finest seaplane pilots in Britain.



Side View of P.V.5a (200 h.p. Hispano-Suiza).

This machine was, apart from her unfortunate floats, extremely satisfactory. The pilot's view was good, her flying qualities were praised by all who flew her, and she was unusually comfortable. The performance was not up to that anticipated, partly because trials were made with a different airscrew which held the engine speed down, but mainly because the engine and mountings were much heavier than those of the original design.

The specification following gives particulars of P.V.5 :—

Type of machine .....Seaplane Scout
Name or type number of machine P.V.5
Purpose for which intended
Fighter and light bomber
Span .....top, 32 ft.; bottom, 21 ft.
Gap .....4 ft.
Overall length .....25 ft. 6 in.
Maximum height .....9 ft. 9 in.
Chord .....top, 6 ft.; bottom, 3 ft. 6 in.
Total surface of wings .....245 sq. ft.
Engine type and h.p.
Hispano-Suiza, 150 h.p.
Weight of machine empty .....1,788 lb.
Disposable load apart from fuel ...375 lb.
Total weight of machine loaded 2,456 lb.
Load per sq. ft. .....10 lb.
Weight per h.p. .....16.2 lb.
Tank capacity in gallons petrol 36; oil 4

PERFORMANCE—
Speed at 4,000 ft. .....82 knots.
Landing speed .....40 knots.
Climb—
To 9,000 ft. .....35 min.

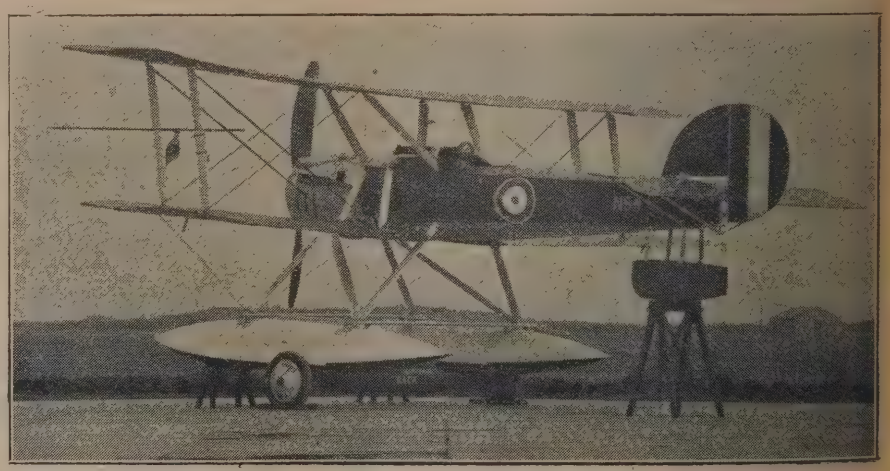
P.V.5a was eventually completed with a 200-h.p. Hispano and very considerably improved on the specification figures for performance, and was quite a good machine.

Both in view and in manœuvring qualities P.V.5 was far the better of the two, and had she been fitted with the same engine—as it was intended—would have had a better all-round performance.

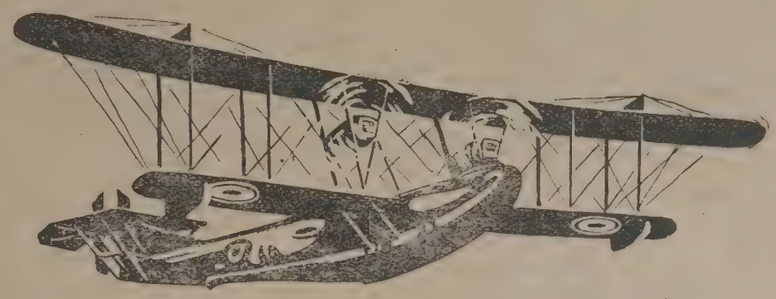
However, by the time these machines were tested it had been officially decided that the type was not needed for service purposes. Large numbers of machines in every way inferior to either of these were later ordered and used for the purpose for which these were designed—but that was only to be expected.

The main dimensions, etc., of P.V.5a are given below :—

SPECIFICATION.
Type of machine .....Seaplane Scout
Name or type number of machine P.V.5a
Purpose for which intended
Fighter and light bomber
Span .....33 ft. 1 in.
Gap .....5. ft.
Overall length .....26 ft. 9 in.
Maximum height .....13 ft. 1 in.
Chord .....5 ft.
Total surface of wings .....309 sq. ft.
Engine type and h.p.
Hispano-Suiza, 200 h.p.
Weight of machine empty .....1,972 lb.
Disposable load apart from fuel .....245 lb.
Total weight of machine loaded (without bombs).....2,518 lb.
Load per sq. ft. .....8.15 lb.
Weight per h.p. .....12.6 lb.
Tank capacity in gallons .....petrol, 41; oil, 5
PERFORMANCE—
Speed at 2,000 ft. .....89 knots.



Three-quarter Rear View of P.V.5a. The attachment to the interplane struts is a special Pitot tube for speed tests.



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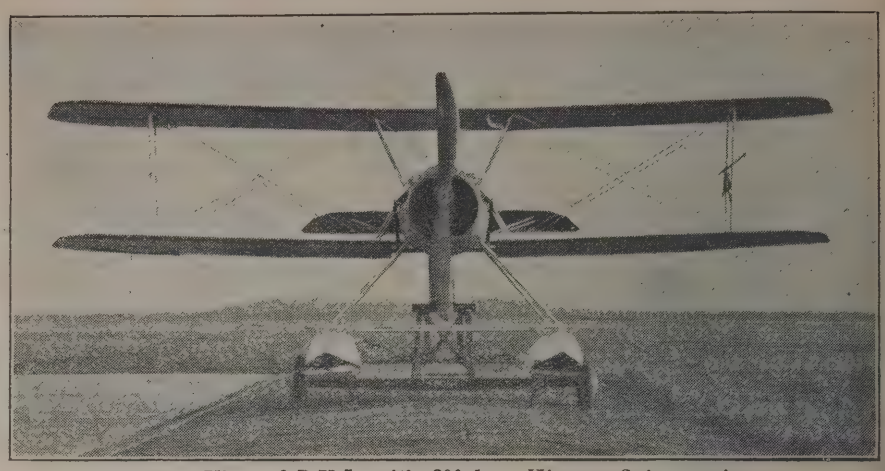
Telegrams
Dynamo, Bradford
Enelectico, Westcent
London

Speed at 10,000 ft. .....87 knots
Landing speed .....45 knots
Climb—
To 10,000 ft. .....17 min. 40 sec.

The Kittens

During the period of construction of P.V.5 and P.V.5a Port Victoria was asked to report upon the possibilities of building a very small reasonably high performance single-seater fitted with a two-cylinder A.B.C. engine of 45 h.p.

The general idea was to produce a machine sufficiently small to be carried by torpedo-boat destroyers and other small craft and capable of getting off a very confined deck space. The Experimental Flight at Eastchurch, under the command of Squadron Commander Busteed, were set the same problem.

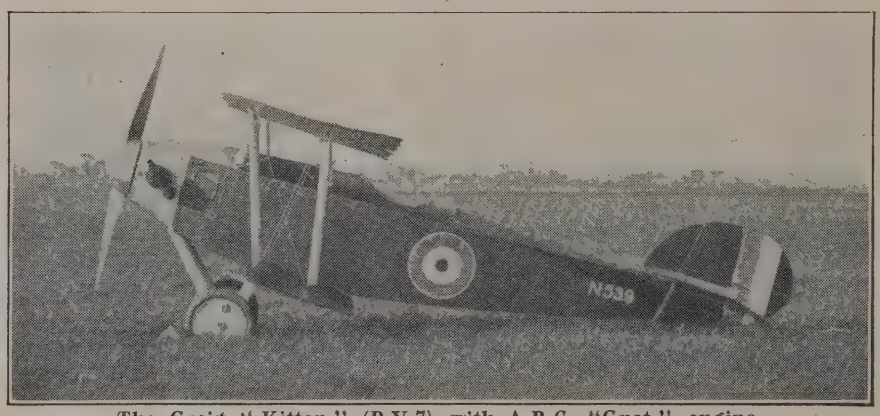


Front View of P.V.5a with 200 h.p. Hispano-Suiza engine.

Both Port Victoria and Eastchurch produced designs and were instructed to proceed with the construction thereof. When Commander Busteed migrated from Eastchurch to take command of Port Victoria he imported the partially built Eastchurch machine, and both were completed, one alongside the other, in the Port Victoria workshops.

These machines were known as the Grain and the Eastchurch "Kittens," P.V.7 and P.V.8—the missing P.V.6 being represented by the preliminary lay-out of a high-speed land scout which never proceeded further.

The two machines differed vastly. P.V.7 continued the Port Victoria tradition of the wing-and-half arrangement, combined with a relatively high loading on a high-lift wing. Unfortunately the wing section developed for this case was by no means a success and the machine was not really satisfactory. The design was based on a total loaded weight,



The Grain "Kitten" (P.V.7) with A.B.C. "Gnat" engine.

with pilot, gun, ammunition, and three hours' fuel, of 520 lb., a figure laughed to scorn by the technical advisers to the Air Department at the time, but which was in fact somewhat higher than the realised one.

Very ample stabilising surfaces were fitted, as it was feared that the machine would be uncomfortably quick in her movements, and, apart from the special wing curve, great care was taken to avoid novel and untried features in the design.

The Eastchurch design was based on a much higher total weight and much lighter wing loading.

Equal top and bottom wings were fitted with an enormous stagger, and the single plank interplane strut used on the Sopwith triplane was adopted.

No fixed tail plane was provided in the original design, but a balanced elevator of Morane-like aspect was fitted.

No springing was fitted to the chassis, large diameter tyres being relied upon, and the main lift wires were taken to the axle centre.

As with most of the other Port Victoria-built machines, the engines failed to materialise, and eventually, instead of the 45 h.p. geared-down engines, 35 h.p. ungeared engines of the same make were fitted.

This involved some considerable modification to the engine mounting in both cases, as the engines had to be raised some 6 in. above their intended position to bring the thrust line into its proper place and to give adequate airscrew clearance. The Grain design was completed first and created rather a sensation. The performance was fair, though not up to expectation, and the machine was very difficult to handle on the ground.

She was eventually fitted with a new set of wings of tried section, the chassis was moved forward to prevent tail-chasing on the ground, and the tail plane was modified to get over a considerable tail heaviness found during her trials.

As far as can be ascertained the machine has never been flown since these alterations were made.

The Eastchurch machine on her first flight showed serious longitudinal unsteadiness, and part of the elevator balance was cut off and a small fixed surface was added. The result of this alteration was so marked as to lead to a belief that overbalancing of the elevator was the real trouble—as the total fixed surface added was less than 2 sq. ft.

With this alteration the machine was remarkably successful. In spite of a very considerably greater weight the performance was better all round than that of the Grain design, and the machine was extremely easy to fly.

Owing to the Sopwith triplane type of struts used, and some resemblances of detail fittings to Sopwith practice, this machine was very commonly believed to be a Sopwith product, and has actually been described in official publications as the "Sopwith Kitten." This, therefore, seems an opportunity for giving the credit to the actual designer, the late Capt. G. H. Millar, R.A.F., who, as Lieut., R.N.V.R., was Commander Busteed's chief technical officer at Eastchurch, and who joined the staff at Port Victoria on Commander Busteed's succession to that command.

These two machines were completed in the summer of 1917.

The specifications of the two "Kittens" are as follows:—

THE GRAIN "KITTEN."

Type of machine .....Small scout.
Name or type number of machine .....P.V.7 (Grain Kitten).
Purpose for which intended .....Shipboard use.
Span .....top, 18 ft.; bottom, 12 ft. 7 in.



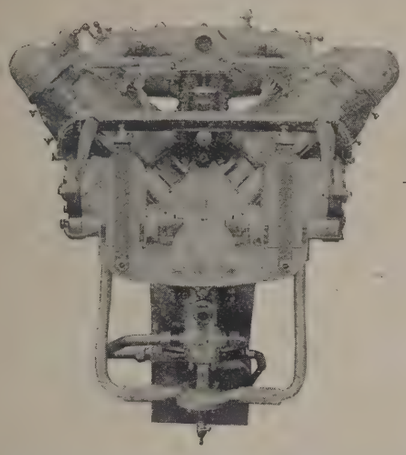
Running the engine of the Grain "Kitten."



200 H.P. 8-cylinder Sunbeam "Arab" engine fitted with type AV8s B.T.H. Magnetos.



275 H.P. 12-cylinder Rolls-Royce "Falcon" engine fitted with type AV12s B.T.H. Magnetos.



200 H.P. 8-cylinder Wolseley Hispano-Suiza "Viper" engine fitted with type AV8s B.T.H. Magnetos.

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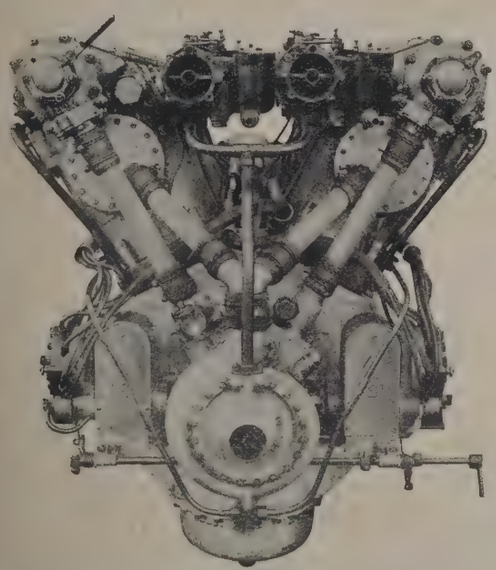
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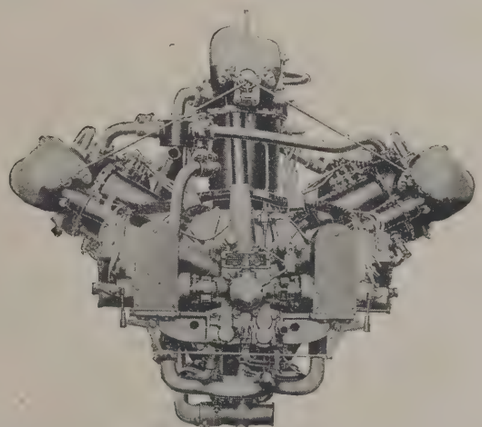
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650 H.P. 12-cylinder Siddeley-Deasy "Tiger" engine fitted with type AV12s B.T.H. Magnetos.



450 H.P. 12-cylinder Napier engine, fitted with type AV12s B.T.H. Magnetos.

Gap .....3 ft.
Overall length .....14 ft. 11 in.
Maximum height .....5 ft. 3 in.
Chord top, 3 ft. 6 in.; bottom, 2 ft. 6 in
Total surface of wings .....85 sq. ft.
Engine type and h.p.
A.B.C. 35 h.p. "Gnat."
Weight of machine empty .....272.5 lb.
Disposable load apart from fuel 175 lb
Total weight of machine loaded 495 lb.
Load per sq. ft. .....6 lb.
Weight per h.p. .....14.1 lb.
Tank capacity in gallons
petrol, 4; oil, 1

PERFORMANCE—
Speed at 2,000 ft .....77 knots.
Landing speed .....35 knots.
Climb—
To 12,000 ft. .....35 min.



Side View of the Eastchurch "Kitten" (A.B.C. "Gnat" engine).

THE EASTCHURCH "KITTEN."

Type of machine .....Small scout.
Name or type number of machine, P.V.8 (Eastchurch Kitten).
Purpose for which intended .....Shipboard use.
Span .....19 ft.
Gap .....3 ft.
Overall length .....15 ft. 7½ in.
Maximum height .....5 ft. 5 in.
Chord .....3 ft.
Total surface of wings .....106 sq. ft.
Engine type and h.p.
A.B.C. 35 h.p. "Gnat."
Weight of machine empty .....340 lb.
Disposable load apart from fuel 150 lb.
Total weight of machine loaded 586 lb.
Load per sq. ft. .....5.5 lb.
Weight per h.p. .....16.7 lb.
Tank capacity in galls.....petrol 9; oil 1
PERFORMANCE—
Speed at 2,000 ft. .....82 knots
Landing speed .....40 knots
Climb—
To 10,000 ft. .....20 min.



Front View of the Eastchurch "Kitten."

(To be continued.)

BRITISH INTERNAL COMBUSTION ENGINES, LIMITED.

Mr. R. Henry Wheeler, presiding at the first annual general meeting of British Internal Combustion Engines, Ltd., said :—

"I would remind you that the company was only registered in April, 1918, and I think you will agree that it has already given a very good account of itself. As the company pays the income tax up to 5s. in the £ on the dividends, they are equivalent to £9 7s. 6d. per cent. on the preference and £6 5s. per cent. on the ordinary shares

"As you are aware, the Green Engine Co., Ltd., is the proprietor of the British, Foreign, and Colonial patents under which the Green engine is designed and manufactured. This engine was famous as the winner of the Naval and Military Aeroplane Engine Competition, winning the first prize of £5,000 for the best aeroplane engine immediately prior to the war, and it is very significant that in the first race after the war its 35-h.p. engine beat all competitors in the Aerial Derby handicap at Hendon in Messrs. A. V. Roe and Co.'s new 'Baby Avro' aeroplane.

"As a result of its recent remarkable performances many inquiries have been received and some very satisfactory business has already been concluded, justifying the forecast made at our statutory meeting that the Green engine would again take a foremost place in the great future of aircraft of all kinds for naval, military, and commercial purposes. These engines are now standardised in five sizes—viz., 35, 100, 160, 275, and 450 h.p., and in addition an engine of 1,000 h.p. is in course of completion.

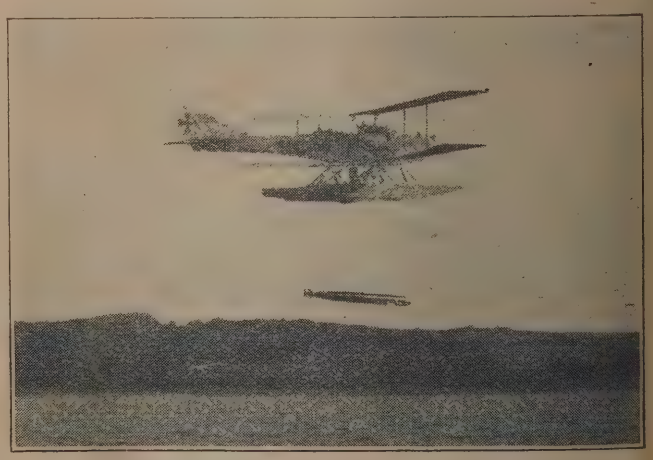
"You will be pleased to know that Green engines were fitted into many of the submarine-chaser coastal motor-boats for the Admiralty, and proved a great success in the Zeebrugge and Ostend raids. Mr. G. Green, the designer of these engines, is a successful inventor who is always at work exclusively in our interests, and he may well be proud of the results obtained. Further developments are pending in connection with Green engines which should prove to be a source of considerable additional profit to this company.

"The position of the Aster Engineering Co., Ltd., may be judged from the fact that since we became interested its dividend has been doubled. This company makes the 'Aster' internal-combustion engine, which is well known all over the world as a power unit in connection with road transport, electric generating sets, electric welding, wireless telegraphy, salvage work, ships' lighting, etc.

"The Aster Engineering Co., Ltd., is fully booked up with profitable orders for more than a year ahead, and is further developing the manufacture and extending the markets both here and abroad for its own specialities. This settled policy has created a most valuable goodwill, which does not figure among the assets in its balance-sheet. The works are being enlarged as rapidly as possible, and additional machinery is being installed.

"Some idea of the importance and great future of the internal-combustion engine in the matter of road transport has recently been brought home to the public, and now that an ample supply of petrol, paraffin, and crude oil is assured the demand for various types of internal-combustion engines as power units for all purposes, both on land and sea, is bound to increase year by year Our associated companies are pioneers in the development of the internal-combustion engine for aviation, road transport, and the generation of electricity, and we are therefore in a position to take full advantage of the great future before this industry.

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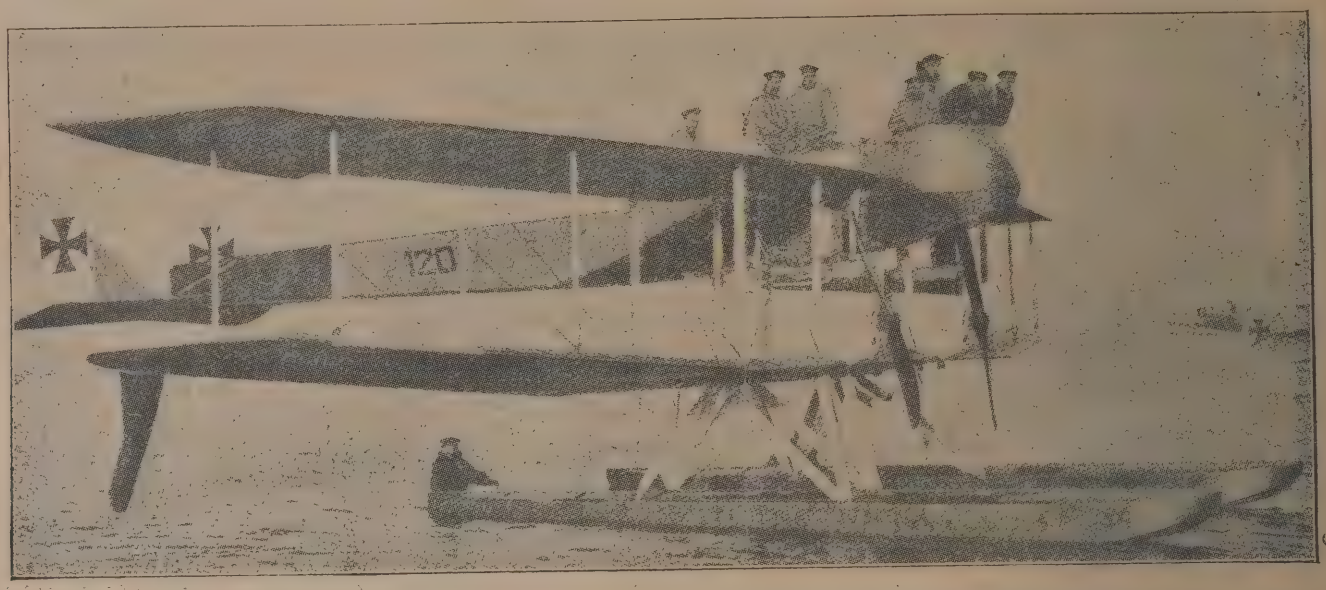
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THE GOTHA SEAPLANES.

By Erik Hildesheim.

The Gotha works came to the fore some time before the war as the aircraft department of the established waggon works, and concentrated their activities on the then favourite Taube monoplane model, their pilot Schlegel being second winner in the "Nationalflugspendi" 24 hours' overland flight.

The Gotha works took up the quantity production of the Ursinus twin-engined biplane, built experimentally at Darmstadt, and this type was also turned out as a seaplane and developed into the torpedo-carrying and long-distance patrol aircraft.



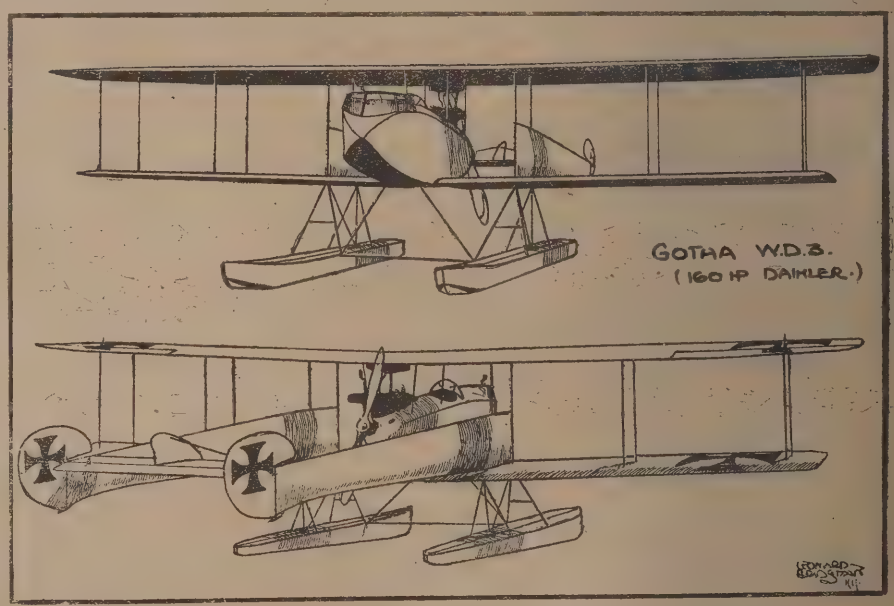
The Ursinus Seaplane (two 160 h.p. Mercèdes Motors), built by the Gotha Works.

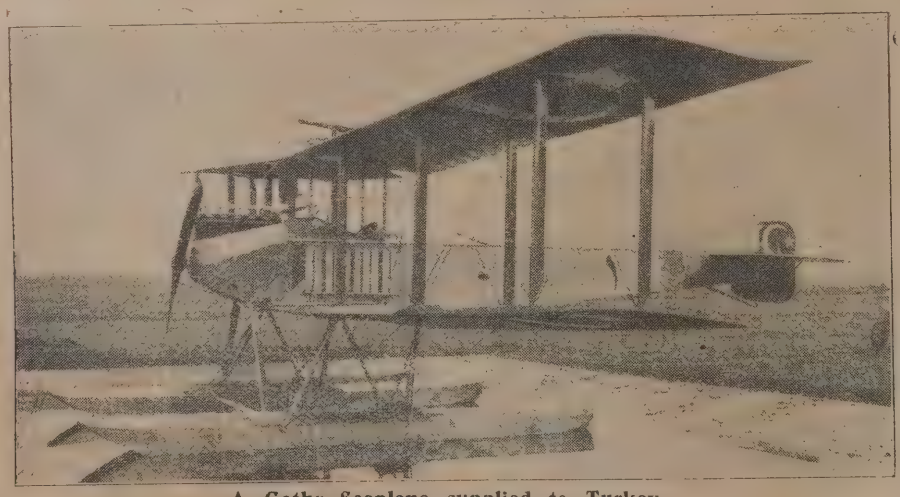
Early in the war the 100-h.p. Gnome-engined Falcon scout was built by the Gotha works as one of the first German replies to the British scout, but the name of Gotha has been chiefly associated with the twin-engined bomber, the first aircraft of that type to be employed by the Germans. It is not usually known that at Gotha was built the first experimental 3-engined giant biplane for Count Zeppelin. This afterwards developed into the well-known Staaken model.

Although the Gotha works, situated in the centre of Germany, were the only German aircraft enterprise not having a seaplane branch of their own, they were large contractors to the German navy, beside being the chief furnishers to the Turkish naval air service. In 1914 the Gotha works arranged with the city of Rostock to have a plant and sheds erected near Breitling, which were used when preparing for the Warnemünde seaplane competition, for which two 150-h.p. Benz and Rapp-engined Gotha seaplanes were entered.

When the war broke out this plant was taken over by the Navy and formed the nucleus of the present Warnemünde air station.

Even in 1914 the Warnemünde entry biplanes were supplied in series, and in spring, 1915, the Imperial Naval Office





A Gotha Seaplane supplied to Turkey.

ordered five new Gotha types, viz., the W.D. (i.e., Wasser Doppeldecker = seaplane), 3, 5, 7, 8, and U.W.D. (Ursinus seaplane).

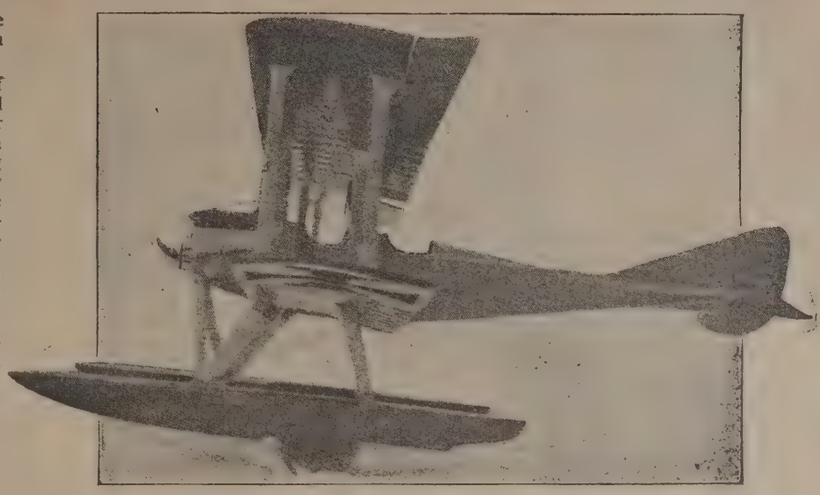
The chief designer of the firm was Diplom-Engineer Karl E. M. Rösner, and during the war 30 float-types were built, the first ones with sharp bows to the floats, then with extended stern to increase longitudinal stability and to prevent the fuselage from getting in contact with the sea, next the standardised streamlined type floats, and finally two-stepped floats for the heavy aircraft.

The original float-springing was soon dropped to the order of the naval authorities. The floats were always made with watertight compartments bulkheaded off and coated with varnish, or later with tar oil varnish on account of the shortage of boat varnish. When the three-ply wood grew of inferior quality towards the end of the war the floats

were made either completely or with the exception of the side walls of thin duralumin sheets.

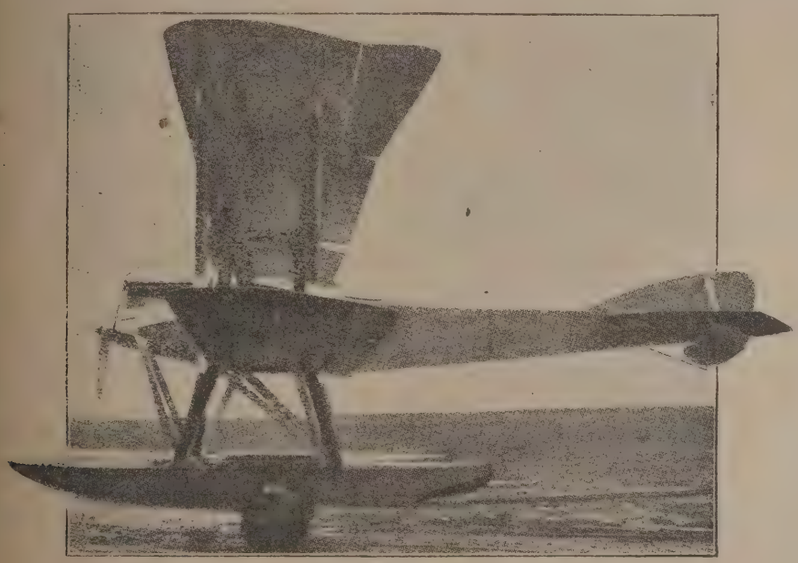
The Gotha Model 3 seaplane was of the twin-bodied pusher type, first heard of as an Ago type land-going scout or two-seater, the central nacelle, with a 160-h.p. Daimler motor installed, being of the Farman type, and the empty bodies replacing the triangular tail-tube construction of the ordinary pusher biplane, forming an improvement in head-resistance and in longitudinal stability. The front observer cockpit was provided with gun-mount, wireless plant and bomb-dropping device.

Model 5, with a 160-h.p. Daimler motor, was the first small speedy German tractor seaplane, from which the naval scout eventually developed and was the favourite of the commander of the Holtenau naval air station, Captain Lt. Langfeld, who kept it for his private use, even when appointed C.O. of the naval air station in Constantinople.



The Gotha W.D.12 Seaplane (160 h.p. Daimler engine).

Gotha type F. was the first twin-engined aircraft ordered by the German navy, being a two-float tractor seaplane, equipped with two 120-h.p. Mercédès motors, mounted on the lower planes above the floats. The observer and the gun mount were in the front cockpit, followed aft by the pilot, and the two tail fins and balanced rudders—beside the central fin—were arranged on each side of the undivided elevator.



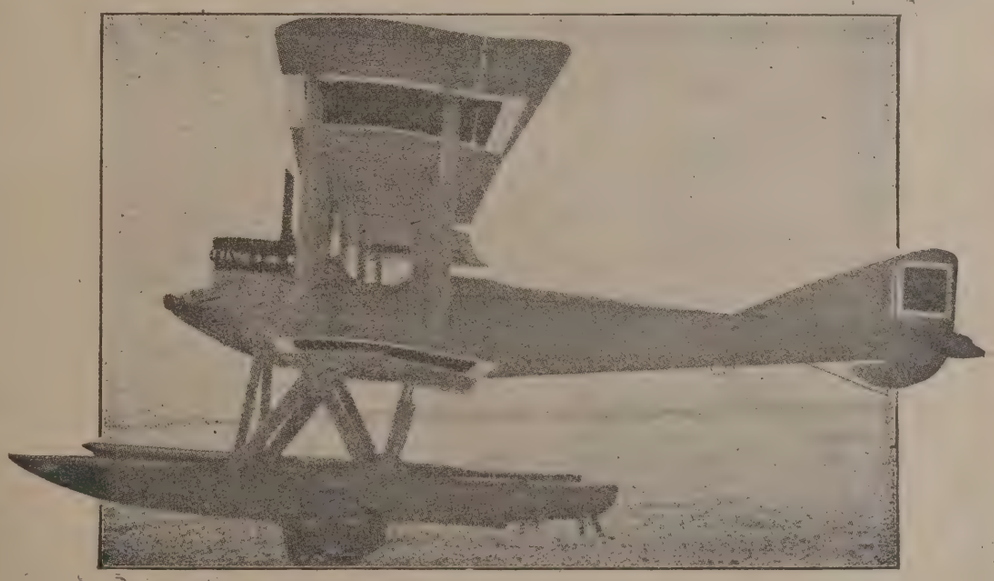
The Gotha Model 15 Seaplane, equipped with a 260 h.p. Daimler engine.

In the next model, No. 7, again a twin-engined seaplane, and the naval version of the Ursinus pattern, the two fins and non-balanced rudders were raised above the one-piece elevator. The W.D.7 was ultimately employed as school mount in the torpedo schools. The W.D.8 turned out with a single 240-h.p. Maybach engine installation and rear observer seat was the first high-powered German seaplane, the production of which was not entered into till two years later.

The Ursinus seaplane was equipped with floats of a length of 8.5 metres and was of the main dimensions: Length, 14.2 metres; span, 20 metres; area, 82 sq. metres; empty weight, 2 tons (1,940 kilos.); useful load, 350 kg.; extra load, 540 kg. The power plant was two opposite rotating 160-h.p. Mercédès motors and the speed amounted to 158 kilometres per hour. According to the Ursinus patent the fuselage was raised to enable the centralising of the engines as far as having the screw-tips almost touch with the object of improving the control of large aircraft, and owing to the presence of the low floats the aircraft remained stable. The fuselage nose was made of three-ply wood and acted as observer cockpit with machine-gun mount and bomb-dropping device.

To facilitate railway transport the seaplane could be taken down in three parts, the central one with fuselage and motors remaining intact.

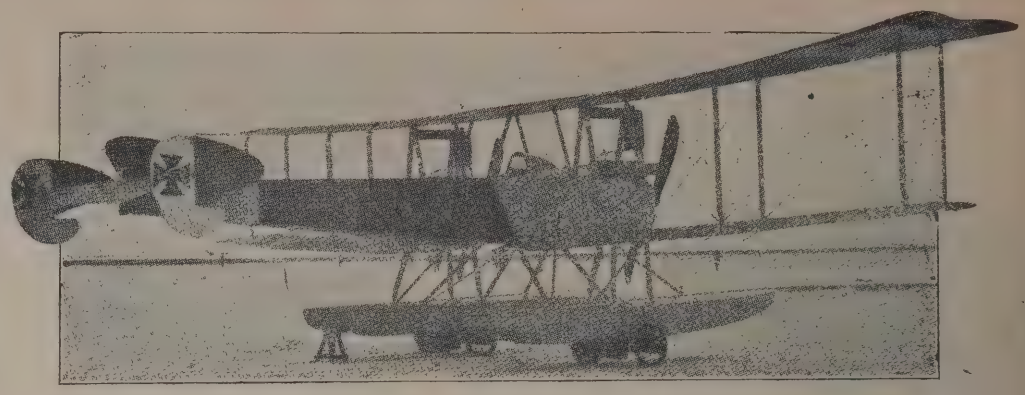
The type was nicknamed the Trojan Horse, dating from an acceptance flight in Warnemünde, when six passengers had been carried instead of sand ballast,



A Modern Gotha Seaplane, built for Turkey.

their sudden appearance on landing causing the above remark from the Government inspector, Marinebaumeister Boatz.

The Gotha works were next ordered by the Imperial Naval Office to remodel type 2 for a combined wheel and float under-carriage for Turkey, the seaplanes having to be transported by land, as Roumania had refused to sanction any transit. So a shaft with wheels on both sides of the floats were mounted below them, the latter acting as brakes by means of aft extending skids. Another feature was the rather old-fashioned top plane gun position calling for a standing position of the gunner-observer.

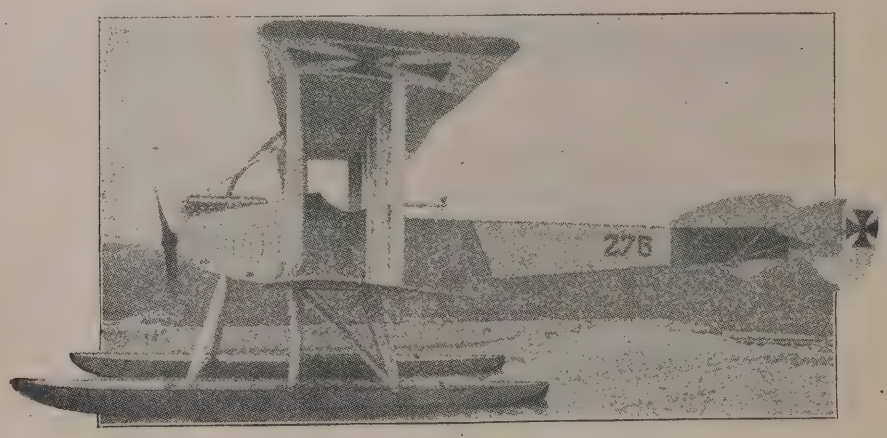


The Gotha Model F (two 120 h.p. Mercédès engines).

The seaplanes were sent by railway to Herkulesbad, in Hungaria, erected there and flown with spare parts across Roumania and Serbia to Lom-Polanka, in Bulgaria, from where they could again be transported to Constantinople. Further Gotha models of more modern streamline aspect supplied to Turkey are shown in illustration.

Model 12 was the next step in improving the German naval seaplane, cutting head-resistance with the aim of getting high-speed patrol machines. Equipped with a 160-h.p. Mercédès motor the attained speed was 141 kilometers per hour. The main dimensions were a length of 10 m., a height of 3.825 m., 15 m. span of top planes and 14 m. of lower ones, an area of 54 sq. m., a net weight of 1 ton without fuel or water, a useful load of 550 kilos., the total weight amounting thus to 15 tons. Fuel was carried for a flight of 5½ hours' duration, and the performance figures for climb were: 7.5 minutes to 1,000 metres; 1.500 m. in 12 min.; 2,000 m. in 19 min., and 3,000 m. in 41 min.

The Gotha model 15, with its 260-h.p. Mercédès engine, was the highest powered and the last single-engined type to be supplied to the German Navy. The results obtained with the large seaplanes encouraged the Imperial Naval Office to commence the building of torpedo-carrying seaplanes, the Gotha works turning out the models 11 and 14, the respective main figures being as follows:—



A Gotha Seaplane similar to the Model F, but with one 260 h.p. Mercédès engine.

Gotha W.D.11.—Overall length, 13.43 m.; overall height, 4.75 m.; span, 22.51 m.; total area, 103.4 sq. m.; motor plant, two 160-h.p. Mercédès; speed, 120 km.p.h.; climb, 1,000 m. in 12 min., 1,500 m. in 20 min.

Gotha W.D.14.—Overall length, 14.4 m.; overall height, 5 m.; span, 25 m.; total area, 131.7 sq. m.; motor plant, two 200-h.p. Benz, speed, 126 km.p.h.; climb, 1,000 m. in 17 min.; 1,500 m. in 38 min.

The net weights amounted to 2,146 kilos., and 3 tons, and useful load of 972 kg. and 1,183 kg., respectively, could be carried beside 465 kg. and 782 kg. fuel.

The W.D.14 was the later model, showing an increase in dimensions and being provided with tractor screw-drive instead of pusher as in the former, the beam of the fuselage being further increased to enable a side-by-side seating arrangement of pilot and observer, who could take turns at pilotage, the control lever being shiftable. W.D.11 had the usual tandem seating with observer in the fuselage nose in front of the planes. The W.D. 14 model was further provided with a folding arrangement, when the span was lowered to 8.7 metres, the length increasing then to 15.1 metres. The torpedo was carried below the body and a special dropping gear was provided. In an attack the seaplanes would come down to a height of 20 to 30 ft. and launch the torpedo on the object.

The same seaplanes were used also for mine-laying both on the French and English coasts and against the Russian naval forces, being employed further during the raid in Krisland for the occupation of the island of Oesel for the transport of troops, landing machine-gun detachments, who conquered the surrounding small islands. For mine-laying, the torpedo gear was replaced by mine racks, or again by special petrol tanks to be dropped in case of long-distance patrol flights of 11 to 12 hours' duration in the North Sea.

Finally, a special version of the land-going Gotha model was turned out for long naval patroling, the dimensions were identical with those of W.D.14, but the performance was improved by the employment of two 230-h.p. Benz motors, a climb to 1,000 metres being thus attained in 15 minutes, while it took 25 minutes to reach 1,500 metres. The total weight of the twin-engined seaplane amounted to over 4.5 tons (4,540 kilos.) and comprised a net weight of 3 tons (3,030 kilos.), 1 ton fuel (1,024 kilos.), and 0.5-ton useful load (486 kilos.).

TRIPLEX GLASS AT OLYMPIA MOTOR SHOW.

As Triplex Glass became almost universal on Service aeroplanes and motor vehicles so it is becoming on all private motor vehicles, and at the 1919 Motor Show the following well-known motor manufacturers will have Triplex Safety Glass windscreens as a standard fitting in their cars:—Straker-Squire, Singer, Star, Lanchester, Hillman, Mercury, etc., etc. Morris Russell and Co. will be showing a special Triplex windscreen for Ford cars, and the Auster-Triplex and the Beatonson Triplex Backscreens will be on view on Auster's and G. Beaton and Son's stands respectively.

It is interesting to note that several insurance companies are allowing rebates approximating to 22½ per cent. on premiums when cars are fitted with Triplex windscreens, etc.

NEW AIR TRANSPORT COMPANY.

As a result of the meeting of 50 business men at the Athletic Club in Los Angeles, Cal., the incorporation of a company known as the California, Great Western and Inter-State Air Route has been announced. The company has been incorporated at $1,000,000, and intends to develop commercial aviation in the Western States of America.

According to the report, the company will establish and operate landing stations and use various types of aircraft. It will make every effort to stabilise the Air Industry. Plans have been made for standardised landing stations at Los Angeles, San Francisco, Oakland, Sacramento, and other places. It is said that the cost of the offices and hangars to be erected on each landing ground will be from two to three million dollars.



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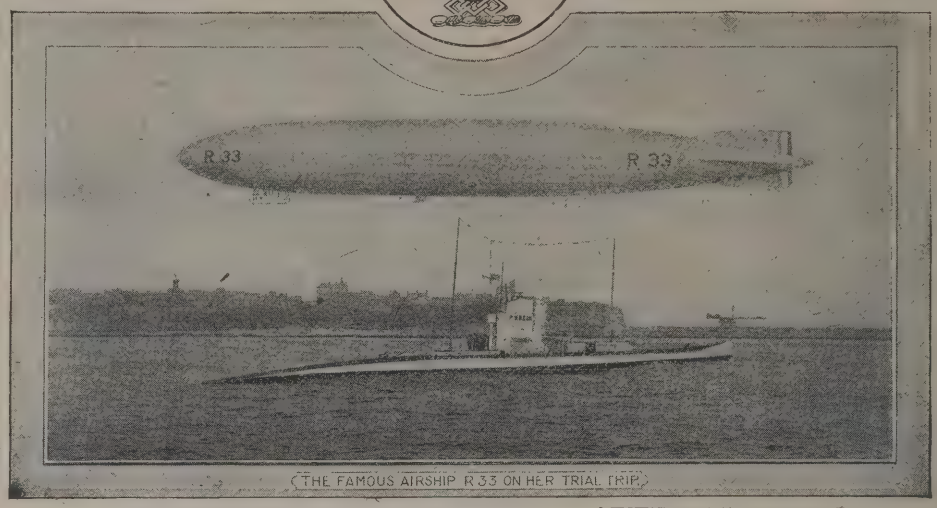
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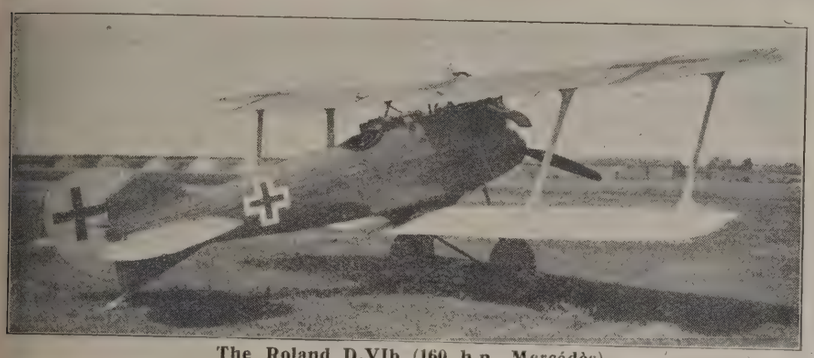
The Luft Fahrzeug Gesellschaft (L.F.G.), of Adlershof, the manufacturers of the well-known "Roland" aircraft, must be reckoned amongst the pioneers of aviation. They are the direct descendants of the original German Wright Company. Roland machines played an active part in the late war, and the photographs attached of certain machines of this make, most of which are of recent date, and which have not previously been illustrated in this country, are of considerable interest.

THE D.VIA FIGHTER.

The first picture represents a type D.VIa single-seat fighter, fitted with a Mercédès 160 h.p. engine, built in 1918. A noticeable feature is the extremely well-shaped fuselage which the photograph reveals as constructed of longitudinal planks—a real boat-built body, in fact. The cowling of the engine is also remarkably neat. The radiator is carried in the top centre section.



The Roland D.VIa of 1918 (160 h.p. Mercedès).



The Roland D.VIb (160 h.p. Mercédès).

The undercarriage appears to be remarkably slender in its members—suggesting the use of circular section tubes unstreamlined. This feature recurs almost throughout the series.

AND A MODIFIED VERSION.

The second picture represents a D.VIb of somewhat later date, apparently employing the same fuselage and tail unit, but with a different wing structure. There are now two single I struts on each side of the fuselage, each strut supporting both spars, in place of the normal single row of two struts, one on the front and one on the rear spar.

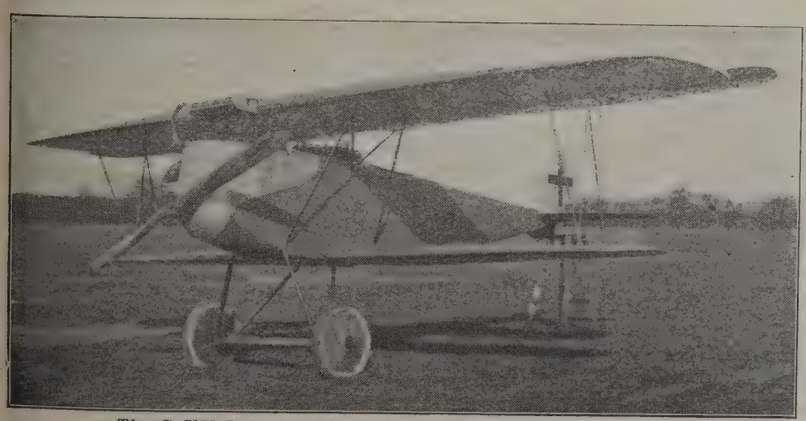
The picture of this machine shows the characteristic German habit of using a vertical fin both above and below the fuselage. The neat way in which the lower fin acts as a fairing for the tail skid support is noteworthy.

A ROTARY-ENGINED EDITION.

The third picture—D.XIV type, appears to be a D.VIa type adapted to a rotary engine—probably the 11-cylinder Siemens engine, recently described in this paper. The fuselage appears to be of the boat-built type, of increased diameter forward to accommodate the engine, but in other respects the machine closely resembles the D.VIa.



The Roland Type D.XIV with Rotary engine.



The D.XV Roland of the Fokker influenced Wireless Type.

The engine cowling in this machine seems to be designed on a very optimistic estimate of the self-cooling properties of a rotary engine—and it is very difficult to believe that the engine can have kept cool within it.

D.XV.—A WIRELESS TYPE.

In the fourth picture there is a marked change. The machine represented is the type D.XV, a biplane of the cantilever wing type, now so popular in Germany.

The upper wing has the characteristic great thickness in the centre section tapering to the tips which are common to this type of machine, and there are no lift or landing wires. The boat-built fuselage has disappeared in favour of a slab-sided structure tapering to a horizontal knife-edge aft, and the shape

of the rudder and fin is quite different from that of the previous examples. It seems probably the effort of a different designer.

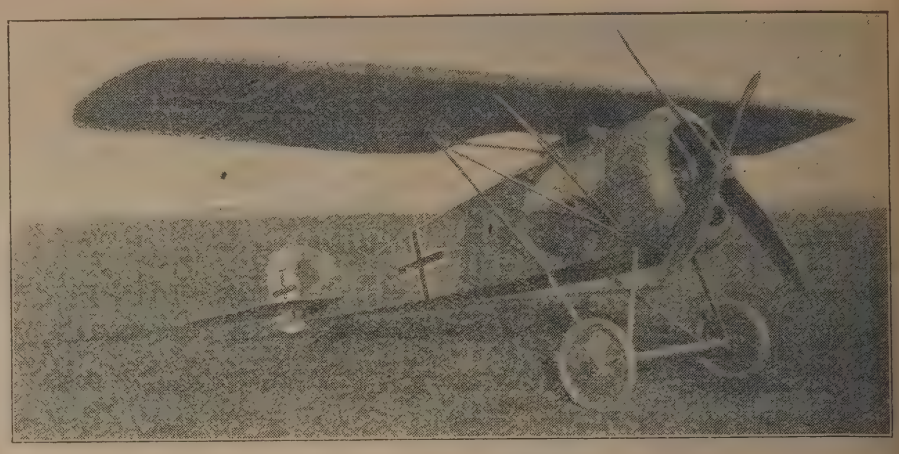
It seems very possible that most of the machines of this general type—manufactured by all sorts of firms and known by the name of the manufacturing firm—were, in fact, essentially of the same design, subject to minor modifications of detail to suit the builders' manufacturing facilities.

A Monoplane.

The next picture—that of a type D.XVI monoplane—is again a cantilever wing machine, fitted with a rotary engine, and bearing a strong resemblance to the Fokker monoplanes of the same class.

A Reversion to Type.

The sixth picture shows the return of some of the characteristics of the earlier pictures. The fuselage of the D.VIa type is here fitted with cantilever type wings, which are fitted with I interplane struts in place of the rather untidy N form struts, which usually characterise the cantilever wing type of German biplane. Apparently, the wings of this machine are covered with some form of transparent material, and the internal structure of the wing is visible. It should be noted that the front spar and the leading edge are joined together by some opaque material, and it may be assumed that the two are really formed into a single wide spar. Apparently, this spar arrangement has forbidden the neat stowage of the radiator into the centre section, as in the D.VIa, with the somewhat clumsy effect shown.



The Roland D.XVI Monoplane.

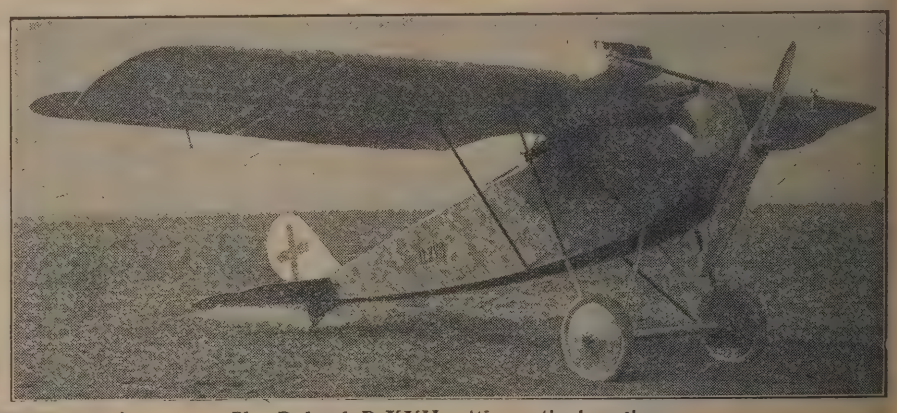


A Roland "Wireless" Machine.

In this case it would appear that the Roland designer has had a free hand to build a cantilever wing biplane to his own designs. Whatever may have been the result—as far as performance goes—the product is distinctly more pleasing to the eye than the great majority of this Fokker-influenced type.

The Type D.XVII.

The type D.XVII, shown in the next picture, is an obvious modification of the D.XVI type above, fitted with a vertical six-cylinder engine, instead of a rotary one. In this case the ailerons are balanced, whereas those of the D.XVI appear not to be, and the ar-



The Roland D XVII with vertical engine.



A Roland Single-seater with the Boat-built Body.

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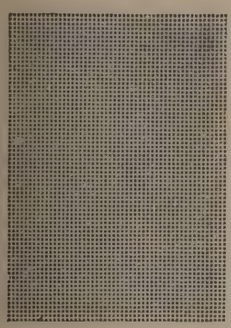
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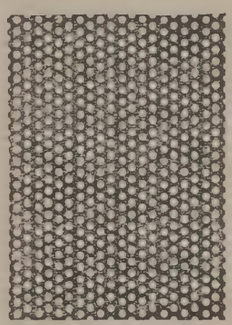


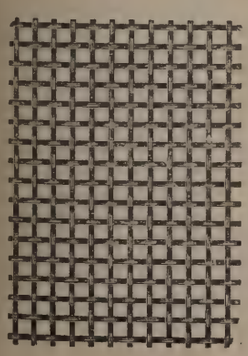
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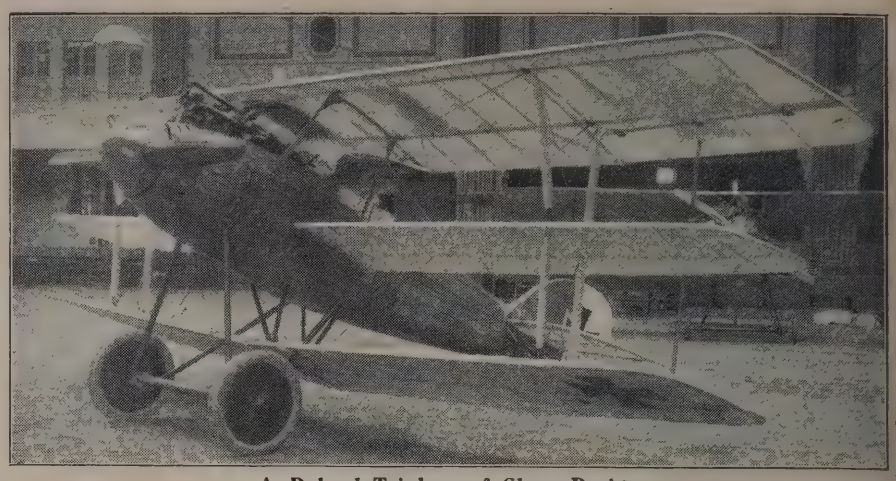
rangement of the wing strutting has been slightly simplified.

Here the Roland designer has not altogether escaped to his own devices, but apparently has been allowed to exercise some portion of the cleaning up capacity which he obviously possesses.

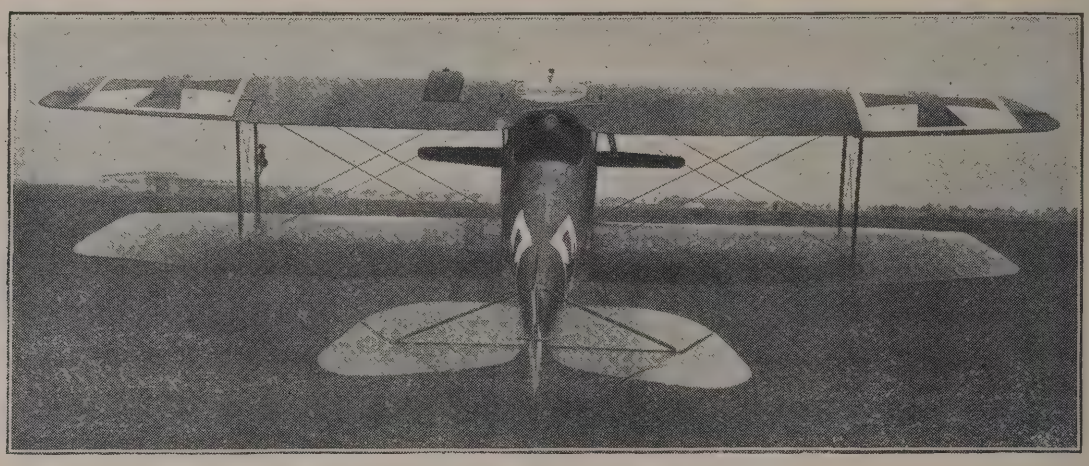
Another Version of the D.VIa.

The machine at the foot of page 1686 would appear to be a slightly modified D.VIa. The engine cowling is slightly changed, and it is obvious that a new rudder has been fitted on the example shown.

This picture shows very clearly the planking of the boat-built body. As in the D.VIa the engine is a Mercédès of 160 h.p. The photograph also shows that this machine has a lower wing of slightly less chord than the upper—



A Roland Triplane of Clean Design.



A Bayern-engined Edition of the Roland D.VIa Type.

which appears to be the case in the D.VIa and D.VIb.

This picture also shows the way in which the lower wings are carried from a kind of keel built out from the body-work, and to which the rear chassis members are also attached.

A Roland Triplane.

The triplane next shown is probably of slightly later date than the D.VIa and b biplanes, and uses again the boat-built body, and a six-cylinder vertical engine. It will be noticed that the top wing is considerably greater in chord than are either of the lower ones, and that ailerons are fitted to all three wings. The bottom ailerons alone have the appearance of being balanced, but this is probably an illusion.

It would seem fairly safe to assume that this was one of the many German machines resulting from the effect of the Sopwith triplane, and that its inception dates back to some time in 1917, and its appearance to the first half of 1918.

A Bayern-engined Machine.

The tenth picture, again, appears to represent a machine very similar to the D.VIa—but, in this case, a three-ply body is used, and the engine fitted is a B.M.W. (Bayern) of 185 h.p.

The position of the radiator, let into the upper centre section, is clearly shown in this view.

A Twin-Screw Machine.

The last picture represents a twin-propeller machine with the power plant in the fuselage, apparently driving the two airscrews by chain. This is, in all probability, a machine of early date.



A Twin-propeller Roland Machine.

Neglecting the last machine, the Rolands illustrated show a characteristic type of machine of extremely neat and graceful design, which has persisted in spite of the irruption into the series of a number of much less handsome types.

It looks very much as though German aircraft designers had suffered at the hands of their indigenous Technical authorities in very much the same way as their British *confrères*.

PHŒNIX PRODUCTS.

A very interesting brochure has been issued by the English Electric Co., Ltd., which gives the war history of the firm, its post-war programme, and, at the same time, in a foreword endeavours to show that aircraft transport compares favourably with other forms of locomotive transport, particularly in connection with the running of flying-boat services in undeveloped countries.

The English Electric Co., Ltd., which is the result of the fusion of the Coventry Ordnance Works, Dick, Kerr and Co., Ltd., and the Phœnix Dynamo Co., Ltd., into one concern, have been engaged on aircraft construction throughout the war, and in 1917 they started on flying-boat construction, building large numbers of F.3 boats, as well as a very successful craft of their own design known as the Phœnix "Cork," which surpassed the specified Air Board performance, and proved to be ahead of the then official design.

As a result of their experience gained in flying-boat construction during the war they are specialising in the flying-boat for their post-war programme.

Four types of boat are projected, ranging from the "Grey Mullet" boat, of 275 h.p., to the Phœnix "Pulex," of 4,800 h.p., which will be capable of carrying 50 passengers, or 6½ tons of goods.

The other two boats (the Phœnix "Cork," of 750 h.p., and the Phœnix "Eclectic," of 3,600 h.p.) were both designed for service purposes, and they are being altered for commercial work.

The booklet is well illustrated, and contains descriptions of all these craft, together with line drawings, as well as a collection of views of some of their war products, etc.

(*Continued from page* 1658.)

During the past week, ending Nov. 8th, the weather was officially reported "Totally unfit for flying" on every day except on Nov. 5th, when it was "Unfit for flying." Despite the mist, fog, snow, hail, rain and very strong winds which carried on, especially over the Channel, during the whole week, machines were able to fly from England to France, as will be seen in the table below, although it was not always possible to land at the destination aerodrome.

An air service to Holland is in preparation, and an aerodrome has been obtained near The Hague.

Date.	Type.	Pilot.	Left Hounslow	Arr. Paris.	Left Paris.	Arr. Hounslow.	Pass.
Nov 3rd	D.H. 4a	Lt. Armstrong	12.35 p m.	Stopped at L'mpne			0
Nov 4th	D.H. 4a	Lt. Armstrong	Lympne, 10.25 a.m.	12.34 p.m.			0
	D H. 9	Capt. Baylis			12.30 p m.	p5om, 4.16 p.m.	0
Nov. 5th	D.H 4a	Lt. Lindley	12 35 p.m.	2 30 p.m.			0
	D.H. 9	Lt. Powell			12.30 p.m.	2 40 p m.	2
Nov. 6th	D.H. 16	Lt. Tebbit	12.30 p.m.	Stopped at L'mpne			3
Nov. 7th	D.H. 16	Lt. Tebbit	Lympne, 11.15 a.m.	Stopped at L'mpne			0

THE HANDLEY PAGE SERVICE.

On Nov. 1st a Handley Page aeroplane carried twelve passengers, 500 lb. of freight, and nearly 400 lb. of personal luggage to Paris through driving rain. Lieut.-Col. Robert Loraine, the aviator actor, was one of the passengers.

On Nov. 3rd a Breguet machine, working in conjunction with the Handley Page Transport, Ltd., flew from London to Paris in 4 hr. 5 min. with one passenger, through wind, hail, and rain. This was the only machine in the Continental Air Services to accomplish the journey.

According to the newspapers, fourteen passengers and 610 lb. of goods were carried on Nov. 5th on the Handley Page London, Paris and Brussels services. The journey from London to Paris took about 2½ hours, and another machine left Brussels at 11.25 a.m. and reached Hounslow at 3 p.m.

During the week ending Nov. 5th thirty-nine passengers and 2,588½ lb. of freight were carried on the London-Paris service, and seventeen passengers and 558½ lb. of freight on the London-Brussels service. Ladies' wearing apparel is being conveyed from London to Brussels for sale in the large stores of that city.

THE B.A.T. SERVICE.

The Amsterdam service is still in operation, but last week, owing to weather conditions, no machine left this country for Holland.

BROOKLANDS

A correspondent writes :—

The bad weather has prevented Brooklands pilots from doing much flying during the past week, but some test flights have been made on Vickers "Vimy" and Sopwith machines. The repairing of the motor-track still continues, although it will be some months before cars will be permitted to do anything in the nature of racing thereon.

The Anglo-American Oil Co. have now completed negotiations for the acquisition of Gordon Watney and Co.'s works, which they will equip as a repair depot for their fleet of motors.

Lang Propeller, Ltd., are still manufacturing airscrews and experimenting, although their side lines are furniture and boats.

The Weybridge works of Vickers, Ltd., are now turning out the "Vimy" commercial machines for China, of which a hundred have been ordered. Some experimental work is also being done.

An error was made in the notes published under this heading in the issue of Oct. 22nd, when it was erroneously stated that the film biplane which Martinsyde, Ltd., are constructing was tested on the sea. This machine has not yet left the shops, and alterations are being made to the fuselage.

Martinsyde, Ltd., have lately acquired the sole rights of manufacture, etc., of the "Ivy" motor-cycle, which they will improve and turn out under another name. It was hoped that the machine would be exhibited at the Motor Show.

The Australian Martinsyde "A. S." machine is again ready for more test flights, and is expected to give complete satisfaction as a result of detail alterations to the fuselage, etc. According to rumours, a new Martinsyde racing biplane of small dimensions is to be constructed in the near future, but nothing definite is known at present

The Walton Motor Car Co., proprietors of the A.B.C. aero engine, are exhibiting at Olympia, and are engaged in all kinds of experimental work on motors, motor-cycles, and aero engines.

The Air Navigation and Engineering Co. (Blériot's), of Addlestone, are manufacturing another type of light car besides the "Whippet." This car is known as the "Marlborough." The firm have entirely discontinued their aircraft work for the present.—J. F. S.

LEATHERHEAD.

Mr. W. G. Chapman, the manager of the Leatherhead Motor Works, has bought a D.H.6 biplane with a 90-h.p. Curtiss engine for his own use. After ten and a half hours in the air he is very satisfied with the machine.

A four days' journey was made during the week-end *circa* Oct. 26th, in all some 340 miles, with two hours' flying in a 30-m.p.h. gale. With a pilot he started from Leatherhead for Aldwincle in Northamptonshire and landed in a small field at Leighton Buzzard to ask his way. The next landing was made at Oakham (Rutland), where they stayed the night.

On the next day they flew via Kettering to Aldwincle. It was blowing very hard and very cloudy when they left the latter place. After flying south for one hour and a half King's Lynn in Norfolk was reached. A landing was made at Cambridge thirty-four minutes later, where the night was spent. The following morning they returned to Leatherhead via Chingford and Hendon.

Ten landings were made on the journey. It was not necessary to make any adjustments either to the engine or the machine.

Several flights have been made at Brooklands, where the machine is kept pending the arrival of a hangar at Leatherhead. There is difficulty in finding a suitable landing ground at the latter place. Mr. Chapman has had several inquiries for flights and wishes to take up passengers for short trips, as he hopes to be able to fly the machine himself very shortly.

LONDON

HENDON.—On Thursday, Nov. 6th, Major Draper gave special flights at Hendon on the B.A.T. saloon passenger machine in the presence of visitors from Australia and Spain. Passengers were taken up, including some of the visitors.

AUSTRALIA.

Mr. Sidney Pickles, at the request of the New South Wales Government, is to survey the route between Sydney and Broken Hill for the purpose of establishing an aerial passenger service between those places.

Mr. Sidney Pickles has flown from Sydney to Broken Hill, a distance of 624 miles, in 11½ hours actual flying time.

BELGIUM.

AERONAUTICAL REGULATIONS.

The Belgian Government has now laid down regulations for the control of aeronautics within the frontiers of the country. The importation and exportation of merchandise by air is subject to the same conditions as control the movement of goods by land. Infractions of this order and others controlling aeronautics can be punished by imprisonment for from eight days to one year, or by a fine of from 50 to 5,000 francs. In addition the certificates of the crew of an airship or aeroplane contravening these regulations may be suspended for any period between three months and three years.

Airships and aeroplanes trading in Belgium should be registered in that country and so take on Belgian nationality.

THE ANTWERP AVIATION MEETING, 1920.

In 1920 Antwerp will be for a space en fête. Organised gaiety will regulate the city and its visitors in celebration of the past hidden from the present by the mists of war. All sports will be practised, and among them aeronautics will hold an honoured place. The fevered brow of the intrepid aviator will find solace in the clouds while his gyrations will serve to amuse and instruct the innocent and the guilty alike.

CHILE.

Commander V. Guichard, chief of the French Aeronautical Mission, has arrived at Santiago to form a company to start an aerial service between Santiago and Valparaiso.

DENMARK.

The Danish correspondent of THE AEROPLANE writes :—

THE DANISH AIR TRAFFIC CO.

The two 110-h.p. Le Rhône-engined Avros of the Danish Air Traffic Co. (in preparation) have now made their first public flights by Copenhagen, piloted by Capts. Atkinson and Faber (late R.A.F.). Much delay was caused by the dock strike. The biplanes were erected at the Avedore

artillery aerodrome by Copenhagen, where shed accommodation has been hired for four aircraft. The German aeroplanes, managed by Danish and Sleswig military pilots, are stationed at the other suburb aerodrome at Lundtofte.—E. H.

A Curtiss Flight.

The Naval American pilot, Captain Batts, flew on Nov. 6th from Gothenburg to Copenhagen on the new large Curtiss flying-boat of the Danish-American ice manufacturing millionaire, Mr. Larsen, having carried out exhibition flights in Norway during the summer. The machine started the day before for the Danish capital, and made an intermediate landing at Gothenburg, but ran short of petrol between Kullen Rocks and Helsinore. It was towed safely to Copenhagen by a sailing vessel in spite of the rough sea.

Aerial Flower Transport.

The Bréguet flower flight from Paris to Copenhagen was not carried out on Nov. 6th as destined, as the firm could not get landing permit at the Copenhagen aerodrome from the War Office, nor permission in Sweden; as, however, all the Nizza flowers had been sold in advance in Denmark, Norway and Sweden, the receiving firm will apply again.—Hi.

FRANCE.

The Paris-Melbourne Flight.

M. Poulet, with his mechanic M. Benoist, landed at San Stefano aerodrome, Constantinople, on Oct. 28th. On the following day he left for Konia at 6.30 a.m. and reached that place after a stormy voyage about 4.30 p.m. On Nov. 4th he reached Adana, on Nov. 7th Baghdad, and Nov. 8th Bushire.

He left Bandar Abbas at 5.0 a.m. on Nov. 9th for Karachi, *via* Tscharbar (on the Persian Gulf), which town he passed over at 11 a.m.

A New Prix Michelin.

M. Michelin, who has given generous assistance in the past both to motoring and to aviation, has now written to the Aero Club de France offering a prize of 500,000 francs (normally £20,000) for the aviator or designer of the first aeroplane (1) to rise vertically from the ground, (2) to possess the greatest possible range of speed up to 124 miles an hour, and (3) to land vertically within a radius of five metres.

The demands are high, but one does not doubt that aeronautical genius will solve the apparently insoluble problems.

The Gordon-Bennett Cup.

The Gordon-Bennett Aviation Cup will be competed for in 1920 after a gap of six years. The regulations are now being considered by the Aero Club de France. Rumour states that it will be decided in a cross-country race on this occasion.

A Trans-Mediterranean Competition.

A French correspondent writes :—

Towards the end of the year there will be a competition for a seaplane "Traversée du Mediterranée," starting from Saint Raphael for Tunis or Tangiers—a speed and endurance contest. Details are not yet issued.

Lieutenant de Romanet.

Lieutenant de Romanet, who is now in Madrid, where he delivered a Breguet to the Spanish Government, is representing several French firms in Spain. He is entering for the Mediterranean Race on a Nieuport with a Ratteau Turbine and a "de Mange-Desmons" variable propeller. A Breguet Ratteau machine will probably also be in the race.

A Salon Souvenir.

"L'Air" is producing the official "souvenir" for the Paris Aero Show. There will be no displayed advertisements, but letterpress and photo descriptions of everything exhibited. Arrangements for such descriptive matter should be made through "The Express Publicity Co.," 36, New Broad Street, E.C.2, who are the advertising representatives of "L'Air" for Great Britain.—J. S.

GERMANY.

The Mishap of the "Bodensee."

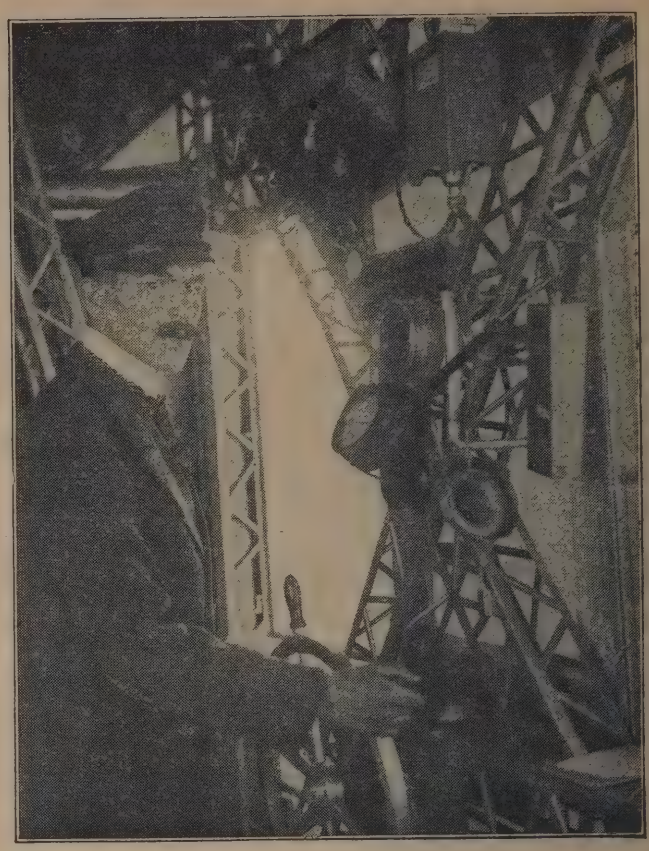
Mrs. Charles Tower, the wife of the Berlin correspondent of "The Daily Mail," was a passenger in the "Bodensee," which narrowly escaped being wrecked near Berlin on Nov. 2nd, as noted in last week's issue of The Aeroplane.

Mrs. Tower was the only Englishwoman aboard the airship, though there were five women passengers altogether, of whom one was an American. It was said that had there been fewer passengers on board when the "Bodensee" left Friedrichshafen more petrol could have been carried.

The account of the mishap given by Mrs. Tower is as follows :—

"When the 'Bodensee' crashed on the landing-ground at Staaken, 13 miles from Berlin, the engines were disabled. After repeated bumping the airship suddenly rose. There was a moment of extreme peril as we just cleared a shed. Had we fouled it the 'Bodensee' would have been lost.

"We rose steadily to what seemed an immense height. We were in darkness, with snow falling, and it was terribly cold, all the windows being smashed



The navigator of the Hamburg-Amerika Air Liner "Bodensee." (Zeppelin airship.)

"Captain Felming, who behaved splendidly throughout, came to the passengers and explained that the motors were damaged, and enjoined courage, declaring that if everyone kept quiet he would save the ship.

"In two hours, by the extraordinary courage of war-trained mechanics, the engines were repaired. We had so little petrol that only one motor could be used at a time. The captain's compass was damaged by the shock, but after drifting for hours he brought the ship over Staaken again, intending to keep her there till he could land her safely at dawn.

"At midnight, realising that this was impracticable, he decided to drift to a fir wood, where he thought it safe to come down. In three hours he found in the darkness a suitable landing place between Magdeburg and Stendal (60 miles from Staaken. We were then told that if no panic occurred and everyone obeyed orders the ship would come down safely.

"We descended very slowly, Capt. Felming allowing some gas to escape. Finally, between three and four, in complete darkness, we came down on the tops of fir trees which were densely covered with snow. These were fortunately dwarf trees and the ship cushioned on to them and was secured.

"In the early dawn we were removed, huddled into hay-carts by rescuers through the deep snow, to a little village, where we got food and warmth."

The Danish correspondent of The Aeroplane writes :—

The Fokker Plant.

"Flugsport" announces that Unie Bank voor Neederland en Koloniën, being one of the founders of Minjheer Fokker's Dutch "Nederlandsche Vliegtuigfabrieken" aircraft works, has bought the Fokker plant in Schwerin.

The Synchronised Gear Patent.

The Imperial German Court on Oct. 15th decided in the claim of priority of Fokker, *re* firing through the screw in a fighting aircraft, that the synchronised gear was the invention of the L.V.G. Co., patented by it before the war by its former technical director, the well-known Swiss aeroplane designer Franz Schneider.

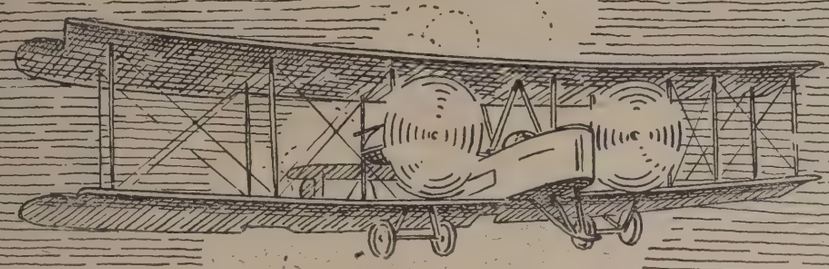
The Young Idea.

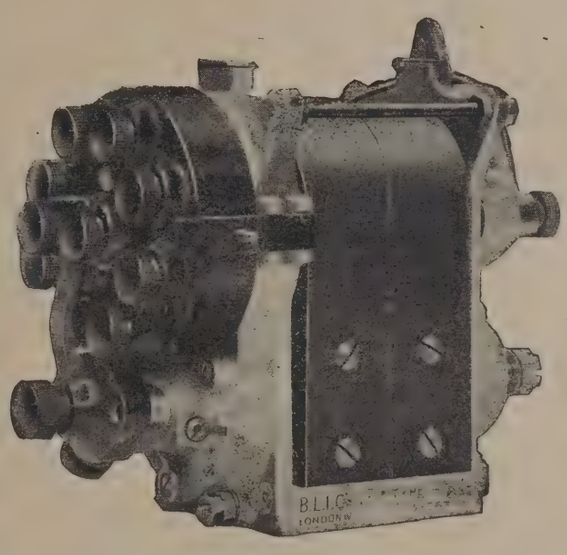
From the advertisement pages of the journal it is interesting to note the request for patrons from youngsters, keen on flying but poor. One derives from the many "situations wanted" of war-pilots that, when offering their willingness in most cases of going abroad, Japan is stated as the favourite place.

Three New Companies.

None of the three last-named new-formed air traffic concerns appear to be of special import either from the

B·L·I·C





THE BRITISH LIGHTING AND IGNITION CO. LTD.

CHESTON ROAD, ASTON, BIRMINGHAM
(Proprietors: Vickers, limited.)

CYCLE & MOTOR-CYCLE SHOW, OLYMPIA.
Nov. 24th to 29th.

You are cordially invited to call and inspect the exhibit of these famous British-built Magnetos on

STAND No. 228.

size of capital or the name of founders, being the Badische Luftverkehrs-Ges.m.b.H. in Baden-Baden, of a joint stock of 100,000 marks (£5,000); Süddeutsche Luft-Reederei in Friedrichshaten, of 50,000 marks capital (£2,500); and Westfälische Luftfahrt Ges.m.b.H. in Hüsten, for aerial transport and flying-school service, with 21,000 marks stock.

ANGLO-GERMAN ALLIANCES.

A note of English-German interests goes through the German Press to the effect that an amalgamation has for the first time since the war taken place by the formation of the Air Traffic Association, Maj.-Gen Brancker partaking from England on behalf of the Aircraft Mfg. Co., and Deutsche Luft-Reederei in Berlin-Johannisthal from Germany. The meeting at the Dutch E.I.T.A. Show of air navigation companies from different countries is apparently referred to.

It is also stated that Vickers did not partake at this occasion, but desire co-operation with German air service firms, wherefore the Dir. of Need. Engl Techn. Handels Maatschappi in Haag has returned from London with orders to prepare Continental working schemes. As, however, the hostility of Vickers to Germany at present was well known, he did not know whether he should get permit to enter and negotiate in Germany, and so acquired the service of a trader with many good agencies in the hardware trade who came in touch with Vickers some time ago in his business.—E. H

GREECE.

H.M. the King of Greece was taken for a flight over Athens on Nov. 8th by Captain Shakespeare, M.C., in the Handley Page aeroplane which was recently flown there for exhibition purposes.

HOLLAND.

A Royal Dutch Aviation Company has been established at The Hague.

The Danish correspondent of THE AEROPLANE writes :—

Writing to the effect that German seaplanes were favoured in Holland during the war, and that both an order for such aircraft was contracted in Germany and the interned specimens bought, while the interned Allied naval aircraft were stored away, "Flugsport" regrets that the field of sales in Holland and its colonies has been lost, since a seaplane built by van Berkel's patent on the light modern Brandenburg lines on its first flight in one day succeeded in flying from Amsterdam to Rotterdam and return. Later a quantity production of these aircraft was started, while of the two best-known German seaplane works, the one has stopped activities completely and the other one has dismissed the total technical personnel (the Brandenburg and Friedrichshafen or Gotha concerns are likely referred to here).—E. H.

ITALY.

The Italian correspondent of THE AEROPLANE writes :—

THE CIVIL AERIAL TRANSPORT SERVICES.

One has the best grounds for believing that a strong combine of firms has requested the Government to entrust them with the projected civilian aerial transport services, the postal ones included. This solution was reported soon after the Armistice as what the Government wanted.

A NEW MACCHI AEROPLANE.

A small Macchi 16 is being tested, I hear, at Malpensa, and has proved very nice to handle and fairly speedy.

TO BEAT HIS RECORD.

From Rome I learn that Ing. Marchetti is out to beat his record with a faster Marchetti-Vickers biplane.

THE VIENNA AERO COMMISSION'S WORK.

A Vienna-Bukarest non-stop flight, about 1,400 kilometres, is likely to be tried shortly as part of the Vienna Aero Commission's work. Prague, Warsaw, and Pilsen are being made into "sub-centres" (pardon the term) of this mission.

A ROME AERO SHOW.

An aero show is mooted for 1920 at Rome. It is not yet decided if it is to be international.

THE NAPLES SEAPLANE RACE.

The seaplane races arranged for October at Naples are postponed till next spring. Luckily the Circuit of Sicily took place before the prohibition of flying was pronounced

A NEW AVIATION WEEKLY.

A new weekly in connection with the movement started at Milan among the ex-combatants (pilots) to protect the sport and trade against all comers has been born at Milan. The first copies to reach me are just what is needed, and the editor, Sig. Attilio Longoni, has everyone's good wishes. The paper is "La Gazetta dell'Aviazione," published at Via Torino No. 10.—T. S. H.

COMPETITIONS IN 1920.

The Coupe Schneider will be run over a course in 1920 at Venice, a few days before the opening of the automobile meeting. Another aviation meeting to be held about the same time will include (1) a speed trial for machines wishing to qualify for participation in a flight of 1,000 kilometres without landing and with a stated useful load, and (2) a flight of 1,200 kilometres for machines with two or three motors.

NORWAY.

The Danish correspondent of THE AEROPLANE writes :—

THE UNITED SARDINE FACTORIES' SEAPLANE.

A 200 h.p. Benz-engined Lübeck-Travemünde seaplane, built after the Armistice, was supplied to a company in Norway for fishing inspection and got delivered by air. It was flown to Bergen with an intermediate landing in Denmark by the pour-le-merite Naval pilot, Commander at the Zeebrügge Air Station, Capt.-Lieut. Christiansen. Director Danielsen, of "United Sardine Factories," its owner, has, at the end of a successful flight to the most northern part of Norway of 2,500 kilometres distance, made the first public announcement of the use of the company's new acquisition, reading to this effect :—

"We bought the seaplane in order to examine the various fishing grounds and to get more raw material than hitherto, and to find out the lack of same. We also acquired the seaplane for express service in our business, as the fishing-grounds are scattered far about, and we can thus get far and inspect most places in a relatively short time. This will facilitate the inspection work much, and the heads can more often visit the branches.

"The experiment is the first, and, so far, the only one in Scandinavian fishing; but we have hitherto had too few chances of employing the seaplane to be able to state the uses to which it can be put, as it rained here for the first six or eight months after it was bought. Yet we have ascertained that the seaplane is strong, and attains a speed of 120 kilometres per hour. A dismantling after every 30 hours' service has hitherto been considered necessary, but this seaplane has flown satistactorily for 150 hours.

"Two passengers can be carried, as well as the pilot. I partook in the northern flight, which was partly carried out in very rough weather. We have now just finished a shed at the Ask Island for two seaplanes with future acquisitions in view, and are able to receive flying visitors. If the weather permits, I will fly this autumn on the seaplane to Christiania, and would appreciate it if there was a shed there to protect the machine against rain or frost."—HI.

POLAND.

The Danish correspondent of THE AEROPLANE writes :—

"Flugsport" reports in its issue of Oct. 29th that Polish commercial concerns are negotiating with the British Handley Page Co. *re* the technical organising of the air line Danzig-Warschau-Krakow. About one and a half tons should be transported in each flight, with the sanction of the Warschau Postmaster. In support of this plan a Poland Aero Club was to be formed at the end of October.

"Flugsport" reports further that the Poland Trade Chamber in Genève (rue Etienne Dumont, No. 22) is contemplating the plan of an aerial service for sending mail and dispatches from Poland across Tschecko Slowakei and Austria, and that the plan is immediately before realising.—E. H.

SPAIN.

THE LOOPING RECORD.

M. Fronval, a French aviator, made a record number of loops at the "Four Winds" aerodrome, near Madrid, on Oct. 28th. Reuter states that he looped 624 times in a flight lasting 2 hr. 49 min. and 9 sec. The record was hitherto held by an American who made 455 loops in one flight.

The feat is of the nature of a record for falling off a horse a great number of times in a short space of time without breaking one's neck.

SWEDEN.

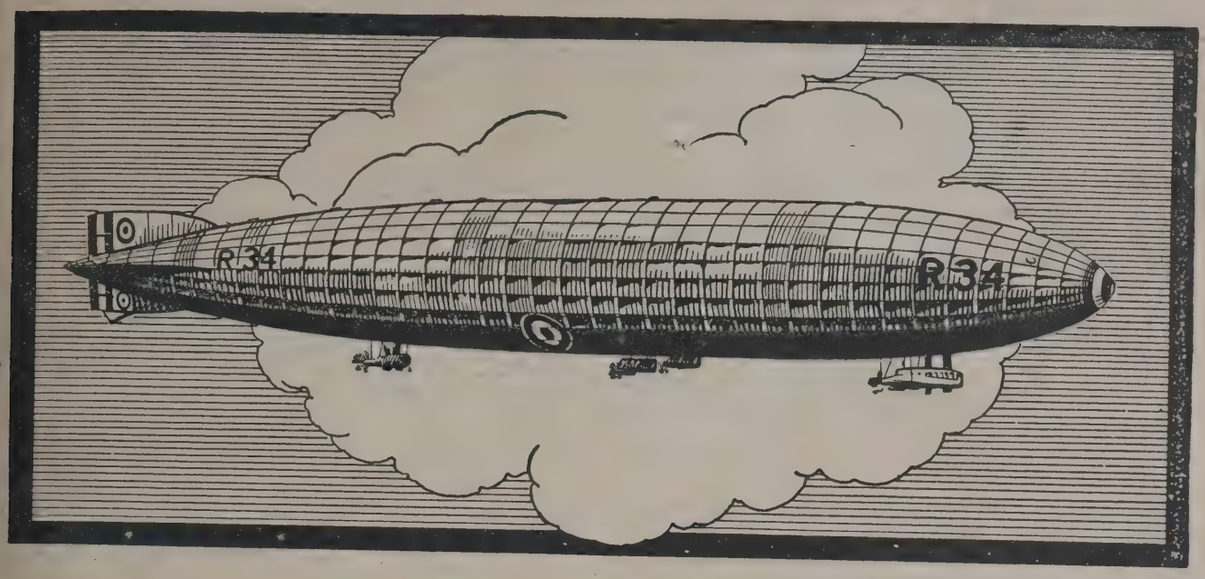
The Danish correspondent of THE AEROPLANE writes :—

THE HANDLEY PAGE FLIGHT RESUMED.

The Handley Page biplane which was damaged in a forced landing from stop of one motor in the start of a flight from the Army aerodrome at Lillestroem by Christiania, early in the autumn, has now been repaired. Various prospective buyers came forward. After successful trial flights by Captain Stewart, the pilot, the Scandinavian circuit was continued to Stockholm, whence the biplane will return to England *via* Copenhagen and Holland. The passengers were Capt. Stewart's wife and Capt. Meisterlin and wife.—HI.

SWITZERLAND.

A telegram from Berne on Nov. 7th stated that a provisional air convention between Great Britain and Switzerland was signed on Nov. 6th. An official luncheon was given to the British delegation, after which Col. Beatty made a flight in a Swiss machine over Lake Thun.



"Cordial Appreciation" of the Skill and Energy———

"Sincere Congratulations to All Concerned"————————

In these words do the Lords of the Admiralty express their opinion of the firm which produced the engines which enabled R.34 to make her journey across the Atlantic and back.

SUNBEAM-COATALEN AIRCRAFT ENGINES

are Second to none.

THE SUNBEAM MOTOR CAR CO., Ltd.,
MOORFIELD WORKS, WOLVERHAMPTON.

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

EXTRACTS FROM "THE LONDON GAZETTE."

GREAT BRITAIN.

NAVAL.

ADMIRALTY, Nov. 1st.

To be retired.—Lt. T G. Southwood (Capt., R.A.F.), Nov 1st.

MILITARY.

WAR OFFICE, Nov. 3rd.

TERRITORIAL FORCE.—INFANTRY.—6TH BN. SCOT. RIF.—Sec. Lt. J. S. Monteith to be Lt., and to remain seconded (R.A.F.). May 1st; Sec. Lt. E. Colvill to be Lt., and to remain seconded (R.A.F.), May 1st.

14TH BN. LOND. R.—Sec. Lt. W. W. Jones, M.C., to be Lt., and to remain secd. (R.A.F.), Oct. 26th, 1918 (substituted for that which appeared in "Gazette" of Jan. 25th).

WAR OFFICE, Nov. 5th.

REGULAR FORCES.—ESTABLISHMENTS.—R.F.C.—Mil. Wing.—Gen. List.—Sec. Cpl. H. V. D. Read, from R.E., to be temp. Sec. Lt., March 24th, 1918.

INFANTRY.—R. Muns. Fus.—Lt.-Col. and Bt. Col. A. M. Bent, C.M.G., on completion of his period of service in comd., is placed on the h.p. list, and retains his present appt. with the R.A.F., March 30th (substituted for the notification in the "Gazette" of March 29th).

WAR OFFICE, Nov. 6th.

REGULAR FORCES.—INFANTRY.—Suff. R.—Lt. J. E. Gurdon, D.F.C., retires on ret. pay on account of ill-health caused by wounds, Nov. 7th.

Linc. R.—G. G. Edgell (temp. Lt., R.A.F.) to be temp. Lt., Feb 16th.

WAR OFFICE, Nov. 7th.

REGULAR FORCES.—ESTABLISHMENTS.—R.F.C.—Mil. Wing.—The following appointment is made:—Flying Officer (Obsr.).—Lt. J. A. Hollis (E. Yorks. R.), Dec. 12th, 1916.

ROYAL REGIMENT OF ARTILLERY.—Lt. J. C. Moolman, M.C., relinquishes the actg. rank. of Maj. on ceasing to comd. an Anti-Aircraft Batt., May 25th.

INFANTRY.—Wilts. R.—Temp. Sec. Lt. C. B. Percy resigns his commn. on appointment to R.A.F., Aug. 21st, 1918.

MEMORANDUM.—The notification in "Gazette" of March 20th, 1918, regarding Lt. G. Iredell, under "Supplementary to Regular Units or Corps, Royal Flying Corps, Mil. Wing," is cancelled.

REGULAR FORCES.—OVERSEA FORCES.—CANADA.—New Brunswick R.—Temp. Lt. G. R. Harrison ceases to be secd. for duty with the R.A.F., Oct. 2nd.

WAR OFFICE, Nov. 8th.

REGULAR FORCES.—COMMANDS AND STAFF.—The following appointment is made:—

PERSONAL STAFF.—A.D.C.—Lt. A. F. Brooke, 10th Hrs. (Capt., R.A.F.), July 3rd, 1918 (substituted for notification in "Gazette" of Aug. 27th, 1918).

ROYAL REGIMENT OF ARTILLERY.—R.G.A.—Maj. and Bt. Lt.-Col. C. A. Mortimore, D.S.O., R.F.A., to be actg. Lt.-Col. while empld. as Anti-Aircraft Comdr., June 27th.

Lt. (actg. Capt.) W. E. Vaudrey, M.C., to be actg. Maj while empld. as Liaison Officer, R.A.F., from July 9th, 1918, to Feb. 13th

AIR FORCE.

AIR MINISTRY, Nov. 4th.

R.A.F.—The follg. are granted Perm. Commns. in the R.A.F. in the ranks stated, with effect from Aug. 1st:—Flt. Lt. E. L. Williams, M.C. (A. and S.); Flying Officer A. C. Collier (A.).

The notification appearing in the London "Gazette" of Aug. 1st appointing the following officers to Perm. Commns. is cancelled:—Capt. M. O. F. England (O.), Capt. C. J. Galpin, D.S.O. (A. and S.), Capt. E. A. Jackson (T.), Capt. W. S. Newton Clare, M.B.E. (Ad.). Capt. C. S. MacNab (S.O.), Lt. F. M. I. Watts, M.B.E. (T.), Lt. R. B. T. Hedges (A.), Lt. W. Myers, M.C., D.C.M. (S.O.), Lt. J. M. McEntegart (T.).

The following temp. appointments are made:—

Staff Officers, 2nd Class.—(Q.).—Lt. (Hon. Maj.) C. A. Cuthill, and to be actg. Maj. while so empld., from June 21st, 1918, to Nov. 25th, 1918. (Air).—Flt. Lt. W. B. Callaway, A.F.C., Sept. 1st; (T.).—Sqdn. Ldr. F. J. Rutland, D.S.C., A.M., Sept. 1st; (P.)—Sqdn. Ldr. G. H. Thomson, O.B.E., Sept. 1st.

Staff Officer, 3rd Class.—(Air).—Flt. Lt. W. P. Groves, Sept. 1st; Flt Lt. A. W. Mylne, Oct. 4th; (T.)—Flying Officer P. A Simmons, Sept. 15th; (P.).—Flt. Lt. H. V. German, Sept. 25th; Flying Officer G. D. Ashby, Sept. 26th; (Q.).—Flt. Lt. R. S. Sugden, A.F.C., Sept. 27th.

Staff Officer, 4th Class.—(T.).—Flying Officer J. R. R Harvey, Sept. 22nd.

FLYING BRANCH.—Sqdn. Ldr. (actg. Wing-Cmdr.) R. Grey relinquishes the actg. rank of Wing-Cmdr. on ceasing to be empld. as Wing-Cmdr. (A.), Oct. 8th.

Capt. W. W. Carey-Thomas, M.C., is graded for purposes of pay and allowances as Maj. while empld. as Maj. (A.), from May 1st to Sept. 29th

Capt. L. C. W. Trend is graded for purposes of pay and allowances as Capt. while empld. as Capt (A. and S.), from May 1st to July 25th.

Lt. R. E. Butler to be actg. Capt. while empld. as Capt. (A.), from Nov. 1st, 1918, to April 25th (substituted for notification in "Gazette" of Oct. 21st).

Flying Officer V. M. C. B. de Sarigny to be actg. Flt. Lt. while empld. as Flt Lt. (K.B.), from Aug. 1st to Oct. 14th

The following Lts. are graded for purposes of pay and allowances as Capts. while empld. as Capts. (A.):—H. R. Gardner, to June 1st; W. D. Knibbs, to Aug. 31st; H. B. Russell, to July 31st (May 1st).

Flying Officer (actg. Flt. Lt.) F. Lord, D.F.C., relinquishes the actg. rank of Flt. Lt. on ceasing to be empld. as Flt. Lt. (A.), Oct. 8th

Flying Officer A. V. Burbury, M.C., to be Flying Officer (A.), from (S.O.), Oct. 7th.

Flying Officer A. F. Lang to be Flying Officer (O.), from (T.), Aug. 1st (substituted for notification in the "Gazette" of Sept. 26th).

Sec. Lt. (Hon. Lt.) G. L. Parkinson, M.C., to be Lt., June 22nd, 1918.

Pilot Officers to be Flying Officers.—C. H. W Clarke, May 28th; V. M. Mitchell, July 24th; J. L. Booth, Oct. 1st.

Sec. Lt. G. A. Thompson (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt. (A.), March 27th.

Lt. D. A. A. Shepperson (Lt., Som. L.I.) relinquishes his commn. on ceasing to be empld., and is granted the rank of Capt., Sept. 10th (substituted for notification in the "Gazette" of Sept. 19th).

The following relinquish their commns. on ceasing to be empld.:—Sec. Lt. G. R. Harrison (Lt., New Bruns. R.), Oct. 2nd; Capt. G. E. Chadwick, M.C. (Capt., E. Lan. R.), Oct. 12th; Lt. A. R. Walker (Lt., Gord. Highrs.), Oct. 13th; Capt. P. E. M. Le Gallais, A.F.C. (Lt., R. Suss. R.), Lt. G. W. T. Pereira (Lt., Som. L.I.), Oct. 15th; Capt. E. A. Packe (Lt., Oxf. and Bucks. L.I.), Oct. 16th; Lt. A. H. St. Clair, M.C. (Arg. and Suth'd Highrs.), Oct. 18th; Sec. Lt. (Hon. Lt.) H. Cooper, M.C. (Lt., R. Fus.), Oct. 20th; Sec. Lt. (Hon. Capt.) H. M. P. Hewett (Capt., Ryl. Dgns.), Oct. 29th.

Transferred to unempld. list:—Sec. Lt. C. R. Knowles, Sec. Lt. G. W. Lawson, Sec. Lt. A. H. McKeown, Sec. Lt. R. B. Paine, Sec. Lt. E. J. Pond, Feb. 1st; Lt. J. B. Rose, Feb. 20th; Sec. Lt. S. J. Glavin, Feb. 25th; Sec. Lt. A. E. McKenna, Feb. 27th; Lt. D. B. Sinclair, March 1st; Sec. Lt. J. R. Robertson, March 12th; Sec. Lt. (Hon. Lt.) J. F. Swindells, March 13th; Lt. C. Muller-Chateau, March 18th; Lt. C. W. B. Martin, April 10th; Lt. R. T. Irvine, Lt. J. D. Smith, April 19th; Lt. R. Watts, April 27th; Lt. F. B. Farquharson, April 30th; Lt. R. V. Sessions, May 25th; Sec. Lt. H. T. Foxton, June 6th; Sec. Lt. R. C. Teen, June 8th; Capt. A. C. Jowett, June 30th; Lt. J. K. Finlay, July 3rd (substituted for notification in "Gazette" of July 15th); Sec. Lt. R. C. Tidbury, July 10th; Lt. P. T. Hunt, Aug. 7th (substituted for notification in "Gazette" of Aug. 1st); Lt. C. D. G. Taylor, Aug. 20th; Lt. B. Marshal, Aug. 23rd, Sec. Lt. G. A. Livett, Aug. 26th; Sec. Lt. G. W. Garner-Smith, Aug. 29th; Lt. M. W. Piercy, A.F.C., Sept. 3rd; Sec. Lt. G. A. Millbank, Sept. 6th; Capt. A. E. Godfrey, M.C., A.F.C., Sept. 9th; Lt. O. J. F. Jones-Lloyd, Sept. 10th (substituted for notification in "Gazette" of Aug 5th); Lt. W. H. Shell, Sept. 12th; Lt. N. R. Smuts, Sept. 13th; Sec. Lt. W. E. Taylor, Sept. 15th; Lt. R. C Ayton, Sec. Lt. W. P. Lewis, Sept. 16th; Sec. Lt. G. Butters, Sept. 25th; Sec. Lt. G. K. Alling, Sec. Lt. N. Sagan, Sec. Lt. R. K. Tarr, Sept. 26th; Sec. Lt. N. Hickson, Capt. J. Mitchell, M.C., Sept. 27th; Sec. Lt. J. B. Abraham, Sec. Lt. O. R. Allen, Sec. Lt. C. E. Arnold, Sec. Lt. L. Ashton, Lt. T. L. Atkinson, Sec. Lt. R. A. Snelgrove, Sec. Lt. T. E. Snelgrove, Sec. Lt. F. L. Southgate, Sec. Lt. J. T. Taylor, Lt. P. D. Taylor, Sec. Lt. W. F. Thorne, Sec. Lt. R. G. Trenholme, Sec. Lt. W. H. Truedale, Lt. K. Whitney, Sept. 28th; Capt. G. S. Abbott, Sec. Lt. G. Abrahams, Sec. Lt. D. H. Alexander, Sec. Lt. G. H. Alexander, Capt. W. M Alexander, D.S.C., Lt. H. N. Arthur, Sec. Lt. G. W. Ashbrook, Lt. S. C. J. Askin, Sec. Lt. P. M. Sangster, Sec Lt. A. C. Smedley, Lt. V. W. Thompson, Lt. P. F. Townley, Sec. Lt. H. L. Turner, Sept. 29th; Lt. T. C. S. Tuffield, Oct. 1st; Lt. S. S. Turnbull, Oct. 5th; Lt. K. V. Anderson, Oct. 6th; Lt. A. P Atkins, Sec. Lt. C. J. Green, Sec. Lt. H. Hinchcliffe, Lt. R. J. Housden, Sec. Lt. D. W. S. Ireland, Lt. E. B. Jone, Lt. G. N. Prout, Sec. Lt. R. H. Shutt, Sec. Lt. R. Tindle, Oct. 9th; Sec. Lt. H. C. T. Browne, Sec. Lt. A. A. Butt, Sec. Lt. H. C. Crowder, Sec. Lt. J. E. H. Littlewood, Lt. A. W. Mackey, Sec. Lt. A. Y. Paton, D.C.M., Sec. Lt. H. W. Petter, Lt. D. B. Robertson, Sec. Lt. M. Tallentire, Lt. J. H. Weatherill, Oct. 10th; Lt. F. H. Bell, Sec. Lt. C. Gardner, Sec. Lt. W. S. McDonald. Lt. G. A Morgan, A.F.C., Lt. E. J. Noble, Lt. E. D. Soar, Capt. J. Weaver, Oct. 11th; Sec. Lt. R. Alcock, Lt. F. P. Bruce Austin, Lt. E. G. Frost, Lt. H. F. Game, A.F.C., Lt. J. B. Hall, Lt. G. R. Judge, Sec. Lt. J. F. F Liddy, Sec. Lt. F. Meehan, Sec. Lt. M. R. Prodger, Oct. 12th; Maj. G. C Colmore, Sec. Lt. E. D. Drew, Lt. G. Meikle, Lt. T. C. Welch, Sec. Lt. L. F. Williamson, Oct. 13th; Lt. P. F. Antleme, Lt. G. J. Carroll, Lt. N Clemence, Sec. Lt. T. N. Donovan, Lt. (Hon. Capt.) S. B. Edwards, Lt. J. C Fitzmaurice, Sec. Lt. R. E. H. Goodhead, Lt. R. Knight, Sec. Lt. E. V. Lockyer, Lt. M. V. McKeon, Sec. Lt. F. W. Moulton, Maj. E. F. Moyes, Sec. Lt. B. Outram, Sec. Lt. J. Sykes, Oct. 14th; Sec Lt. E. B. F. Auld, Lt. N. B. Birkett, Lt. R. A. Boyd, Sec. Lt. J. A. B. Carr-Halfey, Sec. Lt. F. R. Eaton, Lt. C. R. Field, Sec. Lt. G. S. Fenwick, Sec. Lt. I. H. Grabousky, Lt. A. F. James, Sec. Lt. T. Lamb, Lt. S. M. Litten, Lt. K. Loughlin, Lt. C. A. McConchie, Sec. Lt. H. T. Martin, Sec. Lt. C. G. Milne, Lt. W. B. E. Powell, Oct. 15th; Lt. G. W. Burgess, Lt. H. E. Cardwell, Sec. Lt. F. A. Downes, Sec. Lt. A. S. D. Laidlaw, Capt. W. N. Tees, Lt. (Hon. Capt.) R. S. Witchell, Oct. 16th; Lt. M. R. Banks, Sec. Lt. C. N. C. Dickson, Lt. A. J. O. Farina, D.F.C., Lt. B. C. Gay, Lt. D. E. Nicolle, Sec. Lt. F. W. Perrin, Capt. L. C. Shoppee, D.S.C., Sec. Lt. C. W. Trimmell, Lt. A. J. Virgo, Oct. 17th; Sec. Lt. W. A. C. Ballantine, Lt. A. F. Buckley, Lt. V. P. Feather, Sec. Lt. W. E. Finch, Lt. S. N. Menzies, Sec. Lt. A. L. Symes, Oct. 18th; Lt. E. B. W. Bartlett, Lt. W. P. Busher, Sec. Lt. W. R. N. Whiston, Oct. 19th; Sec. Lt. H. E. Brenack, Lt. J. N. Catling, Sec. Lt. T. P. Speakman, Lt. J. Stewart, Oct. 20th; Sec. Lt. A. J. Black, Sec. Lt. F. G. Brown, Lt. P. P. Butters, Lt. J. Coates, Lt. R. Coulthard, Lt. J. F. Dewar, Sec. Lt. C. W. Griffin, Lt. C. G. Halliday, Sec. Lt. A. J. Kelly, Sec. Lt. G. F. Lane, Sec. Lt. H. V. Lewis, Lt. T. H. L. Lewis, Lt. R. D. Linford, Sec. Lt. D. Simmons, Sec. Lt. C. A. Spooner, Lt. M. L. Trapacna-Leroy, Lt. C. B. Wilson, Oct. 21st; Lt. J. A. Eyres, Lt. T C. Story, Sec. Lt. B. S. W. Taylor, D.F.C., Sec. Lt. J. C. Wallace, Lt. F. H. Wrenn, Oct. 22nd; Sec. Lt. (Hon. Lt.) L. A. Brett, Lt. H. C. Burdett, Sec. Lt. R. M. Guiney, Lt. A. C. Hine, Lt. A. Sykes, Oct. 23rd; Sec. Lt. O. E. Coleman, Oct. 24th; Sec. Lt. W. Urwin, Oct. 25th.

Lt. (Hon. Capt.) C. S. Emden, D.F.C., relinquishes his commn. on account of ill-health caused by wounds and is permitted to retain rank of Capt., Oct. 27th.

The following Lts. relinquish their commns. on account of ill-health and are permitted to retain their rank:—E. R. Bullimore (contracted on active service), Oct. 28th; Lt. W. L. Sumsion (caused by wounds), Oct. 29th.

Lt. (Hon. Capt.) F. L. Von Stieglitz (Capt., Connaught Rangers) relinquishes his commn. on account of ill-health contracted on active service, Nov. 4th.

Sec Lt. J. McRobert relinquishes his commn. on account of ill-health contracted on active service and is permitted to retain his rank, Oct. 29th.

Lt. C. G. Ronaldson-Clark to take rank and precedence as if his appointment as Lt. bore date Oct. 1st, 1918.

Sec. Lt. D. C. Sewell is dismissed the Service by sentence of General Court Martial, Oct. 14th.

The Christian names of Sec. Lt. Alexander Alfred Phillips are as now described, and not "Alexander Arthur" as stated in the "Gazette" of Dec. 31st, 1918.

The notification in the "Gazette" of Aug. 26th concerning Sec. Lt. Alexander Alfred Phillips is cancelled.

The notification in the "Gazette" of June 24th concerning Lt. E. I. Sutcliffe is cancelled.

The notification in the "Gazette" of Oct. 17th concerning Sec. Lt. W. W. Smith is cancelled.

The notification in the "Gazette" of Sept. 12th concerning Sec. Lt. F. W. B. Anderson is cancelled.

The notiefiation in the "Gazette" of Oct. 24th concerning Sec. Lt. S. T. Tipper, wherein this officer was shown "transferred to the unempld. list," is cancelled.

The notification in the "Gazette" of July 1st concerning Lt. J. R. Finlay is cancelled.

The notification in the "Gazette" of Aug 19th concerning Lt. W. Rodger is cancelled.

The notification in the "Gazette" of Oct. 14th concerning Lt. R. C. Steele, D.S.O., is cancelled.

The notification in the "Gazette" of Oct. 31st concerning Capt. H. Hemming, A.S.C. (Lt., Worc. R.), is cancelled.

ADMINISTRATIVE BRANCH.—The following Capts. are graded for the purposes of pay and allowances as Maj. whilst empld as Maj.:—A. Wombwell, April 28th; T. Gash, from May 1st to Aug. 5th; W. F. Routley, from May 1st to Aug. 11th.

London-Paris
Air Express

Summary of First Eleven Weeks' Flying.

August 25th, 1919, to November 8th, 1919.

Flights Scheduled	166
Flights accomplished	149
Prevented by weather	8
Interrupted by weather	6
Interrupted by mechanical defects	3
Number of Miles flown	39,000
Average Speed (M.P.H.)	105

The following is a summary from official reports of the weather flown through during these eleven weeks.

Days favourable for flying	17
„ unfavourable for flying	30
„ noted officially as "unfit" for flying	19

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Lt. G. Oliver is graded for purposes of pay and allowances as Maj. whilst empld. as Maj., from May 19th to Aug. 5th.

Flt. Lt. J. A. Hartcup to be Flt. Lt., from (S.O.), Sept. 10th (substituted for notification in the "Gazette" of Oct. 24th.

Lt. R. M. Nicholls to be Lt., from (O.), and is graded for purposes of pay and allowances as Capt., whilst empld. as Capt., from March 13th to Sept. 23rd.

The following are graded for purposes of pay and allowances as Capt. while empld. as Capt.:—Lt. G. D. Rowden, from March 27th to July 29th; Lt. (Hon. Capt.) G. Davies, from May 1st to Oct. 10th; Lt. C. G. S. Fitzgerald, May 1st; Lt. A. L. Morris, from May 1st to Oct. 13th; Lt. D. G. Phillippe, M.C., from (O.), May 1st; Lt. J. D. Loraine, from May 19th to Aug. 1st; Sec. Lt. (Hon. Lt.) J. A. Bonnyman, M.B.E., from May 1st to May 21st; Sec. Lt. J. Mellor, from May 1st to Aug. 9th.

Sec. Lt. G. R. Biggs is graded for purposes of pay and allowances as Capt. while specially empld., from (A.), April 10th (substituted for notification in "Gazette" of Oct 3rd).

Lt. (Hon. Capt.) A. C. T. Applin to be Lt. (Hon. Capt.), from (K.B.), April 17th.

Flying Officer (actg. Maj.) A. D. Carey relinquishes the actg. rank of Maj. on ceasing to be empld. as Maj., from (S.O.), Oct. 8th.

Sec. Lt. R. R. W. Millward to be Lt., Aug. 21st, 1918 (substituted for notification in "Gazette" of Oct. 17th.

Pilot Officer H. H. Ffrench to be Flying Officer, Sept. 18th.

Sec. Lt. F. McKeown is graded for purposes of pay and allowances as Lt. while empld. as Lt., from May 1st to Sept. 29th.

Lt.-Col. F. H. G. Playfair (Lt.-Col., T.F. Res.) relinquishes his commn. on ceasing to be empld., Oct. 31st.

Transferred to the unempld. list:—Capt. (actg. Maj.) W. B. Armitage, Feb. 23rd; Lt. S. Thompson, April 27th (substituted for notification in "Gazette" of July 15th), Sec. Lt. W. D. Owen, May 8th; Sec. Lt. F. Dunlop, June 5th (substituted for notification in "Gazette" of Sept. 9th); Sec. Lt. A. A. Mitchell, Sept. 6th; Sec. Lt. G. A. Middleweek, Sept 7th; Sec Lt. R. Parker, Sept. 19th; Sec. Lt W. E. Tunks, Sept. 28th; Sec. Lt. J. H Thompson, Sept. 29th; Lt. (Hon. Capt.) G. Davies, Lt. W. H Peat, Sec. Lt. H. W. Rigden, Oct 10th; Lt. (Hon. Capt.) C. S. Burdon, Lt J. A. Gorges, Oct. 11th; Capt. L. A. F. Foers, M.C., Oct. 12th; Lt. A. L. Morris, Lt. L. Singer, Oct. 13th; Lt. W. E. Fox, Oct. 15th; Sec. Lt. G. J. Mackie, D.C.M., Lt. P. L. Stephens, Oct. 16th; Sec. Lt. G. J. Joint, Lt. H. M. Kendale, Oct. 17th; Capt. K. D. Abercromby, Sec. Lt. E. J. Hodgson-Stevens, Lt. J. W. Mennie, Lt. A. W. Rouse, Oct. 18th; Sec. Lt. W. M. Everett, Sec. Lt. C. E. Hodgkinson, Lt F. K. Moncur, Lt. A. A. Savell, Oct. 19th; Sec Lt. C. P. Andrews, Lt. A J. Chambers, Maj. F. F. Chambers, O.B.E., Oct. 20th; Lt. J. G. G. Ballard, Sec Lt. L. V. E. Charlton, Lt. (Hon. Capt.) J. Gerrard, Sec. Lt E. Higgs, Capt. W B. Kerr, Lt H. Macpherson, Capt. E. L. Parrett, Sec. Lt. W F. F. Prins, Lt. J. E. W. Sugden, Oct. 21st; Lt. G. M. Darragh, Oct. 22nd; Maj. W. Burningham-White, Sec. Lt. H. S. Fielding, Lt. S. G. K. Rapley, Lt. E. Winter, Oct. 23rd; Capt. S. O. Barnsdale, Sec Lt. F. T. Dixon, Oct. 24th.

Lt. H. G. Mitchell (Hussars) relinquishes his commn on account of ill-health contracted on active service, Oct 23rd.

Sec. Lt. (Hon. Lt.) J. A. Redvers Buller relinquishes his commn. on account of ill-health contracted on active service and retains the rank of Lt., Oct. 29th.

The rank of Lt. D. J. Fryer is as now described, and not Sec. Lt. as stated in "Gazette" of Sept. 23rd.

The initials of Sec. Lt. A. F. Johnston are as now described and not "A. P." as stated in "Gazette" of May 27th.

The notification in "Gazette" of April 25th; concerning Sec. Lt J. Silvester is cancelled.

TECHNICAL BRANCH.—Sqdn. Ldr. (actg. Wing Cmdr.) C. Barber relinquishes the actg. rank of Wing Cmdr. on ceasing to be empld. as Wing Cmdr., Grade (B), Oct. 18th.

Capt. G. D. Nelson, D.S.C., A.F.C., is graded for purposes of pay and allowances as Maj. whilst empld. as Maj., Grade (A), from April 27th to July 31st.

Lt. A. E. Layton is graded for purposes of pay and allowances as Maj. whilst empld. as Maj., Grade (A), from May 1st to July 7th.

Flt. Lt. (actg. Sqdn. Ldr.) E. W. F. Cherry, O.B.E., to be Flt. Lt., Grade (B), and relinquishes the actg. rank of Sqdn. Ldr. on ceasing to be empld. as Sqdn. Ldr., from (S.O.), Oct. 22nd.

Capt. (actg. Maj.) W. P. Groves to be Capt., Grade (B), and relinquishes the actg. rank of Maj. on ceasing to be empld. as Maj., from (S.O.), July 26th.

The following Lts. are graded for purposes of pay and allowances as Capt. while empld. as Capt., Grade (A):—B. S. Crimp, F. W. Clarke, D. Richardson, May 1st; P. S. Laughton, June 2nd; L. L. W. Smythe, June 26th; F. Thomas, Sept. 1st.

Sec. Lt. S. Jupp is graded for pay and allowances as Capt. while empld. as Capt., Grade (A), Oct. 9th, 1918 (substituted for notification in the "Gazette" of May 27th).

Sec Lt. (Hon Capt.) F C. Marsh is graded for purposes of pay and allowances as Capt. while empld. as Capt., Grade (B), May 1st (substituted for notification in the "Gazette" of Oct. 21st).

Pilot Officer (Hon. Flying Officer) C. Bishop to be actg. Flt. Lt. (without the pay and allowances of that rank) while empld. as Flt. Lt., Grade (B), Sept. 15th (substd. for notificn in "Gazette," Oct. 10th).

Lt. J. E. Ruthven to be Lt., Grade (A), from (Ad.), from April 1st, 1918, to Sept. 11th, 1918.

The following are graded for purposes of pay and allowances as Lts. while empld. as Lts., Grade (A.):—Lt. F. Thomas, from Feb. 10th to Aug. 31st; Lt. H. G. Cook, D.S.M., April 7th; Sec. Lt. (Hon. Lt.) R. O. C. Bush, Aug. 20th, 1918; Sec Lt. G. C. Walsh, June 14th.

Lt. E. W. Lawrence is graded for purposes of pay and allowances as Lt. while empld. as Lt., Grade (B), Nov. 12th, 1918 (substituted for notification in the "Gazette" of Oct. 14th

Sec. Lts. to be Lts.:—(Hon. Lt.) W. Bagnall, April 2nd, 1918 (substituted for notification in the "Gazette" of Sept. 26th); S. T. Kemp, Feb. 28th (substituted for notification in the "Gazette" of March 7th).

Pilot Officers to be Flying Officers without the pay and allowances of that rank:—F. A. Benfield, W. J. Coadwell, H. Fellows, C. H. Whitlock, Oct. 1st.

Sec. Lt. H. B. Brown to be Sec. Lt., Grade (A.), from (Ad.), July 17th, 1918 (substituted for notification in the "Gazettes" of Oct. 3rd and Sept. 5th).

Sec. Lt. H. Sleigh to be Sec. Lt., Grade (B), from (Ad.), Aug. 6th, 1918 (substituted for notification in the "Gazette" of Sept. 7th, 1918).

Pilot Officer J. E. Neary to be Pilot Officer, from (Ad.), Oct. 23rd.

Transferred to the unempld. list:—Sec. Lt. (Hon. Lt.) S. P. Ashton, May 25th; Capt. C. R. Evershed, Aug. 1st; Lt. C. W. Duval, Aug. 12th; Sec. Lt. (Hon. Lt.) R. E. A. Mallett, M.C., Aug. 26th; Lt. L. O. Millington, Sec. Lt. R. Smith, Sept. 20th; Sec. Lt. H. Reynolds, Sept. 30th; Sec. Lt. H. B. Hinde, Oct. 8th; Lt. A. E. Burton, Sec. Lt. A. E. Wycherley, Oct. 9th; Sec. Lt. A. T. Bebbington, Sec. Lt. H. Fraser, Lt. E. J. Goodfellow, Capt. W. S. Hammond, O.B.E., Sec. Lt. B. A. Higgins, Sec. Lt. F. J. O. Harman-Fisher, Sec. Lt. R. Fell, Sec. Lt. C. M. Wightman, Oct. 10th; Sec. Lt. T. R. Davies, Sec. Lt. (Hon. Capt.) J. H. McCullock, Sec. Lt. S. W. Turner, Oct. 11th; Lt. W. H. Fearnsides, Oct. 12th; Sec. Lt. A. J. Hale, Oct. 13th; Sec. Lt. N. W. Chandler, Sec. Lt. S. J. Collcutt, Capt. S. P. Holloway, Sec. Lt. F. E. P. Langton, Capt. G. R. Moody, Lt. L. H. Straker, Sec. Lt. (Hon. Lt.) N. W. Walmsley, Sec. Lt. H. E. Young, Oct. 14th; Capt. G. H. W. Dawson, Sec. Lt. R. J. Finch, Sec. Lt. B. G. Fletcher, Sec. Lt. W. T. Henry, Sec. Lt. A. G. C. Potts, Capt. V. H. Ridewood, Oct. 15th; Sec. Lt. J. S. Begg, Capt. F. M. Hampshire, Sec. Lt. G. R. D. Hogg, Lt. N. S. Lott, Lt. (actg. Capt.) H. G. Wood, Lt F. B. Woods, Oct. 16th; Lt. H. W. Armstrong, Capt. G. H. F. Catherall, Sec. Lt. H. A. J. Edgley, Capt. H. F. Hodges, Sec. Lt. E. Le Couteur, Sec. Lt. (actg. Lt.) H. D. Lumb, Capt. N. Vaux, Oct. 17th; Sec. Lt. H. Wearing, Sec. Lt. (Hon. Capt.) R. D. Wills, Oct. 19th; Sec. Lt. (Hon. Capt.) W. V. Churchill-Longman, Capt. H. O. Merriman, Lt. J. Milton, Capt. C. E. Smith, Oct. 20th; Capt. H. G. W. Cox, Sec. Lt. L. T. Holmes, Lt. (Hon. Capt.) G. R. G. Topham, Oct. 21st; Lt. J. E. S. Alexander, Oct. 22nd; Sec. Lt. (Hon. Lt.) L. H. Bainton, Oct. 23rd; Capt. J. H. B. Burgess, Oct. 24th.

The notification in "Gazette" of July 8th concerning Capt. F. R. Hardie is cancelled.

The notification in "Gazette" of Oct. 17th concerning Capt. P. W. Goodchild is cancelled.

The notification in "Gazette" of Oct. 10th concerning Sec. Lt. S. Japp is cancelled.

MEDICAL BRANCH.—Capt. (actg. Maj.) H. R. B. Hull (Surgeon Lt., R.N.) relinquishes his commn on reversion to R.N., Oct. 15th.

Transferred to the unempld. list:—Capt. W. Lessey, Oct. 1st; Capt. W. T. Williamson, Oct. 17th; Capt. F. N. V. Dyer, Oct. 21st.

CHAPLAINS BRANCH.—Transferred to the unempld. list:—The Rev. O. W. E. Grant, Sept. 28th; the Rev. E. A. Gillespie, M.A., Oct. 15th; the Rev. G. F. Naylor, Oct. 21st.

MEMORANDUM.—Flying Officer W. R. Holroyd to be Hon. Flt. Lt. Aug. 31st, 1918.

The following temp. Hon. Lts. relinquish their commns on ceasing to be empld.:—J. Beek, April 16th, W. B. Gibson, Sept. 16th; B. Coulam, J. J. A. Gilmore, J. B. Gott, F. Greenall, F. R. Newton, J. H. Woodruff, Oct. 16th.

Transferred to the unempld. list:—Capt. (actg. Maj.) W. A. Legg, from (S.O.), Oct. 11th; Lt. A. H. Burmann, from (S.O.), Oct. 18th; Lt. J. W. Sawyer (E. Yorks. R.), from (S.O.), Oct. 19th, Capt. (actg. Maj.) R. A. Laws, from (S.O.), Oct. 21st.

The following Cadets are granted hon. commns. as Sec. Lts.:—178841 C. J. Armes, Jan. 6th; 177049 N. Davey, Jan. 30th; 19805 A. M. McColl, Feb. 1st; 13025 V. W. Godwin, Feb. 27th; 432201 C. A. Ashwell, March 24th; 558051 M. Block, March 26th (substituted for notification in "Gazette" of Oct. 3rd, wherein this Cadet was described as 55805 M. Block); 200840 R. H. Scrine, June 1st.

AIR MINISTRY, Nov. 7th.

R.A.F.—The following are granted permanent commns. in the ranks stated:—Flight Lt.—L. Wanless-O'Gowan (A.), Aug. 1st.

Flying Officer.—E. D. G. Galley, M.C., A.F.C. (A.), Aug. 1st

The notification appearing in "Gazette" of Oct. 28th appointing Flt. Lt. J. B. Walmsley, D.F.C. (A.), to a permanent commn. is cancelled.

The rank of Flt. Lt. E. C. Emmett, M.C., D.F.C., is as now described, and not Capt. as stated in "Gazette" of Oct 28th.

The name of Flying Officer R. Jones is as now described, and not R. Jones, M.C., as stated in "Gazette" of Aug. 1st.

FLYING BRANCH.—Wing Comdr. A. D. Cunningham, O.B.E., to be Wing Comdr. (A'ship) from Dep. Dir., Nov. 3rd.

Maj. (actg. Lt.-Col.) R. J. F. Barton, O.B.E., to be Maj (A.), and relinquishes actg. rank of Lt.-Col. on ceasing to be empld. as Lt.-Col., from (S.O.), March 3rd.

Lt. G. F. Moody is graded for purposes of pay and allowances as Capt. while empld. as Capt. (A. and S.), from May 1st to Sept. 21st.

Flying Officer W. K. Sutton relinquishes the grading for pay and allowances as Flt. Lt. on ceasing to be empld as Flt. L. (A.), Oct. 18th.

Flying Officer (actg. Flt. Lt.) W. H. Park, M.C., relinquishes actg. rank of Flt. Lt. on ceasing to be empld. as Flt Lt (A. and S.), Oct. 27th.

Pilot Officer L. J. Chandler to be Flying Officer, Oct. 1st.

Lt. V. W. Kilroe relinquishes his commn. on ceasing to be empld. and is permitted to retain his rank, July 23rd.

Lt.-Col. D. Mackenzie (Maj., E. Lancs. R.) relinquishes his commn. on ceasing to be empld., and is permitted to retain his rank, Nov. 1st.

The following relinquish their commissions on ceasing to be employed:—Lt. J. R. Taylor (Lt., Rif. Bgde), July 27th, 1918; Lt. F. O. Rose (Lt., Essex R.), Oct. 9th; Capt. W. E. Molesworth, M.C. (Capt., R. Munster Fus.), Oct. 15th; Lt. R. A. Derne (Lt., Wilts. R.), Oct. 22nd; Lt. H. N. Loch, D.F.C. (Capt., Gurkha Rif.), Oct. 24th; Lt.-Col. R. H. Mornement, O.B.E. (Surg. Comdr., R.N.), Oct. 31st; Col. B. H. H. Cooke, C.M.G., C.B.E., D.S.O. (Lt.-Col. extra regimentally empld.); Capt. H. W. M. Paul (Capt., Middx. R.), Nov. 1st; Lt.-Col. A. C. H. MacLean (Maj., R. Scots), Nov. 5th; Lt. A. T. Essex (Sec. Lt., Brit. W. Indies R.), Nov. 6th.

Transferred to unempld. list:—Sec. Lt. W. S. Durkin, Sec. Lt. V. B. Nash, Feb. 1st; Sec. Lt. H. E. Davis, Feb. 19th; Sec Lt. H. M. Fridjohn, Feb. 27th; Lt. J. K. Shook, March 1st; Sec. Lt. H. R. Abey, March 15th; Lt. R. Sykes, D.F.C., March 17th; Lt G. N Snowball, April 5th (substituted for notification in "Gazette" of May 9th); Lt G. A. Elmslie, April 15th; Sec. Lt (Hon. Lt.) W. G. Stewart, April 25th (substituted for notification in "Gazette" of July 18th); Lt. R. H. Johnson, May 30th; Lt. H Ibbotson, June 28th; Lt. A. F. Moyles, Aug. 4th; Capt. H. L. H. Owen, A.F.C., Aug. 22nd; Sec. Lt (Hon. Lt.) A. M. Parkes, Lt. T. I. Phillips, Sec. Lt. R. I. Quigg, Aug. 29th; Sec. Lt. H. V. Peberdy, Aug. 30th; Lt. P. M. Rogers, Sept 1st; Lt. E. T. Osborne, Sept. 3rd; Sec. Lt. F. B. Norris, Capt. G. G. Ommanney, Sept. 4th; Lt. E. Foster, Sec. Lt. H. C. Norman, Lt H. G. Owen, Sec. Lt. (Hon. Lt.) S. P. Pattison, Sec. Lt. I. M. M. Perman, Sept. 5th; Sec. Lt. H W. F. Pennick, Lt. A. Pinks, Sept 7th; Sec. Lt. G. W. Pearce, Sept. 8th; Lt. R. A Curry, Sept. 10th; Lt. A. Newman, M.C., D.F.C., Sec. Lt. W. Wallace, Sept. 11th; Capt. W. H. Oliver, Lt. J. B. Palmer, Sec Lt. O. Playne, Sept. 12th; Lt. A. R. Nock, D.F.C., Sec. Lt. W. R. Pearson, Sept 15th; Sec. Lt. P. J. Parry, Sept. 16th; Lt. F. A. S. Nesbitt. Sept. 17th; Sec. Lt. T. Ll. Oliver, Lt. V. R. W Owens, Lt. L. H. Paddle, Sept. 20th; Sec. Lt. (Hon. Lt.) E. Lawson, Sept. 23rd; Lt. W. N. Owen, Sept. 26th; Lt. J. W. Partridge, Sept. 27th; Lt. R. K. Tailyour, A.F.C., Sept. 28th; Capt. G. M. Turnbull, A.F.C., Sept. 29th; Lt. H. C. E. Daggett, Sept. 30th; Lt. G. J. Pilgrim, Oct. 2nd; Lt. G. L. Carter, Oct 7th; Lt. F. I. Bradley, Capt. H. T. Horsfield, A.F.C., Lt. G. O. McEntee, Lt. W. A. McMichael, Sec. Lt H B. Morris, Sec. Lt. H. G. Sansom, Oct. 9th; Lt. A. C. Lutyens, M.C., A.F.C.; Sec. Lt. (Hon. Lt.) S. J. R. B. Simmons, Sec. Lt. G. Thomson, Lt. E. W. Trotman, Oct. 10th; Sec. Lt. L. J. V. Bates, Sec. Lt C. S. Hill, Lt. V. A. Peers, Oct. 11th; Lt. J. W. Mullen, Capt. W. Y. Walls, D.F.C., Oct. 12th; Lt. J. M. Brown, Lt. W. J Buchanan, D.F.C., Oct. 13th; Lt. J. S. Bradley, Sec. Lt. H. A. St. G Burge, Sec. Lt. R. G. Burton, Lt. L. E. Moutrie, Maj. J. T. Rodwell, O.B.E., Lt. A. A. Ross, Sec Lt. C. Sagon, Oct. 14th; Sec. Lt. W. Bellingham, Capt. G. E. Clinton, A.F.C., Lt. A. W. Little, Capt. A. V. Pullan, Sec. Lt. R. Wilkinson, Oct. 15th; Capt. R. Davies, A.F.C., Capt. H. A. H. Leetham, Lt. S. J. Morrell, Sec. Lt. W Mullen, Lt A. W. Phillips, Oct. 16th; Sec. Lt. W. Cougle, Sec. Lt. J. O. McL. Keil, Capt. O. W. Redgate, D.F.C., Sec. Lt. W. C. Taylor, Oct. 17th; Lt. C. Chambers, Lt. (Hon. Capt.) F. H. Davies, Sec. Lt. C. E. Durant, Lt. A. F. Ingram, Capt. A. R Penny, M.C., Capt. C. Sutton, Oct. 18th; Sec. Lt. G. R. Biggs, Lt. C. H. Jeffs, Sec. Lt. (Hon. Capt.) L. Wilmot-Johnson, Oct. 19th; Lt. A. H. Birbeck, Lt. A. Copley, Sec.



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Lt. (Hon. Lt.) E. Hamilton, Sec. Lt. R. P. Pinch, Lt. C. E. Ward, Oct. 20th; Sec. Lt. F. B. Brutnell, Lt. S. G. McNaught-Davis, Sec. Lt. (Hon. Lt.) J. C. Montgomery, Sec. Lt. H. D. Morley, Lt. A. D. Neish, Maj. G. H. Scott, A.F.C., Sec. Lt. R. H. McC. Sheppard, Sec. Lt. (Hon. Lt.) R. M. C. Vaughan, Sec. Lt. J. Whattam, Oct. 21st; Sec. Lt. F. J. Bell, Lt. A. H. Cooper, Lt. C. J. L. Harrison, Sec. Lt. L. I. Lowthian, Lt. J. H. Pascoe, Lt. G. S. Peffers, D.F.C., Oct. 22nd; Lt. (Hon. Capt.) L. W. Burbidge, D.F.C., Lt. A. L. Jones, Lt. O. P. Jones, Sec. Lt. D. J. Stewart, Lt. H. C. W. Strickland, Oct. 23rd; Lt. (Hon. Capt.) J. A. Stanbrook, Oct. 24th; Sec. Lt. W. L. Beck, Sec. Lt. P. W. Lingwood, Oct. 25th; Lt. C. J. Venter, D.F.C., Nov. 7th.

Maj. L. F. Richard (Capt., Royal R. of Art.) relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain his rank, Sept. 30th.

Capt. P. S. Fisher, D.S.O., D.S.C., relinquishes his commn. on account of ill-health caused by wounds and is permitted to retain his rank, Oct. 30th.

The following Lts. relinquish their commns. on account of ill-health and are permitted to retain their rank:—C. H. P. Hughes, Oct. 20th (substituted for notification in the "Gazette" of June 6th); F. H. Robinson (contracted on active service), J. Thompson (contracted on active service), Oct. 30th; H. R. Utley (caused by wounds), Oct. 31st; R. E. Whittingham (contracted on active service), Nov. 1st; J. A. Nolan, Nov. 2nd (substituted for notification in the "Gazette" of Jan. 14th).

Sec. Lt. W. A. Down relinquishes his commn. on account of ill-health contracted on active service and is permitted to retain his rank, Nov. 4th.

Sec. Lt. A. W. Simon (Lt., R. Sussex R.) relinquishes his commn. on account of ill-health, Oct. 30th.

Sec. Lt. G. B. Allen to take rank and precedence as if his appointment as Sec. Lt. bore date March 30th.

The rank of Lt. W. C. Treen, M.C., D.F.C., D.C.M., is as now described, and not "Sec. Lt." as stated in the "Gazette" of July 4th.

The surname of Lt. C. E. Kendall (Lt., R.F.A.) is as now described and not "Rendall" as stated in the "Gazette" of May 30th.

The notification in the "Gazette" of June 20th concerning Sec. Lt. J. Atkinson is cancelled.

The notification in the "Gazette" of Aug. 5th concerning Sec. Lt. R. C. Williams is cancelled.

The notification in the "Gazette" of Aug. 19th concerning Lt. R. S. Jameson is cancelled.

The notificaton in the "Gazette" of Oct. 10th concerning Lt. A. T. Essex is cancelled.

The notification in the "Gazette" of Oct. 14th concerning Lt. C. W. Wridgway is cancelled ("Gazette of Sept. 12th to stand).

The notification in the "Gazette" of Oct. 21st concerning Lt. E. H. Stanes, M.C., is cancelled.

The notifications in the "Gazette" of Oct. 24th concerning Lt. W. S. Campbell and Lt. J. R. Field are cancelled.

ADMINISTRATIVE BRANCH.—Flt. Lt. C. S. McNab to be Flt Lt., from (S.O.), Oct. 1st (substituted for notification in the "Gazette" of Oct. 14th).

Flying Officer J. Keyes to be Flying Officer, from (S.O.), Oct. 9th.

Sec. Lt. (Hon. Lt.) B. Attenborough to be Lt., April 2nd, 1918.

Pilot Officer (actg. Flt. Lt.) N. Bucknall relinquishes the actg. rank of Flt. Lt. on ceasing to be empld. as Flt. Lt., Oct. 13th.

Sec. Lt. A. L. Kidd (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt., May 3rd (substituted for notification in "Gazette" of July 22nd, wherein this officer was reclassified as Lt. (Ad.), from (O.)).

Transferred to the unempld. list:—Lt. G. J. Maunsell, Aug. 21st; Sec. Lt. J. H. Norman, Aug. 25th; Capt. C. W. O'Connor, Sept. 1st; Lt. R. G. C. Pinfield, Sept. 3rd; Sec. Lt. A. H. Petch, Sept. 4th; Lt. J. Pell, M.C., Sept. 11th; Capt. A. Pantin, Sept. 12th; Lt. J. Woolfenden, Sept. 15th; Sec. Lt. J. Randall, Sept. 18th; Sec. Lt. S. St. C. Stone, Sept. 23rd; Lt. A. Mitchell, Oct. 8th; Sec. Lt. A. A. Mackay, Oct. 9th; Sec Lt. D. D. Carcary, Lt. G. D. Rowden, Lt. J. L. Stewart-Moore, Capt. W. McI. Watt, M.B.E., Oct. 10th; Lt. J. Sharman, Oct. 11th; Sec. Lt. W. H. Bayley, Sec. Lt. (Hon. Lt.) R. S. Cowen, Lt. A. Lee, M.B.E., Oct. 12th; Maj. E. W. H. Kennedy, Oct. 13th; Maj. R. D. Carey, O.B.E., Oct. 14th; Lt. (actg. Capt.) J. C. Cantrill, Oct. 16th; Capt. E. P. L. Baker, Oct. 20th; Sec. Lt. H. H. Watson, Oct. 21st; Lt. W. E. J. Roberts, Oct. 22nd; Lt. N. A. Hardie, Lt. J. F. Nalder, Oct. 24th; Lt. (Hon. Capt.) L. F. Bettinson, Lt. P. Dalton, Capt. H. C. Mallett, M.B.E., Oct. 26th; Sec. Lt. T. Bathurst, Oct. 27th.

Lt. K. H. Leake, M.C. (L.N. Lanc. R.) relinquishes his commn. on account of ill-health caused by wounds, Oct. 25th.

The notification in "Gazette" of Oct. 3rd concerning Sec. Lt. W. L. Wade is cancelled ("Gazette" of Sept. 9th to stand).

The notification in "Gazette" of Jan. 10th concerning Lt. W. T. Jourdan is cancelled.

TECHNICAL BRANCH.—Flt. Lt. (actg. Sqdn. Ldr.) J. Curtis relinquishes the actg. rank of Sqdn. Ldr. on ceasing to be empld. as Sqdn. Ldr., Grade (A.), Oct. 22nd.

Flying Officer (actg. Flt. Lt.) S. J. Gardiner relinquishes the actg. rank of Flt. Lt., on ceasing to be empld. as Flt. Lt., Grade (A.), Oct. 6th.

Lt. H. E. K. Eccles, M.C., to be Lt., Grade (A.), from (Ad.), Jan. 11th.

Flying Officer A. F. Lang to be Flying Officer, Grade (A.), from (O.), Oct. 10th.

Sec. Lt. (Hon. Lt.) L. C. Gandy to be Lt., without the pay and allowances of that rank, May 4th, 1918 (substituted for notification in "Gazette" of March 7th).

Sec. Lt. A. E. Wycherley to be Sec. Lt., Grade (B.), from (Ad.), May 1st, and is graded for purposes of pay and allowances as Lt., whilst empld. as Lt., Grade (B.), May 1st.

S. A. Gordon (temp. Sec Lt., E. Kent R.) is granted a temp. commn. as Sec. Lt., Grade (A.), June 10th, 1918, with seny. from April 1st, 1918 (substituted for notification in "Gazette" of Dec. 13th, 1918, wherein this officer was shown as "Administration").

Transferred to the unempld. list:—Capt. C. M. Alport, May 19th; Sec. Lt. C. Parsons, June 10th; Lt. A. H. Dye, June 13th; Lt. G. Osmand, Aug. 23rd; Sec. Lt. W. A. Payne, Sept. 3rd; Lt. C. E. Power, Sept. 9th; Sec. Lt. A. E. Pink, Sept. 10th; Lt. L. C. Pincott, Sept. 11th; Sec. Lt. J. A. Owen, Sec. Lt. A. R. Philcox, Sept. 15th; Sec. Lt. J. Wilson, Sept. 17th; Lt. C. E. North, Sept. 21st; Capt. H. Marsh, Lt. A. E. Young, Oct. 9th; Capt. J. Ree, Oct. 10th; Sec. Lt. E. W. Barton, Lt. C. D. Neale, Oct. 11th; Sec. Lt. C. H. Bell, Lt. G. E. Bower, Lt. H. W. Hire, Sec. Lt. E. W. Taylor, Oct. 12th; Sec Lt. (actg. Lt.) M. Sheriff, D.C.M., Oct. 13th; Capt. E. L. Dale, Maj. C. P. Hearle, Capt. Sir J. K. D. Mackenzie, Bart., Sec. Lt. W. Parkinson, Capt. L. E. West, Oct. 14th; Sec. Lt. C. J. Beardow, Sec. Lt. S. Bishop, Capt. A. D. MacDonald, Sec. Lt. H. G. C. Plumridge, Sec. Lt. (Hon. Lt.) R. N. Tweedy, Oct. 15th; Sec. Lt. J. T. G. Lord, Capt. J. Morrissey, Capt. W. E. Slingsby, Oct. 16th; Lt. H. A. P. Bale, Sec. Lt. J. A. McDonald, Capt. H. Thompson, Oct. 17th; Capt. J. T. Matthews, Oct. 20th; Capt. A. M. Lester, Oct. 21st; Lt. G. A. Heath, Maj. F. Jolly, O.B.E., Oct. 23rd; Sec. Lt. E. Chesterfield, Oct. 24th; Capt. G. L. H. Douglas-Lane, Oct. 28th; Sec. Lt. G. F. Henderson, Oct. 29th.

Capt. J. McG. Robertson relinquishes his commn. on account of ill-health contracted on active service and is allowed to retain his rank, Oct. 30th.

PHYSICAL TRAINING BRANCH.—Lt. J. Butterfield relinquishes his commn. on ceasing to be empld. and is granted the rank of Capt., Sept. 26th.

MEDICAL BRANCH.—Flight Lts. to be Squadron Leaders:—W. A. S. Duck, April 11th; A. E. Panter, A. R. Sharrod, Oct. 3rd.

Capt. W. B. Loveless, M.C., is transferred to the unempld. list, Oct. 12th.

DENTAL BRANCH.—Sec. Lt. (actg. Capt.) G. W. Allen to be Sec. Lt. (from T.), and retains his actg. rank while so empld., June 3rd, 1918 (substituted for notification in the "Gazette" of June 11th, 1918, in which he was shown under "Medical Branch").

WOMEN'S ROYAL AIR FORCE.—Administrator M. N. Thornton reverts temporarily to the rank of Deputy Administrator on ceasing to be empld. as Administrator, Sept. 9th, and to the rank of Assistant Administrator on Oct. 11th, on ceasing to be empld. as Deputy Administrator.

Deputy Administrator H. G. Jack reverts temporarily to the rank of Assistant Administrator on ceasing to be empld. as Deputy Administrator, Oct. 3rd.

The following officers relinquish their appointments at their own request:—Deputy Administrators.—N. M. Isaac, Aug. 12th; Mrs. G. L. Purves, Aug. 31st; M. M. McCarthy, Oct. 10th; P. C. Barber, Oct. 16th.

Assistant Administrators.—Mrs. M. E. Hill, July 6th; Mrs. M. Shields (actg. Dep. Adm.), Aug. 30th; M. H. Fisher, Sept. 23rd; B. L. Larson, Sept. 26th; W. M. Tyler, Oct. 11th; A. E. Bullivant, Oct. 12th; F. M. Cullen (actg. Dep. Adm.), Oct. 15th.

The following officers relinquish their appointments on completion of service:—Assistant Commandant (I.).—W. E. S. Batten, M.M., M.B.E., Oct. 15th.

Administrators.—M. M. Morgan, Sept. 10th; J. E. Oswald, Sept. 30th; Mrs. F. M. S. Newton, D.A.C., M.B.E., Oct. 16th.

DEPUTY ADMINISTRATORS.—E. V. M. Anderson, Sept. 1st; Mrs. N. G. King, Sept. 19th; M. David, Mrs. J. R. Lawrie, C. T. Milward, Oct. 9th; Mrs. H. K. Downer, C. J. MacGregor, Oct. 10th; Mrs. E. G. Penman, Mrs. M. Stephenson, Oct. 13th; G. Lawis, W. A. Stapley, Oct. 15th; K. Gilmour, Oct. 17th.

Assistant Administrators.—I. M. C. Clare (actg. Dep. Adm.), Sept. 6th; J. L. Wilkinson, Sept. 22nd; E. M. Wells, Sept. 24th; D. I. E. Comber, Oct. 1st; M. A. Condon, Oct. 7th; D. M. J. Cochrane-Forster, Oct. 8th; F. P. Buckley (actg. Dep. Adm.), Mrs. E. W. Lloyd-Evans, Oct. 9th; L. M. Burnnand, A. E. Fraser, E. Fletcher, H. McKowen, S. J. Tyler, G. M. Upham, Oct. 10th; Mrs. M. Cookson (actg. Adm., D.A.C.), B. A. Turton (actg. Dep. Adm.), Oct. 11th; H. L. Chaffers, J. M. Curror, D. Robinson, Oct. 13th; M. S. Fawcett (actg. Dep. Adm.), E. V. Macdonald, Oct. 14th; M. N. Finlay, F. A. Laskie (actg. Adm.), Mrs. A. F. Parsons (actg. Dep. Adm.), A. Thexton, Oct. 15th; B. O. Brown, A. J. Edmunds, E. C. Kenion, Oct. 15th; N. H. Frank, L. Hellaby (actg. Dep. Adm.), M. W. Poingdestre, F. D. Turton (actg. Dep. Adm.), Oct. 17th; E. I. Morris, Oct. 18th; M. C. Cadman (actg. Dep. Adm.), A. D. Chapman, Oct. 19th; E. O'Sullivan (actg. Adm. D.A.C.) Oct. 20th.

MEMORANDA.—The following Probationary Flight Officers are granted Hon. Commns. as Sec. Lts.:—F. C. Champneys, Jan. 13th; W. C. Bettles, Jan. 29th; A. L. Coulson, Feb. 2nd; D. H. Couch, Feb. 6th; J. G. Butcher, C. T. Child, Feb. 20th; W. H. Boorne, March 13th; J. V. L. Burder, April 30th; W. I. Beckett, May 15th.

The following temp. Hon. Lts. relinquish their commns. on ceasing to be empld.:—R. E. Barnard, F. Butt, A. Downie, W. J. Southwell, F. G. Wedge, C. J. Whall, Sept. 16th.

Transferred to the unempld. list:—Lt. W. F. Duff, from (S.O.), Sept. 27th; Capt. E. P. M. Robinson, from (S.O.), Oct. 20th; Sec. Lt. W. Bye, from (S.O.), Oct. 26th.

The following relinquish their commns. on account of ill-health:—Lt.-Col. J. D. Markworth, C.B.E. (R.W. Surr. R.), Oct. 24th; Lt.-Col. T. A. Moncton, O.B.E. (contracted on active service), and is permitted to retain his rank, Oct. 30th.

PERSONAL NOTICES.

NAVAL.

ENGAGEMENT.

ELMSLEY—JACKSON.—The engagement is announced between Lieut.-Comdr. Theodore Elmsley, A.F.C., R.N., son of the late Remy and Mrs. Elmsley, of Toronto, Canada, and Joan, only daughter of the late Edward and Mrs. Jackson, of St. Andrews, Fife.

MILITARY.

DEATHS.

BROUNCKER.—Sec. Lieut. Charles Crawford Brouncker, R.A.F. (late London Scottish), who was previously reported missing on Nov. 4th, 1918, is now presumed killed. He was the only son of Mr. and Mrs. Herbert Brouncker, of the Elms, Parkside, Eltham, and Flotsam, Hythe.

WILSON—Lieut. Brodie Wyatt Wilson, 19th London Regt., attached R.A.F., who was previously reported missing on Sept. 23rd, 1918, is now presumed to have been killed on that date. He was the eldest son of the Rev. H. E. and Mrs. Wilson, Little Billing Rectory, Northampton.

AIR FORCE.

DEATH.

STOKES.—Capt. Claud Harry Stokes, D.F.C., R.A.F., who was reported missing on Oct. 29th, is now known to have died on Nov. 7th, 1918. He was the youngest son of Mr. and Mrs. Henry Stokes, 24, Granville Park, Blackheath.

ENGAGEMENTS.

ALLEN—JOHNSON.—The engagement is announced between Mr. W. S. Allen, R.A.F., only son of W. Allen and the late Mrs. Allen, of 50, Gloucester Terrace, W.2, and Clara Eleanor, only daughter of the late H. G. Johnson and Mrs. Johnson, of Long Close, Winchester.

BINNIE—HARRIS.—The engagement is announced between Mr. J. A. Weatherhead Binnie, R.A.F., son of Mr. David Dreghorn Binnie and Mrs. Binnie, of Glasgow, and Olave, only daughter of Mr. Campbell Harris and Mrs. Campbell Harris, of Eastbourne.

G R

By direction of the Disposal Board

AIRCRAFT DISPOSAL DEPARTMENT

MINISTRY OF MUNITIONS.

AEROPLANE ENGINES

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	80 h.p. CLERGET	80 h.p. RENAULT
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200 h.p. HISPANO SUIZA (French)	110 h.p. LE RHONE	100 h.p. MONO
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SPARE PARTS for the above engines are available in large quantities at extremely moderate prices.

Enquiries are invited and should be addressed to The Controller, Aircraft Disposal Department, Welcome Club, Earl's Court (nearest Station, West Kensington, District). Telephone: Western 4950. Telegrams: "Clearhouse, Aerosupply, London."

IMPORTANT.—NOTE CHANGE OF ADDRESS from York House, Kingsway, to EARL'S COURT, as above.

NOTE.—For further particulars of other Government property for sale see "SURPLUS," price 3d., at all bookstalls; or by quarterly subscription of 2s. post free, payable in advance to the Director of Publicity, Ministry of Munitions, Whitehall Place, London, S.W.1.

G. R.

MINISTRY OF MUNITIONS.

By Direction of the Disposal Board.

(Miscellaneous Stores Section.)

Important Sale By Auction of

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And a large quantity of Miscellaneous Stores,

At Ford Junction Aerodrome, Ford Junction, Sussex.

On WEDNESDAY AND THURSDAY, NOVEMBER 26th and 27th, and following day if necessary, at 12 o'clock each day.

The sale will include:

16 150 H.P. Renault Aero Engines.
6 M.F. Aeroplanes.
Large Quantity of Aeroplane Parts & Fittings.

Magnetos, cylinders, accumulators, carburetters, pistons, 4 iron winches, wooden cases, nails, tools, plugs, exhausts, propellers, signal pistols, aero photographic apparatus, wiring plates, rope, tyres, inner tubes, wheels, washers, axles. Together with a large and varied assortment of ELECTRIC APPLIANCES, comprising:—

Switches, wireless installations, amplifiers, rear-lights, batteries, dry cells, torchlights, etc., and a large quantity of NEW CLOTHING AND BOOTS, comprising: Flying suits (fur lined), flying boots (rubber soles), goggles, balaclava helmets, crash helmets, also a HANDLEY PAGE AEROPLANE, fitted with two 400-h.p. Liberty engines.

Admission to Sale by Catalogue only. Further particulars and catalogues to be obtained from the Auctioneers, Messrs. BOWLER & BLAKE, at their offices, Fratton Bridge, Portsmouth, Phone 4613.

NOTE.— For particulars of other Government Property for sale see "SURPLUS" price 3d. at all bookstalls; or by quarterly subscription of 2 - post free, payable in advance to the Director of Publicity, Ministry of Munitions, Whitehall Place, London, S.W.1.

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THE ROYAL AERO CLUB NOTICES.

"DAILY EXPRESS" £10,000 PRIZE.

A meeting of the Advisory Committee on the "Daily Express" £10,000 Prize was held at the Club on Tuesday, Nov. 4th, 1919, at 3 p.m.

Present:—

Royal Aero Club: Brig.-Gen. Sir Capel Holden, K.C.B., F.R.S. (in the Chair); Lieut.-Col. F. K. McClean.

Society of British Aircraft Constructors: Capt. P. D. Acland.

Air Ministry: Lieut.-Col. W. O. Raikes.

"Daily Express": Major W. E. G. Murray.

Lieut.-Com. H. E. Perrin (Secretary) (Royal Aero Club).

The main features of the Competition were decided and the drawing-up of the Regulations was referred to the Technical and Competitions Committee.

SPECIAL COMMITTEE MEETING.

A special meeting of the Committee was held on Wednesday, Nov. 5th, 1919, when there were present:—Brig.-Gen. Sir Capel Holden, K.C.B., F.R.S. (in the Chair), Mr. Ernest C. Bucknall, Squadron-Leader T. O'B. Hubbard, M.C., R.A.F., Lieut.-Col. F. K. McClean, Lieut.-Col. Alec Ogilvie, and the Secretary.

ELECTION OF MEMBERS.—The following New Members were elected:—

Lieut. Harold William Russell Banting.

Cecil Thomas Chandless Chandless.

Geoffrey Kitchin.

John Frederick William Lennard (late Major, R.F.A.).

Arthur Newman (late Capt., R.A.F.).

Flight Lieut. Sydney Gerald Nicholson, R.A.F.

TEMPORARY HONORARY MEMBERSHIP.—Major Melvin Adams Hall, D.S.O. (Air Attaché, American Embassy), was elected a temporary Hon. Member of the Club.

FEDERATION AERONAUTIQUE INTERNATIONALE.—Lieut.-Col. Mervyn O'Gorman attended and presented a report of the Conference of the Fédération Aéronautique Internationale held at Brussels on Oct. 22nd, 23rd, and 24th, 1919.

On the motion of the Chairman, seconded by Mr. Ernest C. Bucknall, a unanimous vote of thanks was passed to the delegates who attended the Conference on behalf of the Club.

PRESENTATION TO SR. JANELLO.—It was decided to make a presentation to Sr. Janello, in recognition of his performance in the Schneider Race at Bournemouth, and the form of the presentation was to be considered at the next meeting of the Committee.

LOG BOOKS FOR PILOTS AND AIRCRAFT.—A letter was read from the Air Ministry asking for a representative of the Royal Aero Club to attend a meeting to discuss the proposed new log-books for pilots and aircraft, and the Secretary was instructed to represent the Club.

FEDERATION AERONAUTIQUE INTERNATIONALE.

REPORT OF THE

CONFERENCE AT BRUSSELS ON OCT. 22ND, 23RD, AND 24TH, 1919.

A Conference of the Fédération Aéronautique Internationale was held at Brussels on Oct. 22nd, 23rd, and 24th, 1919.

In the absence of Prince Roland Bonaparte, who was ill in Paris, M. Jacobs, President of the Aero Club of Belgium, was voted to the Chair.

The following countries were represented at the Conference:—

America, Belgium, Brazil, Denmark, France, Great Britain, Holland, Italy, Japan, Norway, Portugal, Sweden, Switzerland

The delegates who attended on behalf of Great Britain were:—

Lieut.-Col. F. K. McClean, Lieut.-Col. Alec Ogilvie, Lieut.-Col. Mervyn O'Gorman, C.B., Mr. Harold E. Perrin (Secretary).

The principal business of the Conference was the revision of the Statutes and Regulations of the Fédération

The revision of the Statutes and Regulations had been under the consideration of a special committee under M. Surcouf. The report of this committee, which was presented to the Conference, had been fully considered by the Royal Aero Club, and the suggestions put forward by the Club were in nearly every case accepted.

As regards the Schneider Cup, the decision of the stewards of the meeting in not awarding the trophy to Italy was upheld. The British delegates, on behalf of the Royal Aero Club, agreed to a suggestion that the race for 1920 should be held in Italy, and, with the sanction of the Aero Club de France, this was approved by the Conference. The Royal Aero Club also agree to loan the Schneider Trophy to the Aero Club of Italy for exhibition on the occasion of the race.

Six Commissions were appointed, viz.:—

1. International Review of the Fédération Aéronautique Internationale. Secretary: M. Blondel la Rougery.
2. Medical. Secretary: Dr. Van Kulften Galthé.
3. Aerial Touring. President: M. Mercanti.
4. Technical. President: Lieut.-Col Mervyn O'Gorman, C.B. Secretary: Lieut.-Col. Alec Ogilvie.
5. Aerological. President: M. Jacobs. Secretary: M. Jaumotte.
6. Aeronautical Laws. President: M. Clunet. Secretary: M. Imbrecq.

The question of international records was fully considered by the Conference and the revised Regulations to take effect on January 1st, 1920, will be issued shortly.

THE FLYING SERVICES FUND.

(Registered under the War Charities Act, 1916.)

ADMINISTERED BY THE ROYAL AERO CLUB.

For the benefit of Officers, Non-commissioned Officers and Men of the Royal Air Force who are incapacitated while on duty, and for the widows and dependents of those who are killed or die from injuries or illness contracted while on duty.

Hon. Treasurer.—The Right Hon. Lord Kinnaird.

Committee.—H.R.H. Prince Albert, K.G. (Chairman), Mr. Chester Fox, Squad. Leader T. O'B Hubbard, M.C., R.A.F., Squad. Leader C. E. Maude, R.A.F., Group Capt. C. R. Samson, C.M.G., D.S.O., R.A.F.

Secretary.—H. E. Perrin.

Bankers.—Messrs. Barclays Bank, Ltd., 4, Pall Mall East, London, S.W.1.

SUBSCRIPTIONS	£	s.	d.
Total subscriptions received to Sept. 16th, 1919	15,124	12	1
His Majesty The King	100	0	0
H.R.H. Prince Albert, K.G.	21	0	0
Patrick F. Alexander	1,000	0	0
Louis Coen	10	10	0
Mrs. Huntington and Miss Studholme	85	0	0
Miss W. Hudson		2	6
Sec. Lieut. C. H. J. Evershed	2	2	0
A. E. Brodie James	5	0	0
Received by Rev. J. R. Walkey for War Charities	2	0	0
George E. Miles		10	6
Royal Air Force Station, Isle of Grain	1	0	0
John S. Gibb	3	0	0
James Hillier	1	0	0
F. E. Simpson	5	5	0
Capt. J. P. Gurdon	5	0	0
J. Entwisle	5	0	0
H. Williams	5	5	0
Lord Foley	20	0	0
Major-General Brooking	10	0	0
Japp Hatch and Co.	5	5	0
Rev. and Hon. E. R Lindsay	1	0	0
Westland Aircraft Works	10	10	0
C. R. B. Cadwell	10	0	0
From the estate of the late Lieut. Owen Vincent Le Bas, R.F.C.	92	0	0
Arthur H. Leslie Melville	5	5	0
Total, Nov. 10th, 1919	£16,530	8	1

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NOV. 19, 1919.

THE AEROPLANE

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ON THE DISPOSAL BOARD AND THE S.B.A.C.

It seems very nearly time for somebody in a public position to take an interest in the allegatings of the Aircraft Department of the Disposal Board. One can find no word so well suited to the curious behaviour of that department as the equally curious Irish colloquialism which one has used, a word which implies extraordinary antics which give rise to allegations.

So far as one has been able to find any official reason for the existence of the Disposal Board it exists for the purpose of saving the taxpayers' money by selling surplus war material for the greatest possible sum. Few who have had any dealings with the Board have much belief in its ability to fulfil that function, for its policy, at any rate so far as aircraft are concerned, seems to be to hold out for an absurdly high price until the goods under discussion have been worthless, and then break them up for scrap.

Judging by reports from France published recently in the "Morning Post," this custom is not peculiar to the Aircraft Department, for one reads of tons upon tons of tinned meat, milk, jam, and other edibles being left exposed to the weather until the tins rust through and the contents rot. And all the while the people of France are crying out for cheap food.

Incompetence or Self-Interest.

Such policy, custom, habit, action, or inaction may be due to either of two reasons, firstly to sheer incompetence, or secondly to ill-considered selfishness. In the first case it may be explained by the fact that the few competent people who were originally employed in the Disposal Board have now found adequately paid positions in commercial employment and that consequently only the utter incompetents are left behind. Which is very much as it was during the war when almost all the competent technical people were employed by the aircraft constructors and only the grossly incompetent (with a few brilliant exceptions) were left for the Technical Departments of the Air Board, and afterwards for the Technical Department, Air Group, Ministry of Munitions.

In the second case the explanation seems to be that if all the surplus aircraft and material were sold off at once for a reasonable price all the officials who are now drawing salaries—small in amount, but lavish when judged by results—from the Disposal Board would find themselves cast forth on a cold and unsympathetic world to earn a living. And as most of them are probably painfully cognisant of their own incompetence it is natural, if not honest, that they should keep the surplus stock as long as possible so that the evil day when they find their occupation gone may be postponed to the uttermost limit.

This is poor policy in reality, for by the time the taxpayer is roused to action the Disposal Board will have earned such a bad name that if a man is known to have been employed by the Board it will be impossible for him to get a job anywhere. To have been a Disposal Board official will for a man be several degrees worse than it is for a woman to have been a Whitehall flapper It would be a far better thing to do, so far as these men are concerned, if they resigned *en masse* and became bricklayers' labourers or adopted some equally honest and useful profession.

Some Quaint Aircraft Deals.

The actions of the Disposal Board in relation to aircraft appear to be quaint beyond all measure and entirely without co-ordination.

For instance one hears of quite obsolete but still useful machines being sold at very moderate prices to individual pilots who have done remarkably well with them in single-handed "joy-ride" ventures. In one case a pilot bought a 1915 type machine for a few hundreds of pounds, cleared well over £1,000 in passenger fares, and then sold the machine for about what he gave for it. But against this one hears of a manufacturer who wanted an obsolescent machine for a special purpose in a very great hurry and was forced to pay several thousands of pounds for it. When he got it he found that the engine was unfit for use, though it was sold under a guarantee that it was in perfect flying order. Consequently he had to buy a brand-new engine for it from the makers.

Against this Sweden can buy brand new Brandenburg seaplanes for £200 complete, delivered in Sweden.

It seems that the Disposal Board is holding out for absurdly high prices for all machines which are merely obsolescent, and that even where actually obsolete machines are concerned as soon as there appears to be a demand for them the price is raised so that they become unsaleable.

Yet at the same time as these high prices are being asked for certain machines others of the same make and type are being broken up, or "reduced to produce" as it is called, and sold as firewood and scrap metal. This breaking-up process, incidentally, gives perfectly useless employment to a lot of people who ought to be at work producing something of value.

How "Scrap" Is Made.

One heard recently of a pilot who smashed a certain considerable part of his machine in an accident, and went straight off and bought the whole of that part, plus some more, off a Disposal Board scrap-heap for a few shillings. Yet the part which he had bought had only become scrap through breaking up a perfectly good flyable machine which was worth some hundreds of pounds if sold as a going concern.

Even in the breaking-up process no intelligence whatever seems to be shown. For example, a petrol tank out of an aeroplane is always a receptacle which will hold liquid and could be sold as such, either for use in motor-boats, or for storing petrol or oil in garages, or for holding the domestic paraffin supplies in houses in the country. Thousands could be sold through local ironmongers and garages.

Yet no attempt seems to be made to sell them in this way. When they are taken out of the machines they are hammered out of shape to make sure that they cannot be used. And so tanks which cost pounds to make—apart from the price paid for them by the Ministry of Munitions—are sold for a few pence as scrap tin or brass or aluminium.

The Waste of Power-Plants.

Engines are treated in a similarly imbecile way, and as the cost of an engine was so high the scandalous waste is far greater. If the maker or owner of an aeroplane wants to buy a first-class engine, such as a 1916 or 1917 Rolls-Royce, or any other engine of fairly modern type, he is asked to pay a price which is very nearly as high as the maker's list price for the very newest type.

Naturally the sales at such prices are very small indeed, and so the engines are left in store to become more and more obsolete. In many cases they are badly housed and rust is eating into the valves, springs, water-jackets, and other parts, with the result that in a year or so it will cost as much to overhaul these engines and to replace the deteriorated parts as it will to buy new engines.

In other cases, where the officials of the Disposal Board have made up their minds that certain types of engines are obsolete, instead of selling the engines at a "job lot" price so that they can be adapted to some useful purpose, such as driving motor-boats, or driving dynamos for lighting country houses, or even for use on slow, low-powered aeroplanes, the engines are condemned to be broken up with hammers and sold as scrap metal.

One heard not long ago of an astute person who bought several such engines at a matter of ten or fifteen pounds apiece as scrap metal, plus a couple of pounds per engine to the gentlemen who were supposed to break them up for the courtesy of missing them with their hammers in the breaking-up process.

All sorts of other valuable parts of aircraft seem to be treated in the same way. Seaplane floats, which would do excellently for replacements, are stove in and sold as firewood. It is said that flying-boat hulls of the older types, which would make quite good pleasure craft on lakes and big rivers here and abroad, though perhaps unfit for sea work, are similarly broken to pieces.

The whole business seems to be managed with the idea of selling as little as possible and making what is not sold unfit for use. Though one admits that intelligent officials here and there are proving themselves to be first-class salesmen.

Our Priceless Opportunity.

If nothing more than mere waste were involved in this astonishing policy it would be bad enough. But far worse than the mere waste of money and material is the loss of the priceless opportunity which exists at the moment for pushing forward the progress of Civil Aviation and for getting a footing in foreign countries with British aeroplanes. Surely it is the duty of the Society of British Aircraft Constructors to step in and stop the waste, and to convert all this surplus war material into useful propaganda.

Almost all the obsolete and obsolescent machines and engines are quite fit to fly. Therefore, why not fly them? Especially should they be flown abroad, where less is known about the fast and comfortable modern machines of to-day than is know elsewhere.

Fields for Enterprise.

Australia and South Africa, as is well known, are keen on starting "joy-rides" and regular air lines. Already small private ventures, equipped with such ancient craft as D.H.6s and B.E.2es, are at work and doing well. Why not send them dozens of somewhat newer and better machines and sell them cheap? There are hundreds of pilots in each country, and thousands of mechanics.

Canada has some ten or twelve thousand pilots, nearly all of whom are keen on flying if they can get machines at a price. Ancient Curtisses with 90 h.p. engines are being planted on them by Americans or pseudo-Canadians. Why not let them have D.H.4s, R.E.8s, Sopwith "1½ strutters," Avros, and other less antiquated types, at a price? It would be better than scrapping such machines.

Also, Canada is a mass of water ways. One can travel from Halifax, Nova Scotia, to the foot-hills of the Rockies and to Hudson's Bay in a seaplane or flying-boat and never be out of gliding distance of a safe alighting place on water. Why not send flying-boats and seaplanes to Canada?

The Argentine Republic is made for flying. Its great plains and rivers afford perfect conditions for thousands of miles. The Argentinos are rolling in wealth, and they have been infected with a love of flying by French and Italian aeronautical missions which have visited them since the Armistice, while we have been represented by about two British machines and pilots. Can we not send some of our modern surplus machines to Argentina instead of leaving them to rot?

Is there nobody in the S.B.A.C. who has enough influence with financial people in the City to find the money to buy up a few tens of thousands of pounds worth of surplus aeroplanes from the Disposal Board and send them with a few capable business men and squads of mechanics to these and other countries which are crying out for aviation? Or is it that the S.B.A.C. does not want the surplus stock sold and would rather see it rot away at the cost of millions of pounds to the country?

A Question to the S.B.A.C.

Some people believe that such is the case. One has been told that the prevailing idea among the aircraft firms in the S.B.A.C. is to prevent obsolete and obsolescent machines from being sold cheap, for fear lest they should spoil the market for modern machines at the high prices made necessary by labour conditions to-day. It is even said that the apparently imbecile policy of the Disposal Board in holding out for absurdly high prices and scrapping usable material is to a large extent due to an understanding with the S.B.A.C.

One has too much respect for the business acumen of the leading men in the S.B.A.C. to believe that such is the policy of the Society, but it would be well if the Council of the Society were to investigate the facts and discover whether any of its members are instigating this policy in the Disposal Board. Will the Council do so, and make an official announcement accordingly?

Propagating Civil Aviation.

Surely it must be evident that the best way of propagating Civil Aviation is to make it popular first. This can best be done by making it as cheap as possible at the beginning. High prices will come later.

One has seen personally from their beginnings the rise of three great industries, the Cycle Industry, the Motor Industry, and the Aircraft Industry. History has repeated itself in every case. Invariably there has been an attempt to maintain high prices artificially, and equally invariably the highest prices and the greatest boom has been reached when there was the greatest supply of cheap machines. The bigger the sale of cheap machines the bigger the sale of high-priced machines. Which is quite natural.

The Progress of Prices.

The youth who has a cheap bicycle wants a better

one. Then he wants a motor bicycle. When he has got that—and a little more money—he wants a side-car, and then the eternal feminine comes into the question, which always means more expense.

After the side-car comes a cycle-car. That is followed by a "ten-twelve" or a "twelve-fifteen" two or three seater. After a while the light car becomes a bore and he wants more solidity and more speed, and acquires an "eighteen-twenty-two," with a sporting four-seater body. And finally, if the money can be got, he gets to the "twenty-eight-eighty" class and a saloon body.

Or he starts with a Ford and graduates to a Napier, or Rolls-Royce, or Sunbeam, or Siddeley. Yet is anybody foolish enough to believe that the astounding sale of Fords affects the sale of the more expensive cars adversely? Does it not, on the contrary, very much extend the sale of higher-priced cars, simply because the man with money cannot afford to be seen in a cheap car, and because the man with a cheap car always wants a more expensive one?

Similarly in aviation, the half-guinea "joy-ride" at Blackpool becomes the cross-country "stunt" from Blackpool to Manchester or *vice versa*. The short cross-country trip becomes the adventure of an aerial journey to Paris or Brussels or Amsterdam. The adventure becomes in time a habit, and so we shall develop the passenger air lines of the future to Berlin and Petersburg, Rome and Cairo, Bordeaux and Madrid, and ultimately to India, Australia, and the Cape. But it will be the half-guinea joy-ride which has educated the passengers on those lines.

Price as an Educator.

Just in the same way the cheap aeroplane will, if given the chance, educate the buyer of the bigger and better machines. The Canadian sportsman who buys an obsolescent F.B.A. or N.T. boat and finds it a useful as well as an amusing way of travelling about his country will ultimately buy the latest product of the Gosport, or Saunders, or May, Harden and May boatyards. The inspector or trader who uses Disposal Board seaplanes for journeys on the Canadian rivers will at a later stage use the latest Faireys and Shorts. The Australian sheep farmer, the Argentine *ranchero,* or the Canadian corn or cattle man who starts inspecting his out-stations on a B.E.2e or a D.H.6 will soon want the latest thing in Aircos, Avros, Blackburns, Martinsydes, Sopwiths, or what-not.

The men (as usual embracing women) are there and the money is there waiting to buy aeroplanes—at a price—if only somebody will set about selling them in the right way. The aeroplanes in thousands are ready for sale.

A Business Proposition.

If the S.B.A.C. is wise it will form a huge co-operative selling organisation to plant all the Disposal Board's surplus aeroplanes all over the world, irrespective of make and at the lowest possible price. Then and then only will Civil Aviation propaganda be propagated as they should be. All the Air Ministry's well-meant propaganda are so much waste paper unless based on accomplishments.

The only aerial propaganda worth having are those which are demonstrated by aeroplanes in being. Between now and next March is the time for organisation. It is to be hoped that next year will see the British Aircraft Industry convincing the world of its ability to supply all the aircraft needed at prices which make flying possible.—C. G. G.



An aerial photograph showing the Houses of Parliament, St. Thomas' Hospital, and Westminster Bridge. Westminster Hall, formerly the principal Law Court of the realm, is in the centre foreground. The photograph was taken from an Airco biplane.

REFLECTIONS ON THE MOTOR SHOW.

Except for that body of enthusiastic amateurs whose automobile tinkering habits provide a large portion of the motor trade with the wherewithal to pay super-tax, and whose activities are the means of keeping the cost of motoring at a level well beyond the means of those to whom motoring could be of real use, no one nowadays pays much attention to the motor Press.

However, its bright burblings provide a fund of constant amusement, and its insistence on the influence which aircraft practice has had on the design of automobiles has seemed to call for an investigation, for which the present show at Olympia has afforded an opportunity, though a very uncomfortable one.

Nevertheless, at show time, the motor trade does abandon some of its habitual discourtesy to those of an inquiring turn of mind but of limited purse, and thus the honest poor may then occasionally discover the truth undisturbed by violence, either physical or verbal.

Be it at once confessed the motor Press has in this matter of aircraft influence on design founded its statements on fact.

There can be no doubt that one well-known aero-engine has distinctly influenced the designs of that firm, which, having made that engine in quantity during the war, has now planted a speaking likeness of it into a chassis by way of producing their 1920 model. But, with a few honourable exceptions, aero-engine practice seems to have had its greatest influence on the designs of the advertising departments of the motor trade, which, perhaps, is where most of its designing is done.

Overhead valves, overhead camshafts, wonderful pistons of costly and fragile construction, and a lavish use of aluminium—all excusable enough in an engine which has to develop one steady horse-power for every three pounds of weight—are here employed to advertise engines which may occasionally develop one horse-power for every eight pounds during some very small fraction of their working life, with no discernible reason other than that of assisting in the transference of cash from the pockets of the ignorant to the coffers of the motor manufacturers. And one joyfully shakes the dust of Olympia from off one's hat with the comforting reflection that, whatever befall British Industry in the future, our luxury toy trade is safe in the hands of the motor makers.

However, amongst the glittering mass of nickel-plated muckings attached to what, five years ago, might have been useful vehicles, there are some signs that one or two designers have used their brains and have realised that, when this era of promises has departed, when the Government pays in cash and the motor broker delivers in kind, and the world has again settled down to the harmless but necessary task of earning its living, the British motor-car will have to establish itself as an economically justifiable method of transport, or else depart to the limbo of the might-have-beens.

Amongst the cases wherein aeronautical practice has been applied with intelligence to the improvement and simplification of the automobile, the greatest interest attaches to the three entirely novel air-cooled light cars —the A.B.C., the Enfield-Allday, and the C.A.R., better known among aviators as the Cosmos.

In the matter of air-cooling, the experience of the last few years with regard to aero-engines may fitly and properly be applied to the design of automobile engines, since air-cooling offers at once a simpler, lighter, and cheaper engine, and in nowise necessarily entails either an unduly fragile or an unduly intricate construction.

In so far as engines are concerned, both the A.B.C. and the C.A.R. are based on the experience of their designers with aero-engines of generally similar type, and in both instances the car engine appears to be a simplified edition of the aero-engine types associated with the same name.

The A.B.C. resembles in lay-out and general appearance the 40-h.p. Gnat 2-cylinder aero-engine, with cylinders of reduced bore and stroke, fitted with detachable cast-iron heads instead of being machined from solid steel, and with two valves per cylinder instead of the Gnat's three.

In the C.A.R. engine the three cylinders are also fitted with detachable heads instead of the one piece construction. The aluminium head-plaster—which forms the valve stem guides and ports and serves to dissipate heat from the cylinder tops—the distinguishing feature of the Cosmos aero-engine is naturally preserved.

In the case of the Enfield Allday, simplicity is less in evidence. Five cylinders, together with ten valves of a novel and, one would imagine, rather expensive type, seems an unnecessarily ample allowance for an engine rated at 10 h.p., and almost certainly never called upon to deliver more than 25 b.h.p., particularly when it is considered that the cooling arrangements employed for the cylinders are those hitherto found necessary only in engines of the cylinder-in-line type developing nearly 10 h.p. per cylinder.

Nevertheless, this car does show originality in design, and in comparison with the great majority of cars it is relatively simple and free from gadgets, and its designer may be congratulated upon having produced a very effective compromise which provides the maximum of talking points with the minimum of complication.

Amongst the cars of more orthodox design which are manufactured by British firms with aero-engine experience there is a noticeable tendency to make intelligent use of that experience while refraining from talking overmuch about the fact. A notable exception is the Rolls-Royce, wherein, as far as can be gathered, no change in design has been found necessary in the power plant. This seems not unnatural, as the Rolls-Royce is now, and ever has been, equipped with an engine intended to develop a steady high power without effort, and without any of those characteristics of an intensive use of materials and the accompanying shortness of life which necessarily characterise the aero-engine.

A case where a designer with successful experience of aero-engine design has applied himself to producing a high-grade car engine in the light of that experience is the Napier. The value of aluminium as a material for cylinder block castings, owing to the excellent heat conductivity of this material and the improved cooling which can thus be effected, has been amply demonstrated in aero practice, and the extension of the habit to automobile engineering is a legitimate one. In the Napier six-cylinder engine the cylinder block and the upper half of the crankcase are cast in one piece, with detachable heads carrying the overhead valve gear bolted thereto. Not only the engine but the whole chassis has the appearance of a thoroughly sound engineering job, and the finish throughout is of the highest class.

Mr. Louis Coatalen is, of course, one of those who were most busily employed upon the design of aircraft engines during the late war, and an inspection of the power units of both the 16 and the 24 h.p. Sunbeam rather leads one to suppose that he has turned with a sigh of relief to the production of the relatively simple and satisfactory automobile engine after his wrestlings to satisfy the demands of aero-engine "experts." When the present phase has passed, doubtless most car designers will follow his example and make engines to suit car conditions rather than to ape their aerial cousins.



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65, SOUTH MOLTON ST. W.1.

Telephone: Mayfair 5803-4-5.

Telegrams: "Efficonomy, Phone, London."

Australia: THE LARKIN-SOPWITH AVIATION CO. OF AUSTRALASIA, LTD., 18, GURNER STREET, ST. KILDA, MELBOURNE.

Wm. Beardmore & Co., Ltd., another of the firms who have designed aircraft engines which really pulled their weight, show in their car-engine design that a competent engineer can apply the experiences of one craft to the exigencies of another otherwise than by merely continuing the conventions of the first, and thus, though doubtless aero-engine experience has had its due effect, their car engine bears less outward resemblance to any known aero-engine than do the products of many makers who have not only never built such an engine, but could not if they tried.

And so with practically every firm which really has any aero-engine experience behind it. They have learnt about engines from aero-engines, and their car engines are doubtless the better for it; but they are car engines and not emasculated aero-engines.

Thus even the trade papers can only accuse one of three Wolseley models of showing "direct evidence of aero-engine influence," and that merely on the strength of its possessing overhead valves and camshafts.

Again the magnificent Armstrong-Siddeley chassis is equipped with an engine bearing much less outward resemblance to the Siddeley "Puma" aero-engine than does one not distant neighbour emanating from a firm unheard of in the world of aeronautics; but one may feel certain that the Armstrong-Siddeley engine embodies the essential of good engine practice to a considerably more useful effect.

On the whole, the show is a depressing affair, and serves still more to accentuate the idea that, far from settling down steadily to useful work, Britain is sinking still deeper into habits of luxury and sloth. The contrast between British cars and those of foreign origin does not ameliorate the impression. Class for class, the foreign cars show cleaner and simpler design, better workmanship, and a markedly smaller amount of that expensive and utterly useless eye-wash so dear to the British motor-car trader, and so prohibitive to the would-be user of his products.

W. H. S.

THE RESIGNATION OF MAJOR-GEN. J. E. B. SEELY, C.B.

The reasons given by Major-General J. E. B. Seely for his resignation of the appointment of Under Secretary of State for the Air are to be found in the reports of the proceedings in Parliament printed on page 1758.

THE SALVAGE OF AIRCRAFT.

A section dealing with the salvage of aircraft at sea is to be introduced in the Air Navigation Bill. This is a result of discussions between the Fisheries Division of the Board of Agriculture and the Air Ministry.

Aircraft on the water are to be regarded as shipping for salvage purposes. When in need of assistance aircraft are to become "wrecks" within the meaning of the Merchant Shipping Act.

It has been decided to send the first case of salvage of civil aircraft for test to the courts in order to get the law settled.

THE FEDERATION AERONAUTIQUE INTERNATIONALE.

The statutory conference of the Federation Aeronautique Internationale was held at Brussels on Oct. 22nd, 23rd, and 24th. In the absence through indisposition of H.I.H. Prince Roland Bonaparte, the President of the F.A.I., M. Jacobs, the Vice-President, who is President of the Aéro Club de Belgique, was appointed chairman. The following countries sent rerpesentatives: Belgium, Denmark, France, Great Britain, Italy, Japan, the Netherlands, Norway, Switzerland, Sweden, and the United States of America.

M. Surcouf, one of the French representatives, was appointed reporter to the conference. A Belgian should normally have been appointed to this office, but in view of the hostile occupation of Belgium during the war it was felt that Belgians were not so fully informed in aeronautics as were representatives of other countries less directly affected by the war.

It was decided by vote that requests and information for enemy countries should be supplied officially.

The draft for the revision of the Statutes of the Federation prepared by M. Surcouf under instructions issued in Paris in May, 1919, was read. There are 31 articles of the statutes and 200 articles of regulations.

Under Article 6, Paris was selected as the permanent seat of the F.A.I. No nation can be represented by more than six delegates, exclusive of secretarial staffs and delegates to special commissions.

In the discussion on Articles 14 and 15 the questions of votes and of national payments to the general fund were decided. The financial charges are to be as follows: half the budget will be paid in equal shares from each affiliated country, and the remaining half will be made up of sums proportional to the number of votes allotted to the respective subscribing nations.

After a long argument, during which both the British delegation and that from the Netherlands threatened to withdraw from the conference, it was decided that nations already in the F.A.I. should have votes proportional to their aeronautical importance, and that newly admitted nations should have one vote each. The first allocation of votes was as follows: France, Great Britain, Italy, and U.S.A., 4 votes; Belgium, 3 votes; Argentina, Brazil, Denmark, Egypt, Holland, Japan, Norway, Portugal, Russia, Spain, Sweden, and Switzerland, 2 votes, and Uruguay, 1 vote. The subvention per vote was laid down at 900 francs.

In the matter of regulations the altitude record will in future not be granted to any claimant who has not beaten the previous holder's record by 100 metres. Heights will in all cases be calculated from sea-level. The landing must in all cases be made at the point of departure.

Speed records will in future be contested for over a kilometre course by a flight in each direction at a height of 50 metres. New records must exceed preceding records by at least four kilometres per hour.

No records will in future be granted for flights with passengers. They are to be replaced by records made with useful loads.

All "feminine" records are abolished.

A new category of aeroplane—the aviette—is recognised by the F.A.I.

The decision of Great Britain in regard to the Schneider Cup was upheld, but at the request of the British delegation it was decided that Italy should organise the Cup Race for next year and hold it over Italian waters.

The Gordon Bennett Cup for spherical balloons, which has been uncontested since 1913, will be open to competition in the United States during 1920.

The United States was informed that the competitors in the New York-Toronto race have been disqualified, as the race was not held under F.A.I. regulations.

The Committee of the F.A.I. for 1920 is composed as follows: President, H.I.H. Prince Roland Bonaparte; Vice-Presidents, M. Fernand Jacobs (Belgium), M. le Comte Henri de la Vaulx (France), Colonel Monta (Italy), Major-General Holden (Great Britain), Mr. Frank Lahm (U.S.A.); Secretary General, M. Paul Tissandier (France); Treasurer, M. Georges Besançon (France).

The next conference will be held at either Geneva or Berne.

WIRELESS.

The next General Meeting of the Wireless Society of London has been arranged to take place at the Institution of Civil Engineers, Gt. George Street, Westminster, on Wednesday, Nov. 26th, at 6 p.m. After the business of the meeting, Mr. J. Scott-Taggart, M.C., A.M.I., R.E., will read a paper on "A System for the Reception of Continuous Waves," after which the meeting will be open for discussion. Mr. Scott-Taggart (who has already contributed to the columns of scientific papers and journals on themionic valves) is head of the Valve Department of Ediswan, Ltd., and members and visitors may be assured of hearing something of real interest.

The Secretary of the Wireless Society, Mr. Leslie McMichael, notifies his change of address to 32, Quex Road, W. Hampstead, and all communications with regard to the Society should be so addressed after Nov. 23rd.

A PELMANIST AMONG THE BOLSHEVIKS.

Lieut.-Colonel Cecil L'Estrange Malone, M.P., late R.A.F., whose entry into Parliament shortly after the completion of a course in Pelmanism aroused a certain degree of interest some months ago, has it appears, been on a visit to the central seat of Bolshevik disorder. He visited Moscow and Petrograd, and was honoured by an audience with M. Trotsky, one of the leading exponents of modern murder methods. He has been writing a series of articles on the things and incidents seen by him. Bolshevism and Communism clearly have attracted him. He wanted "to learn," and he is now giving the British Public the benefit of his lessons. It will be interesting to follow his public career.



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NAVAL & MILITARY AERONAUTICS

[The Official "Gazettes" and Personal Notices will be found on page 1760.]

GREAT BRITAIN.

FROM THE COURT CIRCULAR.

BUCKINGHAM PALACE, Nov. 12th.

Major-General the Right Hon. J. E. B. Seely, M.P., was received in audience by His Majesty upon his resignation as Under-Secretary of State for Air.

BUCKINGHAM PALACE, Nov. 13th.

The King held an Investiture in the Ball Room of the Palace at 11 o'clock this morning.

The following were severally introduced into the presence of The King, when His Majesty invested them with the Insignia of the respective Divisions of the Orders into which they have been admitted :—

THE MOST DISTINGUISHED ORDER OF SAINT MICHAEL AND ST. GEORGE.—Companion.—Lieut.-Col. Ronald Waterhouse, R.A.F.

THE DISTINGUISHED SERVICE ORDER.—Capt. Robert Steele, R.A.F.

THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE.—Officers.—Military Division.—Major James Cooper, R.A.F., Squadron Leader Vincent Richmond, R.A.F., and Major Jack Stewart, late R.A.F.

MEMBER.—Military Division.—Flight Lieut. Edward Trist, R.A.F.

The King then conferred decorations as follows :—

THE DISTINGUISHED FLYING CROSS AND THE AIR FORCE CROSS.—Squadron Leader Frederick Baker, R.A.F.

THE DISTINGUISHED FLYING CROSS.—Major Charles Mackay, R.A.F., Flight Lieut. Francis Halsted, R.A.F., Capt. Leonard Baker, R.A.F., Flying Officer William Bentley, R.A.F., Capt. Thomas French, R.A.F., Lieut. Harold Gard, R.A.F., Flying Officer Lloyd Mason, R.A.F., Lieut. Frank Noble, R.A.F., Lieut. Ernest Whyte, R.A.F., Sec. Lieut. Cyril Ambler, R.A.F., Pilot Officer Gerard Kannemeyer, R.A.F., Sec. Lieut. John Moorhouse, R.A.F., and Sec. Lieut. George Thomson, R.A.F.

THE AIR FORCE CROSS.—Wing Comdr. Dermott Allen, R.A.F., Lieut.-Col. Stanley Bell, R.A.F., Wing Comdr. Robert Ross, R.A.F., Major William Aplin, R.A.F., Capt. Gordon Alchin, R.A.F., Flight Lieut. Valentine Baker, R.A.F., Flight Lieut. Alfred Blake, R.A.F., Flight Lieut. Norman Bottomley, R.A.F., Capt John Henry, R.A.F., Capt. Cedric Jones, R.A.F., Lieut. Edward Ackery, R.A.F., Flying Officer Bertie Brice, R.A.F., Lieut. Walter Bruce, R.A.F., and Lieut. Herbert Vineberg, R.A.F.

BUCKINGHAM PALACE, Nov. 15th.

The King held an Investiture in the Ball Room of the Palace at 11 o'clock this morning.

The following were severally introduced into the presence of His Majesty, when The King invested them with the Insignia of the respective Divisions of the Orders into which they have been admitted :—

THE MOST HONOURABLE ORDER OF THE BATH (Military Division), THE MOST DISTINGUISHED ORDER OF ST. MICHAEL AND ST. GEORGE, AND THE DISTINGUISHED SERVICE ORDER.—Companion.—Air-Commodore Henry Brooke-Popham, R.A.F. (also received the Air Force Cross).

THE MOST DISTINGUISHED ORDER OF ST. MICHAEL AND ST. GEORGE.—Companion.—Group Capt. Amyas Borton, R.A.F. (also received the Air Force Cross).

THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE.—Commander.—Military Division.—Lieut.-Col. Frederick Cleaver, R.A.F.

THE DISTINGUISHED SERVICE ORDER, THE MILITARY CROSS, AND THE DISTINGUISHED FLYING CROSS AND BAR.—Flight Lieut. Falcon Hazell, R.A.F.

THE DISTINGUISHED SERVICE ORDER AND THE MILITARY CROSS.—Wing Commander Helperus Van Ryneveld, R.A.F.

THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE.—Officers.—Military Division.—Major Allan Bridgeman, late R.A.F.; Major Charles Krabbe, R.A.F.; Major Clarence Krabbe, R.A.F., and Capt. Alexander Cassy, R.A.F. (also received the Air Force Cross).

MEMBERS.—Military Division.—Aileen, Mrs. Rathbun, W.R.A.F.; Flying Officer Kenneth Meek, R.A.F., and Pilot Officer John Adams, R.A.F..

His Majesty then conferred decorations as follows :—

THE MILITARY CROSS AND THE AIR FORCE CROSS.—Capt. Frederic Bates, R.A.F., and Capt Douglas Brooks, R.A.F.

THE MILITARY CROSS.—Flight Lieutenant Alister Bolton, R.A.F.; Flying Officer Frank Farrington, R.A.F.; Lieut. Anthony Harrison, R.A.F.; Lieut. Louis Murphy (R. Irish R.), attd. R.A.F.

THE DISTINGUISHED FLYING CROSS AND BAR.—Capt. Edgar McCloughry, R.A.F.

THE DISTINGUISHED FLYING CROSS.—Major Arthur Barker, R.A.F.; Squadron Leader Robert Leckie, R.A.F.; Capt. Norman Bolton, R.A.F.; Capt. Edward Crundall, R.A.F., Flight Lieut. Frederick Hudson, R.A.F.; Flying Officer George Blake, R.A.F. (also received the Distinguished Conduct Medal); Flying Officer Roger Blake, R.A.F.; Lieut. Ralph Bolton, R.A.F.; Lieut. William Bottrill (Canadian Infantry), attd. R.A.F ; Flying Officer Walter Brind, R.A.F.; Lieut. Cyril Leeke, R.A.F.; Flying Officer Stanley Sharpe, R.A.F.; Flying Officer Frank Woolley, R.A.F., and Pilot Officer Samuel Brabner, R.A.F.

THE AIR FORCE CROSS.—Lieut.-Comdr. Ennis Chambers, R.N.; Capt. Cyril Carleton, R.A.F.; Flight Lieutenant Leslie Clarke, R.A.F.; Flight Lieut. Wilfred Cox, R.A.F.; Capt. Norman Fraser, R.A.F.; Capt. Albert Henshaw, R.A.F.; Capt. John Stocks, R.A.F.; Flying Officer William Catchpole, R.A.F., and Flying Officer Douglas Chapman, R.A.F.

NAVAL.

ADMIRALTY APPOINTMENTS.

The following appointments have been made :—

NOV. 15TH.—Payr. Lt. (Hon. Capt., R.A.F.).—K. B. S. Greig, to rank of Payr Lt.-Comr., seny Nov. 14th.

NOV. 17th.—GUNNER.—C. J. Remfry, to "Pegasus" (Nov.15th); and (on commg.).

NAVAL INTELLIGENCE.

H.M.S. "Eagle," the aircraft-carrier, will shortly be taken from the Tyne to Portsmouth Dockyard in order to be completed for sea. Up to Sept. 30th, the latest date for which figures are available, the total expenditure incurred on the construction of "Eagle" was £2,199,358, including £1,334,358 paid to the Chilean Government in respect of work done for them before the vessel, which was originally to be the battleship "Almirante Cochrane," was taken over by the Admiralty.

It is understood that Capt. W. S. Nicholson, C.B., at present commanding "Furious," has been selected to command "Eagle." It was originally intended to launch "Eagle" last August.

H.M.S. "Furious," aircraft-carrier, will be reduced to the Reserve complement at Rosyth on Nov. 21st.

It is now announced that trials have been recently successfully carried out with a new type of torpedo-plane. The machines are said to have two 15-in torpedoes each, which is another proof that the British Navy is beginning to realise the importance of aircraft.

MILITARY.

THE AFGHANISTAN AFFAIR.

It was recently reported that when Major-General Climo presented the Peace Terms to the Mahsuds at Khirgi on Nov. 4th, three British aeroplanes were flying overhead as a reminder of the British threat of air raids if the terms were refused.

The British terms were announced to the representatives of the Northern Wazari tribes at Miranshah on Nov. 9th. Aeroplanes again taking part in the ceremony as they did at Khirgi. These machines had previously dropped leaflets, over the surrounding country, advising the tribesmen to remove their women and children, as the bombing operations would begin almost immediately should the terms be refused. Even so, the Wazaris were given until Nov. 17th to decide.

AIR FORCE.

BOY MECHANICS FOR THE ROYAL AIR FORCE.

The Air Ministry has recently instituted a new scheme to secure the entry of well-educated boys for a systematic Course of Training as skilled craftsmen for service with the Royal Air Force.

Under this scheme, boys will be entered between the ages of 15 and 16 years for a period of 10 years' colour service followed by two years' service in the Reserve. During the first three years they will undergo a course of Educational and Workshop training, at the end of which those who have passed the requisite tests will be promoted forthwith to the rank of Leading Aircraftsmen in one or other of the skilled trades.

To give scope to the more capable and ambitious boys, and to ensure that the Air Force shall secure the full benefit of their ability, a certain number of those who show most promise during their training will be chosen for an additional six months' course of higher instruction, being promoted at once to the rank of Corporal. From among these, some may be selected for the grant of a commission, and will proceed to the Cadet College for training as Flying Officers with the Cadets entered by open competition.

There will also be opportunities for promotion to a Commission at a later stage to those who show their suitability during their service in the ranks.

In order that the opportunity of competing for entry into the Royal Air Force under these conditions may be brought within reach of the largest possible number of boys, two distinct methods of admission are being arranged: (1) Open competitive examinations, (2) Examinations limited to candidates nominated as in every way suitable by the local Education Authority of their district. A limited number of candidates with Service claims may also be admitted on the nomination of the Air Council subject to their passing a quali-flying test only.

The first examination under the scheme will be one for boys nominated by their Local Education Authority, and will take place in December. Full particulars in regard to the arrangements of the grant of nominations for this examination have been circulated to the Local Education Authorities throughout the country, many of whom have already promised their support. As nominations must reach the Air Ministry not later than November 22nd, prospective candidates should communicate with their Local Education Authority without delay. Boys who are successful in this examination will enter the Training Centre early in February, 1920.

During the war it was not possible to give enlisted boys more than a few months' training, neither was it feasible to confine the entry only to boys of sufficient intellectual attainments to ensure that they would benefit by a long apprenticeship in R.A.F. technical trades.

The scheme which forms the subject of this communiqué constitutes an entire departure from the methods imposed by war conditions, and is designed to meet the requirements of the R.A.F. as organised on a permanent basis

Training Centres are consequently being reorganised to deal with this new entry, and the machinery of education, both general and vocational, is being largely increased and developed for the same purpose.

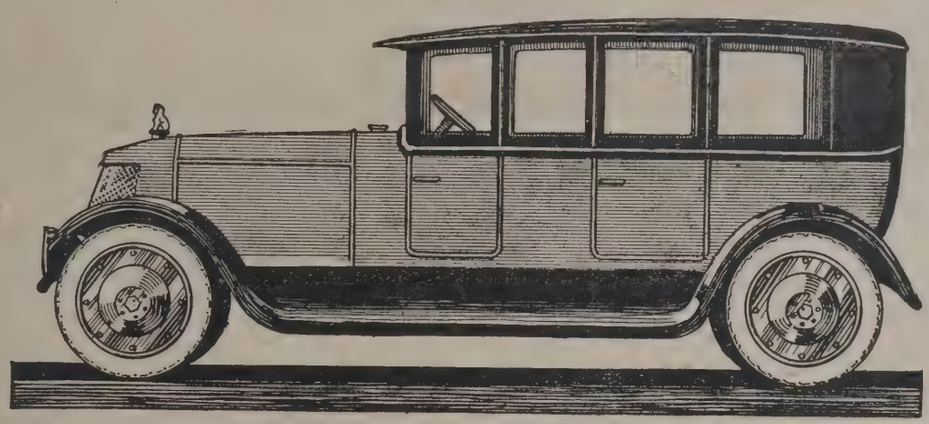
AN INVESTITURE.

A correspondent writes ;—

Mr. W. G. Yeulett, of Walton, was presented at Uxbridge on Nov. 12th, by Sir John Maitland Salmond, K.C.B., with the Distinguished Flying Cross, won by his son, the late

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Godbolds

Lieut. W. A. Yeulett, R.A.F., for "conspicuous gallantry in a long-distance bombing raid upon enemy aircraft stations under very difficult circumstances in July, 1918." Lieut. Yeulett was killed during this raid.—J. F. S

THE RELINQUISHMENT OF AERODROMES.

It is stated in the local Press that both the Airship Station at Polegate and the Coal Aston Aerodrome are being closed down. The personnel and material in both cases are being transferred to other stations.

ANDOVER AERODROME.

The Andover Guardians, who complained to the Air Ministry concerning the waste of timber at the Andover Aerodrome, have received a reply to the effect that the dump consisted of surplus hangars from all the aerodromes of the district, which had been brought to Andover for disposal. Some had been removed, others would be shifted for service elsewhere, and the remainder, from 18 to 20, would be disposed of by the Disposal Board.

The Andover Guardians were not satisfied with the reply and have decided to approach Sir Auckland Geddes on the matter.

ALEXANDRA PARK, MANCHESTER.

The decision of the Air Ministry to relinquish the Alexandra Park Aerodrome, Manchester, in the near future on the ground of economy has led to the Lord Mayor and local members of Parliament making strong representations with a view to its retention, as it is considered to be of great importance to the future of Manchester as an industrial centre.

THE HOWDEN AIRSHIP STATION.

The "Yorkshire Herald" of Nov. 3rd makes the following revelations with regard to accidents at Howden during the war :—

"The first accident happened in 1917, when a small airship came to grief near Foggathorpe Hall Farm. The crew fortunately jumped from the ship and were saved. The ship was a total wreck. Later in the year another ship of a similar type fell into the Humber, three of the crew being killed and the craft destroyed. In 1918 an accident occurred at the station. It was caused through a fire breaking out in R.27, which spread to three other 'blimps' all housed in one shed. A bomb in R.27 exploded, wrecking the ship and making a large hole in the roof of the shed. All the aircraft involved were destroyed, and one young man, who was on the look-out on the shed top, was suffocated. There at present lies near to the sheds a large heap of firewood and wire which was originally R.31, which broke its back after being prepared for a trip to Scotland."

This paper also states that since the decision to make Howden permanent, the aerodrome has been extended by commandeering land on the Spaldington side.

FENCING IN THE R.A.F.

The Royal Air Force have concluded a series of fencing competitions at Uxbridge.

The competitions, which were open to all ranks of the R.A.F., comprised Foil v. Foil, Sabre v. Sabre, Epée v. Epée, and Bayonet v. Bayonet, and as a result the following officers and warrant officer who were first, second or third in all events, qualified to represent the R.A.F. against the Army fencing team in London on Wednesday, Nov. 19th :—Squadron Leader E. G. H. Clarke, M.C., Flight Lieut. F. G. Sherriff, M.C., and Sergt.-Major H. Grainger.

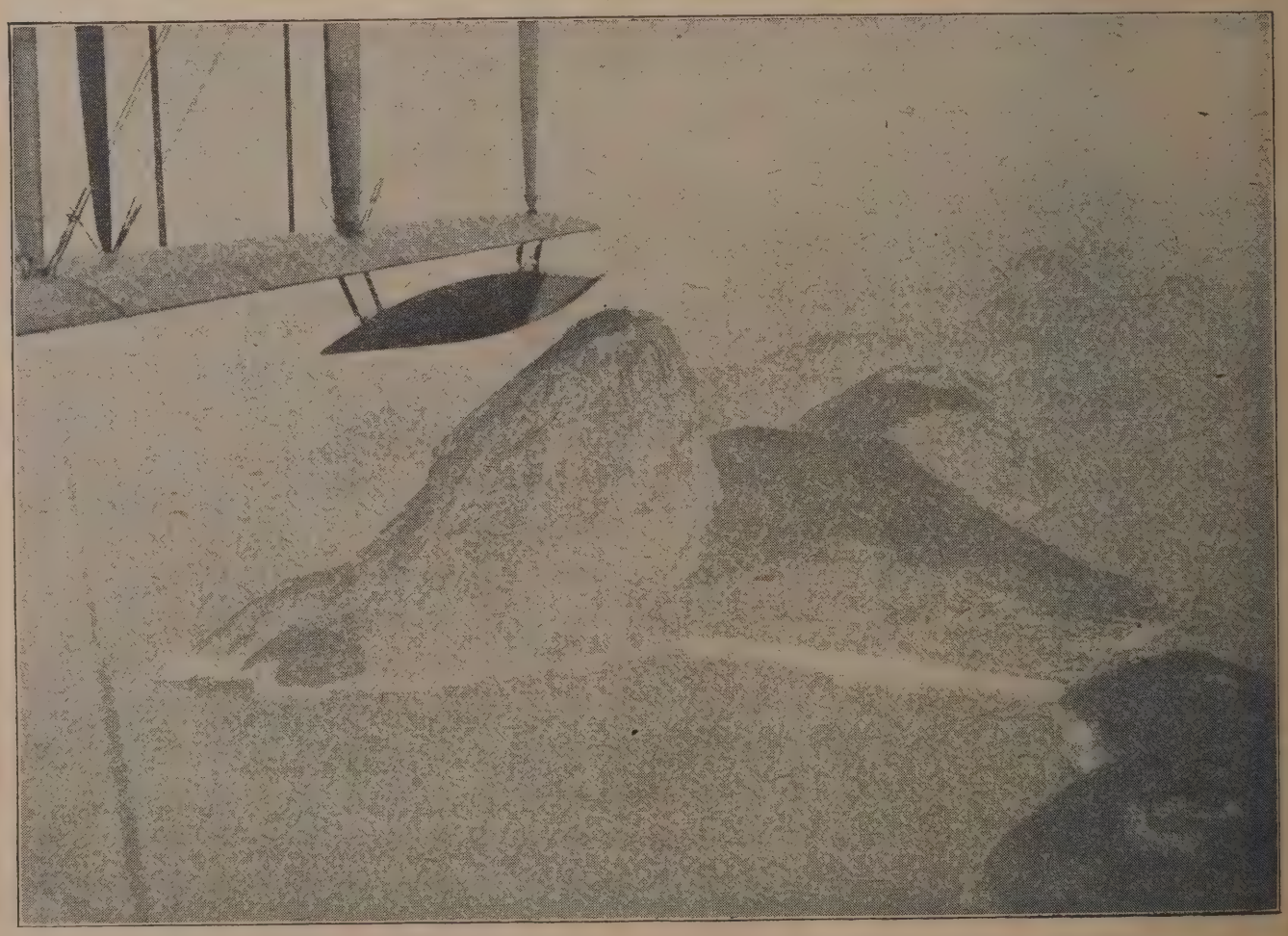
R.A.F. TITLES.

The following letter has been received :—

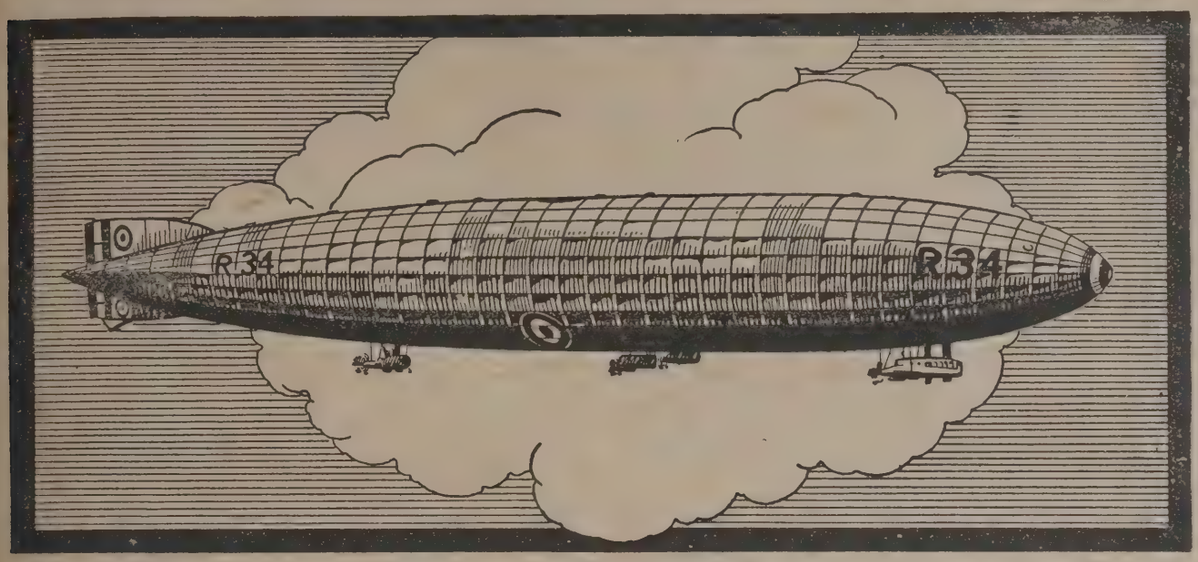
Sir,—There is one point about the new titles for the Royal Air Force which does not so far appear to have been considered, and that is—how are they to be used socially and in ordinary conversation?

No doubt in the higher ranks, Wing Commander, Group Captain, Air Commodore, etc. (by the way, what a pity all the titles are double-barrelled), the prefixes will be generally omitted and officers will be called simply "Commander," "Captain," etc. This will cause confusion with the Naval ranks of similar name, and to this extent the Air Ministry's desire to obtain distinctive titles will be defeated. I suppose, however, this factor was taken into consideration when the new titles were decided on.

The title "Squadron Leader" is entirely new and presents some difficulties when considered from a social or conversational point of view. Suppose we wish to invite Squadron Leader Jones to dinner, should we write "Dear Squadron Leader Jones"? Even if we do, we cannot imagine Jones' partner at dinner addressing him all the time as, "Oh, Squad-



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ron Leader Jones, do tell me what it feels like to fly," etc., etc. Yet dropping the prefix in this case does not help at all, for "Leader" by itself sounds even worse.

Flight Lieutenant can and will, of course, be shortened to Lieutenant; but the new titles of "Flying Officer" and "Observer Officer, and "Pilot Officer," present the same difficulty as Squadron Leader

Officers of the last two ranks will presumably be know as "Mr."; but I would like to suggest that the use of the title "Mr." be carried further, and that the same convention be adopted throughout the R A.F. as is used in the Navy, where all Officers of the rank of Lieut.-Commander (corresponding to Squadron Leader) and below are addressed as "Mr."

(It is true that one sometimes hears Lieutenant-Commanders addressed or referred to as "Commander," or even "Captain"; but this is only done by people outside Naval circles, who are ignorant of the proper convention.)

The question for the Air Force is hardly one about which we can expect the powers that be to issue regulations or lay down hard and fast rules. But considering that for every time one's title is used officially (e.g., in official correspondence, etc., when, of course, the full title would be given), it is used probably a hundred times in ordinary conversation, it does seem to me to be one which should be settled as soon as possible so that the necessary convention may grow up.

I suggest, therefore, that every officer and every mess in the R.A.F. should agree that in ordinary conversation all officers up to and including the rank of Squadron Leader be referred to as "Mr." If this custom were brought into practice at once it would very soon be fixed in general use.

To some people this may seem a trivial matter; but personally I think that in a new Service like ours small points like this are of some importance.

(Signed) SQUADRON LEADER, R.A.F.

FRANCE.

THE FRENCH MISSION IN CHILI.

On Nov. 6th M. Gilbert, Minister of France in Chili, gave a banquet for Capt. Guichard, member of the French Aviation Mission. The G.O.C. the Chilean Aviation Service and his staff were present at the dinner.

SPAIN.

An aeroplane crashed in the evening of Nov. 16th, or, as another says, early in the morning of Nov. 17th, at Casas de Villaseca, in the commune of Benamira, in the province of Soria. The crew, Capt. Laños, the French aviator Augostini, and three mechanics, were killed.

It is thought that the machine is a twin-engine Farman, built to carry seven passengers, and that it was piloted by the French aviator, Augostini, who was due to arrive on Nov. 16th at Cuatrovientos, Madrid, from Pau, at the same time as another machine piloted by the aviator Sains, who landed later.

ITALY.

POST-WAR RELATIONS.

The Italian correspondent of THE AEROPLANE writes :—

In reply to a venomous attack on war expenses in a Turin paper commonly reputed to be the organ of the anti-Italian part, the Hon. Chiesa, ex-Under Secretary for Aviation, who held office during the most difficult period of the war with courage and conviction, writes of the conditions of those times and gives unpublished particulars of great interest.

Promised by the Naval authorities—who were themselves clamouring for "600" Capronis to the number of 1,200—some 10,000 tons of transport space per month for the carriage of raw materials from America, the Ministry obtained 600 tons space owing to the lack of shipping which was caused by war losses. At that time about 386 millions of lire had been assigned and orders given to the aero trade.

Without consulting the constructing firm in Italy the Hon. Chiesa's predecessor had given free and gratis the right to build 1,000 Capronis to the U.S. Government. Consequently the Ministry found itself up against various evident injustices and were inclined to be generous. (Hence, no doubt, all the envious feeling at the bottom of the long and lamentable display of jealousy.)

The Hon. Chiesa gives the following figures showing the height of production reached in 1918 by the Italian trade :—

Monthly output : Motors, 1,700; machines, 750. The material existing in December, 1918, and in active service conditions was :—Motors, 9,743; machines, 5,950. One thousand six hundred and fifty engines and 2,400 machines were then in the refitting shops.—T. S. H.

ONE RESULT OF AIR RAIDS.

The Briglia del Carmine, the big electric power plant and building of the water supply station at Padua, which cost nearly 3,000,000 lire (about £120,000), with all its machinery, collapsed on Oct. 29th and fell into the canal of Bacchiglione. It is thought that the cause of this was the bombing of Padua in February of last year when three big bombs fell near this building. The building was erected in 1882.

U.S.A.

The following is extracted from the Official "Air Service News Letter" of the U.S. Army, dated Oct. 25th, 1919. When one compares the frugal extravagance of our own Air Ministry with the lavish expenditure on aeronautics in the U.S. Army one's opinion of British foresight fades.

"AIR SERVICE LEGISLATION.

A Bill was introduced in the House of Representatives on Oct. 22nd, 1919, and referred to the committee on Military Affairs to the effect that the Secretary of War be authorised and directed to acquire for the United States, by purchase or condemnation, for use as an Aeronautical Experimental development and engineering plant, the following pieces of real estate :—

"The Dayton-Wright airplane factory and plant situated on Edison Street, Dayton, Ohio, consisting of about thirty-three (33) acres of land at a cost not to exceed three hundred and ninety thousand and ninety dol. and eighty cents ($390,090.80); the land adjoining the Dayton Plant, known as the Moraine Tract, consisting of about eight hundred and thirty-six (836) at a cost not to exceed one million sixty-six thousand six hundred and thirty-six dollars and ninety-four cents ($1,066,636.94); also the tract adjoining and north-west of the Moraine Tract comprising about seven hundred and sixteen (716) acres at a cost not to exceed five hundred and nineteen thousand six hundred and forty-eight dollars and fifty cents ($519,648.50).

"That the unexpended balance of appropriations made heretofore for aeronautical purposes by the Act authorising the President to increase temporarily the Signal Corps of the Army, shall be made available for the purposes set forth; that the sum of one million one hundred and twenty-nine thousand five hundred dollars ($1,129,500) be appropriated from any money in the Treasury not otherwise appropriated for construction work on structures and utility or alteration or expansion thereof, or the installation of such equipment necessary for the establishment of an experimental engineering plant on the above described land. Two hangars, one at a cost not to exceed two hundred thousand dollars ($200,000) and the other not to exceed three hundred and seventy-five thousand dollars ($375,000)."

THE FOREST PATROLS.

The commanding officers of March, Mather, and Rockwell Fields and the Ross Field Balloon School were instructed to arrange for forest patrols for the location of fires. The routes were laid out after consultation with the District Forester and the patrols began on June 1st last. It was thus possible to give information as to forest fires within fifteen minutes of their outbreak. Each aeroplane so employed is fitted with a wireless outfit and reports at intervals throughout its patrol. Its position at any given moment is known to the officer commanding the landing ground from which it started.

The following extract from a letter written by the Forestry Service is of interest :—

"The value of timber given protection by forest patrols in the Tahoe National Forest is estimated at $18,000,000 and the value of farm property and crops is estimated at the same figure, to that date 30 fires being reported, 12 being inside forest. In the Stanislaus National Forest the value of timber protected is estimated at $19,280,000 and in the Eldorado National Forest at $25,000,000. Aircraft having proven of such value in reporting fires, the Department Air Service Officer was given authority to establish additional patrols during the time when fires were most serious in the forest areas of California. During the week of the Oregon patrols (which were organised later) 16 patrols were made and 28 fires located. A patrol of the whole State began on August 9th, with bases at Roseburg and Salem, and a consolidation of the daily report shows the following data for the month of August. A total of 82 patrols were made, 190 fires reported and 13,835 miles flown. During the latter part of August, Salem and Roseburg were abandoned and a new base established at Redding, California, also one at Fresno, California. On Sept. 17th the base at Redding was changed to Redbluff, California, and this patrol has since reported as many as ten fires in a day."

The forest patrols have worked with great success. Intentional fires are being prevented. Many patrols cover 300,000 acres twice in one day. Under normal conditions, before aeroplanes were used, 24 hours at least elapsed before detailed information as to fires was received, whereas on a recent occasion the District Forester was able to plot two great fires on one map in the course of a 90-minute flight. During Sept. 249 patrols were carried out, 67,511 miles covered and 160 fires reported.



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THE FLIGHT TO AUSTRALIA COMPETITION.

The Sopwith Machine.

A Reuter message from Mayence, dated Nov. 16th, stated that Captain Matthews has been detained at Gouzenheim, five miles from Mayence, for the last ten days owing to bad weather.

The Vickers Machine.

Capt. Ross M. Smith, M.C., D.F.C., A.F.C., accompanied by Lieut. K. M. Smith, Serjeant Bennett, and Serjeant Shiers, left Hounslow on the Vickers-Vimy machine on Nov. 12th, at 9.10 a.m. The Royal Aero Club were represented by Major R. H. Mayo, and Lt.-Comm. H. E. Perrin, and Vickers Ltd. by General Caddell. A correspondent writes :—

The machine was constructed and tested at the Weybridge works of Vickers Ltd. It was put through its final test flights by Capt. Sir John Alcock at Brooklands, which is a happy omen for the success of the flight, considering that the "Vimy" Transatlantic machine was also constructed and tested by Sir John Alcock at Brooklands.

The Australian "Vimy" is practically identical with the Transatlantic "Vimy," except that it has a front skid in place of the fifth wheel on the other machine, and has a smaller petrol capacity.—J. F. S.

On Nov. 13th news was received that the machine had reached Lyons after a flight of about six and a half hours, and on that day they landed at Pisa.

It was reported on Nov. 18th that the machine had arrived at Rome after experiencing very bad weather.

The Blackburn Entry.

The Blackburn "Kangaroo" (two Rolls-Royce "Falcon" engines) was to have left Hounslow on Nov. 17th, but the start had to be postponed owing to the weather. The machine was to fly from Brough in Yorkshire to Hounslow on Nov. 18th, if the conditions were favourable, and start for Australia on the next day.

The Alliance Fatality.

The third British machine to leave for Australia was the Alliance, with a 450-h.p. Napier engine. Piloted by Lieut. Roger Douglas, M.C., D.C.M., Aus.F.C., and with Lieut. J. S. L. Ross, Aus.F.C., as navigator, the machine left Hounslow on Nov. 13th at 11.35 a.m.

A note was published on the aviators and their machine in the issue of The Aeroplane for Nov. 5th.

The Alliance passed over South Teddington very low down and attracted much attention owing to the noise that it made. At Kingston the machine appeared to be in difficulties, and at Surbiton it suddenly nosedived to the ground and broke down a large tree. The machine was totally smashed. The airscrew was found buried in a field near by.

The body of Lieut. Ross was found lying some seven yards from the aeroplane. Immediately on the arrival of the police an effort was made to remove the wreckage, which had buried Lieut. Douglas, and eventually he was extricated in a dying condition and passed away in the presence of Dr. Pattison Armstrong.

The inquest was held on Nov. 17th. Lieut.-Col. Ridley represented H.Q. the Australian Imperial Forces, Mr. L. C. Tree watched the proceedings for the Alliance Aeroplane Company, and Viscount Erleigh, for Napier and Sons, Ltd.

The following account of the proceedings is taken from the "Morning Post" :—

Donald Easdale, chief draughtsman to the Alliance Aeroplane Company, identified the bodies as those of Lieut. Roger Douglas, aged 25, and of Lieut. James Stewart Ross, aged 24, both of the Australian Flying Corps. The two officers had been flying the machine which met with disaster for about three weeks and for several hours each day. The two officers understood its construction in every detail, having seen it built in the workshops. They were due to start on their flight on Thursday morning, but a late start was made owing to early snow and mist. As the weather became clear they set out at 11.33 a.m.

Machine in Perfect Condition.

James Arthur Peters, aeroplane designer, of Woodville Gardens, Ealing, said he designed the aeroplane. He and the chief test pilot flew a similar machine at Madrid in July last year, and they were also the first to fly the aeroplane which met with disaster.

The two officers were trained, and in the event of mishap to the machine they should have been able to deal with it. [It will appear that Mr. Peters did not say that these officers were trained in this particular machine, or that they had ever flown in it.—Ed. The Aeroplane.]

The machine was in perfect condition, and was ready to start any time after dawn. It was "run up" to the satisfaction of Messrs. Napier's representative, and all the usual precautions were taken. Weather reports were received from France prior to the start. The total weight of the machine was 5,900 lb.

An independent examination had been made of the machine on behalf of the Air Ministry, and every control cable and lever was found to be connected and compact [(intact?)—Ed. The Aeroplane.] The engine had since been stripped and found to be in perfect mechanical order.

The log (produced) was kept by Lieut. Ross, and stated : "Left Hounslow, 1,200 feet. Engine, 1,650 revolutions per minute," and gave his course, which was approximately to where the machine was found.

It had been arranged (witness continued) that if a difficult landing had to be made with any considerable load of petrol the petrol release should be used. After the disaster that valve was found closed.

Three eye-witnesses called were P.C. Money, Arthur C. Knite, mechanical engineer, Abbey Road, St. John's Wood, and Mrs. Evelyn Jones, of Surbiton, who, respectively, estimated the height at which the aeroplane was flying just prior to the disaster at 500 ft., 700 ft., and 1,000 ft.

Cloud Dangers.

Mr. Knite and Mrs. Jones, who said she had lived in the vicinity of aerodromes for three years while her husband was a captain in the R.F.C., agreed that just before the disaster the engine of the aeroplane shut off. The machine came out of the clouds and then spun round as it nose-dived to earth. It appeared that the pilot did his best to right the machine, but failed.

Mr. Peters, recalled, said it was a common thing to come out of a cloud in a spin, and the obvious thing to do in that case was to shut the engine off and push the nose down. He was of opinion that the machine came out of the cloud too low. There was not sufficient room for the machine, whether at a height of 500 ft. or 1,000 ft., to right itself.

Lieut. Douglas, an exceptionally experienced pilot, undoubtedly did his level best to right the machine. If he (witness) had been in a similar position he could not have done more.

By Viscount Erleigh : Once in a cloud one lost sense of direction apart from instruments. It was difficult to tell then whether a plane was flying upright. The machine was designed for high flying.

The hearing of the case was subjected to several interruptions from persons at the back of the court. A gentleman, who said he was a licensed aeroplane engineer, asked permission to give evidence, but the Coroner, on learning that he had not the authority of the Air Ministry to tender such evidence, would not admit it.

Mr. Frederick Richard Draper, head of the testing department of Messrs. Napier, said the deceased officers told him that the aeroplane in question was the best machine they had ever flown, and that they did not wish for a better engine. Witness was present at the examination of the remains of the aeroplane by the Air Ministry that morning, and everything was found to be mechanically correct.

Question of Sufficient Test.

Miss Mabel Desmond Woolley, who was dressed in black, stated she was the fiancée of Lieut. Douglas, and asked permission to put to the experts the question whether they thought a five minutes' flight from Acton to Hounslow was a sufficient test for an aeroplane before a flight of several thousand miles to Australia was attempted.

The Coroner called Miss Woolley's attention to the evidence already given by Mr. Peters.

Miss Woolley : I know what I am saying. I saw Lieut. Douglas every night. My boy did not fly that machine until he left Acton Aerodrome for Hounslow previous to the flight. It was not ready before.

The Coroner : You have heard the evidence of the witnesses who are on their oath? In further reply to Miss Woolley, the Coroner said he was only inquiring into the cause of death.

Miss Woolley : Then you miss the things that matter.

The Coroner : That means I am incompetent or not doing my duty?

Miss Woolley : I think you are not doing your duty.

The Coroner : Very well; you can apply to the Lord Chancellor and say so.

The Coroner read a report which Lieut. Douglas had submitted to the Alliance Aeroplane Company on Aug. 21st stating that since he had joined the Royal Flying Corps he had flown practically every type of machine, and that he was firmly convinced that the particular machine on which he was going to make his flight was far superior in every respect to any type he had ever lifted off the ground.

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ANOTHER INTERRUPTION.

A man who said he was a friend of Lieut. Ross, and who had been repeatedly interposing questions, protested that he was not allowed to put them to the witnesses. "Not enough," he added, "has been said as to what happened on Oct. 30th and Nov. 13th.

Miss Woolley: That is what I say.

The Coroner (to the man): Do you know?

The Interrupter: I do, sir, but you will not hear me.

The Coroner: I will not hear you now, and I will get the police to remove you if you trouble me any more.

The Interrupter: It is a packed room.

In summing up, the Coroner said they were not there to make all sorts of inquiries, but to ascertain the cause of death. The jury might take it that the authorities both at home and in Australia would hold a different inquiry, at which all the questions such as had been raised that day could be thrashed out.

A verdict of accidental death was returned, no blame being attached to anyone.

[It is to be hoped that the evidence to be given at the official inquiry will be published, as it seems that there is other matter affecting the accident which was not brought out at the inquest. The accident, occurring as it did to a machine which occupied public attention, has no doubt shaken the faith of some members of the public in the safety of Civil Aerial Transport, and it is very desirable, in the interests of the British Aircraft Industry in general and of the Alliance Company in particular, to remove any impression that evidence is being withheld.—Ed., THE AEROPLANE].

LORD FISHER AGAIN SPEAKS.

The following letter appeared in the "Times" of Nov. 6th:

Sir,—By land and sea the approaching prodigious aircraft development knocks out the present Fleet, makes invasion practicable, cancels our country being an island, and transforms the atmosphere into the battle-ground of the future.

I say to the Prime Minister there is only one thing to do to the ostriches who are spending these vast millions ("which no man can number") on what is as useful for the next war as bows and arrows!—"Sack the lot."

Yours, FISHER.

Postscript.—As the locusts swarmed over Egypt, so will the aircraft swarm in the heavens, carrying (some of them) inconceivable cargoes of men and bombs, some fast, some slow. Some will act like battle-cruisers, others as destroyers. All cheap and (this is the gist of it) requiring only a few men as the crew.

No one's imagination can as yet depict it all. If I essayed it now I should be called a lunatic. I gently forecast it in January, 1915, and more vividly on July 11th, 1918. We have the star guiding us, if only we will follow it.

"Time and the Ocean and some fostering star
In high cabal—have made us what we are!"

On Friday last the presiding genius at the "Marine Engineers" said: "The day of oil fuel and the oil engine had arrived." In 1885 I was called an "oil maniac."—*Nunc Dimittis.*

The following appeared under the heading "Marr'd" in the "Times" of Nov. 10th:—

Sir,—Do you hear the bleating of these sheep in your ears? We are going to hew Agag into pieces! (I refer to the moaning of the Admirals and to the keeping the best of the ships—exactly the same spirit as Saul.) There was the same bleating of the sheep and the same preservation of Agag when masts and sails were doomed and the engineer came into his own! Saul got kicked out for not "sacking the lot."

The reason I put the word "marr'd" at the head of this letter is that when, six months before the war, a Cabinet Minister of that period read my printed memorandum that German submarines would sink defenceless merchant ships with their women and children, he observed that I had "marr'd" my memorandum by that prophecy! Don't let us have another "marr'd" prophecy.

The air controls the water. Unless all warships can get under the water they will be blown out of the water. Millions upon millions of money are still being wantonly wasted in the upkeep of ships that can't be used in war. When this winter the price of food and coal goes up, the masses will "sack the lot." A gust of fury will clear out this effete Parliament.

Yours, FISHER.

AN OPPORTUNITY FOR BRITISH MANUFACTURERS.

It is stated upon excellent authority that the Monaco meeting to be held at the end of April next will include a competition for seaplanes.

The exact details have not yet been officially settled, but the general principles upon which the competition will be based are as follows:—

On the first day competitors will be required to fly from Monaco to Tunis, with an intermediate landing at Corsica. On the second day they will fly from Tunis to Kabes and back. On these two days marks will be allotted on a basis of useful load carried and on petrol consumption. On the third day a non-stop flight from Tunis to Monaco will complete the tests, and this flight will be marked on the speed attained alone.

All landings are to be made in the open sea, and all competitors will, it is understood, have to carry a specified minimum useful load over and above crew and fuel, of something of the order of 200 kilogrammes.

"THE AEROPLANE IN THE GREAT WAR."

THE AEROPLANE IN THE GREAT WAR. By W. L. Wade. Pp. vi+229. Ilus. London: Virtue and Co., Price 16s.

The late Mr W. L. Wade was for some years before his death the assistant editor of THE AEROPLANE. Incapacitated by physical disability from entering His Majesty's service during the war, he served his employers with a devotion and single-mindedness none too common in modern life. His knowledge of aeronautics was extensive, and his vivid memory enabled him to write with accuracy and interest on the history of the progress of flying in all its branches.

Shortly before his death he completed the writing of the book now under review. All that remained was to correct the proofs and to supervise the general arrangement of the work. Both of these have since been done by Mr. C. G. Grey, the editor of this print, as a token of his high opinion of Mr. Wade's character and ability.

There are only two ways in which to write a book on military aviation in the past war. The first of these is to deal exhaustively with each branch of the subject and to relate with meticulous accuracy the aerial events of each day during the war. A work of this nature would hardly be encompassed in half-a-dozen volumes, and its preparation would take years of arduous endeavour. The examination and collation of the necessary official documents would provide employment for several people for months to come. The alternative is to write a popular disquisition which would relate briefly the progress of the employment of aircraft in war, give typical stories of the varied incidents which occur in aerial history, and convey a general impression of the life and duties of the military aviator.

Mr. Wade's book is arranged on the latter plan, and he has succeeded in giving an excellent general survey of wartime aviation. He has devoted little space to the intricacies of detail and has instead illustrated each of his points by anecdotes of actual incidents. Each theatre of war is dealt with in turn, and there are chapters on bomb raids, reconnaissance, queer landings, captures, and the "star turns" of the Flying Services. Signor Gabriele d'Annunzio, once renowned for the charming decadence of his plays and now known chiefly as a practical apostle of "self-determination" in world-politics, has a chapter largely devoted to his exploits as an observer on bombing machines.

The book is free from irritating inaccuracies in the names and ranks of pilots, and naturally there are no mistakes in the descriptions of the aeroplanes or of the work done by them.

An excellent summary of each year of war in so far as aviation is concerned is inserted at the end of the volume.

There are many illustrations, some of them coloured, and all save a few photographs are drawn by Mr. Geoffrey Watson. The book is well designed as a suitable present for the youth whose growing interests are centring temporarily on aviation.

THE SONGS OF THE R.A.F.

The following letter has been received from Mr. S. G. E. Inman Knox, Lieut., R.F.C., 69, Sumner Place Mews, S. Kensington:—

Sir,—A few of my friends and myself, ex-R.F.C. officers, are endeavouring to compile a complete collection of the songs of the Flying Services, with a view to publishing them.

We would be very much obliged if any of your readers would be so good as to send any flying songs, or parodies they know of, to the above address. We would also like to point out that songs that were well known in some squadrons were practically unheard of in others, so all will be welcome.

We should be very grateful if you could find room for this letter in your columns, as we feel that such a collection of the many songs that did so much to brighten the "dud-weather" periods in our overseas squadrons will find a welcome, not only in the R.A.F. messes still "carrying on," but in the homes of ex-flying men when now and then old members of the Services foregather.

AERONAUTICAL ENGINEERING

SUPPLEMENT TO "THE AEROPLANE"

INCORPORATING AIRCRAFT ENGINEERING, AERODYNAMICS, AIRCRAFT FINANCE AND COMMERCIAL AERONAUTICS AND MATTERS PERTAINING TO THE AERONAUTICAL ENGINEER AND THE AIRCRAFT TRADER.

THE WEEKLY COMMENTARY.

In this issue there begins a very interesting and highly eulogistic report upon the design, construction, and performance of the Rolls-Royce aero-engines.

This article is abstracted from the German journal "Der Motorwagen," and is based on examination of various samples captured by the German forces during the War.

It is probably the most disinterested and the most gratifying testimonial to the enterprise of the British Aircraft Industry which has yet been penned.

A further instalment of the article on the work of the Experimental Depot at the Isle of Grain gives details of a high-speed seaplane scout and of a two-seater reconnaissance ship-plane designed and built at that station.

Details of a number of accessories of interest to the Aircraft Industry which are to be found at the Motor Show, Olympia, are given on page 1748.

A GERMAN APPRECIATION OF THE ROLLS-ROYCE AERO ENGINE.

TRANSLATED BY ERIK HILDESHEIM, COPENHAGEN.

The report by Herr Otto Schwager, B.Sc., on the Rolls-Royce aero-engine, which was announced by the German technical journal "Der Motorwagen" last year as amongst the value to be given for the increased subscription rates, has now been published.

The following is an abstract of that account :—

One of the most interesting of hostile aero-engines, on the highest plane in respect to design, is undoubtedly the Rolls-Royce.

Each detail of design has been dealt with most carefully and with highest affection. With respect to commercial manufacture one is inclined to say that the designer has done too much of good. At any rate, the aim could in many instances have been attained with much simpler means.

Yet, on the other hand, the Rolls-Royce motor is a classic example of how the designer can avoid every possible difficulty which can be foreseen in the design and thus ensure success; for many details of design are undoubtedly not the results of long lasting experiments, but the achievement of a thinking designer.

The motor is built in two different models, as a 12-cyl. V-type engine, either with 101.6 mm. bore and 146 mm. stroke, or with 114 by 165 mm. bore and stroke. The nominal output of the small motor was originally 190 h.p. and of the large one that of 250 h.p., which have been gradually increased to 275, 320, and 352 h.p., partly as the result of an increase of the number of revolutions from 1,600 and 1,650 to 1,800 r.p.m., and partly by increasing the compression ratio from 4.84 to 5.51 and to 5.43, and by increasing the gas intake sections.

In the accompanying table of figures the various figures of the design—partly given on the maker's nameplate and partly derived from measurements and trials carried out—have been grouped. The two more powerful engines in this table are distinguished by the type word "Eagle," and the new editions of the small engine are provided with a similar trade word, "Falcon."

The large type will be described by means of illustrations and drawings, and the differences, marking the various horse-powers, will be reported upon in detail.

The general arrangement of the engine is evident from the illustrations. The case will be seen to be of a 12-cyl. V-type motor with a gear drive to an airscrew hub on the same line as the crankshaft.

The whole motor is mounted on a crankcase which, with the exception of the gear-box bolted to the front side, is composed of three main parts : the top, bottom, and rear ones, the latter serving, especially the housing of the driving parts, for gearing, magnetos, and the remaining apparatus.

The top part of the crankcase contains mainly the bearings of the crankshaft, of which there is one between each crank. As torsion stress is as far as possible kept off the case by the provision of counterweights at each crank, the designer had not to pay undue attention to a rigid form, and the crankcase top half appears to be carried out rather light considering the horse-power. The bearing bridges extend across the whole width, and are made as simple cross-ribs of T section, reinforced to carry the main bearing bolts and lubrication channels. By means of long through-going bearing bolts and steel caps, the bronze bearing brass with babbitt lining are mounted to the top part of the crankcase. The steel bearing covers are carefully guarded against deflection by deep ribs. Strong bronze intermediate layers between the joints allow a readjustment of the bearing brass without a remachining of the crankcase or of the steel bearing caps, and also act as a safeguard against turning.

For lubrication a round-running groove is provided in the interior of the brass, supplied with oil from the oil nozzle through two holes and a distribution groove, leading to the latter, somewhat above the joint.

The single cylinders subtend 60 deg. and are held by four bolts each fitted to four strong bosses. To avoid thread in the aluminium, studs are not used to hold the cylinders, screws with middle and bottom nuts fixed with split pins have been chosen. A safe distribution of the forces on the case is secured by a careful providing of strong ribs.

The crankcase top part is noteworthy owing to the nature of its mounting in the aircraft. Instead of the usual ledges cast on with horizontal bearing surfaces, vertical faced brackets are provided at each end of the case, to which brackets to suit to carry the engine may be affixed. The advantage of this construction is that special motor mountings can be done without, as the motor can simply rest on the fuselage longitudinals or in a corresponding auxiliary equipment provided in the body side walls, the engine itself acting as a beam, to which object the crankcase is especially adapted, as longitudinally it is very stiff between the mounting flanges. The objection that the bending stress is especially high on the case with this mounting, particularly in bad landings, which could be raised against this construction does not hold good on close study.

The crankcase lower part is mainly a deep oil sump, and is connected with the top part by means of many small square-headed screws. In cross-section it is strengthened by two strong cross-ribs. At the lowest point a flange is provided to which an oil filter is mounted. Two gauge-glasses are provided in each side. As with the joint of the two crankcase halves, the oil filter and the gauge-glasses are mounted with setscrews and nuts. Altogether threads in the

TABLE OF DATA OF ROLLS-ROYCE AERO ENGINES CAPTURED BY THE GERMANS.

Engine.	Normal H.P.	H.P. on test at normal R.P.M.	Crankshaft R.P.M.		Airscrew R.P.M.		Petrol Consumption.	Bore.	Stroke.	Compression Ratio.	Mean Piston Speed.	Mean Effective Pressure.	Carburetter.					Jet capacity (maker's figure).	Inlet Pipes.						Weight. (Dry.)	Weight per H.P. (Dry.)	Remarks.
													No. and Type of Carburetter.	Dia. of Choke Tube.	Dia. of Petrol Jet.	Area of Choke Tube.	Gas velocity in choke tube.		Main.			Distributor.					
			Normal.	Maximum	Normal.	Maximum.													Diameter.	Area of Section.	Gas Velocity.	Diameter.	Area of Section.	Gas Velocity.			
	H.P.	H.P.					Grms per H.P hr	mm	mm		m/sec	kg/cm2		mm	mm	cm2	m/sec	ccm	mm	cm2	m/sec	mm	cm2	m/sec	kg	Kg/HP	
Rolls-Royce	250	260 (287)	1600 (1591)		1024 (1017)		257 (252)	114	165	4,84 (4,66)	8 8	7,25 (8,05)	2 twin carburetters	38,5	16	9,6	93,5	420	44	15,2	59	44	15,2	59	384	1,47	2 Magnetos, old oil pump.
Rolls-Royce	275	300 (309) (307)	1650 (1616) (1635)		990 (969) (981)		246 (228) (229)	114	165	5 0 (4,8 (4 92)	9,1	8 07 (8,5) (8,36)	4 old single carburetters.	38,5	16	9,6	96,7	455	44	15,2	61	44	15 2	61	384	1,28	4 Magnetos, new oil pump.
R. R. Eagle	320	320	1800		1080		220	114	165	5,1	9,9	7.95	4 old single carburetters	38,5	16	9,6	105,2		44	15,2	66,4	44	15 2	66,4	400	1,25	4 Magnetos, new oil pump.
R. R. Eagle	352	352	1800	2000	1080	1200	228	114	165	5.43	9.9	8,7	4 new single carburetters	42	16	11,85	85,3		44	15,2	66,4	44	15,2	66 4	430	1,22	4 Magnetos, new oil pump.
Rolls-Royce	190	200	1700		1005		256	101,6	146	4,5	8,3	7,45	2 double carburetters.	38 5	16	9,6	69 8	400	44	15,2	44	44	15,2	44	315	1,57	2 Magnetos, old oil pump.
R. R. Falcon	250	250	2000		1179		225	101,6	146	4,8	9 7	7 95	2 double carburetters	38,5	16	9,6	81,6	430	44	15,2	51,5	44	15,2	51,5	325	1,3	2 Magnetos, old oil pump.
R. R. Falcon	264	264	2000	2250	1179	1327	220	101,6	146	5.0	9,7	8,4	4 new single carburetters	42	16	11,85	66,2		44	15,2	51,5	44	15,2	51,5	330	1 25	2 Magnetos, new oil pump.

VICKERS LIMITED

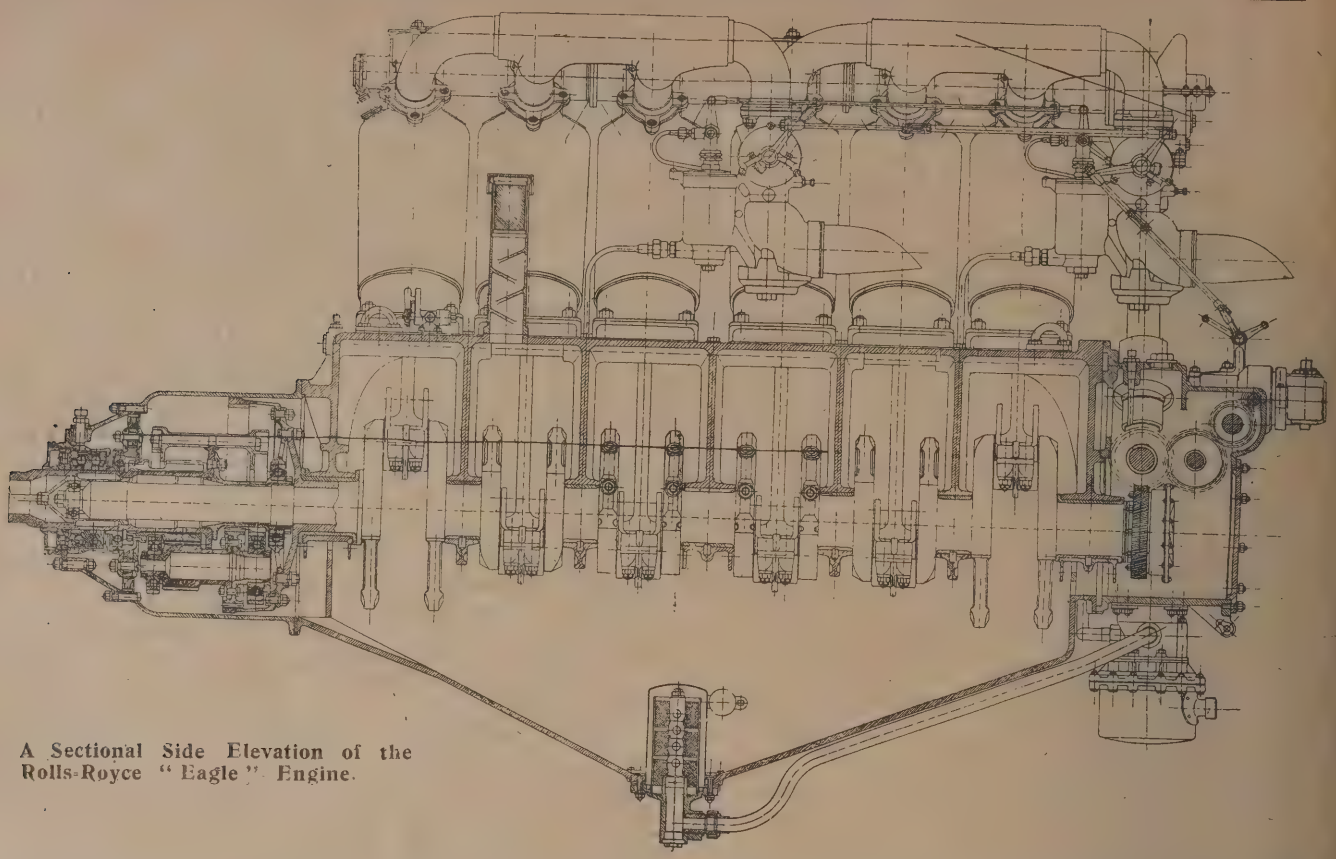
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The first direct Flight from Newfoundland to Ireland (1,900 miles) was accomplished by this Aeroplane in 15 hrs. 57 mins. 4 tons of Petrol and Oil were used.

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A Sectional Side Elevation of the Rolls-Royce "Eagle" Engine.

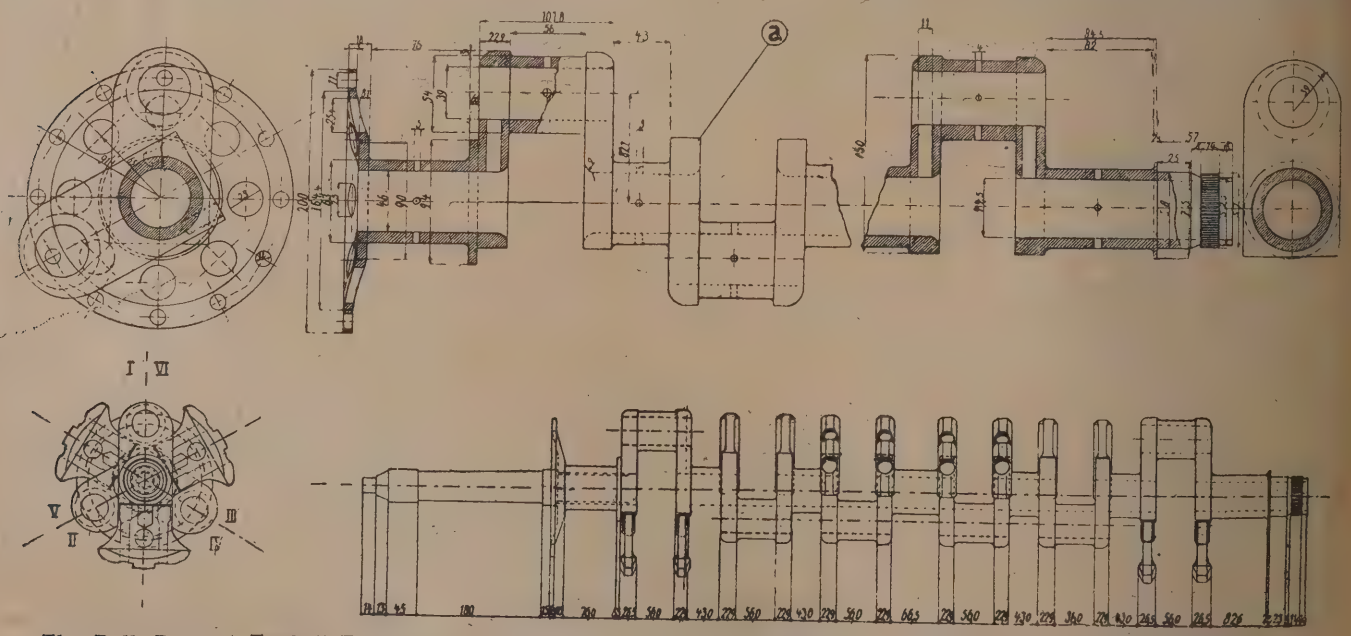
aluminium have been avoided whenever possible, which construction deserves special attention. Where necessary these setscrews are prevented from pressing during erection, as too in the oil filter mounting, by special hold rings, which are again screwed to the case by means of small setscrews without nuts.

On the rear end of the crankcase a special one-part auxiliary case is attached by a flange and studs. In this part the drives for the camshafts, magnetos, and the rest of auxiliary apparatus are housed. The magneto brackets also are separate castings, which are united to the crankcase rear part by means of studs.

Even though this extreme subdividing of the crankcase may seem somewhat intricate owing to the many faces to be machined, it affords too many advantages, as easy repair and mounting facilities. Most important, the auxiliary drives are often exposed to damage, frequently resulting in damage to the crankcase, in which case a repair by the little reliable welding procedure is necessary, if the whole crankcase has not to be abandoned at once. In the case in question one is more easily induced to sacrifice the damaged part and replace it by a new one. Thus the greater initial manufacturing costs are counterbalanced by low repair costs.

Only one single but amply dimensioned breather pipe is mounted between the cylinders on the front side of the crankcase top for ventilating the crankcase. The provision of baffle plates and a circular wire gauze strainer secures separation of the condensing oil vapours.

As already mentioned, the shaft, cranked six times in the usual way, rests in the crankcase top part in seven journal bearings. To do away as far as possible with the transverse stresses caused by the rotating masses, steel cast counterweights are mounted to each crank web by means of two stay-rods screwed into the crank web with castle nuts and cottars. These counterweights are secured against side displacement by fitting pins, screwed in. Thanks to this counterweight arrangement, the crankshaft could be kept comparatively very light by boring to a large diameter. These drillings are provided with caps, held in place by through-bolts with castle nuts and cottars. Compared with the usual rolled-in



The Rolls-Royce "Eagle" Engine.—At the top details of the crankshaft proper. Below the crankshaft assembly complete with balance weights.

G R

By direction of the Disposal Board

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Telephone—Western 4950. **Telegrams—"Clearhouse, Aerosupply, London."**

IMPORTANT. Note change of address from York House, Kingsway, to Earl's Court as above.

NOTE.—For further particulars of other Government Property for sale, see "SURPLUS," Price 3d., at all Bookstalls; or by quarterly subscription of 2/- post free, payable in advance to the Director of Publicity, Ministry of Munitions, Whitehall Place, London, S.W.1.

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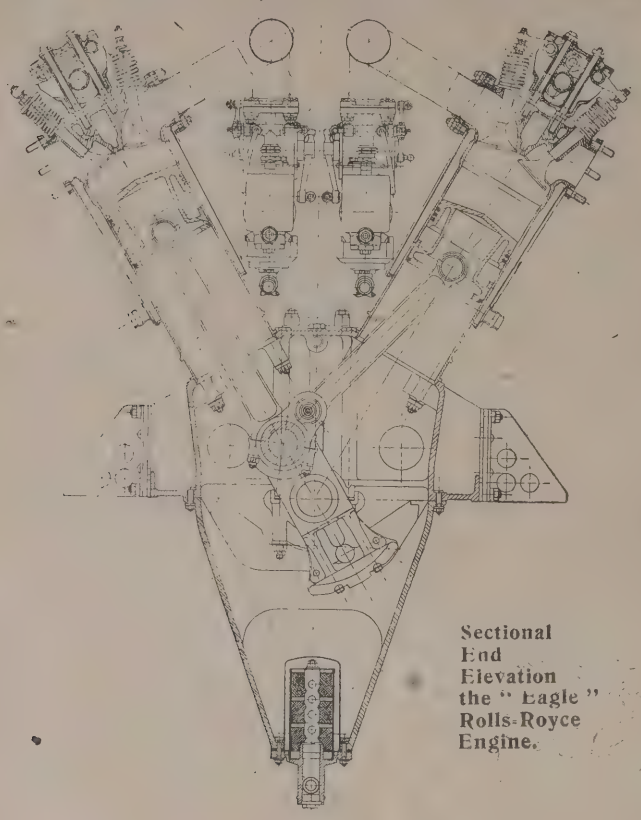
A typical size of Hangar is **60 ft. by 60 ft. by 13 ft. high.**

The locality, together with any further information required, may be obtained from the—**CONTROLLER, AIRCRAFT DISPOSAL DEPARTMENT, WELCOME CLUB, EARL'S COURT, (nearest Station—West Kensington District).**

Telephone—Western 4950. Telegrams—Clearhouse, Aerosupply, London.

IMPORTANT.—Note change of address from York House, Kingsway, to Earl's Court, as above.

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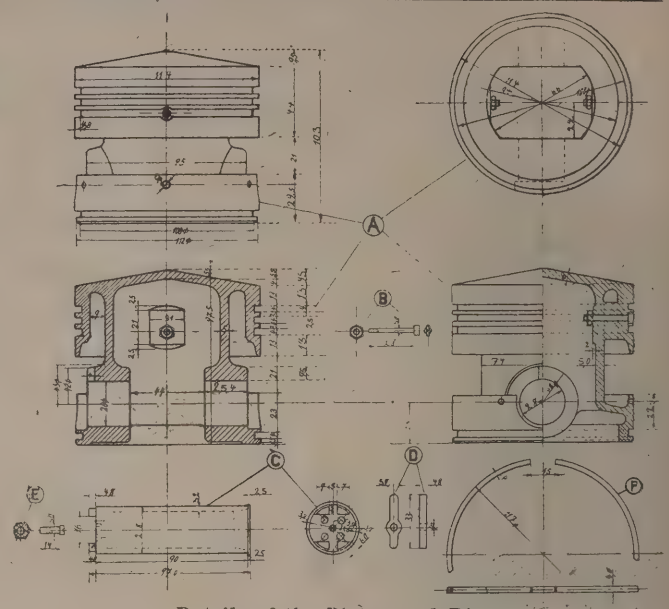
Sectional End Elevation the "Eagle" Rolls-Royce Engine.

caps, this construction permits a careful cleaning of the interior of the crankshaft, which is most necessary when dismantling after melting out a bearing, when pieces of white-metal are apt to enter the crankshaft oil-channels and cause further seizing. For the supply of lubricating oil to the connecting-rods four holes are provided in each bearing, so that an ample oil supply is certain.

At the front end the crankshaft is provided with a flange for the internally toothed gear drive wheel, and a stub shaft is pressed into the bore of the crankshaft, on which the wheel spider for the planet wheels runs. The rear end of the crankshaft is splined for the drive of the valve gearing and auxiliary apparatus.

The connecting-rods are of double T section and are articulated. The master rod is provided with no special bearing brass, but the white-metal lining is cas direct in the end of the connecting-rod. The supply of oil for lubrication of the auxiliary rod wrist pin is from the main connecting-rod bottom end bearing through an oil hole drilled in the lug of the master rod. The wrist pin itself and its bush are provided with an all-round oil groove to ensure that the oil gets to the piston pin through the lubrication tube, which is fixed to the rod with three clips.

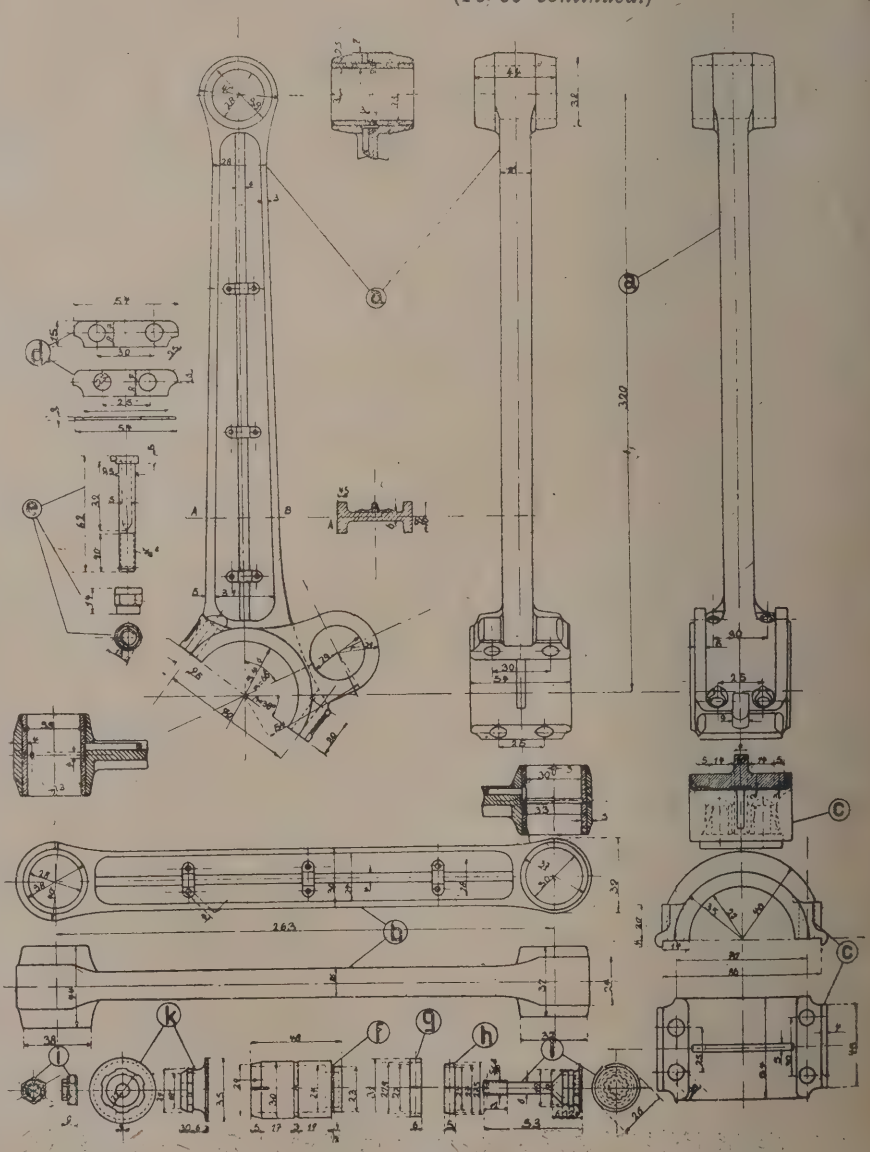
The aluminium cast pistons differ also completely from the usual model. The gudgeon pin bearings are not on the body of the piston, but on a special cylindrical part about two-thirds of the cylinder diameter. The piston guide surfaces are formed by collars projecting from this cylinder. The advantages of this design are the good transmission of the forces from the top of piston to the gudgeon pin, the low transverse stress in this part, and less liability to distortion due to longitudinal elongation of the gudgeon pin. Extraordinary, too, is the position of the gudgeon pin, almost at the lower end of the piston. At the top end of the guiding surface three cut compression rings are fitted that are prevented from turning by means of setscrews mounted in the piston with



Details of the Piston and Rings.

nuts. A fourth ring is provided in the lower end, serving here also as oilscraper ring as the part below the ring groove is 2 mm. less in diameter than the cylinder. In addition, the break in the bearing surface in the middle opposes the passing of oil into the combustion chamber. The gudgeon pin rests direct in the piston with no bushes in. At one end a small fishplate is screwed on, securing it against turning and side displacement.

(To be continued.)



Details of the Connecting Rods—the Rolls-Royce "Eagle" engine.

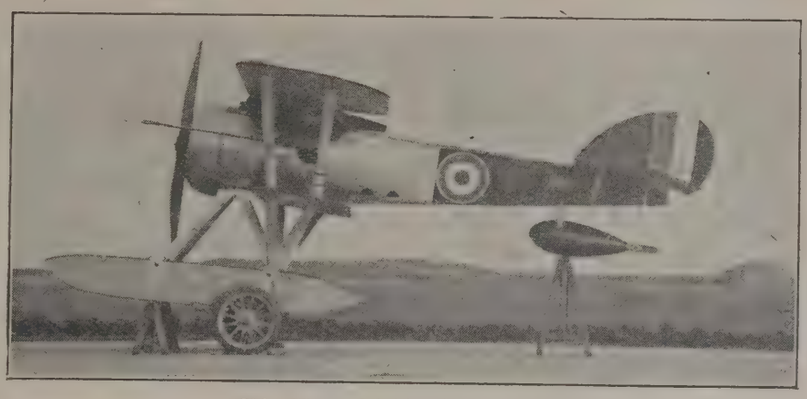
THE WORK OF THE MARINE EXPERIMENTAL AIRCRAFT DEPOT, ISLE OF GRAIN.—(*continued.*)

BY CAPT. W. H. SAYERS, LATE R.A.F.

P.V.9.

Whilst the "Kittens" were under construction, the drawing-office at Port Victoria were instructed to put in hand a single-seater fighter seaplane of the same general type as P.V.2, which should conserve the airworthy qualities of that machine with the excellent view which the type afforded, and should have a really high speed. The machine known as P.V.9 was accordingly designed. The engine in view was the 130-h.p. Clerget, and it was intended to use a high-lift wing and a high loading per sq. ft.

Unfortunately the prejudice against high-lift wings was then at its height, mainly because certain constructors had been instructed to use a particular brand of this type of wing with no information as to the special precautions needed to ensure success, and had turned out machines with very objectionable qualities, and the proposals of the Port Victoria design staff were turned down in this respect and instructions were given to use R.A.F. 15 section, in spite of their protest that this involved a high landing speed and a loss in climb on the limited dimensions prescribed. R.A.F. 15 was accordingly used, and the machine eventually produced was a compromise—forced on the design staff against their own judgment—with a low-lift wing fairly heavily loaded. To keep the loading to even the figure attained the machine had to be considerably enlarged and increased in weight, and although actually the machine gave very good results on tests, a very much better machine could have been built if the prejudices of pilots had not been allowed to influence the design.



Side View of P.V.9 (B.R.1 engine).

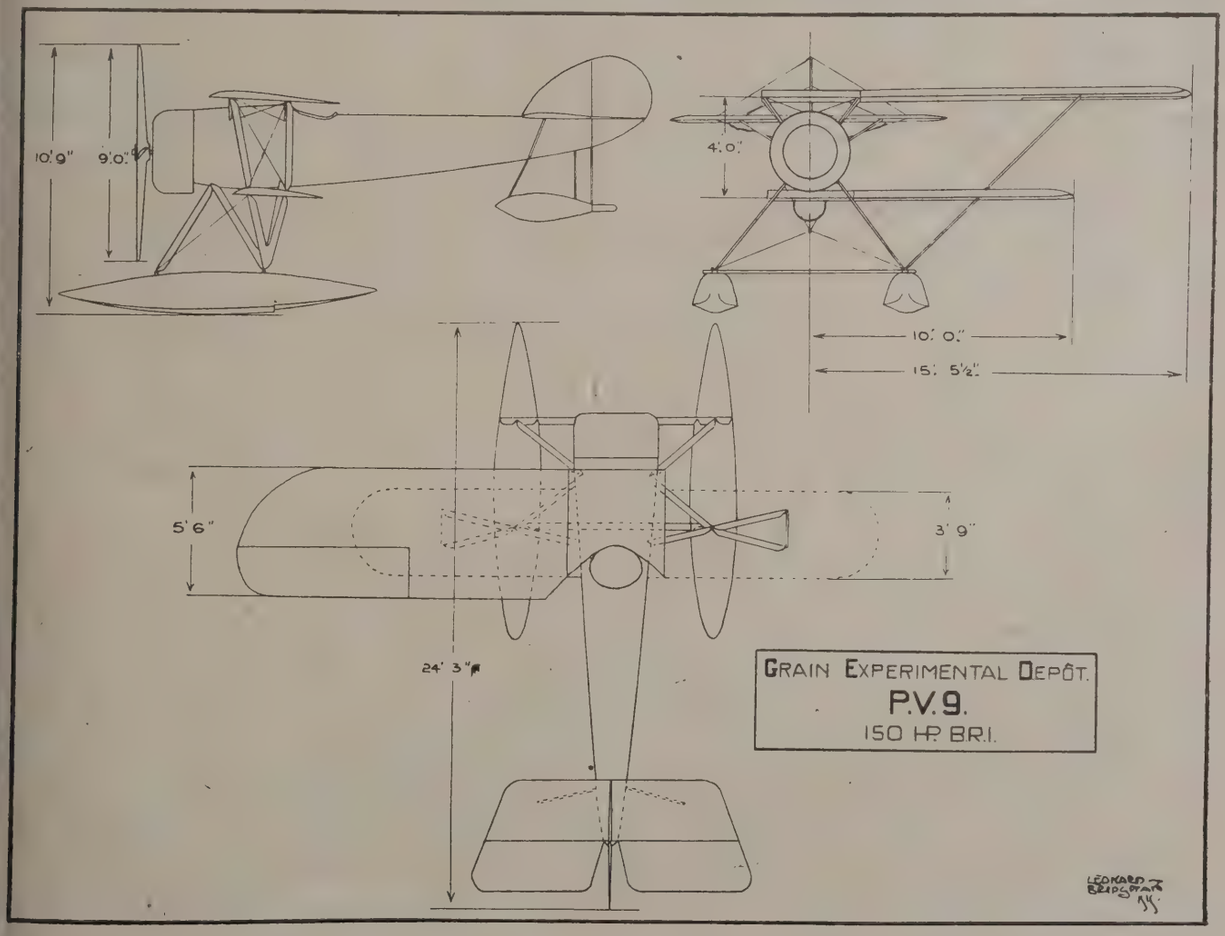
In general arrangement P.V.9 was an enlarged edition of P.V.2. The fuselage was somewhat widened and the fuel tanks were fitted one on each side of the fuselage, between the framework proper and the fairing which continued the line of the engine cowl. A very roomy cockpit was thus provided in a quite small fuselage.

A synchronised Vickers gun and a Lewis firing over the upper plane were fitted.

The wing structure was almost exactly that of P.V.2, except that the larger lower wing was supported by struts from the chassis to both front and rear spar, instead of by one only. Thus the wing struts in side elevation have the form of a V instead of the Y arrangement of P.V.2.

Floats of the Linton Hope type were designed for the machine, but were not in fact built, a pair of stepped pontoon floats being actually fitted.

A B.R.1 engine of 150 h.p. was installed, and the machine was flown for the first time in December, 1917. An argument with a barge delayed trials for some time, and then a series



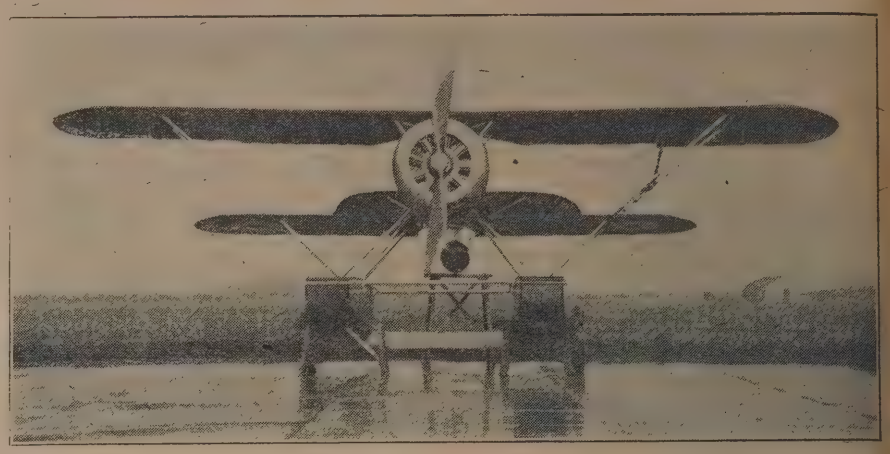
of engine troubles prevented proper trials being carried out till some time in the middle of 1918.

The airscrew proper to the machine suffered in the affair with the barge, and the tests were finally made with an airscrew from a much lighter and faster land scout. On the climb this propeller was highly inefficient, held the engine revs. down, and knocked some three to four thousand feet off the ceiling.

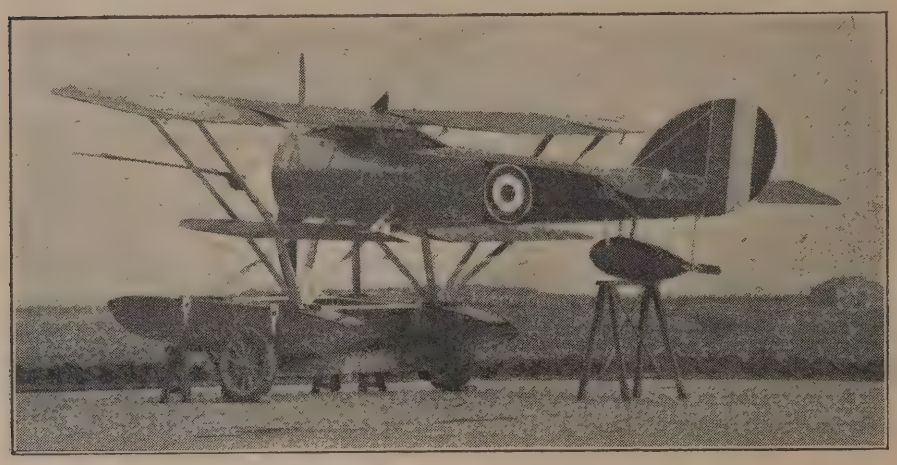
The report of the trials states that it was the best seaplane scout produced till that date, but that it fulfilled no known Service need. It was some little time later that the Brandenburg monoplanes began to take toll of our big flying-boats.

Specification.

Type of machine .....Seaplane scout.
Name or type number of machine...
.....P.V.9.
Purpose for which intended .....
Fighter escort.



Front View of P.V.9.



Three-quarter Rear View of P.V.9.

Span .....
top, 30 ft. 11 in.; bottom, 20 ft. 1 in.
Gap .....4 ft.
Overall length .....25 ft. 2 in.
Maximum height .....9 ft.
Chord...top, 5 ft. 6 in.; bottom, 3 ft. 9 in.
Total surface of wings .....227 sq. ft.
Span of tail .... 11 ft. 6 in.
Engine type and h.p. .....150-h.p. B.R.1.
Weight of machine empty .....1,404 lb.
Disposable load apart from fuel ...300 lb.
Total weight of machine loaded.....
...1,965 lb.
Load per sq. ft. .....8.6 lb.
Weight per h.p. .....13,1 lb.
Tank capacity in gallons .....
.....petrol, 34.5; oil, 6.

Performance—
Speed at 2,000 ft. .....96 knots.
Speed at 10,000 ft. .....*86.3 knots.
Landing speed .....50 knots.
Climb—
To 10,000 ft. .....27 min. 20 sec.
* Great decrease in speed due to engine dropping revs. over 2,000 ft.

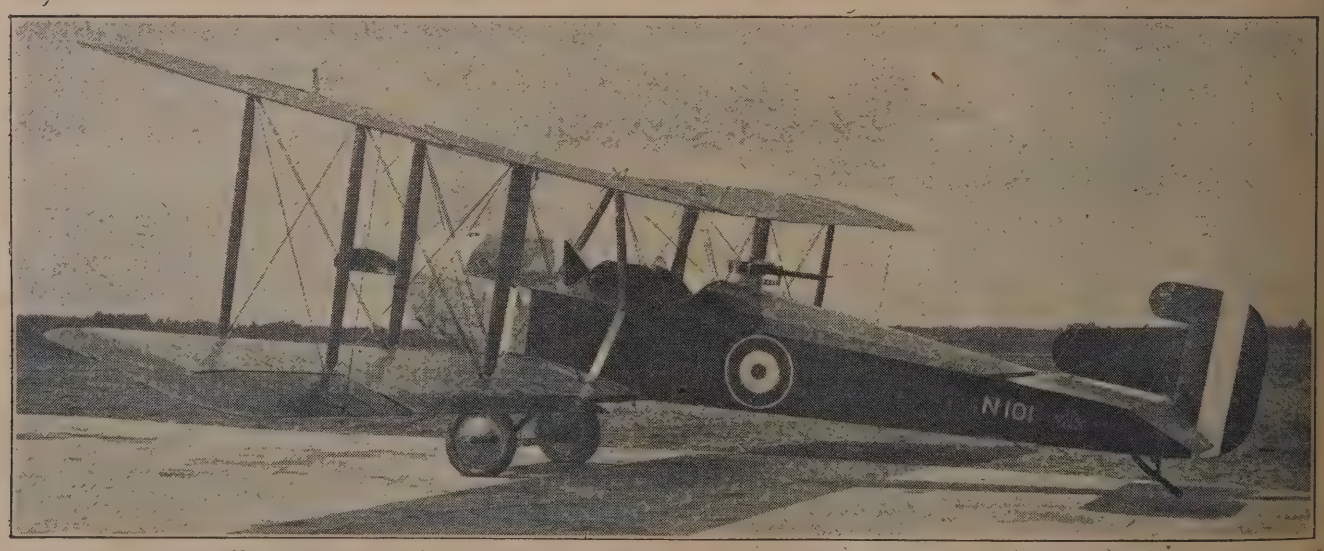
The Grain Griffin.

Whilst P.V.9 was under construction a 200-h.p. Sopwith single-seater bomber was delivered to Grain with instructions to convert it into a two-seater reconnaissance machine, fitted with folding wings and wireless, for use from aeroplane ships. It was impossible to fly the machine as no radiator was delivered, and the job was to be considered urgent.

Test figures—obtained at Martlesham—were supplied showing an astonishing speed and climb with a very big bomb load, and it was wondered why the



The original Grain "Griffin," with Sunbeam "Arab" engine.



Three-quarter Rear View of the Grain "Griffin," fitted with 230 h.p. B.R.2 engine.



GWYNNES
LIMITED.

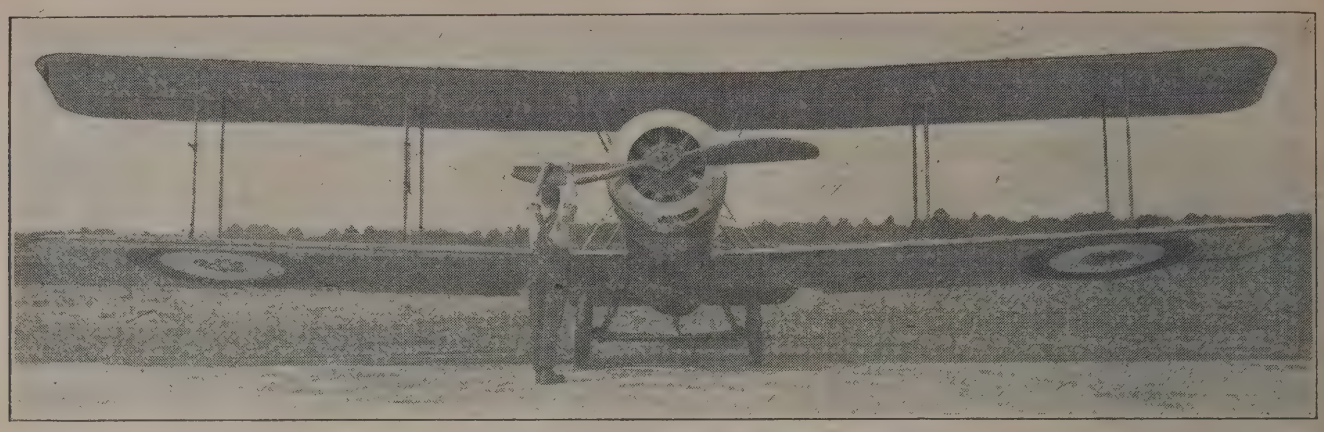
CONTRACTORS TO H.M. GOVERNMENT

MANUFACTURERS AND SOLE LICENSEES IN THE BRITISH EMPIRE

"CLERGET" PATENT AERO ENGINES

ENGINEERS, LONDON.

"GWYNNE, LONDON." "HAMMERSMITH 1910."



Front View of the B.R.-engined "Gri ffin."

machine was not used for its designed purpose. Bombers were in demand in those days.

Naturally enough it was found that the conversion was full of snags. The fuselage was too narrow to carry the wireless equipment with comfort, the interplane struts were just in the place to foul the tail plane when folded, and generally the machine indicated that she had no intention of suffering the proposed transformation.

The drawing-office reported that it would be quicker to design a new machine based on the bomber and build that than to carry out the alterations, and that even if altered the job would be but a botch.

They were allowed to design the machine concurrently with making the alterations to the original.

The latter involved reducing the span to bring the struts clear of the tail plane when folded, and when finally tested the altered machine had lost most of its performance, mainly because of the reduced surface involved. The test showed, however, why the machine had been turned down as it originally stood. It was impossible to produce any effect on her by means of the ailerons.

However, six machines of the modified type had been ordered from Port Victoria, and had already been christened as "Griffins," and work was put in hand from the new set of drawings. The wing spar bays had been rearranged so that struts cleared the tail without reducing the span, the fuselage had been widened, and a generally satisfactory job resulted.

A set of wings to the new drawings was rushed through and fitted to the original fuselage, together with a wheel aileron control instead of a stick, and on test the modified machine was found to have regained the lost performance to a great extent.

Lateral control was still deficient, but was adequately secured by fitting balanced ailerons.

The original machines were fitted with 200-h.p. Sunbeam "Arab" engines, but later editions carried 230-h.p. B.R.2 engines.

SPECIFICATION.

Type of machine	Folding aeroplane.
Name or type number of machine	Grain Griffin.
Purpose for which intended	Fleet reconnaissance.
Span	42 ft. 6 in.
Overall length	27 ft. 3 in.
Maximum height	10 ft. 6 in.
Chord	6 ft. 3 in.
Total surface of wings	506 sq. ft.
Engine type and h.p.	Arab Sunbeam, 207 h.p.
Weight of machine empty	1,911 lb.
Disposable load apart from fuel	538 lb.
Total weight of machine loaded	2,858 lb.
Load per sq. ft.	5.65 lb.
Weight per h.p.	13.8 lb.
Tank capacity in gallons	petrol, 50; oil, 5
PERFORMANCE—	
Speed at 5,000 ft	100 knots.
Speed at 10,000 ft.	87.5 knots.
Climb—	
To 10,000 ft.	12 min.

So far this completes the tale of Grain-built experimental machines. Whether Grain will ever again produce machines of original design seems doubtful. During the war it did interesting work, and buried in the archives of the establishment there is much useful practical information as to the design of seaplanes.

That this experience was never put to any serious use must be laid at the door of that lack of any enduring policy which has always dogged the naval side of the British Air Service.

(To be continued.)

A FRENCH NOVELTY.

It is now possible to publish a brief outline of the Damblanc and Lacoin "Alerion"—a kind of hybrid between an aeroplane and a helicopter, to which a guarded reference was made in THE AEROPLANE some months ago.

In its general lay-out the machine is a monoplane of the normal type with the wings replaced by a pair of four-bladed rotating lifting screws, with their axes lying on a line passing through the centre of gravity of the machine. These are carried from the fuselage in such a way that the inclination of their vertical axes may be altered at will by the pilot.

The angle of each blade can also be varied at will, whilst the blades are in motion, not in the manner usually associated with the variable pitch propeller but according to the exact position of the blade at any time.

Thus each blade as it passes a determined point in its path may have its incidence increased to a definite extent, and then reduced again. In this way each blade as it enters into, say, the port half of the circle in which it rotates gains an increased angle of attack and effectively the port half of that particular screw has a greater lift than the starboard half, and therefore the effective centre of lift of that screw moves towards the port side and the machine tends to bank up accordingly on that side. This both lateral and longitudinal control can be effected.

In addition to this control the machine is fitted with elevators and a rudder at the tail as in the normal aeroplane.

The four blades of each screw are built in the manner of the usual aeroplane wing, with wooden framework and fabric covering. Two engines are fitted, coupled together and clutches are fitted between the engines and the screws, or rotating wings as they properly are called.

Climbing is to be achieved by the direct lift from the rotating wings, and horizontal motion is gained by inclining the axis of the rotating wings forward, thus producing a forward component of the thrust.

Descent may be made either under power, by throttling the engines till the thrust is less than the weight, or with engines off, and with the incidence of each blade of the rotary wings reversed, when descent occurs in a manner clearly explained by Mr. M. A. S. Riach in THE AEROPLANE of March 19th, 1919. This descent may be either vertical or combined with a motion of translation according to the inclination of the axes of the rotating wings.

It is stated that the experimental machine—which is to be tested next month—has been built to the order of the French Government and that they have advanced a large sum to defray the cost of the experiment.

THE ZENITH CARBURETTER.

The popularity of the Zenith carburetter is, of course, known to every motorist, but the extent of it is perhaps hardly realised. In the issue of Nov. 1st the "Autocar" gives a list of 129 different types of cars manufactured in the United Kingdom. No fewer than 78 of these are fitted with Zenith carburetters. Of the remaining 51 types, seven use the manufacturer's own carburetter, nine do not specify a type of carburetter, and the remaining 35 types of cars divide amongst them 10 other makes of carburetters on the market. The figures tell their own story of the popularity of the Zenith.

TRADE MARK



THE FAMOUS AIRSHIP R 33 ON HER TRIAL TRIP.

— RIGID AIRSHIPS FOR WAR, MAIL & PASSENGER SERVICE. —

SIR W. G. ARMSTRONG, WHITWORTH & CO., Ltd.,

NEWCASTLE-UPON-TYNE. **Works: Barlow, near Selby, Yorks**

LONDON OFFICE: 8, GREAT GEORGE ST., WESTMINSTER, S.W.1.

TELEGRAMS: "ZIGZAG PARL, LONDON." TELEPHONE: VICTORIA 4010.

The "Bristol" Aeroplanes

"BRITAIN'S PIONEER AIRCRAFT CONSTRUCTORS."



The "BRISTOL" Tourer has proved a great success as a high grade, speedy and dependable machine for the conveyance of passengers or cargo, whilst the "BRISTOL" mark is a guarantee of sound design and excellence of construction. Its principal dimensions and performances are:

Wing Span	39 ft. 3 in.
Overall Length	25 ft. 9 in.
Maximum Height	10 ft. 1 in.
Petrol Capacity	70 gals.
Best Speed	125 m.p.h.
Cruising Speed	90 m.p.h.
Range	560 miles.

Further particulars of this and other "BRISTOL" machines will be supplied on application.

THE

British & Colonial Aeroplane Co., Ltd.

FILTON — BRISTOL.

Telegrams: "Aviation, Bristol." Codes: A.1. A B.C. & Moreing. Telephone: 3906 Bristol.

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

AMONGST THE ACCESSORIES AT OLYMPIA.

Amongst the accessories on view at the Olympia Show are many which have a direct or indirect interest to the Aircraft Industry, either because they are of actual use in that Industry, or because they are the products of firms that have contributed to the development of that Industry.

Owing to the extreme difficulty of seeing anything beyond the back of other people's necks at Olympia, the following notes on such articles are by no means complete.

Brown Bros.—At Stand 236 Messrs. Brown Bros. exhibited a colossal number of fitments of all kinds calculated to assist the automobilist in his pastime. Many of these are of direct use for purposes aeronautical, and a number of them—such as the Glow Warm Gloves, the Boyce lightning valve connector, and the Tapp petrol pourer—have been described in these pages.

The Brolt dynamo lighting and starting outfit handled by this firm is an extremely interesting affair, and it should not be impossible to apply it almost unmodified to the lighting of commercial aircraft.

Serck Radiators, Ltd.—This firm—late the Motor Radiators Manufacturing Company—of Warwick Road, Birmingham, are well known as manufacturers of radiators for aircraft, and exhibited on Stand 338 a very fine selection of radiators for cars.

H. M. Hobson, Ltd.—Claudel Hobson carburetters admittedly did their "bit" towards winning the war in the air, and since the war they have assisted at both the aeroplanes and the airships crossing of the Atlantic, and have to their credit that they vaporised upon the machines taking the first three places in the "Aerial Derby" of 1919. Samples of carburetters for all purposes, together with several varieties of Hobson Plugs, were shown by H. M. Hobson, Ltd., 29, Vauxhall Bridge Road, S.W., on Stand No. 207.

Barimar, Ltd.—The art of welding has had many applications in the realms of aeronautical engineering—and amongst welders Barimars, Ltd., undoubtedly hold a premier place. On Stand 296, those who are interested in welding—be it merely regarded as a mysterious process capable of inexplicable miracles or as a practicable method of saving money—found very much to instruct them. Barimars are amongst the firms who think, and their habits engender thought.

In addition to exhibitions of apparently impossible repairs accomplished by welding, they exhibited examples of machining and sheet metal work of the highest class.

S. Smith and Son (M.A.), Ltd.—Smith and Sons have a name dating to well before the birth of either motoring or aviation as the makers of instruments of precision. When it is considered that a very poor watch is accurate to 0.07 of one per cent., and that one of Messrs. Smith's watches in the possession of the present writer has maintained a mean accuracy thirty times greater than this for fourteen consecutive years, one feels that a Smith instrument may be considered reasonably reliable.

On Stand 345 a full range of the appliances developed by the motor accessories branch of this firm were shown.

The K.L.G. Plug—by no means a rare attachment to aero engines—is handled by this firm, and takes a high place amongst the benefits conferred upon motoring by its younger sister, aviation.

The firm also specialise in instruments for aviation purposes—though these were in little evidence on this occasion.

C. C. Wakefield and Co., Ltd.—Wakefield Lubricants of one brand or another—more particularly "Castrol R"—did their fair share towards bearing the heat and burden of war in the air. All the lines of oil and grease marketed by this firm were displayed upon Stand No. 290.

Benton and Stone, Ltd.—The Enots cork disc seated petrol valve is one of those accessories developed in response to the war-time needs of aircraft, and which is now available for use in more extensive fields. On Stand No. 266 these and numerous other products of Messrs. Benton and Stone, mostly more directly of automobile import, were found in great variety.

Auster, Ltd.—Auster Triplex windscreens have in the past added to the comfort and the security of many a pilot and observer, and will continue so to do till flying as we know it is a thing of the past. Auster screens of many varieties adapted to the more mundane pursuit of motoring, and displaying the excellence of workmanship and finish which have always characterised their aero screens, were shown on Stand 293.

Leo Ripault.—In the early days of flying, when the Gnôme engine was the engine of every designer's desire, Oleo plugs were the inevitable accompaniment of the satisfaction of that desire. To-day, though the Gnôme is no longer the only engine, Oleo plugs preserve their reputation for excellent service under the most trying conditions. On Messrs. Leo Ripault's stand, No. 353, Oleo plugs suitable for all types of petrol engines were found, together with other accessories of an equally high grade.

R. W. Coan.—When Mr. Coan began to circulate his famous statement, one who had many occasions to grope in the interior of aircraft fuselages was heard to remark that he wished Coan had cast the crankcase of the engines installed therein. Whether Mr. Coan's habits have or have not been responsible for the general decrease in the amount of filth usually associated with this part of the internal combustion engine's anatomy or not, there can be little doubt that he does know how to cast aluminium, and an inspection of Stand No. 325 demonstrated the fact.

The Vacuum Oil Co., Ltd.—Though petrol is the essential essence of motoring as of flying, these two sports resemble life in that it is their luxuries that make them worth while, and effective lubrication, in one form or another, is the essence of luxury. Thus the products of the Vacuum Oil Co., which are specialised to lubricate all but the human type of mechanism, are of the greatest interest.

Palmer Tyres.—Pneumatic tyres appertain rather to the domain of aerostatics than of aerodynamics, yet many a pilot has cause to thank the qualities of the Palmer tyres which have sustained him in that interval which elapses between the condition of aerodynamic support and an undisturbed motion in a straight line on terra-firma. Palmer cord tyres as applied to the lordly Rolls-Royce or other mere terrestrial vehicle are but a fortified edition of their aero brethren and their shrine at Stand 186 should have been the object of veneration on the part of all ex-quirks.

The British Thomson-Houston Co., Ltd.—Amongst those firms who came to the rescue of the British aero engine industry when an absence of magnetos threatened its extinction the B.T.H. Co. hold an high and honourable place, and one wishes them every success in their endeavours to extract from the motor manufacturing industry an adequate return for the expenses which they must have incurred in developing this branch of their activities. On Stand No. 326 examples of this brand of their wares were exhibited in an extremely attractive form, and those who are interested in the principles of magneto construction found this exhibit worthy of close attention.

PEACEFUL PENETRATION.

The accompanying photograph shows the All-Metal cantilever wing Junker Fokker monoplane adapted to the purpose of peaceful penetration. The cockpit has accommodation for two pilots, and in the enclosed cabin there are comfortable seating arrangements for six passengers. A machine of this type was forced to land by darkness near Dvinsk whilst attempting to fly from Berlin to Moscow and fell into the hands of the Lithuanians.



Junker Fokker Limousine.



GREAT BRITAIN.

THE DEPARTMENT OF CIVIL AVIATION.

A White Paper has been issued by the Air Ministry entitled, "Synopsis of Progress of Work in the Department of Civil Aviation (May 1st, 1919, to Oct. 31st, 1919)."

This can be purchased through any bookseller or directly from H.M. Stationery Office, Kingsway, W.C.2.

The subject of this paper will be dealt with in a future issue of THE AEROPLANE.

CIVIL AERODROMES.

The Air Ministry announced on November 10th that the following list is issued as a supplement to the lists issued on November 8th, 1919, and in addition to or amendment of those previously published :—

LIST E.

(Stations no longer in use by R.A.F.)

These stations have been passed to the Government Property Disposal Board. They will be relinquished as soon as the Government property thereon has been disposed of. In many cases the aerodromes are now under cultivation, but it is probable that the sites still form the best emergency landing grounds in the immediate neighbourhood.

Aerodrome	Nearest Railway Station.	Nearest large Town
Leighterton	Tetbury	Stroud
Lopcombe Corner	Grateley	Salisbury
Rendcombe	Foss Cross	Cirencester
Southport	Hesketh Park	Southport
Turnhouse	Turnhouse	Edinburgh

RAILWAY STATION MARKING.

The Air Ministry announced on Nov. 11th that the following "Notice to Airmen" is issued :—

"The roofs of the following railway Stations are now marked with the name of the place in large white letters :—

REDHILL.—(S.E. and C. Railway.)
TONBRIDGE.—(S.E. and C. Railway.)
ASHFORD.—(S.E. and C. Railway.)
HITCHIN.—(G.N. Railway)."

LOG BOOKS FOR CIVILIAN AVIATION.

The Air Ministry announced on Nov. 14th that, pending the production of aeroplane and engine log books conforming to the International Air Convention, log books of the type used by the Royal Air Force are on sale at 2s. net per copy. These can be purchased through H.M. Stationery Office, Westminster, S.W., or through any bookseller.

Log books conforming more closely to the requirements of the International Air Convention will be placed on sale as soon as possible.

A POSTPONED VISIT.

Major-Gen. Sir F. H. Sykes, G.B.E., K.C.B., C.M.G., has been unavoidably compelled to postpone his visit to America.

THE BERKSHIRE AVIATION CO.

The Berkshire Aviation Co., which came into existence early in May this year, was formed primarily for exhibition and passenger flying, and, in that capacity, has been giving demonstrations in most of the Midland and Southern County towns.

The personnel are all ex-Service people. Mr. J. D. V. Holmes, late R.F.C., served in France with No. 19 Squadron, and in May, 1917, was shot down and taken prisoner, remaining in Germany until repatriation last December.

When demobilised he went into partnership with Mr. Alan Cobham, another ex-R.F.C. Officer, who was three years with the Artillery of the Lahore Division of the Indian Army in France and Flanders, before being transferred to the Royal Flying Corps—in which he was an instructor.

Mr. Fred Holmes, late R.N.A.S., is another partner. He was with Messrs. A. V. Roe and Co. for three years before the war, and accompanied Mr. Raynham in the latter's famous "Daily Mail" seaplane tour round Britain.

The machines used are 110 h.p. Le Rhône Avros, with two passenger seats. So far, they have visited nearly 30 different places, including Oxford, Swindon, Reading, Northampton, Bedford, Leicester, Loughborough, Nottingham, Derby, Stoke-on-Trent, Chesterfield, Leamington Spa, Rugby, Coventry, Shrewsbury, and Kidderminster. During the week ending Nov. 16th they were to fly at Bradford.

The Berkshire Aviation Co. have given flights in conjunction with the "Daily News," "Nottingham Journal" and "Nottingham Evening News," and claim the World's record for any single machine of this type by having carried nearly four thousand passengers this season.

THE CONTINENTAL AIR SERVICES

THE AIRCO SERVICE.

During the past week ending Nov 15th the weather has continued to be unfit for flying. Out of 181 scheduled flights 159 have been accomplished. Twelve have been prevented, and seven interrupted by the weather. Three have been interrupted by mechanical defects.

Date.	Type.	Pilot.	Left Hounslow	Arr. Paris.	Left Paris.	Arr. Hounslow.	Pass.
Nov. 10th	D.H. 4a	Lt. McMullin	12.30 p.m.	Landed Hounslow 12.45 p.m.			Mail 8 bags
Nov. 11th	D.H. 4a	Lt. McMullin	12.35 p.m.	3.00 p m.			1 and Mail
	D.H. 4a	Lt. Campbell-Orde			12 30 p.m.	2 40 p.m.	0
	D.H. 16	Lt. Lindley			12.45 p.m.	Landed Kenley 3 45 p.m.	Mail
Nov. 12th	D H. 9	Lt Lawford	12.45 p.m.	3.14 p.m.			Mail
	D.H. 16	Capt. Baylis	1.00 p.m.	3.30 p.m.			4
	D.H, 4a	Lt. Armstrong			12.30 p.m.	3 30 p.m.	1 and Mail
Nov. 13th	D.H. 4a	Lt. Powell	12.30 p.m.	3.15 p.m.			Mail
Nov. 14th	D.H. 16	Lt. Tebbit	12.30 p.m.	Landed in France			Mail
	D.H. 4a	Lt. McMull'n			12.30 p.m.	2.45 p.m.	1
	D.H. 9	Lt. Lawford			12.30 p.m	2.45 p m.	0
Nov 15th	D.H. 4a	Lt. Campbell-Orde	12.30 p.m,	L'mpne 1.20 p.m.			1 and Mail

On Nov. 10th, 13th, and 15th, no machines started from Paris on account of adverse weather conditions.

On Nov. 11th the D.H.16, which started from Paris, was forced to descend at Kenley owing to petrol shortage.

On Nov. 14th the D.H.16, which started from Hounslow, was forced to descend twenty miles short of Paris owing to thick fog. The mails and parcels were taken into Paris by road.

Each Airco pilot, flying between London and Paris, now carries with him a list of transport agents in towns on the route both in England and France, whose task it is, should a mail-carrying aeroplane have a forced landing in their vicinity, to take every possible step to see that the mail-bags continue upon their journeys with the least possible delay.

On a telephone message from a pilot, stating where he has alighted, the nearest of these agents will pick up the mails by means of a fast motor-cycle and take them to the nearest railway station, where the next through express will be stopped in order to put them on board. If rail connections are not suitable, then the aerial mail will go on its way by road. In the event of an air-mail pilot having to make a compulsory descent in the Channel, the Lympne Air Station, by telephoning to Dover, will be able to send out a relief patrol boat in a few minutes. Both the Airco air-mail machines and the bags containing the mails are fitted with a special flotation gear.

THE HANDLEY PAGE SERVICE.

A machine flew from Paris to London on Nov. 11th with passengers and freight, passing through thick fog when over the Channel. Another Handley Page machine flew from London to Brussels with three passengers, 1,069 lb. of freight, and a large model of a Handley Page aeroplane, which is to be exhibited in the Belgian capital. The machine which left London for Paris returned after several ineffectual attempts to penetrate the fog over the Channel.

On Nov. 12th a machine left Hounslow for Paris at 11.25 a.m. carrying one passenger and 240 lb. freight. A second Handley Page biplane left Hounslow for Brussels at 12.20 p.m. with 1,829 lb. of freight. A machine returned from Brussels, starting at 10.50 a.m. with one passenger. Hounslow was reached at 1.50 p.m.

During the week ending Nov. 12th twenty passengers and 779¾ lb. of freight were carried on the London-Paris service. On several occasions the machine started from Hounslow fully loaded, but had to turn back at the Channel after several ineffective attempts to penetrate low clouds and fog.

During the same period ten passengers and 2,969 lb. of freight were carried on the London-Brussels air service.

On Nov. 14th the machines carried out their scheduled flights despite very severe snowstorms. Lieut. MacIntosh flew from Paris to London with passengers and freight in 3 hr. 28 min., and Lieut. Hope arrived from Brussels after a journey of 3 hr. 15 min.

Since the restrictions on the carrying of goods to Belgium have been removed large quantities of freight have been carried, including women's dress, crepe de chine tea-gowns, boudoir caps, feathers and furs.

The unique view of the Flanders battlefields which is enjoyed by travellers on the London-Brussels air service has resulted in many passengers making the journey in order to view the Ypres salient, the shell-scarred area of the Menin Road, the battered town of Menin, and the picturesque cities of Ghent and Bruges.

As soon as Customs offices have been erected Cricklewood Aerodrome will be the departure and arrival centre for the Handley Page aeroplanes carrying out air services between London, Paris, and Brussels. Searchlights and flares have been installed for night-flying.

BRIGHTON.

The Rev. S. Stanley Shergold, describing in a sermon how Sunday is spent in Brighton, said :—

"There is an enormous amount of absolutely unnecessary and unprofitable labour which is of great detriment to the bodies and souls of our fellow townsmen."

Mr. Shergold went on to allude to what he described as the prostitution of the day for great gain by panderers to the taste of the public. There was an aeroplane company, with a local aerodrome, which regarded Sunday as the day par excellence for joy-rides.

It might be suggested that Mr. Shergold's habit of prostituting the same day to pander to the public's partiality for piffling platitude of the above character has also the incentive of gain—though one must infer that his gains are not great.

The Rest Day Association is appealing to the East Sussex County Council to stop the Sunday flying at West Blatchington, on the ground that it constitutes "an affront to the religious feelings of the people."

BROOKLANDS.

The manufacturers of the A.B.C. aeronautical engines are Walton Motors, Ltd., and not the Walton Motor Car Co., as erroneously stated in last week's issue of THE AEROPLANE.

EDINBURGH.

On Oct. 25th Aitken, Melrose and Co., Ltd., of Forth Street, Edinburgh, delivered supplies of tea to Dundee firms by air. The machine, an Avro biplane named "The Advertiser," was loaded at Turnhouse Aerodrome. The pilot was one Lieut. Jones, and the flight to Lochee Park, Dundee, was made in 30 mins.

Lord Provost Sir William Don, the town clerk, and magistrates of Dundee were present when the aeroplane arrived, and each was presented with a casket of tea to commemorate the event. The remainder of the tea was delivered to the local agents by motor-cars.

HULL.

The North Sea Aerial and General Transport, Ltd., has in the last few months flown machines between London and Glasgow, Liverpool, Leeds and Hull, and given displays at Scarborough and Amsterdam. The company has also carried goods and passengers between Hull and the Continent.

In the last three months over 400 successful flights have been made with a total approximate mileage of 12,000 miles. Just short of 2,000 passengers were carried, and over 12,000 lb. of goods. This work was performed without a single accident of any sort either to passengers or machines. The machines used were of the Blackburn "Kangaroo" commercial type.

LONDON.

Vickers, Ltd., write that during the past summer they have undertaken certain commercial services, in particular a service of three or four machines which visited some of the principal towns in England.

The firm think, therefore, that the position is more hopeful than would appear at first sight. An interest has been created and the public is really only waiting for practical services to be initiated between points carefully selected from the point of view of aviation.

The heavy depreciation of rolling-stock, the shortage of shipping, and the scarcity of motor transport, caused principally through the exigencies of the war, are all in favour of the early development of civil aviation. Aircraft manufacturers are faced with the task of converting the impetus they received during the war into a healthy peace industry.

The firm expects that several years will elapse before the very best types of machines have been evolved, which will require both scientific study and practical experience, and therefore during this period the various works will of necessity not be producing at their maximum capacity.

The firm have also to examine into the correct relation of the aeroplane and the airship. In view of these facts they are directing a proportion of their energies to other kinds of manufactures, although they are in the fortunate position of having a large contract for machines recently received from China.



At the E.L.T.A.—The Queen-Mother of Holland visiting the Vickers Stand at the E.L.T.A. at Amsterdam.

HOUNSLOW.—A Mr. Willars Peterson was a passenger on the belated Cunarder "Maurefania," and was due in Copenhagen before the liner reached England. He sent a wireless message while in mid-Atlantic to his representative in London to arrange for an aeroplane to convey him to Denmark. The representative communicated with the Lep Aerial Travel Bureau, who arranged with Lieut.-Col. G. L. P. Henderson, M.C., A.F.C., to make the flight.

Mr. Petersen arrived in London on the night of Nov. 10th and was introduced to Col. Henderson, and it was arranged that a start should be made at 6 o'clock on the next morning.

They started on the Armstrong-Whitworth machine belonging to Col. Henderson on Nov. 11th for Copenhagen, but a landing had to be made at Hamburg in the evening owing to a snowstorm.

On November 15th Lieutenant Lindley, piloting an Airco D.H.9a, left Hounslow at 12 noon with one passerger *en route* for Brussels, but owing to extremely adverse weather conditions was compelled to alight at Lympne.

NORTHOLT.—Miss McMaugh, an Australian nurse, after only a month's training, successfully passed her tests at the Central Aircraft Company's Aerodrome at Northolt on Nov. 15th, and received the Royal Aero Club's pilot's certificate. She flew a Centaur IV machine, designed and constructed by the Central Aircraft Company.

Miss McMaugh has been working as a Red Cross nurse in France, attached to the A.I.F. It is claimed that she is the first Australian woman to take the certificate, and the first woman in England to become a pilot since the outbreak of war.

SHEFFIELD.

A correspondent to the "Yorkshire Observer" of Nov. 7th writes :—

"The rumour that two of Sheffield's largest engineering

The Alliance
Aeroplane Company Ltd.

CONTRACTORS
TO
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Air Board.

Registered Offices:
45, EAST CASTLE ST.
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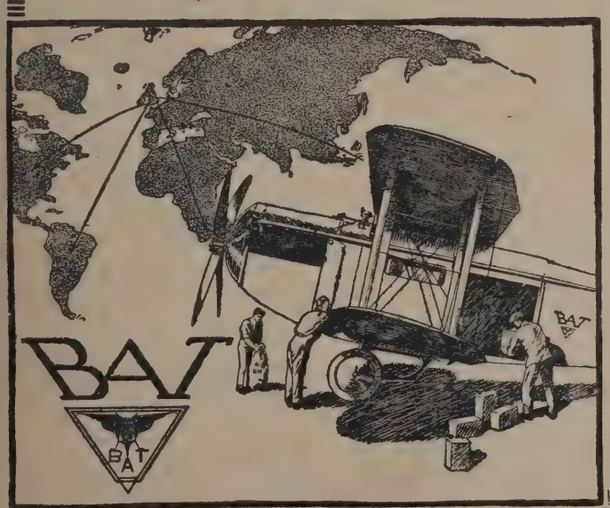
NOEL ROAD
ACTON.

Round the world by Air

is mainly a question of organisation and *choice of flying stock*. As to the second factor, the B.A.T. Company can be of unusual assistance.

For instance, we are the first people out with a purely commercial model (not a modified war type)—the B.A.T., F.K.26—the machine with the largest cargo space and load capacity for its overall size and power yet produced.

Here are some interesting points concerning F.K.26:—



ENGINE:—Rolls-Royce Eagle VIII.

SPEED:—45-120 m.p.h.

CABIN:—Is clear of any transverse cross bracings or other obstruction, and measures 8 ft. by 3 ft. 3 ins. by 6 ft.—this in a machine of only 33 ft. overall length. Direct entry off ground through ordinary door.

LOAD:—With 600 mile range of fuel—2,000 lbs.

FUEL COST AT FULL LOAD:—7½ pence per mile.

CHASSIS:—A sturdy job, sprung by an unique combination of oleo and rubber shock absorbers.

TAIL:—Can be trimmed in flight from pilot's seat—steering and practically unbreakable tail skid.

GENERAL CONSTRUCTION:—Straightforward—simple to repair and recondition.

A series of these machines is in production. Governments and prospective owners desiring a fleet of these machines—or a single one—are invited to forward their enquiries.

Complete particulars on application to:—

The BRITISH AERIAL TRANSPORT CO. LTD.
38, CONDUIT STREET, LONDON W. 1.



Miss H. McMaugh, who recently took her certificate at the Central Aircraft Co.'s School at Northolt.

firms had been negotiating for the purchase of the Coal Aston Aerodrome is supported by the latest development.

The Corporation, it is authentically stated, has been asked by the Air Ministry if it is prepared to take over the aerodrome as a municipal aerodrome for the city.

"The Development Committee urges that the retention of the aerodrome is of the utmost importance, and has decided to call a conference of local manufacturers to consider the matter, in conjunction with the question of promoting a regular air service to and from Sheffield."

WESTON-SUPER-MARE.

The Urban District Council, advised by the Sands Committee, have refused a renewal of flying rights from the sands for next year to A. V. Roe and Co., Ltd., and a similar concession to the Warwick Aviation Co.

More than 3,000 passengers were carried by A. V. Roe and Co., Ltd., in the past summer. The Golf Club object to the flying on account of the damage done by crowds, etc. Certain residents also object to the aeroplanes flying over their houses. It is said that there is a general desire on the part of the public for a continuance of the flying, but the Council is reactionary and unenlightened.

SOUTH AFRICA.

Mention was made of the amalgamation of two aeronautical companies in the Nov. 5th issue of THE AEROPLANE. Further details of the officers in the new company have now been obtained.

One of the Chiefs of South African Aerial Transports, Ltd., is Colonel R. S. Armes, C.M.G. Latterly, he was an Air Council representative in the British Section of the Supreme War Council at Versailles, and a Chief Staff Officer in the Department of the Inspector-General, R.A.F.

Col. Armes has passed through the Staff College at Camberley and the School of Economics, London University. Since 1914 he has been a Company Commander, a Staff Officer at Headquarters, 2nd Army, on the Staff of Air Vice-Marshal (then Colonel) Sir J. M. Salmond, and in the Directorate of Military Aeronautics.

Major Allister Miller, D.S.O., is another of the Chiefs. He made the first cross-country flights in South Africa in a recruiting campaign for the R.F.C. On his return to England, Major Miller was selected as an officer in the Independent Force, fighting squadron, and shortly before the Armistice was flying a Sopwith "Snipe" machine.

Major F. W. Honnet joined the R.F.C. in 1915, graduated as a pilot in Jan., 1916, and proceeded to France with 24th Squadron. He afterwards became a Flight Commander, a Brigade Fighting Instructor, and a Home Defence Squadron Commander. It is claimed that Major Honnet was the first pilot to fly a Scout machine (a "Camel") at night. At Stonehenge he underwent a special Navigation Course, with a view to pioneering on the Cape to Cairo route, but owing to ill-health he had to give up the project.

Major W. E. Young, D.F.C., served as an observer and pilot in the R.F.C. on the Western Front. He commanded No. 1 Squadron in France, and, after the Armistice, a Handley Page Squadron employed on an Aerial Mail Service between Boulogne and Cologne.

Lieut. C. R. Thompson, D.F.C., was one of Major Miller's pupils.

Lieut. L. E. Rutherford was also one of Major Miller's pupils, and was for two years a flying instructor in the R.F.C. and R.A.F.

Capt. C. G. Ross, D.F.C., was gazetted Flight Commander in 1918. He was awarded the D.F.C., bar, and Croix de Guerre (Belge), for services on the Western Front.

The following is extracted from the Johannesburg "Star" of Oct. 16th, and relates to information issued by South African Aerial Transports, Ltd. :—

"The circular is something amusing when it sets out to explain 'airisms' for the 'benefit of the uninitiated'—quite solemnly; and quotes five of them: 'Flip,' 'ceiling,' 'stunts,' 'joy-stick,' taxi-ing.'

"I hereby add to the joy-list—it seems so inadequate for instruction or amusement :—

"To suffer from a vertical gust; or, to get the wind up; to have a dud day; to be a Quirk or Hun; to have one's tail up; to hear from old 'Boom'; to have cold feet; to zoom; to lose a prop.; to swing the lead (applicable to A.M.'s only); to call a chap 'old bean' (the password of the Corps!).

"These are but random additions; the full slang dictionary is too long; and some of it is uninkable!"

THE ARGENTINE.

Major S. G. Kingsley is the representative of Aircraft Transport and Travel, Ltd., in the Argentine. The following information is extracted from an article written by him which appeared in the Buenos Aires "Standard" of July 25th :—

The De Havilland biplane which Major Kingsley has taken out to Uruguay is a demonstration machine, with which he hopes to familiarise the country with the idea of utilising the aeroplane as a time-saving and comfort-giving device, to enter into the everyday lives of the inhabitants and increase their business. The first aircraft company to start in the country on properly organised lines will find a very profitable field to develop.

The routes that such a service would cover are frequently visited by cattle buyers and business men from Montevideo. The towns are situated in fertile districts, the development of which are seriously retarded by the lack of adequate communication. After heavy rains it is impossible now to get from one town to another, owing to the flooding of the rivers and the bad state of the roads.

Once aerial transport is established in Uruguay, it will be possible to travel from Montevideo to any point in the Republic, transact business and arrive back in the capital within the day. It will likewise be possible to write a letter in the morning to a client in any part of the country, give him several hours in which to answer it, and receive a reply before the closing hour of the business houses. A buyer of cattle will be able to visit four live-stock breeding centres or fairs in the time it now takes to visit one : in other words, one man will do the work now being done by four.

On July 15th Major Kingsley flew from Buenos Aires to Cordoba. He previously sent a telegram asking that the landing ground might be marked out, but the telegram arrived one hour after Major Kingsley had alighted safely on very bad ground.

On the following day he decided to make an ascent in order to find a spot better fitted for a temporary flying-ground. The race track was chosen, and Major Kingsley was informed that the ground was hard for its whole length. Whilst taking off the machine ran on to a soft patch of loose sand. The left wheel buried itself up to the axle. The machine swerved and ran into a wire fence. Slight damage was caused, but it was not expected that it would take long to put right.

Five more De Havilland machines were expected from England at the beginning of September. One a D.H.16, with 375 h.p. Rolls-Royce engine, and the other four, two-seater biplanes of a light type.

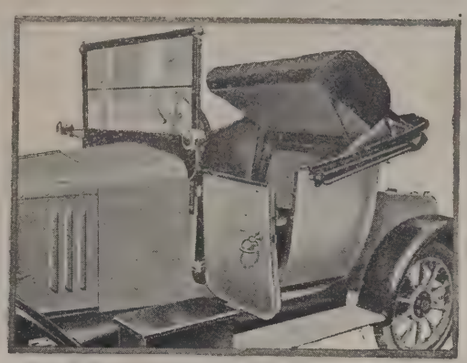
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DENMARK.

The Danish correspondent of THE AEROPLANE writes :—

GERMAN DESIGNS.

After the landing last autumn in a Danish harbour of a modern Brandenburg sea-biplane, from which the monoplane edition was derived, the Royal Dockyard at Copenhagen built a copy. A 160-h.p. Benz-engined Brandenburg sea-monoplane was also bought from Germany after the Armistice.—HI.

FRANCE.

THE PARIS-MELBOURNE FLIGHTS.

M. Poulet and his mechanic, Benoit, reached Karachi on Nov. 13th after an adventurous journey. They landed en route, and were promptly attacked by natives, who mistook them for "devils." They were forced to use arms in self-defence. —No further news has arrived as to their later movements.

LIEUT. CASALE IN NEW WORK.

Lieut. Casale has left the Nieuport firm and is going to fly on a Breguet limousine biplane to Alexandria, where he intends to open an aviation business.

THE ELECTIONS.

M. Louis Breguet is standing for the Chambre des Deputés in the Department du Nord. Capt. Fonck, whose prowess in the war needs no new historian, has been elected by the constituents of his native province in the Vosges. Capt. Heurteaux, who is also well known in official aviation circles, has also been elected.

GERMANY.

A NEW MAIL SERVICE.

According to the "Times" of Nov. 14th, an aeroplane carrying the first aerial post from Berlin to Königsberg has arrived at Königsberg after a flight of six hours.

ANOTHER "BODENSEE."

According to the "Times" of Nov. 17th, the German Aerial Company have placed orders for the construction of a new passenger airship of the Bodensee type.

THE AIRSHIP "BODENSEE."

During the twelve days' suspension of the railways the "Bodensee" is carrying the mails to South Germany and Switzerland. On Nov. 11th the airship left Friedrichshafen for Berlin, carrying twenty-four passengers and 1,760 lb. of mails. After flying some sixty-two miles it encountered a driving snowstorm, but maintained its course, being steered by the compass. The journey of some 437 miles took five hours.

The "Bodensee" left Berlin again on Nov. 12th with a ton of mails and urgent telegrams for the South. The mails by airship reach their destination in six hours, instead of twenty-five or more when sent by the ordinary route.

HOLLAND.

A correspondent writes :—

PROPOSED AERODROMES.

The management of the international aviation enterprise at Amsterdam has chosen, in concurrence with the Aviation Committee of the Deventer Town Council, a site for an aerodrome on the road between Deventer and Zutphen. It is hoped to begin work on the aerodrome, the erection of hangars, etc., in April next.

Lieut. Aviator L. J. M. Hofstee gave a lecture at Deventer, in the course of which he said that the Government is working out a plan for the institution of an international aerodrome (or, as the Dutch say, "a flying harbour") at Amsterdam, which is to cost six or seven million guldens. The Aviation Law, which is in preparation, said the speaker, will appoint as Customs station the first place in the eastern part of Holland which is ready with an aerodrome.

A LONDON-HAGUE AIR SERVICE.

We hear, says the "N. Rott. Courant," that on the 10th of this month a regular flying service will be opened between Holland and London from some grounds belonging to Mr. Kröller lying on the Maaldrift, near Loosduinen, which is a small place quite close to The Hague.—N. C.

This service is to be run by Aircraft Travel and Transport, Ltd., but did not start on Nov. 10th.

SWEDEN.

117 MILES PER HOUR.

Lieut. Maddalena, an Italian aviator, flew from Stockholm to Helsingfors on Nov. 10th in 2 hr. 20 min. The distance is about 440 kilometres.

AN ITALIAN GIFT.

Two Italian seaplanes which were flown to Stockholm have been presented by the Italian to the Swedish Government.

BRIDGE FLYING.

Captain Saunders (late R.N.A.S.), a pilot in the Swedish P.O. Flygkompani, flew a D.H.6 biplane under the arch of a railway bridge near Stockholm on Oct. 27th. Other attempts to fly through this bridge have failed, as the passage is difficult and bordered by high mountains.

It appears that for some days certain Italian aviators had been advertised to fly under the bridge, and as they delayed so long Capt. Saunders proceeded to do it.

The Danish correspondent of THE AEROPLANE writes :—

Capt. Saunders crossed Skuru Sound by Stockholm. The bridge has a span of 57 metres on the water-line, and is built in a semicircular form with a radius of about 30 metres.

SWITZERLAND.

THE AERIAL POST.

The aerial post recently maintained between Zurich, Berne, Lausanne, and Geneva ceased on Nov. 1st last.

THE INJURIES OF CAPT. BRADLEY.

Capt. Eric Bradley, who was previously reported to have crashed at Nyon in an Avro biplane whilst flying with a passenger, was still in hospital at Nyon on Nov. 10th. His injuries have been found to be more serious than was reported at first.

UNITED STATES OF AMERICA.

A Reuter message from Mineola, Long Island, dated Nov. 14th, stated that Vice-Admiral Mark Kerr, in a Handley Page aeroplane, left there shortly after 7 a.m. on that date for a non-stop flight to Chicago. He was carrying eight passengers and 1,500 lb. of express mail matter, and estimated that the flight would take ten hours.

The machine was piloted by Major Brackley, of the R.A.F. It was intended to start before daybreak, but the cold weather had chilled the engine and thus delayed the departure.

A Reuter message from Ohio, dated Nov. 16th, stated that the machine made a forced landing at Mount Jewett, Penna, on that date, and was so badly damaged that new parts will have to be obtained from England.

GOLF AND THE ROYAL AERO CLUB.

The members of the Royal Aero Club held an 18-holes competition over the Addington Club's course on Nov. 18th. The competitors included Lieut.-Col. J. T. C. Moore-Brabazon, Commander W. Briggs, Lieut.-Commander H. E. Perrin (secretary of the Royal Aero Club), Lieut.-Col. F. R. McClean, and Major S. V. Sippe.

OUR CARELESS SECRECY.

Speaking of the war work of Dorman, the celebrated engine makers of Stafford, the "Daily Chronicle," in a short article on the Olympia Motor Show, says : "During the war Messrs. Dorman produced, under the seal of secrecy, the interrupter gear, which enabled machine-guns mounted on an aeroplane to fire between the propeller blades of enemy aircraft."

This is very interesting, but before this wonderful gear was invented, what a time our poor pilots and gunners must have had, relying entirely on their quickness of eye to snipe a Hun through his propeller.

"MANY INVENTIONS."

Sister Hilda McMaugh, the first Australian woman to fly, in an interview to a representative of the "Daily Mail" gave a few experiences of her course of instruction at the Central Aircraft School. She said, "I've only had one mishap; that was yesterday, when a farmer drove a cart right across my landing track and I touched it with a wing. For a moment I though it was all up with the machine, but I pulled the right stick and saved myself. It's all a question of pulling the right stick." One doesn't quite grasp the function of the right stick. Did it withdraw the wing, push the cart out of the way or whisk plucky Miss McMaugh out of the machine into safety by a patent quick-release catapult-cum-parachute device?

ONE USE FOR A WORKSHOP.

A dinner, given on Nov. 11th, at Byfleet, to returned Service men, was held in one of Mr. W. G. Tarrant's aeroplane shops, where the Tarrant triplane was first built. The cloakroom was another shop, and the top half of a wooden fuselage was utilised for placing overcoats, etc., thereon. There appears to be little activity as regards aircraft in this establishment, although the works are large and suitable for construction.—J. F. S.

A CHANGE OF ADDRESS.

The Aeronautical Intelligence Bureau, Ltd., late of Bedford Row, W.C.2, wish it to be noted that they have recently moved into more commodious offices at 50, Jermyn Street, S.W.1, and that in future all communications should be addressed there. The temporary telephone number is Gerrard 1060.

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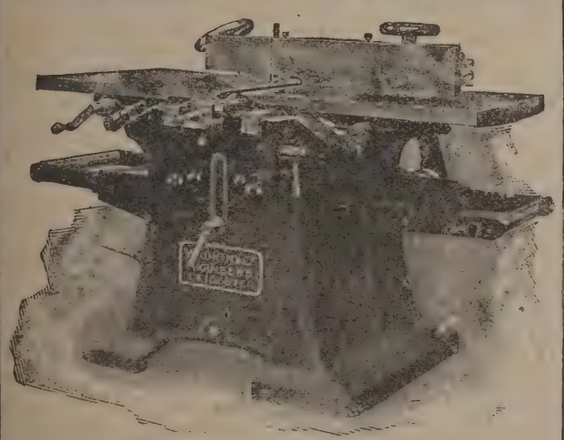
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AIRCRAFT IN PARLIAMENT

The following written answers were given on Nov. 10th :—

ROYAL AIRCRAFT ESTABLISHMENT, FARNBOROUGH (DISCHARGED APPRENTICES).

Viscount WOLMER asked the Under Secretary of State to the Air Ministry whether he is aware that a number of lads are being discharged from the Royal Aircraft Establishment, Farnborough, before they have completed their apprenticeship.

Mr. KELLAWAY : I have been asked to answer this question. No lads of the apprentice class (excepting nine who were dispensed with as unsuitable) have been discharged, and, in spite of the drastic reduction in the personnel of the Royal Aircraft Establishment, I hope that the necessity for discharging any lads of that class will be avoided. 195 lads have been discharged since the Armistice who were originally engaged as office boys, messengers, etc., but who were subsequently drafted into the shops and given an opportunity of learning a trade.

ORDNANCE SURVEY (AERIAL PHOTOGRAPHY).

Sir A. BOSCAWEN, the Parliamentary Secretary to the Board of Agriculture, replying to Lieut.-Col. Moore-Brabazon, said :—The application of aerial photography to peace surveys is being carefully studied by the Ordnance Survey, but at present the process is generally more expensive than normal methods, and less accurate. The Ordnance Survey has full information on the subject, and is in touch with those who carried out air surveys on the Western Front and elsewhere. Some of these officers are now on the Ordnance Survey staff.

* * *

The following oral answer was given on Nov. 11th :—

AIR MINISTRY—MAJOR-GEN. SEELY.

Mr. BILLING : Have the Government received the resignation of the Secretary of State for Air ? Have any reasons been given for it, and, if so, what ? And has the resignation been accepted ?

Mr. BONAR LAW : I would rather not make any statement to the House on this subject. It is possible the hon. Member's information is right. If so, I would rather the statement was made by the Under Secretary for Air himself.

* * *

The following oral answer was given on Nov. 12th :—

AIR SERVICE.

Capt. WEDGWOOD BENN (by Private Notice) asked the Prime Minister whether the Government adheres to its pledge to maintain the unity of the Air Service.

Mr. BONAR LAW : The answer is in the affirmative.

The following written answer was given on Nov. 12th :—

ROYAL AIR FORCE RESERVE.

Lieut.-Col. POWNALL asked the Secretary of State for War whether, in connection with the organisation of the Territorial Force, he will consider the advisability of arrangements being made by which civil aviators can be formed into a branch of the Territorial Force Reserve, in order that their services may be utilised in case of national emergency.

Mr. CHURCHILL : No such proposal has been considered in connection with the organisation of the Territorial Force, but the question of the formation of a Royal Air Force Reserve is at present under consideration.

* * *

The following personal statement was made on Nov. 12th :—

RESIGNATION OF MAJOR-GENERAL SEELY.

Major-Gen. SEELY (speaking from the Front Opposition Bench) : The House generally wishes to know the reason for the retirement of any of its Members from the Ministry and in a very few words I will endeavour to tell the House the reasons which have impelled me to resign the high position which I have hitherto held.

When the Government was first formed the Prime Minister asked me to go to the Air Ministry, and in a curious phrase, as announced officially, to "preside over the Council." It was a curious arrangement in that the right hon. Gentleman opposite (Mr. Churchill) was to hold the seals of both offices as Secretary of State for both War and Air. It had the obvious anomaly that the Admiralty was left out of the business altogether.

But I accepted it because I had a very deep interest in the Air business for a very long time. Indeed, I was charged by Mr. Asquith, then Prime Minister, with the task of being President of the Committee of Imperial Defence, which laid the foundation of our present Air Service. Also we were not then at peace with Germany, and I thought it my duty to take any office in which one could be of service

It involved, obviously, the dangers of dual control. Dual control is a dangerous thing anywhere, and, as my right hon. friend the Secretary of State for War would be the first to admit, it is peculiarly dangerous in the air.

Nevertheless, I undertook the duty gladly, and endeavoured to work it, but it very soon became apparent that the thing would not work, not for any personal reason, but because by actual fact and by statute the only man who can preside over the council is the Secretary of State. He cannot divorce himself from his responsibility, even if he wishes to do so.

All questions such as these, submissions to the Sovereign, memoranda to the Cabinet, dealings with the responsible heads of other Government Departments, where any question of controversy arises, and, above all, on questions of high policy, must be the duty of the Secretary of State, and of him alone.

As soon as this became apparent I informed the Leader of the House, through my noble friend the Member for Chichester (Lord Edmund Talbot) that the arrangement was bound to be inefficient and wasteful and that I would ask for a change. He begged me to wait until after peace was made with Germany. I accordingly did so.

When the Prime Minister returned in July I then put the case before him, and in very precise terms stated that the present arrangement for the reasons I have shortly given, was one which I thought was not in the interests of the State, and, above all, inimical to the interests of the Air Service, and I asked for a change.

The decision was delayed, first owing to the Prime Minister's absence in France, having a much-needed rest, and then owing to the railway strike. The matter came up finally for decision twelve days ago. The Prime Minister treated me with the utmost courtesy and consideration, begged me to reconsider my position, and finally told me that he had decided on the present plan after due consideration and that he did not propose to abandon it.

The only possible course for me to take, as I am sure the House will agree, whoever of the two of us was right, was for me to resign and be no longer responsible for an arrangement which I was convinced was wasteful and inefficient.

There is no personal question involved. There is no personal question between myself and my right hon. friend the Secretary of State for War. If any man could have done two things he could have done, with his boundless industry. I have never met so industrious a man—and with his care for the Air Service as a whole, than whom it has had no better friend. If any man could have done it he would have done it, but the thing is obviously impossible.

The War Office is a whole-time job, as I have reason to know, and the duty of the Secretary of State for Air—this service, with its vast possibilities—is a whole-time job, too. A man cannot be in two places at once, even if he is the Air Minister. The very fact that the offices are distinct, that the Air Ministry is a distinct office, makes it quite impossible for the responsible head of one to be also the responsible head of the other.

Still less is there any personal difficulty in the Air Ministry itself. I can say truly, and I have had some experience of public life, that never has a man been so faithfully served by loyal and devoted servants as I have been in my position by the members of the Air Council, and especially by Sir Hugh Trenchard and General Sykes, whom I think the State is fortunate in having at the head of their respective Departments.

The issue involved is very clear and very definite and involves questions of vast importance. By deciding as the Prime Minister has done that the Air Ministry is to receive its guidance from its responsible head, from a man who can only give a fraction of his time to it, it seems to me that three certain consequences follow.

First of all, because such a man, however industrious, cannot possibly give enough time to enable business to be efficiently conducted, it must mean delay, and delay must mean waste—waste of time, waste of energy, waste of money. Secondly, the fact that the Admiralty is left out of the business must make it difficult to work in with that great Department.

How can the First Lord of the Admiralty appeal to the Air Ministry for a proper allocation of funds and a proper allocation of energy, with the infinite possibilities of air effort in regard to the Navy, when all the time he finds that the man he is addressing is the Secretary of State for War ?

Over and above all, the result of this decision must be that the Air Ministry is condemned definitely to be a subordinate office and an annexe of the War Office, with results, I am sure, inimical to the good of this country. We must be involved in waste of our commercial possibilities. We must be involved in waste of money on a gigantic scale by not taking advantage of the new inventions and of the new power that the air has given us, to enable us to undertake our great and increased responsibilities throughout the world.

If anybody doubts that, let him consider what is the possibility of the air. One aeroplane has saved a war in Arghanistan, and in future aeroplanes may do much more. If it be said, on the plea of economy, that it is wise to combine the offices, then I would say that it is wasteful in the extreme.

We cannot possibly hope to maintain our position throughout the world, unless we use science to the utmost, and especially the science of the air. I could no longer consent to agree to a plan which I thought would have these fatal results, and I so told the Prime Minister.

Believing as I do that the result must be a loss of millions of money and thousands of lives, I asked him to relieve me of that duty. He may say that he knows better. He may say that this is the old dispute between brigade headquarters and general headquarters, and that from that there can be no appeal. In that case there is no appeal, but here there is an appeal. There is an appeal to this House, and to this House, accordingly, I appeal.

Lord HUGH CECIL : In view of the importance of the statement to which we have just listened from the right hon. gentleman, shall we be given an opportunity of discussing the statement, and the circumstances in which it has arisen, and, if so, on what day ?

Mr. BONAR LAW : It is not usual, I think, for a Member of the Government to say anything in reply to a personal statement such as my right hon. friend has made, and I should not have done so except for the noble lord's intervention. Since I am on my feet, however, I desire to say, on behalf of the Government, how much we regret that our right hon. friend has found it necessary to resign, but at the same time to say that it is simply a question of difference of opinion; he takes one view and we take another.

As regards time for discussion, we shall, of course, follow the wishes of the House. I cannot name a day, but if there is a desire for such discussion we shall be very glad to afford the opportunity for it.

Mr. BILLING : May I ask whether the right hon. gentleman the Leader of the House can say if it is the policy of the Government to appoint another Air Minister ?

GENERAL SYKES' MISSION.

Major-General the Right Hon. J. E. B. Seely, C.B., C.M.G., D.S.O., M.P., gave a farewell lunch at the House of Commons on Nov. 12th, to Major-General Sir F. H. Sykes, C.B.E., K.C.B., C.M.G., who was about to leave the country on a mission to the United States. Supporting him were the American Ambassador and Air-Marshal Sir. H. M. Trenchard, Bart., K.C.B., D.S.O.

Proposing the health of the American Ambassador, General Seely said General Sykes was about to go to America at the invitation of Viscount Grey in order to confer with the United States people in aviation matters.

The American Ambassador, in acknowledging the toast, said that he rejoiced in the fact that this mission opened up a field of work and of labour which we entered upon together, and in which our co-operation, he thought, might be taken as assured. It was a very generous thing that the British Government should be willing to transfer to the United States one of its best, the largest, and most improved airships.

General Sykes said he went to America to try to help that co-operation which they had met with in France in the air, both actively and in Paris, in connection with the Conference.

Lord Londonderry said that whatever General Seely did in the future, he would always have the affection and goodwill of those connected with the air.

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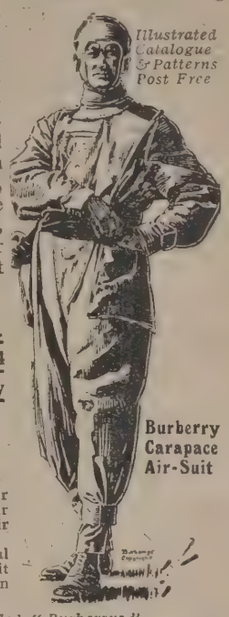


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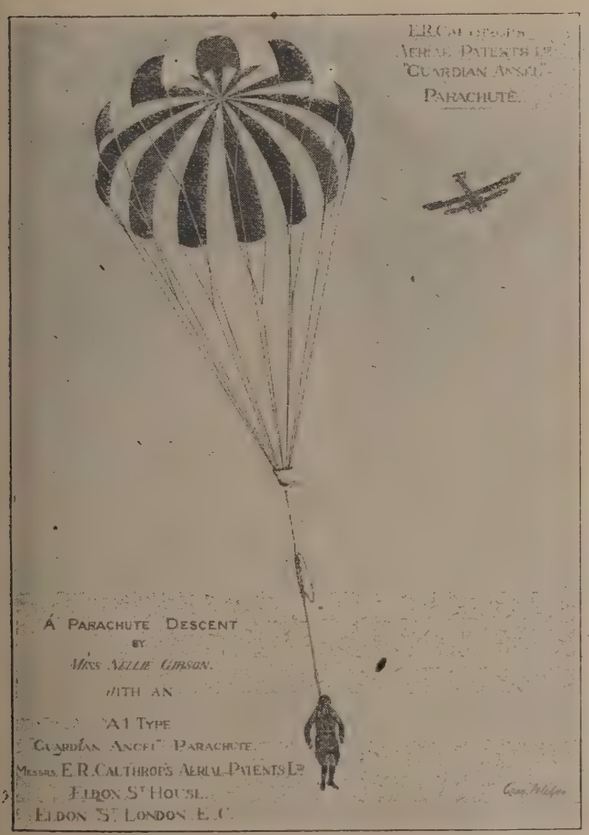
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GREAT BRITAIN.

MILITARY.

WAR OFFICE, Nov. 10th.

TERRITORIAL FORCE RESERVE.—YEOMANRY.—Capt. A. C. Bishop (Lt.-Col., R.A.F.), from Berks. Yeo., to be Capt., Nov. 11th.

WAR OFFICE, Nov. 12th.

REGULAR FORCES.—INFANTRY.—Notts and Derby R.—Capt. J. E. A. O'Dwyer, D.F.C., is restd. to the estabt., July 25th.

TERRITORIAL FORCE.—R.E.—Tyne Electrical Engrs.—Capt. J. Young is now secd. for service with the R.A.F., April 29th, 1918.

WAR OFFICE, Nov. 13th.

REGULAR FORCES.—R.E.—Temp. Lt. S. J. Stocks, from R.A.F., to be temp. Lt., Oct. 30th.

TERRITORIAL FORCE.—INFANTRY.—5th Bn. Glouc. R.—Sec. Lt. H. B. Smith to be Lt., and to remain secd. (R.A.F.), May 1st.

WAR OFFICE, Nov. 14th.

REGULAR FORCES.—ESTABLISHMENT.—R.F.C.—Mil. Wing.—Gen. List.—C. C. Lotter to be temp. Sec. Lt. (on prob.), Aug. 21st, 1917.

INFANTRY.—Labour Corps.—Temp. Lt. G. Iredell, from R.F.C. (Spec. Res.), to be temp. Lt., Feb. 4th, 1918, seny. Sept. 1st, 1917.

THE CASUALTY LIST.

Reported Nov. 12th.

PREVIOUSLY REPORTED MISSING, NOW REPORTED KILLED.—Tayler, Capt. St. C. C., M.C., R. Suss. R., attd. R.F.C.

Reported Nov. 15th.

PREVIOUSLY REPORTED MISSING, NOW REPORTED KILLED.—Haynes, Lt. J. L. P., L.N. Lancs. Regiment, attd. R.F.C.

AIR FORCE.

AIR MINISTRY, NOV. 11th.

R.A.F.—The following officers have been granted short service commns. in the ranks stated, with effect from Nov. 11th. They will retain their seny. in the substantive rank last held by them prior to the grant of the short service commn.

In the case of officers now gazetted Flying Officer from Pilot Officer, seny. will date from the date of Gazette :—

Sqdn. Leaders.—T. S. Impey (A.); J. C. M. Lowe (A.P. (T.)).

Flight Lts.—C. B. Belt, M.C., M.B.E., D.C.M. (Ad.), V. Greenwood (T.), B. D. Hobbs, D.S.O., D.S.C. (S.), H. J. Payn (A.), E. M. Pizey (A.), H. C. Todd (A.), W. D. Wain (T.), R. B. Waite, M.B.E. (S.O.), F. C. Wilkinson (A.P. (T.)), F. R. Williams (T.).

Flying Officers.—E. A. Burridge (Ad.), W. Jones (A.), W. M. Long (Ad.), D. S. C. Macaskie (T.), W. G. MacD. Nicholl (T.), E. P. Terry (T.), E. A. Tottle (T.), B. Turner (A.P. (T.)), L. A. Walters (A.).

Observer Officer.—W. J. Umpleby.

Flying Officers (from Pilot Officers).—E. F. Elliott (Ad.), V. S. Holbrook (T.), A. B. Langridge (Ad.), E. J. Newman (T.), C. H. N. Nunn (T.), T. Thomson (T.).

It is intended that officers empld. as Stores Officers or on "Q" duties shall belong to the new Stores Branch when formed. Officers appearing in this "Gazette" who are at present so empld. will be transfd. to this Branch on its formation and will accept these short service commns. on that condition. They will then come on to the rates of pay of that Branch, but will meantime be permitted to draw the higher rates laid down in the new scheme for officers on the General List. Any officer posted to the Stores Branch on its formation will then have the option of declining his short service commn.

The notifications appearing in the "Gazettes" of the dates indicated below, appointing the following officers to short service commns., are cancelled :—Flt. Lt. T. L. Williams, M.C. (Ad.), Flying Officer E. R. Bruce (A. and S.), Flying Officer A. H. Burmann (S.O.), Flying Officer J. W. Milner (A.), Flying Officer R. N. Walter (Ad.), Sept. 12th; Flt. Lt. T. K. Young (T.), Flying Officer D. B. Robertson (A.), Sept. 16th; Sqdn. Leader H. G. Atkinson, O.B.E. (T.), Flt. Lt. E. R. Pritchard (A. and S.), Flt. Lt. P. C. Purser, M.C. (A.), Flying Officer J. Burden (T.), Flying Officer E. H. Colman (A.), Flying Officer C. S. Fulton (S.O.), Flying Officer L. W. R. Grubb (A.), Oct. 24th.

The notification appearing in "Gazette" of Oct. 28th appointing Sqdn. Leader J. C. M. Lowe to a permanent commn. is cancelled.

R.A.F.—PERMANENT COMMISSIONS.—The notification in "Gazette" of Aug. 1st appointing the following officers to permanent commns. is cancelled :—Maj. E. T. Newton-Clare, D.S.O. (A.), Maj. V. A. A. Albrecht, O.B.E., M.C. (A.), Maj. F. F. Minchin, D.S.O., M.C. (A.), Capt. A. F. F. Jacob, D.S.O. (A.), Capt. G. L. Hunting (T.), Lt. R. G. St. John, D.S.C. (O.), Lt. J. H. Rutherford (T.), Lt. F. Thompson (A.), Lt. A. T. Laing (Ad.).

The notification appearing in "Gazette" of Aug. 22nd appointing Lt. J. W. D. Leigh, M.C. (A.), to a permanent commn. is cancelled.

The Christian names of Sqdn. Leader John Claude Malcolm Lowe are as now described, and not "John Cecil Mansfield" as stated in "Gazette" of Oct. 28th.

The following temp. appointment is made at the Air Ministry :—Staff Officer, 3rd Class.—(P.).—Flt. Lt. R. Addenbrooke-Prout, O.B.E., M.C., Oct. 21st.

The following temp. appointments are made :—Staff Officers, 3rd Class.—(P.).—Flt. Lt. F. B. Beauman, May 31st; (T.) Lt. J. W. Sawyer, April 11th, and to be actg. Capt. until April 30th (substituted for notification in "Gazette" of July 22nd).

FLYING BRANCH.—Sec. Lts. to be Lts. :—(Hon. Lt.) J. S. Arthur, M.C., April 15th, 1918; A. L. Wilcox, Oct. 6th, 1918.

Sec. Lt. D. H. Woodhouse (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt. (A.), July 28th, 1918.

Sec. Lt. E. Wallace (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt. (O.) (Aug. 8th, 1918) (since killed).

The following relinquish their commns. on ceasing to be empld. :—Sec. Lt. (Hon. Lt.) R. W. V. Midlane (K.R.R.C.), May 21st; Capt. W. T. F. Holland, A.F.C. (Lt., Lancers), June 5th; Lt. J. C. Preston (Lt., Bedford R.), Aug. 6th; Lt. C. L. Mundey, M.C. (Lt., R. Fus.), Oct. 6th; Sec. Lt. (Hon. Lt.) R. A. Adams (Lt., C. Ont. R.), Lt. (Hon. Capt.) F. H. Eberti (Capt., R.G.A.), Lt. R. A. Grosvenor, M.C. (Capt., Dragoon Gds.), Lt.-Col. A. T. L. Nye (Paymr.-Commdr., R.N.), Oct. 16th; Lt.-Col. T. A. E. Cairnes (Capt., Dragoon Gds.), Oct. 17th; Maj. E. H. M. O'Farrell (Maj., R. Irish Fus.), Oct. 18th; Lt. B. D. Collison-Cox (Lt., N. Staffs. R.), Oct. 21st; Lt. C. M. J. Barrington (Lt., D.L.I.), Lt. W. C. Thompson (Lt., R.G.A.), Oct. 23rd; Lt. C. T. Armitage (Lt., Lab. Corps), Sec. Lt. J. H. B. Rygate (Sec. Lt., Dragoon Gds.), Capt. R. J. G. Temple (Lt., R.G.A.), Oct. 28th; Sec. Lt. P. S. Blowey (Sec. Lt., Devon R.), Oct. 30th; Lt. A. H. W. Fleming (Lt., Norfolk R.); Sqdn. Leader (actg. Wing Commdr.) R. Hall, O.B.E. (Capt., Welsh Fus.), Nov. 1st.

Transferred to unempld. list :—Sec. Lt. A. Kitchen, Sec. Lt. V. P. J. Phillips, Sec. Lt. K. B. Read, Sec. Lt. T. O. Robinson, Sec. Lt. V. J. Zaozkowski, Feb. 1st; Lt. H. N. Barnard, Feb. 13th; Sec. Lt. E. H. Bullen, March 1st; Lt. S. Quayle, March 2nd; Sec. Lt. E. I. Riley, March 6th; Lt. L. H. Smith, March 15th; Capt. J. D. Mackenzie, March 17th; Lt. P. G. Ratliff, March 24th; Sec. Lt. W. Smith, April 8th; Lt. C. F. Campbell, April 19th; Sec. Lt. G. K. Lucas, April 23rd; Lt. (Hon. Capt.) G. E. Lange, June 11th (substituted for notification in "Gazette," July 18th); Sec. Lt. W. P. E. S. Waller, June 10th (substituted for notification in "Gazette," July 15th); Sec. Lt. R. G. Ricketts, July 31st; Sec. Lt. A. G. Nicholls, Aug. 6th; Sec. Lt. M. D. Laurenson, Aug. 15th; Sec. Lt. J. H. Hall, Sec. Lt. E. R. Jones, Aug. 29th; Sec. Lt. G. K. Waterhouse, Sept. 1st; Sec. Lt. W. D. Redmond, Sept. 3rd; Lt. R. S. Payne, Lt. L. P. Rendell, Sept. 9th; Lt. R. S. Jameson, Sept. 10th; Sec. Lt. F. C. C. Rayson, Sec. Lt. W. Redmond, Sept. 12th; Sec. Lt. G. H. R. Range, Sept. 13th; Sec. Lt. R. H. Rawll, Sec. Lt. T. G. Simpson, Sept. 17th; Capt. T. C. Pattinson, D.F.C., Sept. 18th; Sec. Lt. C. H. Redhead, Sept. 20th; Capt. F. H. E. Reeve, Sept. 22nd; Sec. Lt. A. E. Porter, Sept. 25th; Sec. Lt. H. Lackey, Lt. A. H. Waugh, Sept. 26th; Sec. Lt. C. D. Lang, Lt. O. W. Lang, Sec. Lt. E. W. Langford, Sec. Lt. J. N. Laughlin, Sec. Lt. D. J. Lewis, Sept. 28th; Sec. Lt. J. W. Lavoie, Lt. A. W. Voss, Sept. 29th; Lt. E. M. Jenouré, Sept. 30th; Lt. C. H. G. Nida, Oct. 4th; Sec. Lt. R. J. Folland, Oct. 7th; Lt. O. J. Rose, D.F.C., Oct. 8th; Sec. Lt. (Hon. Lt.) D. S. Robertson, M.C., Sec. Lt. S. W. Smith, Oct. 9th; Sec. Lt. J. H. R. Hopkins, Oct. 10th; Sec. Lt. T. P. Knott, Sec. Lt. E. May, Lt. F. Neale, Sec. Lt. G. C. Paish, Sec. Lt. E. Phillips, Oct. 12th; Lt. F. C. B. Greene, Sec. Lt. G. H. Mitchell, Oct. 14th; Sec. Lt. W. A. Hammond, Lt. P. Hubbard, Sec. Lt. M. M. Miln, Oct. 15th; Sec. Lt. C. J. Bevan, Lt. H. H. Harman, Oct. 16th; Capt. (Hon. Maj.) C. A. Cutbill, Sec. Lt. G. Dietrich, Oct. 17th; Capt. R. E. Dean, A.F.C., Sec. Lt. J. Millar, Lt. M. K. Macgregor, Lt. W. G. Ryan, Sec. Lt. R. Ridyard, Lt. G. F. Turner, Oct. 18th; Capt. G. M. Boumphrey, Lt. J. J. Fitzgerald, Lt. F. Wright, Oct. 20th; Lt. E. Gravson, Oct. 21st; Sec. Lt. G. E. Dorman, Lt. E. F. Haylock, Lt. G. A. Linglam, D.F.C., Sec. Lt. J. H. Manicon, M.C., Lt. G. W. J. Stanton, Lt. E. C. Wuite, Oct. 22nd; Lt. H. W. Allen, Lt. H. C. G. Allen, Sec. Lt. F. I. L. Reis, Lt. R. C. Rodger, M.C., Lt. F. H. Solomon, Sec. Lt. Lt. G. A. Walker, Oct. 23rd; Lt. H. B. D. Harrington, Lt. E. W. Kirby, Sec. Lt. R. H. Matthews, Lt. H. Morris, Oct. 24th; Sec. Lt. S. A. Beck, Lt. C. C. Dews, Sec. Lt. C. E. Gauld, Sec. Lt. (Hon. Lt.) V. W. Helps, Sec. Lt. S. C. Hewitt, Sec. Lt. J. F. M. Phillips, Capt. H. B. Smith, Sec. Lt. H. Stanier, Sec. Lt. F. Steel, Sec. Lt. S. P. Watts, Sec. Lt. C. A. Wright, Lt. G. A. Wright, Oct. 25th; Lt. W. H. Bolam, Capt. T. Davidson, Lt. D. H. Drew, A.F.C., Lt. I. G. Elias, Sec. Lt. W. E. Everett, Sec. Lt. W. E. Fisher, Lt. D. J. Fleming, Lt. A. P. Freer, Lt. W. C. Gardiner, D.F.C., Sec. Lt. A. J. Garside, D.F.C., Lt. N. U. Harvey, Capt. B. C. Rice, M.C., Lt. (Hon. Capt.) K. R. Simpson, Oct. 26th; Sec. Lt. C. H. Beech, Lt. I. Hamilton, D.F.C., Lt. L. L. Leleu, Sec. Lt. C. R. L. Shaw, Oct. 27th; Lt. F. W. Carryer, Lt. A. Daws, Lt. A. S. Girling, D.F.C., Lt. R. H. Stocken, Lt. S. E. Sutcliffe, Lt. C. H. Wilkins, Sec. Lt. R. G. Wilkinson, Capt. J. N. Wilson, A.F.C., Oct. 28th; Sec. Lt. (Hon. Lt.) C. O'B. Dickinson, M.C., Lt. G. P. W. Earle, Lt. J. E. Ferrand, D.F.C., Sec. Lt. H. C. Howard, Lt. G. Pattinson, Lt. C. C. Reynolds, M.M., Lt. C. D. Spiers, Sec. Lt. C. N. Strong, Lt. (actg. Capt.) G. N. Trace, Sec. Lt. J. E. Way, Lt. G. T. Wix, Oct. 29th; Lt. H. Faull, Capt. G. H. D. Gossip, Lt. D. P. Hadow, M.C., Sec. Lt. J. Macintyre, Oct. 30th; Lt. (actg. Capt.) W. J. Butler, A.F.C., Lt. G. H. Clayton, Lt. R. T. Colley, Capt. W. H. K. Copeland, Lt. J. L. King, Lt. H. C. Naldrett, Sec. Lt. H. R. Vennard, Oct. 31st; Lt. S. H. Gudgin, Nov. 1st; Lt.-Col. O. H. K. Maguire, D.S.O., Nov. 2nd; Sec. Lt. G. G. Shaw, Nov. 4th; Lt. H. E. Sheppard, Nov. 7th; Capt. E. C. H. Tebb, Nov. 8th; Sec. Lt. (Hon. Lt.) W. D. Potter, Lt. E. G. K. Weakley, D.F.C., Nov. 10th.

The following Lts. relinquish their commns. on account of ill-health caused by wounds, and are permitted to retain their rank :—R. R. Montgomery (R.A., T.F.), Oct. 31st; H. C. Deeks, Nov. 5th.

Lt. J. G. W. March (Sec. Lt., R. Warwick R.) resigns his commn., Nov. 12th.

Sec. Lt. (Hon. Capt.) D. Gale relinquishes his commn. on account of ill-health contracted on active service and is permitted to retain the rank of Capt., Nov. 5th.

Lt. W. J. Gleason is dismissed the Service by sentence of General Court Martial, July 18th.

The notification in "Gazette" of May 16th concerning Lt.-Col. G. C. St. P. De Dombase is cancelled.

The notification in "Gazette" of May 16th concerning Sec. Lt. W. J. McDonough is cancelled.

The notification in "Gazette" of May 9th concerning Lt. J. A. Harkin is cancelled.

The notification in "Gazette" of Oct. 21st concerning Lt. C. L. Mundey, M.C. (Lt., R. Fus.) is cancelled.

ADMINISTRATIVE BRANCH.—Sec. Lt. C. P. Sisley to be Lt. (since relinquished commn.), May 13th, 1918 (substituted for notification in "Gazette" of May 6th).

Lt.-Col. (actg. Col.) W. P. Alexander relinquishes his commn. on ceasing to be empld. and is permitted to retain rank of Col., Sept. 1st (substituted for notification in "Gazette" of Aug. 29th).

Lt.-Col. F. H. G. Playfair (Lt.-Col., T.F. Res.) relinquishes his commn. on ceasing to be empld., Nov. 1st (substituted for notification in "Gazette" of Nov. 4th).

Transferred to the unempld. list :—Sec. Lt. W. H. Williams, May 9th; Sec. Lt. J. D. Grant, Sept. 2nd; Lt. F. J. R. Weaver, Sept. 3rd; Lt.-Col. R. H. More, C.M.G., C.B.E., and is granted hon. rank of Brig.-Gen., Sept. 20th; Sec. Lt. (Hon. Lt.) G. Ryall, Sept. 25th; Lt. H. E. Evennett, Sec. Lt. A. T. Robson, Oct. 9th; Lt. F. A. Gill, Oct. 10th; Lt. C. A. J. Manger, Oct. 11th; Maj. W. J. King, M.C., Sec. Lt. (Hon. Lt.) E. J. Leedle, Lt. D. V. D. Thomas, Capt. E. W. Wilkins, Oct. 16th; Sec. Lt. E. Frost, Oct. 17th; Lt. W. G. Nicholls, Oct. 18th; Capt. P. M. Miroy, Oct. 21st; Lt. H. Royston, Oct. 22nd; Lt. H. J. W. Fletcher, Capt. S. G. Nicholson, Lt. (Hon. Capt.) W. J. E. Owen, Oct. 23rd; Sec. Lt. (Hon. Lt.) G. Simmers, Oct. 24th; Sec. Lt. C. C. Watkins, Oct. 25th; Lt. J. C. Kinmond, Lt. S. Saunders, M.C., Oct. 26th; Sec. Lt. E. V. Evans, Sec. Lt. F. H. Stapleton, Oct. 27th; Sec. Lt. (actg. Capt.) J. H. Boyd, Lt. A. W. Grigsby, Sec. Lt. F. C. Hook, Lt. L. N. W. Woods, Oct. 28th; Capt. V. H. E. Langford, M.C., Lt. W. Pilkington, M.C., Oct. 29th; Lt. T. S. Bulman, Sec. Lt. O. E. Fleming, Sec. Lt. W. H. Frame, Sec. Lt. H. Sidebottom, Sec. Lt. G. Storey, Oct. 30th; Sec. Lt. W. E. Cockram, Sec. Lt. W. D. Cooney, Sec. Lt. R. W. Stoner, Capt. R. J. F. Sulivan, Lt. H. N. Turner, Oct. 31st; Lt. (Hon. Capt.) F. Allen, Maj. J. W. F. W. Ashby, Lt. E. W. Burrin, Nov. 1st.

The following Lts. relinquish their commns. on account of ill-health and are permitted to retain their ranks :—R. T. Jones, D.F.C. (caused by wounds), C. J. Stanfield (contracted on active service), Nov. 5th; Sec. Lt. F. G. Laing relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, Nov. 5th.

TECHNICAL BRANCH.—Sec. Lts. to be Lts. :—W. W. Scott-Davidson, April 2nd, 1918; F. A. Dickinson (since demobilised), Oct. 8th, 1918; J. E. Tyrrell, March 8th.

Sec. Lts. to be Lts., without pay and allowances of that rank :—P. W.



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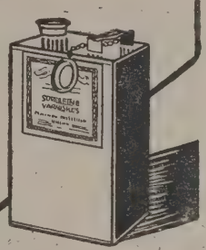
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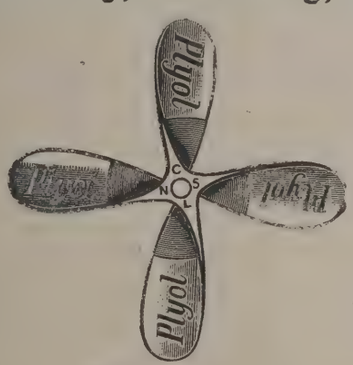
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Renshaw, June 8th, 1918 (substituted for notification in "Gazette" of Dec. 24th, 1918); R. M. Langley, Jan. 16th; H. A. Chapman (since demobilised), Jan. 27th; W. T. O. Cosgrave, May 26th.

Pilot Officer H. P. Strong to be Flying Officer, Oct. 1st.

Pilot Officer F. H. Davis to be Flying Officer without the pay and allowances of that rank, Oct. 1st.

Transferred to the unempld. list:—Lt.-Col. the Hon W. F. Forbes-Semphill, Master of Semphill, A.F.C., Aug. 1st; Sec. Lt. H. Nixon, Sept. 4th; Lt. F. D. Grant, Sept. 5th; Capt. F. W. C. Newton, Sept. 8th; Lt. M. Leeds-Paine-Reilly, Sept. 10th; Capt. F. Reynolds, Sept. 8th; Lt. A. S. Readwin, Sept. 12th; Lt. A. D. Napier, Sept. 20th; Sec. Lt. (Hon. Lt.) F. M. Rayment, Sept. 25th; Sec. Lt. W. N. Formby, Capt. T. K. Young, Oct. 9th; Capt. C. H. Nelson, Oct. 10th; Sec. Lt. R. J. Kelso, Sec. Lt. P. S. Riach, Oct. 11th; Sec. Lt. J. C. Barbara, Capt. N. Turner, Oct. 13th; Capt. G. R. Moody, Oct. 14th; Lt. S. Buckenham, Sec. Lt. A. N. Ramsey, Sec. Lt. G. Smith, Sec. Lt. V. Du B. Smythe, Lt. J. I. Thompson, Oct. 15th; Capt. J. Chapman, Oct. 16th; Sec. Lt. P. V. Milner, Oct. 17th; Lt. H. Glaisyer, Capt. W. T. Hauson, Oct. 20th; Sec. Lt. A. F. Woods, Oct. 21st; Sec. Lt. W. C. Garner, Oct. 22nd; Lt. A. E. Abell, Capt. H. C. Woodward, Oct. 25th; Sec. Lt. W. C. Burns, Sec. Lt. S. A. Smith, Maj. E. Stokes, O.B.E., Sec. Lt (Hon. Lt.) A. S. Walker, Oct. 27th; Lt. R. E. Hussey, Oct. 28th; Lt. C. B. Hudson, Sec. Lt. P. C. Ingram, Sec. Lt T. H. White, Oct. 29th; Lt. R. R. Crosby, Capt. H. Crouch, Capt. E. Dodson, Oct. 30th; Sec. Lt. B. C. Bennett, Capt. F. G. Brown, O.B.E., Lt. E. McR. Cockell, Lt. C. L. Gandy, Lt. A. G. Ridgon, Lt. L. G. Sewell, Lt. F. T. Sinclair, Lt. A. C. Tinkler, Oct. 31st; Sec. Lt. H. L. Bown, Sec. Lt. G. M. C. Cherry, Lt. H. H. Chivers, Capt. A. W. Sarsons, Nov. 1st; Sec. Lt. W. H Bull, Maj. P. Garton, Nov. 2nd.

The initials of Pilot Officer (Hon. Flying Officer) J. G. Dyson are as now described, and not J. C. as stated in "Gazette" of Oct. 21st.

The notification in "Gazette" of Aug. 27th, 1918, concerning Lt. R. H. Whittingham is cancelled.

MEDICAL BRANCH.—Transferred to unempld. list:—Capt. L. B. Stringer, Sept. 24th; Sec. Lt. L. W. Jones, Oct. 11th; Capt. R. J. Hearn, Oct. 30th; Capt. J. I. Russell, Oct. 31st; Capt. C. Peacock, Nov. 1st.

CHAPLAIN'S BRANCH.—The Rev. J. R. Towers is transferred to the unempld. list, Oct. 28th.

MEMORANDA.—Sec. Lt. R. F. B. Campbell (late Gen. List, R.F.C., on prob.) is granted the hon. rank of Lt., April 1st, 1918.

The following Cadets are granted hon. commns. as Sec. Lts.:—180398 O. G. Williams, Jan. 7th; H.71746 A. J. Smith, Feb. 7th; 137769 L. Mawer, March 15th; 35646 J. A. Crawford, March 26th; 15587 H. Cheesman, July 31st.

The following probationary Flt. Officers are granted hon. commns. as Sec. Lts.:—F. L. S. Allen, Nov. 19th, 1918; E. W. Bettany, Jan. 25th; W. Anelay, Jan. 31st; B. D. Bowyer, Feb. 13th; C. F. Byrd, Feb. 19th; C. P. Abbott, March 31st; F. J. C. Bush, April 15th; A. Barron, May 8th; R. G. Agnew, June 5th.

The following relinquish their commns. on ceasing to be empld.:—Temp. Hon. Lt. J. Hay, March 16th; Maj. H. F. Towler (Sub.-Lt. (actg. Lt.), R.N.R.), Oct. 25th.

Transferred to unempld. list:—Lt. R. V. Tivy, from (S.O.), March 1st; Lt. R. B. Fricker, Oct. 9th; Capt. G. A. Scott, from (S.O.), Oct. 27th; Sec. Lt. A. B. Turner, from (S.O.), Oct. 28th; Lt. W. S. H. Reid, from (S.O.), Nov. 2nd.

The notification in the "Gazette" of May 6th concerning Cdt. 178765 G. Adams is cancelled.

The notification in the "Gazette" of Oct. 7th concerning 29380 Cdt. E. I. Treasure is cancelled.

The notification in the "Gazette" of Aug. 5th concerning 102854 Cdt. T. A. Bailey is cancelled.

AIR MINISTRY, Nov. 14th.

R.A.F.—The notification in "Gazette" of Aug. 1st appointing Capt. W. R. Read, M.C., A.F.C., to a permanent commn. is cancelled.

The following temp. appointments are made at the Air Ministry:—Dep. Dir., 2nd Class.—Group Capt. J. M. Bonham-Carter, O.B.E., from Dep. Dir., 1st Class, Nov. 1st.

Staff Officer, 3rd Cl.—(Air.) Flying Officer H. C. Pyper, Oct. 29th.

The following temp. appointment is made:—Staff Officer, 1st Class.—(Air.) Wing Comdr. F. W. Bowhill, D.S.O., Oct. 30th.

FLYING BRANCH.—Wing Comdr. R. P. Ross, D.S.O., A.F.C., to be Wing Comdr. (A. and S.), from (S.O.), Oct. 22nd.

Wing Comdr. R. C. M. Pink to be Wing Comdr. (A.), from (S.O.), Nov. 1st.

Sqdn. Leaders to be actg. Wing Comdrs. (without pay and allowances of that rank) whilst empld. as Wing Comdrs. (A. and S.).—R. J. Bone, D.S.O., to Oct. 17th; L. Tomkinson, to Oct. 2nd, Aug. 1st.

Capt. M. R. Buckland is graded for purposes of pay and allowances as Maj. whilst empld. as Maj., (S.), May 1st.

Lt. H. J. Gibson is graded for purposes of pay and allowances as Capt. whilst empld. as Capt. (A.), from May 1st to Aug. 2nd.

Flying Officer (actg. Flt. Lt.) G. N. Trace relinquishes the actg. rank of Flt. Lt. on ceasing to be empld. as Flt. Lt. (A. and S.), Oct. 3rd.

Lt. F. E. E. Villiers to be Lt., from unempld. list, May 16th, prec. next below Lt. F. S. Reed.

Sec. Lts. to be Lts.:—T. F. Harvey (deceased), April 10th, 1918; R. H. Owens, Oct. 13th, 1918; W. E. J. Bloodworth, Dec. 27th, 1918 (substituted for notification in "Gazette" of Oct. 21st); W. A. Manson, Feb. 1st; A. H. Ashtch, July 15th.

Sec. Lts. to be actg. Lts. whilst empld. as Lts. (O.):—A. F. Adams, to Oct. 2nd; J. F. Mehigan, to Oct. 3rd, May 1st.

The following relinquish their commns. on ceasing to be empld.:—Sec. Lt. E. Brittain, April 26th, 1918; Sec. Lt. (Hon. Lt.) J. S. Batty (Lt., R.F.A.), March 21st; Sec. Lt. W. J. McDonough, May 3rd; Lt. E. L. Brown (Lt., Warwick R.), Aug. 20th; Maj. A. V. Squire (Paymaster Lt.-Comdr., R.N.), Oct. 10th; Lt. G. W. Panter, M.B.E. (Lt., R.I. Rif.), Oct. 15th; Lt. G. Malone (Lt., R.I. Regt.), Oct. 16th; Lt. (Hon. Capt.) M. M. Parkenham (R.A.S.C.), Oct. 17th; Maj. C. A. A. Hiatt, M.C. (Lt., Norf. R.), Oct. 20th; Lt. F. O. Cave, M.C. (Lt., Rif. Brig.), Oct. 22nd; Lt.-Col. A. Ross-Hume, O.B.E. (Maj., Camer. Scot. Rif.), Oct. 24th; Capt. G. B. McClure, O.B.E. (Capt., Black Watch), Oct. 25th; Maj. R. Grey (Capt., Gren. Gds.), Nov. 8th.

Transferred to unempld. list:—Lt. F. E. E. Villiers, Dec. 30th, 1918; Lt. N. H. Hamley, March 10th; Sec. Lt. C. R. Moore, April 2nd; Sec. Lt. W. De W. Atkinson, April 15th; Lt. A. L. Clark, May 5th; Sec. Lt. R. Turner, May 24th; Lt. H. V. Dorey, May 30th; Sec. Lt. S. J. Chiddenton, June 5th; Lt. A. S. Selby, June 6th; Lt. O. C. Dawson, June 26th (substituted for notification in "Gazette" of June 17th; Lt. L. Nevile-Smith, July 6th; Sec. Lt. W. Anderson, July 12th; Sec. Lt. D. V. Clawson, July 15th; Lt. A. Leggatt, July 23rd; Lt. J. B. Edginton, Lt. W. G. Pudney, Aug. 22nd; Lt. P. G. Lewis, Lt. L. G. Robinson, M.C., Aug. 29th; Lt. B. Roxburgh-Smith, D.F.C., Sept. 2nd; Lt. S. A. Robinson, Lt. A. E. Rowell, Capt. R. H. Rusby, D.F.C., Sept. 5th; Lt. R. L. McK. Ross, Sept. 10th; Sec. Lt. A. E. J. Pratt, Sept. 12th; Sec. Lt. E. A. Roberts, Sept. 13th; Lt. A. C. Kermode, Lt. G. R. Poole, Sept. 17th; Sec. Lt. P. Porteous, Lt. W. A. Roberts, Sept. 18th; Sec. Lt. A. Rogerson, D.F.C., Sept. 20th; Maj. F. J. Roberts, Sept. 22nd; Sec. Lt. P. Evans, Sec. Lt. C. A. Thornton, Sept. 26th; Lt. A. C. F. Luke, Sec. Lt. H. F. Rouse, Sept. 27th; Sec. Lt. B. S. Ashley, Lt. R. S. V. Elliott, Sec. Lt. S. C. Elliot, Lt. H. C. Little, Lt. F. S. McClurg, D.F.C., Sept. 28th; Lt. J. C. M. Enslen, Sec. Lt. R. F. Lynch, Sept. 29th; Sec. Lt. R. F. Caspareuthus, Oct. 9th; Lt. H. N. O'Donnell, Lt. W. Pope, Lt. C. G. Pugsley, Oct. 10th; Capt. the Hon. N. G. H. Sturt, Oct. 11th; Lt. A. T. Lotz, Maj. G. V. Rice, Lt. A. P. Squire, Oct. 12th; Sec. Lt. (Hon. Capt.) D. R. Macdonald, Sec. Lt. G. H. Mitchell, Lt. G. E. B. Pottinger, Sec. Lt. D. C. Prodge, Oct. 14th; Lt. C. A. Posey, Oct. 15th; Lt. A. H. Padley, Oct. 17th; Lt. S. T. Proctor, Oct. 18th; Sec. Lt. A. J. Price, Oct. 19th; Lt. P. Hardy, M.C., Lt. T. L. Lovell, Sec. Lt. (Hon. Lt.) G. G. Ross-Smith, Sec. Lt. D. Thomson, Oct. 21st; Lt. P. T. Bowers, Sec. Lt. F. G. Gage, Lt. S. Gillatt, Sec. Lt. E. V. Parrish, Lt. J. O. Priestly, Capt. E. R. Pritchard, Lt. J. E. Ruthven, Oct. 22nd; Sec. Lt. J. L. Airey, Lt. E. F. Briggs, Oct. 25th; Lt. W. I. L. Legg, Lt. C. Lobley, Sec. Lt. R. C. Morrison, Oct. 26th; Capt. W. P. D. C. Scott, Oct. 27th; Sec. Lt. A. H. Bosher, Sec. Lt. E. S. Coombes, Lt. S. L. H. Potter, Oct. 28th; Sec. Lt. R. H. Barker, Lt. P. R. Bowen, M.C., D.F.C., Lt. L. W. E. Leage, Oct. 29th; Sec. Lt. (Hon. Lt.) J. P. Jones, Sec. Lt. A. A. McHardy, Oct. 30th; Capt. R. S. P. Boby, Sec. Lt. J. Garrety, Lt. R. Longman, Capt. T. J. C. Martyn, M.C., A.F.C., Oct. 31st; Lt. W. B. Cass, Nov. 1st; Lt. C. B. Bird, M.C., Nov. 2nd; Sec. Lt. T. W. Ashton, Lt. E. Edgar, Nov. 4th; Sec. Lt. M. Graham, Nov. 6th; Sec. Lt. C. N. Drew, Nov. 11th; Sec. Lt. K. Stuart-Smith, Nov. 14th.

Lt.-Col. Hon. C. M. P. Brabazon, O.B.E. (Maj., Irish Gds.), relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain rank of Lt. Col., Oct. 22nd (substituted for notification in "Gazette" of Oct. 24th).

The following Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—E. E. C. Pickwood, Nov. 6th; J. A. F. Sinclair (contracted on active service), Nov. 7th.

Sec. Lt. A. T. Rose relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, Nov. 7th.

The notification in "Gazette" of June 27th concerning Capt. G. A. Revington is cancelled.

ADMINISTRATIVE BRANCH.—Flt. Lt. L. M. Boddam-Whetham to be Flt. Lt., from (S.O.), Aug. 12th (substituted for notification in the "Gazette" of Aug. 29th).

Flying Officer (actg. Flt. Lt.) H. B. Dakin relinquishes the actg rank of Flt. Lt. on ceasing to be empld. as Flt. Lt., Oct. 4th.

Capt. L. M. Boddam-Whetham relinquishes his commn. on ceasing to be empld., from (S.O.), Aug. 28th (substituted for notification in the "Gazette" of Oct. 21st, wherein this officer was shown under Flying Branch).

Transferred to the unempld. list:—Sec. Lt. W. K. Jenne, March 13th; Sec. Lt. H. S. Harris, Aug. 31st; Lt. A. Rowbottom, Sept. 4th; Lt. E. W. Pringle, Lt. J. M. Russell, Sept. 6th; Lt. J. Edwards, Sec. Lt. R. C. Ryan, Sept. 9th; Sec. Lt. J. Ross, Sept. 11th; Sec. Lt. C. G. B. Edwards, Sept. 12th; Lt. H. V. Hall, Sept. 27th (substituted for notification in the "Gazette" of Oct. 21st); Lt. J. E. Morgan, Oct. 11th; Sec. Lt. L. A. T. Power, Lt. J. G. C. Williams, Oct. 12th; Maj. A. C. E. S. Bowlby, Oct. 14th; Sec. Lt. W. F. M. Hopkins, Capt. A. S. Weeding, Oct. 15th; Sec. Lt. W. J. Wreford, Oct. 21st; Sec. Lt. F. G. Clarkson, Oct. 25th; Sec. Lt. P. Coogan, Oct. 26th; Sec. Lt. P. T. Rule, Lt. A. C. W. Williams, Oct. 27th; Lt. R. B. Collins, Lt. W. H. Crotty, Oct. 29th; Capt. (Hon. Maj.) A. F. Morris, Oct. 30th; Maj. T. G. Leith, O.B.E., Nov. 1st; Sec. Lt. E. J. Gordon, Nov. 2nd; Lt. H. C. E. C. P. Dalrymple, Nov. 4th.

Maj. A. Brind relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, Nov. 6th.

Lt. A. L. Hitt (Lt., D. of Cornwall's Lt. Infy.) resigns his commn., Nov. 15th.

The notification in the "Gazette" of Aug. 22nd concerning Lt. J. Edwards is cancelled.

TECHNICAL BRANCH.—Sec. Lts. to be Lts.:—W. C. Francis, May 30th; C. S. Goode, July 7th (substituted for notification in "Gazette" of Oct. 14th); G. C. Walsh, July 14th.

Sec. Lt. (Hon. Capt.) W. E. Humphreys to be Lt., April 2nd, 1918, without pay and allowances of that rank prior to Sept. 17th, 1918.

Sec. Lt. A. N. Goodwin to be Lt., without the pay and allowances of that rank, Jan. 19th.

Pilot Officer T. G. Brice to be Flying Officer without the pay and allowances of that rank, Oct. 1st.

W. J. Collins (late Deputy Commissary and Hon. Capt., Indian Army) is granted a temp. commn. as Sec. Lt. (Grade A.), without pay and allowances, April 1st, 1918, and to be Hon. Capt.

Pilot Officer E. C. Farma to be Pilot Officer (Grade B) from (Ad.), Oct. 18th.

Transferred to the unempld. list:—Lt. H. B. Richards, March 6th; Capt. A. M. Lester, April 15th; Lt. F. S. Barton, May 5th; Lt. C. C. Hicks, June 30th; Sec. Lt. H. G. Dixon, July 26th (substituted for notification in "Gazette" of Aug. 19th); Sec. Lt. S. Pollard, Sec. Lt. F. W. Pridham, Sept. 2nd; Sec. Lt. R. S. Porter, Sept. 8th; Sec. Lt. (Hon. Lt.) W. H. Pullen, Sept. 9th; Lt. R. Roots, Lt. S. M. Rowlands, Sept. 11th; Lt. W. H. Rose, Sept. 13th; Lt. H. E. Randall, Sept. 18th; Capt. F. B. Pulham, O.B.E., Sept. 19th; Maj. A. Robertson, Sept. 21st; Capt. O. I. Preston, M.C., Sec. Lt. J. C. E. Price, Sept. 23rd; Maj. J. S. Nicholson, M.B.E., Oct. 9th; Lt. J. McKeown, Oct. 10th; Lt. H. G. Bell, Oct. 13th; Sec. Lt. T. F. Emms, Oct. 17th; Sec. Lt. (Hon. Lt.) J. G. Dyson, Oct. 18th; Lt. (Hon. Capt.) J. F. Bargman, Lt. D. R. Morford, Lt. M. V. Morgan, Oct. 28th; Capt. R. F. Bellamy, Oct. 29th; Sec. Lt. R. Locke, Oct. 30th; Lt. R. J. Costigan, Oct. 31st; Maj. H. G. Atkinson, O.B.E., Nov. 1st; Lt. W. J. Aubert, Nov. 3rd; Sec. Lt. (Hon. Lt.) N. Whitley, Nov. 5th; Sec. Lt. E. W. Reynolds, Nov. 6th.

Capt. A. Belton, O.B.E. (R. Fus.), relinquishes his commn. on account of ill-health contracted on active service, and is granted rank of Maj., Nov. 4th.

Capt. C. Gordon Riley relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain his rank, Nov. 7th.

Lt. S. C. Tucker relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Oct. 18th.

The rank of Lt. H. A. Chapman is as now described, and not Sec. Lt. as stated in "Gazette" of March 28th.

The notification in "Gazette" of Sept. 5th concerning Lt. E. A. Baker, M.C., is cancelled.

MEDICAL BRANCH.—Flt. Lt. G. Cranstoun to be actg. Sqdn. Ldr. whilst empld. as Sqdn. Ldr., Sept. 4th

Flying Officers to be Flight Lts.:—S. A. Clark, Sept. 25th; S. R. E. Davies, J. Gorsky, V. I. Levy, K. F. D. Waters, Nov. 1st.

Transferred to empld. list:—Capt. N. Rumboll, Oct. 23rd; Capt. H. C. Cox, Nov. 1st.

Capt. Q. Moir Gray relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Aug. 26th.

DENTAL BRANCH.—Flying Officer F. B. Stradling to be Flt. Lt., Oct. 30th.

CHAPLAINS BRANCH.—The Rev. G. D. Jones, B.A., is transferred to unempld. list, Oct. 21st.

MEMORANDA.—The following Probationary Flight Officers are granted hon. commns. as Sec. Lts.:—F. H. Dawson, L. J. Empson, Nov. 22nd, 1918; R. P. France, Dec. 1918; F. W. Ings, Jan. 16th; D. E. Huck, Feb. 21st; J. S. Mackinnon, March 9th; A. E. Blaxill, W. N. Errington, April 15th; O. Drew, April 30th; J. W. Maidment, June 26th.

Lt. B. D. Bellamy (Essex R.) relinquishes his commn. on ceasing to be empld., Oct. 31st.

Transferred to unempld. list:—Capt. G. W. Robarts, M.C., from (S.O.),

Sept. 18th; Capt. R. F. Maitland, O.B.E., from (S.O.), Oct. 6th; Lt. (Hon. Capt.) F. C. Clements, from (S.O.); Maj. O. H. Powell, from (S.O.), Oct. 31st; Lt. C. S. Fulton, from (S.O.), Nov. 1st.

The notifications appearing in "Gazettes" of dates indicated below appointing the following Officers to short service commns. are cancelled:—Flt. Lt. L. P. Ferris-Scott (Ad.); Flt. Lt. N. Keeble, D.S.C. (A.); Flying Officer F. G. Brookman (T.); Flying Officer H. H. Sharp (T.), Sept. 12th; Flt. Lt. L. O. Brown, D.S.C., A.F.C. (A. and S.); Flt. Lt. D. O. Mulholland, A.F.C. (A.); Flt. Lt. P. D. Robertson, A.M. (T.); Flying Officer C. Rapley (T.), Sept. 16th; Flt. Lt. P. E. L. Gethin, A.F.C. (A.); Flying Officer H. L. Rough, D.F.C. (A.), Oct. 10th; Flying Officer S. Dawson, D.F.C. (A.); Flying Officer L. G. Morris (T.), Oct. 24th.

The Christian names of Sqdn. Ldr. John Claude Malcome Lowe (A.P. (T.)) are as now described, and not "John Cecil Mansfield," as stated in "Gazette" of Nov. 11th, appointing this officer to a short service commission

PERSONAL NOTICES.

MILITARY.

ENGAGEMENTS.

BECK—DUGDALE.—The marriage arranged between Capt. Edwyn Tyrrell Beck, D.S.O., M.C., Royal Fusiliers, attd. R.A.F., and Miss Mollie Dugdale, will take place on Wednesday, Dec. 17th, at St. Mark's, North Audley Street.

CREWDSON—FYERS.—A marriage has been arranged between Major Eric Crewdson, M.C. (late R.E. and R.A.F.), younger son of Mr. and Mrs. Francis William Crewdson, of Gilling Grove, Kendal, Westmorland, and Mary Stuart, only child of Major Evan W. H. Fyers (Reserve of Officers), Wellington Club, S.W., and granddaughter of the late Lieut.-General Sir William Augustus Fyers, K.C.B.

RAVENSCROFT—JENKS.—The engagement is announced between Capt. S. Trevor Ravenscroft (late Lancashire Hussars and R.A.F.), third son of Mr. and Mrs. S. Ravenscroft, of Broughton Grange, Cartmel, Lancashire, and Brathay, Oxton, Cheshire, and Marjorie, youngest daughter of the late Mr. Henry Jenks, of Barrow Hedges, Carshalton, Surrey, and Mrs. Jenks, Dunairds, Birnam, Perthshire.

AIR FORCE.

ENGAGEMENTS.

FIELD—ELLIOTT.—The engagement is announced between James Roy Field, late R.A.F., younger son of Mr. W. F. and Mrs. Field, of The Highlands, Enfield, and Joyce Clèlie, only daughter of Dr. and Mrs. A. Campbell Elliott, of Cranford, St. Annes-on-Sea.

HAMILTON—MITCHELL.—The marriage of Lieut. Wallace Ferrier Hamilton, R.A.F., youngest son of Mr. and Mrs. Claude Hamilton, of Macedon, Victoria, Australia, and Elsie, daughter of Mr. and Mrs. Ernest Mitchell, of 5, Park Street, Bath (formerly of Folkestone), will take place at St. Andrew's Church, Bath, on Dec. 2nd, at 2.30. No reception. Friends will be welcome at the Church.

SOUTHALL—CAMPIN-TOMPKINS.—The engagement is announced between Mr. A. W. Southall, R.A.F., son of Mr. W. Southall and Mrs. Southall, of Retford, and Marjorie Mary, daughter of the late Mr. W. Tompkins and Mrs. Tompkins, of Bicester.

SYMONS—LE BRASSEUR.—A marriage has been arranged, and will take place early in December, between Stephen White Symons, late R.A.F., son of the late William Christian Symons and Mrs. Symons, of 129, Beaufort Street, Chelsea, and Margaret Le Brasseur, eldest daughter of Mr. and Mrs. Robert Le Brasseur, of Sunnycote, Rosslyn Hill, Hampstead.



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ON SIX MONTHS OF CIVIL AVIATION—I.

One day last week His Majesty's Stationery Office issued a White Paper entitled "Synopsis of Progress of Work in the Department of Civil Aviation, May 1st, 1919, to October 31st, 1919." As the first document of its kind dealing with Civil Aerial Transport it deserves to be considered in detail by all concerned with aeronautics, therefore it is reproduced hereafter, and such comments as seem necessary are appended to each section.

The impression left on one's mind after reading it is that Commercial Aeronautics have a far greater future than most people believe to-day, for if such progress is possible in so short a time despite the hindrances of Government control it is evident that as commercial flying expands and shakes itself free from the leading strings of the Air Ministry it will develop more and more rapidly and will become established on a firmer basis.

Except in the sphere of International Politics it is impossible to see how the Department of Civil Aviation has helped civil aviation. On the other hand there are many ways in which the Department has been a hindrance. But there are times in the youth of all growing things when a certain amount of suppression is advisable and makes for the better development of the adult. For example young plants have to be thinned and pruned, small boys are the better for the discipline of even the stupidest of schoolmasters, and the female figure is improved by the apparent restriction of a corset in its youthful stages.

The Department of Civil Aviation must be regarded somewhat in such a light. Though it is no help to the Aircraft Industry, the mere fact of its existence irritates the Industry into some activity. But, so far as this "Synopsis" is concerned, one is certainly inclined to jib a bit when the Department takes credit for progress which has been made in spite of its operations and not because of them.

However, let us to the Synopsis. Here followeth the first section :—

I.—INTRODUCTION.

Except for a brief period during Easter week this year, civil flying did not open officially until May 1st, 1919, and the six months which have since elapsed forms perhaps a convenient period on which to make a preliminary review of the work done by, and to estimate the future of, the Department of Civil Aviation.

Between February 12th—on which date it was announced in the House of Commons that the Government had decided to set up a Department of Civil Aviation—and May 1st, the official date of the opening of civil flying, a small staff began to attack the multiplicity of problems and difficulties attending the transition period from war to peace, which had to be met in the commencement of civil aviation. There were the adjustment and redistribution of activities between the Service and civil sides; the framing, with the assistance of representatives from the industry and other experts, of the Air Navigation Regulations for the control of civil flying at home, as distinct from the International Air Convention, governing the regulations for international flying; the necessity for deciding upon which routes traffic was most likely to follow and develop, and the aerodromes which should therefore be retained in the general after-war liquidation.

There were also a number of other problems of a kindred nature to assist in the solution of which there were no landmarks, no established precedents and no accumulated experience.

II.—PROGRESS

(*a*) RELATIONS WITH FOREIGN COUNTRIES.—The International Air Convention, which was in the main based on the Air Navigation Regulations drawn up for the control of civil flying at home, was signed on October 14th by 11 out of the 13 nations which were parties to it, the United States and Japan not yet being in a position to sign.

The terms of this Convention were made public some months ago, but it was considered desirable to anticipate its becoming operative by provisionally opening traffic by air with certain foreign countries, as it was thought that aerial transport firms could not too soon gain experience of running regular international services, both for the benefit of the industry, and the early development of the air routes of the Empire on a commercial scale.

Great pains were therefore taken to make temporary agreements with other countries, and such were concluded with Belgium, France, Holland, Italy, and Portugal, while permission for individual flights was obtained from Denmark, Norway, Spain, and Switzerland; and steps have since been taken which it is hoped will ensure the subscription of Holland, Spain, and Switzerland to the International Convention at no distant date, and later of the Scandinavian countries, so that one code of rules for the air will obtain throughout the whole of Europe.

The conclusion of these provisional agreements has enabled British aircraft belonging to commercial firms to visit Amsterdam, Brussels, Christiania, Copenhagen, Lausanne, Madrid, Paris, and Stockholm, whilst a demonstration flight for civil purposes carried out by R.A.F. aircraft was made as far as Helsingfors.

Every effort has been made to assist British firms to establish regular services between London and Paris, London and Brussels, and London and Amsterdam.

So far there is little call for comment. One would only remark that Switzerland seems little inclined to listen to the voice of the charmer from the Civil Aviation Department. Apparently Switzerland regards joy-riding as a branch of hotel-keeping and therefore a national prerogative, judging by the obstacles put in the way of British and other foreign aviators who have desired to show the Swiss how it ought to be done.

Of the "demonstration flight for civil purposes carried out by R.A.F. aircraft . . . as far as Helsingfors" perhaps the less said by the Department the better. One has already shown that there was no "demonstration" at Stockholm, and nothing has been heard of any at Helsingfors. Copenhagen and Christiania, which are not good markets, seem to have had all the fun to themselves.

Very wisely the compilers of the synopsis refrain from mentioning the fact that a Gosport flying-boat which was permitted to fly to Amsterdam was expressly prohibited from flying after it got there. So it seems that the "Progress of Work" rather cancels itself out when one considers the plus and minus sides of it.

CONCERNING AIR ROUTES.

The Synopsis continues :—

(*b*) RECONNAISSANCE.—Considerable progress has been made

with the reconnaissance and development of Imperial air routes.

The Cairo-Karachi route has been opened for military purposes, and will be available for civil traffic at an early date. That from Cairo to the Cape has been surveyed, and a chain of landing places established. Of the latter the section lying in the Union of South Africa should shortly be available for the use of civil enterprise, and the whole route should be capable of being flown on an experimental basis before the end of the year. A full reconnaissance of the route from India to Australia has also been completed.

It will be noticed that the compilers of the Synopsis have wisely omitted any reference to "blazing the trail," a phrase which was until recently popular among speech-makers from the Department of Civil Aviation.

It is rather a pity that more has not been said about the Cairo-Karachi route and that from India to Australia. Perhaps General Swinton's excellent department will shortly issue a contour map of the line, showing and describing the landing places. It is, however, of interest to note that the first civilian flight over part of the route is that of the amazing Monsieur Poulet, who, with his ancient tail-boom Caudron and his two old 80 h.p. Le Rhône engines, has successfully taken the shine off all our Australian competitors for the £10,000 prize, thanks to the combined efforts of the Department of Civil Aviation and the Committee of the Royal Aero Club, which prevented anybody from starting while the weather was good and the days were long.

The Cape to Cairo route is also of interest, and more information as to landing places would be gratefully received. But it seems quite likely that for some years to come the best way to getting to the Cape by air will be by seaplane down the Red Sea, or even down the West Coast. There is an opportunity here for an adventurous seaplane pilot to be the first to reach the Cape by air.

Fragile Regulations.

We now come to a far more immediately interesting section of the Synopsis :—

(*c*) Air Navigation Regulations.—The Air Navigation Regulations which came into force on May 1st, 1919, were based on war experience and on an estimate of the requirements of civil aviation. In a few directions experience has shown that there are omissions, while in others the Regulations have been found to be somewhat in advance of requirements and their strict enforcement up to the present has proved undesirable. It has not always been easy to administer the Regulations so as to secure the safety of the public without handicapping the expansion of air work, but frequent consultations between the department and representatives of the industry and the goodwill of all concerned have enabled a very fair measure of success to be obtained in this respect. Any defects in the Regulations or in the method of administering them brought to light by experience are corrected as rapidly as possible

One is glad to notice that in some respects "the Regulations have been found to be somewhat in advance of requirements, and their strict enforcement up to the present has proved undesirable." This disposes of a prevalent idea that some of the Regulations are so silly that if the Department enforced them it would merely make itself look more ridiculous than it is in reality. It also accounts for the fact that unregistered pilots fly machines without airworthiness certificates over prohibited areas with absolute impunity. It also accounts for the casual way in which people wander into and out of the country by air without troubling official people about their doings.

But it does not account for airworthiness certificates being given to machines which are not airworthy, nor for the refusal of airworthiness certificates to machines which are airworthy. Nor does it account for the refusal of permits for the carrying of passengers to pilots of unblemished record and long experience and the granting of permits to notoriously incompetent or reckless pilots.

A Bad Case of Officialism.

One has in mind the case of a pilot who owned a machine before the war and carried passengers without let or hindrance. During the war he was a test pilot and put many dozens of machines of all types through their tests for private firms and for the Air Council. He also carried a great number of passengers during these tests. In five years' flying he never had an accident owing to any fault of his own, and his only crashes have been two or three quite trivial affairs caused by defective machines.

Yet when he applied for a licence to carry passengers "for fee or reward" he was refused because of defective eyesight. It is true that he wears glasses, but such is his carefulness that he always carries a spare pair of glasses in his pocket when flying in case the pair he is wearing are damaged or knocked off, the said glasses being built into proper flying-goggles.

There is a clause in the Regulations which says that physical disabilities such as will disqualify a new pilot are not to apply to pilots who have flown before a certain date. This clause and his splendid record as a pilot should be enough to qualify the pilot in question for his passenger-carrying certificate, and yet he has been turned down by the doctors because *they*, forsooth, are not satisfied with him.

Thus he is prevented from earning his living at a profession in which he is a past master, and the progress of civil aviation is deprived of the help of a very valuable man. It would be of great interest to know what the doctors who turned him down know about practical flying and how much of it they have done themselves.

It would appear from this case that not only may it be "undesirable" to enforce the Regulations against people who choose to ignore them, but that the officials of the Air Ministry may themselves ignore with impunity such few Regulations as exist for the benefit of aviators instead of for their suppression.

(To be continued.)

THE DEATH OF M. DEUTSCH DE LA MEURTHE.

One regrets to announce the death in Paris, on Nov. 24th, of M. Deutsch de la Meurthe, President of the Aero Club de France. He revived by his actions memories of the splendid days of the Medicis, when a discriminating patronage developed the arts and the sciences to a degree such as was not possible in many decades of normal progress. The science of aeronautics and the art of music owe his memory a heavy debt of gratitude for the generous benefactions by which he materially assisted in their development.

Time is lacking in which adequately to deal with his career in this issue of The Aeroplane. His biography will therefore appear in this paper next week.

THE PARLIAMENTARY AIR COMMITTEE.

On Nov. 18th Major-Gen. J. E. B. Seely, C.B., C.M.G., D.S.O., M.P., attended a meeting of the Parliamentary Air Committee. Sir William Joynson-Hicks was in the chair. General Seely made a further statement regarding his resignation, in the course of which he is said to have laid great stress on Mr. Churchill's determination to keep the Royal Air Force under the control of the Secretary of State for War. The following motion was unanimously passed :—

"That this Committee expresses its deep anxiety in regard to the present union of the Air Ministry and the War Office, and the consequent position of the Royal Air Force, and requests the Government to announce its air policy at the earliest possible moment, and to provide a day for a full discussion."

It will be interesting to await future events. Perhaps the "anxiety" of the Parliamentary Air Committee will serve to defeat its own ends and bring about the abolition of the Royal Air Force, which is not the least of the evils brought about by the aid of the said Committee.

AIR POWER AND SEA POWER.

By "AUDITOR TANTUM."

Said the great Francis Bacon, Lord Verulam, "To be master of the sea is an abridgement of a monarchy," or, in other words, an epitome of sovereignty. This is so obvious and trite, and has been repeated in different ways with such "damnable iteration," that the Briton has at length got it into his noddle. Tell him every day in the largest writing that Somebody's Pills are worth a guinea a box and he will eventually take it as an established fact, and not as an opinion. Which is the secret of advertising and politics.

But "the old order changeth," and the vantage of strength at sea, which, says Bacon, "is one of the principal dowries of this kingdom of Great Britain," is in danger of losing its supremacy, which is passing to the sovereignty of another element. And the voice that proclaims this change with more authority and insistence than any other is, curiously enough, that of a distinguished seaman.

THE SOVEREIGNTY OF THE AIR.

Lord Fisher, who throughout his long life has always been in the front of progress, and is now more advanced in his ideas than most men of half his age, is quite revolutionary in his opinion of the effect of air-power on land and sea.

This is strange, for the British Navy, the most hide-bound and conservative Service on the face of the earth, was for long the most unbelieving in the possibilities of aircraft. *Malgré lui* the Navy took aircraft unto itself, but there being no faith, there was lack of works also.

"Air fighting dominates future warfare by sea and land." These words, spoken by the creator of the modern Fleet, have more significance than when the same words are shouted (as they have been) from the house-tops of the Aircraft Industry. And, the great sailor adds, the only way for a fleet to escape destruction in future will be for it to get under the water.

In which case, it is obvious, even if a fleet so constructed should be able to maintain the traditions of the Navy under the water as well as it did upon it, that the sovereignty of which Bacon spoke has passed from the sea to the air. For if the British Navy is compelled to submerge itself, with Admiral and Vice-Admiral, and all the Articles of War, it is clear that the compelling factor must be the superior.



"Himmel! Are these so beautiful shots for us meant. Heinrich?"

But what of the land? An army or a nation cannot usefully be employed in the bowels of the earth. The problem of the defence of the people of these islands is to be solved in but one way; by the creation of an overpowering air fleet. And it is at this moment, when the painful truth is being brought home to the intelligent section of the community, that the British Government is relentlessly reducing the already meagre building programme of aeroplanes, and completely cancelling the construction of airships.

NEWSPAPER AGITATION.

One of the strangest features of the case is that the group of newspapers which claims to have promoted aviation in this country has outbawled all others in their enthusiasm for economy in this direction. The "Evening News" stated a few days since that the skilled hands discharged from aircraft factories should be absorbed into some *useful trade*. Providing for the future safety of the realm is evidently not a useful trade. The fact is that the B.P. does not yet take aircraft seriously, and seems to think that the Government is similarly afflicted. It has an idea that, the war being over, our rulers have no further use for aircraft. A not altogether unfounded suspicion.

The attitude of the B.P. in general is that of a Felixstowe worthy, who, being interrogated as to the fate of the "Fury," replied: "It's a do, Sir, that's what I call it, nothing more'n a do. A naxident like that when the've got no more use for the thing, sets yer thinkin', don't it?"

THE ARGUMENTS FOR THE FLEET.

Arguments against Lord Fisher's dicta take three lines. 1. That the war proved that aircraft attacks against warships were largely failures, owing to the great height made necessary by anti-aircraft fire. 2. That submerging is very nearly useless as a protection; witness the efficacy of the depth charge. 3. That wars have ceased, and we shall have the Brotherhood of Man.

To take the last item first, the Brotherhood of Man is a hoary hoax, with "a very ancient and fishlike smell," an odour, in fact, of Red Herring. It is not in any way a discovery of Mr. Lloyd George for the rebuilding of the bad old world. "Mrs. Jellaby held a discussion with Mr. Quale, of which the subject seemed to be the Brotherhood of Humanity, and gave utterance to some beautiful sentiments."

After every great conflict there has arisen this idea of Universal Peace, and the war that was to end war. When Augustus had achieved the Imperial power, and "compassed earth with conquest, Heaven with fame," it was prophesied by Virgil, "Then wars shall cease and savage times grow mild, with iron bolt and chain firm closed the gates of Janus shall remain."

After the war with France in 1815, there occurred the same symptom, in conjunction this time with that passion for economy, the result of which was the inefficiency of the Army at the outbreak of the Crimean War.

The lesson is apposite now. There is imperative need for economy in the Services, but it must be economy applied with progress and reform. "Economy without a policy of reform is the creator of chaos and weakness on land and sea." And, it may be added, in the air.



THE VULNERABILITY OF THE SHIP.

The second argument is feeble, for if a vessel is not safe from aircraft attack when submerged, theoretically it should be at least as vulnerable on the surface. And the first argument relies on a supposition of gunnery efficiency which is rather staggering to those who have seen the Naval anti-aircraft gunner and his gunnery "loot" at work, and have marvelled at the deadly inaccuracy of his shooting.

Tales of this failing have been told in The Aeroplane, and there is a tawdry one of a gunner who put a shell through his own Admiral's flag while firing at enemy aircraft. The Admiral, being a disciple of Lord Fisher, is reported to have said—in effect—"You be damned!" And he was so.

It is, of course, a fact that the art of bombing war vessels is capable of considerable improvement. There was the case of the "Goeben," which was for some days heavily bombed as she lay beached in the Straits, some time before the Armistice. The writer saw her some months afterwards, and she appeared to be none the worse, although she was popularly supposed to have been destroyed for the third or fourth time in her career.

But as aircraft and bombing are both in their infancy, it is probable that Lord Fisher is right, and the surface of the sea will be no longer the exclusive theatre of operations of the Fleet, at any rate when the enemy is in the heavens above. A prophet having no honour in his own country, it is improbable that we shall have that submersible Fleet until other Powers have a few years' start of us. As Lord Fisher says, "All the brainy men said that aeroplanes were impossible. Yes! and we still have ancient Admirals who believe in bows and arrows."

The Councils of the British Empire seem to oscillate from panic to somnolence according to the attitude of the Press, and perhaps it would be an improvement to adopt some such system as the Gothis employed. The ancient Goths of Germany, as all the world knows, used to have a wise custom of debating everything of importance to the State twice: once drunk, and once sober. Drunk, that their Councils might not want vigour, and sober that they might not want discretion. Between the two a middle course was found which touched the points of wisdom.

A Submersible Fleet.

In itself, the idea of a submersible fleet is distinctly attractive, and a blind squadron manœuvring under water is a situation full of comic possibilities. Most of us still have a weakness for Jules Verne's "Twenty Thousand Leagues under the Sea," and could wish that the modern submarine had the comfort of the "Nautilus." As it is, going on board a submarine is like entering a sewer by the manhole.

It is to the internal combustion engine that Lord Fisher looks for salvation. The rest is easy. There is no impossibility in building a submarine of 20,000 tons, the difficulty is merely one of horse-power, and that will be overcome. But whether we get our submersible warships or not, the *sine qua non* of military power is a strong Air Fleet.

Indeed, it is not difficult to foresee a time when our Armed Forces will consist of the Under Seas Fleet, the Air Fleet, and a certain number of infantry who will be little more than the ground portion of the R.A.F. Cavalry will be useless, and the big gun, as a distinguished artillery officer has said, will be as obsolete as the catapulta and ballista of the Romans, and "the last argument of kings" will be the bomb.

It is cheaper and deadlier to carry your projectile and drop it on the spot, than to propel it with a costly charge with more or less uncertainty. No longer will there be any need for an Uncle Toby to "exasperate his symptoms in pursuit of the phantom Knowledge," endeavouring to discover the road that the cannon-ball did not go.

The Power of an Aerial Fleet.

A powerful Air Fleet would be a more potent factor in keeping the peace than even the British Navy has been, for the Fleet being confined to the sea, its effect is not felt in equal degree by all countries, whereas no country would be inaccessible to an Imperial Air Fleet, and the result of such an Armada in being might be such as that of which Cæsar spoke, when after the bloodless victory of Ilerda, he said, "That it was as much a General's duty to conquer by tactics as the sword." The threat of destruction would be sufficient.

Such appear to be some of the lessons of the Great War; but, as is usually the case, they will probably for some time remain unheeded, and the development of the Forces of the Crown on the lines required will be left to the mercy of chance, drift and political opportunity.

It will not be for lack, however, of a plain-speaking prophet, and Admiral of the Fleet Lord Fisher of Kilverstone, whose reorganisation of the world-wide machinery of the British Navy showed him to be a great strategist, and a man of immense foresight and imagination, is not likely to allow the authorities to remain slumbering in a policy of stagnation.

The cause of Air Power desperately requires a Fisher to put its case before the public as vehemently and remorselessly as the great seaman has stated that of the Navy.

THE FLIGHT TO AUSTRALIA COMPETITION.

The Vickers "Vimy" Machine.

The following letter was received by Vickers, Ltd., from General Sir W. Birdwood, G.C.M.G.:—

"I very heartily and sincerely wish all possible success to Capt. R. M. Smith, M.C., D.F.C., A.F.C., Australian Flying Corps, Lieut. K. M. Smith, R.A.F., and Serjeants J. W. Bennett, A.F.M. and W. H. Shiers, A.F.M., Australian Flying Corps, in their forthcoming attempt to fly to Australia.

"They know well that there is a very arduous task and very many dangers before them—but I know they will face them as fearlessly as they did the difficult and dangerous duties which have been allotted to them during the last five years and in the overcoming of which they helped to the final victory.

"I look forward to congratulating them in Australia.

"(Signed) W. R. Birdwood."

The following letter, written at Pisa by Capt. Ross Smith, pilot of the Vickers "Vimy" machine now on its way to Australia, has been received by Vickers, Ltd.:—

"We landed here just after 3 p.m. yesterday (Nov. 13th) from Lyons and have not been able to get away to-day.

"It took a lot of haggling to get our petrol and hot water for the radiators at Lyons, and we did not leave there until 10 a.m.

"When we got near here yesterday we decided we could not make Rome before dark, and as one manifold was badly gone we landed. Part of the aerodrome was sticky and we had to dig ourselves out of one patch.

"We had patched up the manifold at Lyons but it got worse and we found it had completely gone here and also burnt out part of the aluminium plate above the petrol strainer. The mechanics fitted another manifold and repaired the cowling, etc., but it was 11 a.m. before we were filled up and ready to start this morning (Nov. 14th). It was then raining hard with a strong south wind and low clouds, so we did not start.

"There is an R.A.F. officer and one mechanic here with petrol and oil, and the officer has done all he can for us, and the Italians have been sympathetic also. Capt. Horne (here) (of No. 1 Air Route) has advised us to go to Taranto and thinks Suda Bay, in Crete, is still available, so in view of having landed here we now intend to miss out Rome and go to Taranto from here and find out about the rest of the route to Cairo. Taranto is now H.Q. of No. 1 Air Route.

"It is still raining now (7 p.m.), but we have hopes of getting on again to-morrow if the aerodrome is not too wet.

"It was good flying yesterday from Lyons to here and the Riviera looked very fine and we are very fed up at this rotten turn of the weather, but still more fed up with our manifold.

"We are all very fit and the mechanics have worked like Trojans. So far we have not been able to take any cinema pictures, principally on account of the intense cold when flying, but we hope to start it next time.

"I like the 'Vimy' to fly very much and find she does 75 on the Pitot at 1,650 revs. That is what I am flying her at. The engines are certainly the best two I have ever had.

"(Signed) Ross Smith."

The following telegram from Rome, dated Nov. 15th, has been received:—

"Yesterday at Pisa heavy rain—aerodrome under water—attempted start—got bogged—spent day on machine—had engines running eight to-day—bogged badly taxi-ing—used planks—Italian mechanics dug out machine—bogged again—but finally got away—Sensational start—Bennett held tail down until machine moving then made running jump at rear cockpit—hauled aboard by Shiers as machine was leaving ground—aerodrome two inches under water but 'Vimy' rose beautifully—crew very wet but cheerful—encountered strong head wind—ground speed only 50 miles hour—passed through some heavy clouds otherwise hazy bumpy but landed Rome three o'clock.—Ross Smith."

The Vickers "Vimy" machine arrived at Suda Bay, Crete, on Nov. 17th and at Cairo on the 18th. It is stated to have left Cairo for Damascus on Nov. 19th.

The Blackburn Machine.

The Blackburn "Kangaroo" left Hounslow for Australia at 10.37 a.m. on Nov. 21st, in good weather.

It arrived at Romilly, 60 miles S.E. of Paris, at 3.0 p.m. on the same day, after passing through a heavy snowstorm over Amiens. The commandant of the aerodrome at Romilly received the crew with great courtesy, and has done everything possible for their comfort.

The commanding officer and navigator is Capt. G. H. Wilkins, M.C. The pilots are Lieuts. Val Rendle and D. R. Williams. Lieut. G. H. Potts is the engineer officer.

A note on the aviators and the machine was published in the Nov. 12th issue of The Aeroplane.

The Sopwith Machine.

Nothing has been heard of Capt. Matthews since the Reuter message of the 16th inst., which stated that the machine was detained at Gonsenheim, near Mayence, by bad weather.



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NAVAL & MILITARY AERONAUTICS

[The Official "Gazettes" and Personal Notices will be found on page 1814.]

GREAT BRITAIN.

NAVAL

ADMIRALTY APPOINTMENTS.

The following appointments have been made:—

NOV. 18TH.—Lieut.—H. E. M. Watkins (Capt., Temp. Maj., R.A.F.) promoted to Lieut.-Comdr., seny. Oct. 17th.

NOV. 19TH.—Comdr.—C. D. Longstaff, to "Furious," in command, Nov. 21st.

Nov. 22nd.—Comdr.—O. M. F. Stokes, D.S.O., to "Pegasus," in command (on recommg.).

* * *

H.M.S. "PEGASUS."

H.M Seaplane-carrier "Pegasus" will be recommissioned for service on the Mediterranean station, at Rosyth on Dec. 2nd with a Devonport crew.

MILITARY.

THE AFGHAN WAR.

On Nov. 13th the aerial operations against the Mahsuds began with an air raid on the villages of Kaniguram, Makin, and Marobi, five tons of explosives were dropped. All the machines returned safely. On Nov. 16th another raid was carried out on Shakai, north of Wana. It is stated that the Mahsuds are not particularly pleased with this method of warfare and are already making tentative approaches for Peace.

The terms presented to the Mahsuds and rejected by them included an undertaking of non-interference with aeroplanes flying East of the Durand line.

On Nov. 18th the villages of Ismailkhan and Zuran Atsar were bombed, and as a result of this the sections of the Wazirs who had absented themselves from the Jirgah at Sakka Khel came in and the whole tribe has now accepted the British terms unreservedly.

The aerial operations against the Mahsuds are continuing.

AIR FORCE.

THE AIRSHIP DEPARTMENT.

The Air Ministry announces that the Airship Department of the Admiralty has now been transferred to the control of the Air Council. All correspondence therefore should in future be addressed to the Secretary, Air Ministry, Kingsway, W.C.2.

THE W.R.A.F. OLD COMRADES' ASSOCIATION.

The following was issued by the Air Ministry on Nov. 22nd :—

All officers and other ranks of the W.R.A.F. who are serving or have served during the war will be interested to know that it is proposed to form a W.R.A.F. Old Comrades' Association.

It is felt that a great number of friendships were made between women serving in the Corps during the war period and afterwards, and that some opportunity should be afforded for the periodical renewal of these friendships, and it is the object of the Association to do this and to foster, as far as possible, the "esprit de corps" that existed in those days.

It is also hoped to form local branches to arrange reunions and to hold annual meetings of members.

Apart from its social side, the Association proposed to adopt practical means to assist members in obtaining employment, to help those who are in need of assistance, to endeavour to get suitable cases into homes, hospitals, etc., and to make arrangements, during their convalescence, for members who have been ill. Another possible development will be the exchange of hospitality between country members and those living in town.

Such an Association would not only preserve the spirit of comradeship that was one of the most admirable features amongst all ranks of those who served in the W.R.A.F., but should encourage preparedness to help the country in time of need should such occasion arise.

All officers and other ranks are invited to attend the inaugural meeting which will be held on Saturday, Nov. 29th, at 3 p.m., at Birkbeck College, Breams Buildings, Chancery Lane. Those unable to be present should write to the Secretary, W.R.A.F., O.C.A., 5, Red Lion Yard, Waverton Street, W.1, offering to form or to join local branches in the districts where they live.

The proposed rates of subscription are merely nominal.

A CERTAIN LIVELINESS.

During the morning of Nov. 21st a number of Sinn Fein men, believed to be in quest of arms, attempted to raid the R.A.F. stores distributing park in Marrowbone Lane, Dublin. The raiders were repelled after an exchange of shots. One of the raiders is said to have been injured. The police are investigating the matter.

AT LAST!

The result of some R.A.F. fencing contests in connection with a fencing match against the Army was reported last week. On November 19th, the Army and Air Force teams met with foil, sabre, epée, and bayonet. This was really the opening of the Services fencing season, and the keenness of the contests and the good attendance of spectators augur well for the success of the sport. Though the same three men represented the R.A.F. in each event they proved equal to the occasion, both in skill and stamina, and eventually won by four events to none, or 22 matches to 14.

The R.A.F. representatives were : Squadron Leader E. G. H. Clarke, Flight Lieut. F. G. Sherriff, and Serjeant-Major Grainger. They won the foils by 5 to 4, the sabres by 5 to 4, the epée by 6 to 3, and the bayonet competition by 6 to 3.

The skill displayed by the winners was of a high order, and was the more noteworthy by reason of the fact that while the R.A.F. relied on only three men (as already stated), the Army drew upon nine to represent them during the afternoon.

The Army teams were :—Foils : Capt. Wand Tetley, Capt. Smith, Serjt.-Major Elliott. Sabres : Col. R. Campbell, Major Huntingdon and Serjt.-Major Elliott. Epée : Col. Campbell, Capt. Wand Tetley, and Serjt.-Major Eggleton. Bayonet : Capt. Barnes, Serjt.-Major Reardon, and Serjt.-Major Reed.

THE FIRST VICTORY.

The R.A.F. XV scored their first victory of the season on Nov. 22nd in a game against the London Welsh at Herne Hill. From the outset it was a good game to watch, both sides playing strenuously. The forwards were fairly evenly matched, although the Welsh got the ball from the scrum more often. Behind the scrum the R.A.F. showed a marked superiority—the two new wings showing a great turn of speed.

In the first half the R.A.F. scored three times through Penny, Maxwell and Wagner, and Munday converted one of these. The Welsh scored one try, which was converted.

Half-time : R.A.F., 11 pts.; L. Welsh, 5 pts.

In the second half the R.A.F. were penalised several times, and from one of these kicks the Welsh scored a penalty goal. Soon afterwards they scored again from a break-away, and, this being converted, they led by two points. From this point the R.A.F. took charge of the game, and after Maxwell had been collared near the line, he gave the ball to Lees, who scored a good try, which was not converted.

Final score :—R.A.F., 14 pts.; L. Welsh, 13 pts.

R.A.F. Team : F. O. Damant, S. Ldr. Penny, Flt. Lieut. Thomas, S. Ldr. Neale, F. O. Wagner, S. Ldr. Smart, S. Ldr. Pulford, F. O Maxwell, Flt. Lieuts. Munday, Scroggs, Lees, Abbot, and Simpson, Serjt.-Major Patten and Serjt. Smith.—F. R.

THE C.F.S. (1918) DINNER.

A dinner will be held at Claridge's Hotel on Thursday, Dec. 4th, at 8 p.m., for the officers who served at the Central Flying School, Upavon, during the year 1918. The subscription is £3, including wines. Will officers wishing to attend please send their subscriptions and notifications to Major J. C. Slessor at the R.A.F. Club, Bruton Street, W.1., by Dec. 1st at the latest. Wing Commander A. J. L. Scott, C.B., M.C., A.F.C., will preside. Uniform or evening dress.

THE OLD COMRADES' ASSOCIATION, 7TH WING, R.A.F.

The First Annual Dinner of the Old Comrades' Association of 7th Wing Headquarters, R.A.F., was held in the "Flying Horse" Hotel, Nottingham, on Saturday, Nov. 15th, 1919. Col. A. G. Board, C.M.G., D.S.O., presided over a fairly good attendance.



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Note.—All above Types can be fitted with interchangeable land undercarriage or seaplanes.
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The 7th Wing O.C.A., which was formed early this year, is believed to be the first association of this nature in the R.A.F.

DENMARK.

The Danish correspondent of The Aeroplane writes :—

Two more Naval flying pupils, Lieuts. Andersen and Sorensen, are leaving for England to receive their training there.

FRANCE.

A New French Aircraft-Carrier.

The new dispatch vessel "Bapaume" is to be completed as an aircraft-carrier, and will be attached to the Fréjus-St. Raphael Naval Air Station. At present the only aircraft-carriers the French have are the old "Foudre" and the converted liner "Campinas."

A Fatal Accident.

The escadrille under Capt. Metzergues returned to Tunis on Nov. 19th, after a flight to Casablanca. They reported the loss of a machine in the Kroumirie Mountains owing to bad weather. The pilot, Lieut. Thouzellier, and his mechanic were killed.

A Seaplane Flight.

According to a Reuter report of Nov. 20th, three seaplanes from St. Raphael have arrived at Rabat (Morocco), having completed the non-stop journey at an average speed of 94 miles per hour.

This apparently refers to the flying-boat escadrille which left St. Raphael for Casablanca on Nov. 1st. But one fails to see why the flight which has taken nearly a month to accomplish should be called a "non-stop journey."

ITALY.

According to recent information, Italian Service aeroplanes still lack magnetos and certain essential controls by reason of the Fiume affair.

JAPAN.

The Japanese Naval Authorities have decided to open a new Naval Air Station near the Kure Naval Base and Dockyard. A site at Himomura, in the Kama Province, is being surveyed now.

POLAND.

According to a report from Major Cedric E. Fauntleroy, the commanding officer of the Kosciuszko squadron, another American air squadron is being formed to serve with the Polish Army. The squadron will be named after Count Casmir Pulaski, the Polish patriot who fought and died for the United States. The two squadrons will be amalgamated in the Polish-American Flying Group.

SWEDEN.

The Danish correspondent of The Aeroplane writes :—

The Italian Visitors.

Lieut. Madelena, one of the four Italian officer-pilots at present staying in Stockholm, started in the morning of Nov. 11th for Helsingfors in the largest of the Italian aircraft with the Italian Naval Attaché, Count Gravin, and a mechanic as passengers, alighting safe in the harbour of the Finnish capital at 2 o'clock. The flying-boat was later presented to Finland.

Both Lieut. Madelena and the Squadron Commander, Count Robinet, have been decorated by the Swedish King as an acknowledgment of the Italian Naval aircraft gift to Sweden.

Propaganda.

The Swedish Naval Authorities have asked permission to spend a small part of the amount granted for the buying of flying material on the acquirement of an instructive film of 500 metres length, showing the proper way of alightment of seaplanes in high sea.

U.S.A.

Grades and Badges in the U.S. Signal Corps (Air Service).

The following document has been issued on the authority of the U.S. War Department :—

The Secretary of War directs that Paragraph 1269, Army Regulations, be rescinded and the following substituted therefor : Examinations for ratings of Military Aviator, Junior Military Aviator, Military Aeronaut, and Junior Military Aeronaut will be held at such times as exigencies of the Service require. Such officers as are recommended for these ratings by their commanding officers will be ordered by the Chief of Air Service before an examining board, to be composed of two officers of experience in Air Service and one medical officer, and to be convened from time to time by the Chief of Air Service to conduct such technical and physical examinations as may be prescribed. The medical officer of the board will take part only in the physical examination. The examination will be prescribed by the Chief of Air Service, and will be both theoretical and practical, and will include a demonstration of fitness of the candidate for advanced rank and command if any be involved in the appointment. No officer shall receive the rating of Military Aviator or Military Aeronaut until he shall have served creditably for three years as an aviation officer, with the rating of a Junior Military Aviator or the rating of a Junior Military Aeronaut, except that in time of war any officer or enlisted man who especially distinguishes himself in active service may be rated as a Junior Military Aviator, Military Aviator, Junior Military Aeronaut, or Military Aeronaut, without regard to examination or to length of service.

The Chief of Air Service will from time to time submit names of aviation officers qualified for rating as Military Aviators, Junior Military Aviators, Military Aeronauts, and Junior Military Aeronauts. Such rating to be announced in special orders, which orders shall cite the date of the rating in the case of each officer so rated. Each officer so rated shall receive a certificate to the effect that he is qualified for the rating, and while so rated is entitled to the rank, pay, and allowances authorised by Acts of Congress approved July 18th, 1914, June 3rd, 1916, and July 24th, 1917.

Paragraph 1584-3/4 is amended as follows : An officer of, detailed in or attached to, the Air Service who has demonstrated that he possesses the required qualifications shall, under such regulations as may be prescribed by the Chief of Air Service, be rated as "Airplane Observer," "Balloon Observer," "Aerial Gunner," "Aerial Bomber," "Airplane Pilot," or "Dirigible Pilot," as the case may be. The fact of such rating and date thereof, which is the date of final qualification, will be published in orders by the Chief of Air Service, and a copy of the order will be forwarded to the Adjutant-General.

The Secretary of War directs that no additional badges will be employed. The present authorised badge for military aviator (the double wings and the U.S. shield) will also be used by junior military aviators and airplane pilots. The aeronaut's badge (double wings and a spherical balloon) will be used by junior military aeronauts and dirigible pilots. The observer's badge (the letter "O" and one wing) will be used by airplane observers, balloon observers, aerial bombers and aerial gunners.

Aeroplanes and Engines in the U.S. Army.

The following tables have been extracted from the official "Air Service News Letter" of the U.S. Military Air Service dated Oct. 31st, 1919 :—

The Air Service reports 9,586 planes and 32,033 engines of all types on hand; 54 per cent. of the planes and 57 per cent. of the engines are of the active class.

Airplanes and engines are classified as "active," "obsolescent," and "obsolete." Obsolescent types will be used until the supply is exhausted, but no extensive repairs are to be made or additional spare parts manufactured. Obsolete types are those no longer used. They will be held until final disposal has been authorised.

Planes.

Class	In commission	In reserve	Out of com.	Total	Per cent. In com.	Per cent. In res.	Per cent. Out com
Active	337	4,091	739	5,167	7	79	14
Obsolescent	177	2,057	266	2,500	7	82	11
Obsolete	3	677	699	1,379	0	49	51
Experimental	15	242	283	540	3	45	52
Total	532	7,067	1,987	9,586	5	74	21

Engines.

Class	In commission	In reserve	Out of com.	Total	Per cent. In com.	Per cent. In res.	Per cent. Out com
Active	414	15,833	2,100	18,347	2	86	12
Obsolescent	114	6,481	1,244	7,839	2	82	16
Obsolete	1	353	2,400	2,754	0	13	87
Experimental	8	1,562	1,509	3,079	0	51	49
School	0	14	0	14	0	100	0
Total	537	24,243	7,253	32,033	2	75	23

Medals and Decorations.

The following piece has been extracted from the official "Air Service News Letter" of the U. S. Army, dated Nov. 7th, 1919 :—

Concerning the Wearing of Medals and Decorations.

The War Department authorises publication of the following information from the Office of the Chief of Staff :—

The new Army uniform regulations and specifications are now in course of preparation, but, pending issuance, the following changes in regulations concerning the wearing of medals and decorations is in force.

When dress and blue uniforms of the Army were abolished, it became impossible for any officers or men to wear the medals awarded them, as these were only authorised for wear on full dress uniforms, the ribbons, representing the medals only, being worn on field and Service uniforms. It is now the intention of the War Department to provide for the wearing of medals and decorations as follows :—

In the field no medals will be worn. It is optional with the

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individual whether or not he shall wear his ribbons. On certain formal occasions the Commanding Officer may require the wearing of medals and decorations. On social occasions their wearing is optional with the individual. On evening clothes, military and civilian, these decorations and Service medals are worn only on the left lapel.

Decorations, Service medals and badges, except aviation badges, will not be worn when equipped for the field, neither will they be prescribed for troops in the field. Officers suspended from rank and command and enlisted men serving sentence of confinement are prohibited from wearing any decorations, medals, badges, or substitutes therefor.

Decorations and Service medals will be worn when in uniform on the following occasions, unless especially prescribed otherwise. On State occasions at home and abroad; when receiving or calling officially upon, or acting as escort or aide to the President of the United States; the sovereign or chief executive of any foreign country, or any member of a reigning royal family; at all official and social functions at the White House; at escort to the Colour.

They may be prescribed by the Commanding Officer on the following occasions, when in uniform: For evening parades, formal reviews and inspections and funerals; on ceremonial and social occasions of a general and formal nature. They may be worn when in uniform, at the option of the wearer, on social occasions of a private nature and on holidays when not on duty with troops under arms.

When decorations and Service medals are worn under provisions of the above paragraphs, all those to which the wearer is entitled will be worn by officers and enlisted men in formation, officers and enlisted men not in formation, including reviewing and inspecting officers and their staffs, may omit the wearing of some for purpose of specially emphasising or giving special honour to those which they individually consider particularly appropriate to the occasion. On evening clothes, military or civilian, only one full size decoration or Service medal may be worn on the lapel; any number of miniatures may be worn, but full size and miniatures must not be worn together on the lapel. Service ribbons may be worn, on the white and Service uniforms. When any decorations or Service medals are worn, all Service ribbons will be removed or hidden from view. They will not be worn on the white mess jacket nor on civilian clothes. Badges, not to exceed three in number, may be worn on white and Service uniforms, but not on white mess jacket nor on civilian clothes. Badges of societies will not be worn with decorations, Service medals or substitutes therefor except at meetings, ceremonies or functions of the society in question. Civilian clothes, lapel buttons may be worn. The wearing of decorations, Service medals or miniatures should be limited to ceremonial occasions, then only when strictly appropriate to the occasion.

A foreign decoration or Service medal will not be worn alone, at least one American decoration or Service medal (or miniature in evening clothes) must always be worn with a foreign award.

A Helium Gas Committee.

The Secretaries of War and Navy have appointed a joint naval and military Helium Board composed as follows: Lieut.-Col. C. de F. Chandler, Chief of the Balloon and Airship Division of the U.S. Signal Corps (Air Service), alternates with Major P. Pleiss as Chairman of the Board. As members, Comdr. A. K. Atkins, U.S.N., and Comdr. H. T. Dyer, U.S.N., serve in alternation. Dr. C. F. Cottrell, Assistant Director of the Bureau of Mines under the Department of the Interior, has been appointed to represent that department, which is closely concerned with the problems affecting the production of helium gas. In his absence the department will be represented by the Chief Chemist of the Bureau, Dr. R. B. Moore. This board is formed "for the purpose of co-ordinating the various helium gas activities and requirements of the various Government Bureaus, including full control over the operation of the present and future Government-owned helium production plants, disposition of helium products, the conduct or supervision of conduct of further experiments undertaken with a view toward increasing the efficiency of the production plants, and to control further steps for conserving such sources of helium as may be deemed expedient."

At a meeting of the Board held on Oct. 23rd it was decided that the Bureau of Mines should conduct an exploration to locate sources of helium gas in the United States. The analysis of all gases supposed to contain workable quantities of helium will take about eighteen months. A helium laboratory is in existence at Fort Worth, Texas, and will shortly be enlarged. Dr. Seibel, who is an authority on helium, is in charge of the analytical work. It is expected that the oil and natural gas production companies in the United States will co-operate in this investigation.

A Gyroscopic Stabiliser for Aerial Cameras.

Dr. A. N. Lucien, Experimental Branch, Photographic Section, Air Service, has designed a gyroscope with a new dampening device. The model at present under test stabilises a small 5 in. by 7 in. aerial camera swung in gimbal brackets. The tests shows that the camera remains in the horizontal plane whatever the aeroplane may be doing at the moment. The value of such a device in aerial survey work cannot be exaggerated.

PROHIBITED AREAS.

The following is taken from the "London Gazette" of November 18th:—

ORDER OF THE SECRETARY OF STATE UNDER THE AIR NAVIGATION ACTS, 1911 TO 1919.

In pursuance of the powers conferred upon me by the Air Navigation Acts, 1911 to 1919, and all other powers enabling me in that behalf, I, The Right Honourable Winston Spencer Churchill, one of His Majesty's Principal Secretaries of State, by Order, make the following regulations amending the Air Navigation Regulations, 1919:—

1. Regulation 1 of the Air Navigation Regulations, 1919, shall have effect as though the following provisions were substituted for subsection (7) thereof:—

(7) The aircraft shall not land in any prohibited area as defined by this Regulation, and shall not fly over such area at a lower altitude than six thousand feet.

2. Schedule VI of the Air Navigation Regulations, 1919, shall have effect as though the following were substituted for paragraph 1 thereof:—

1. Each of the places named in the following list, as described therein, shall be a prohibited area:—

Orkney Islands.—An area enclosed by straight lines joining the following points:—Tor Ness, Rora Head, Inga Ness, Mull Head, Old Head.

Cromarty.—Seven statute miles in all directions from Newball Point (opposite Invergordon).

Firth of Forth.—An area enclosed by straight lines between the following places:—Hill House (one mile south of Dunfermline), Blackness Pier, Dalmeny Church, Inchmickery, Hallcraig Point.

Harwich.—Two statute miles in all directions from Parkeston Pier.

Osea Island.—Three statute miles in all directions from the centre of Osea Island.

Sheerness.—Three statute miles in all directions from Garrison Point, excluding Grain aerodrome and all land belonging thereto.

Chatham.—Three statute miles in all directions from Hoo Church.

Dover.—Three statute miles in all directions from Dover Castle.

Portsmouth.—Two and a half statute miles in all directions from Dockyard Clock Tower.

Poole Harbour.—Three statute miles in all directions from Lychett Minster Church.

Portland.—Two statute miles in all directions from Portland Castle.

Devonport.—Two statute miles in all directions from a point half a mile north of Stoke Church.

Pembroke.—Two statute miles in all directions from Wear Point.

Cork Harbour.—Two statute miles in all directions from Spike Island Fort.

W. S. Churchill,
One of His Majesty's Principal Secretaries of State.

Air Ministry, London, November 17th, 1919.

LORD WEIR AND THE W.R.A.F.

Among those made honorary graduates of Glasgow University on Nov. 19th were the Lord Weir and Commandant Dame Gwynne Vaughan, D.B.E. In the course of a long speech proposing "Town and Gown," Lord Weir said that the honour conferred upon him was a reflection of the admiration, pride, and wonder universally felt for the heroic work of the Air Force. He also heartily endorsed the honour conferred upon Dame Gwynne Vaughan for her wonderful work in the Women's Royal Air Force. No one ever commanded a corps composed of more honourable, gallant and devoted women, with higher character or principle, than the girls of the Women's Royal Air Force.

INTELLIGENT ADMINISTRATION.

An ex-R.A.F. officer tells a delightful story of the modern R.A.F. as related to him by a much-afflicted C.O.

One of the administrative officers under the said C.O. received a wire the other day to send four men to the Airship Station at *F*ulham, an obvious mistake for the famous Station at *P*ulham, Norfolk. The administrative officer being a thoroughly disciplined and obedient person duly sent the four men to Fulham. The teller of the story remarks: "Imagine these four men wandering up the Fulham Road, looking for an airship station. It is a good illustration of the idiocy of giving administrative commissions to flying officers or conversely forcing administrative officers to fly."

It is alleged that when the hero of this story was admonished for making such an obvious mistake he rushed off for the wire and pointed out the *F* where the *P* should have been, and stated that he could not be responsible for the mistakes of the Post Office.

A RESIGNATION.

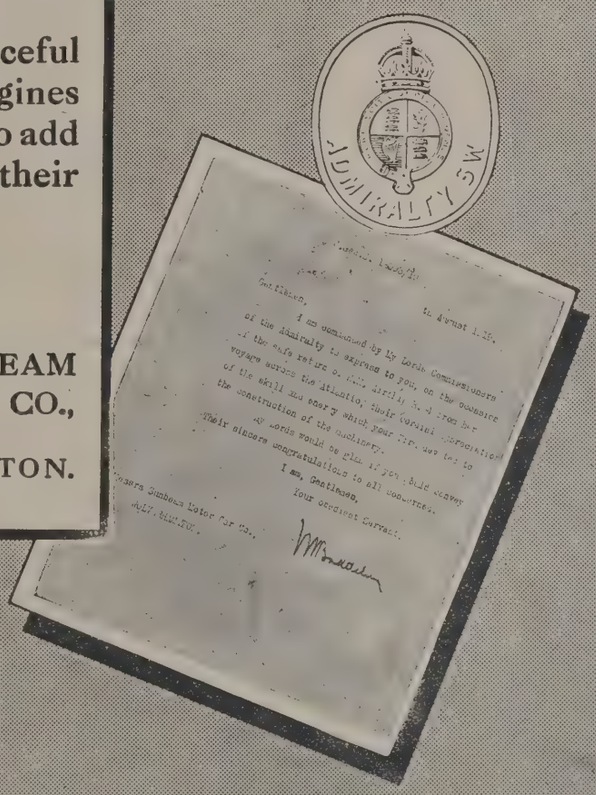
Mr. E. W. Roberts (late Lieut., R.A.F.) is, owing to pressure of work, resigning his position as Secretary of the ex-R.A.F. Officers' City Luncheon Club.

SUNBEAM-COATALEN AIRCRAFT ENGINES

contributed in no small measure to the aerial supremacy which was largely responsible for the Victory which crowned the Allied arms.

And in peaceful times, these Engines will continue to add to the fame of their name.

THE SUNBEAM MOTOR CAR CO., LTD.,
WOLVERHAMPTON.





GREAT BRITAIN.

COMMUNICATION WITH AIRCRAFT.

The following "notice to airmen" was issued by the Air Ministry on November 24th :—

The Radio Telephony Stations at the Aerodromes at Hounslow and Lympne are now working on 900 metre wave length.

The registration marks of aircraft should be used as the call signs in making or receiving signals by wireless telegraphy or other methods of communication, except when opening up communication by means of visual signals, when the usual methods will be employed.

THE CONTINENTAL AIR SERVICES.

THE AIRCO SERVICE.

Sixteen flights have now been prevented and eight interrupted by the weather on the Airco London-Paris Air Service. Before each machine starts on its journey to France, it is brought round in front of the customs offices, so that passengers can be seen climbing aboard, and cannot do any smuggling. A medical officer, R.A.F., is in attendance at the aerodrome and examines all foreigners entering the country by the air route.

This week the times of the Bréguet mail-carrying machines have been placed in the table with the Airco machines.

Date.	Type.	Pilot.	Left Hounslow	Arr. Paris.	Left Paris.	Arr. Hounslow.	Pass.
Nov. 18th	D H. 9	Lt. Shaw	12.35 p.m.	2.35 p m.			Mail
	Breguet	M. Bajac			12 30 p.m.	3.00 p.m.	Mail
	D.H. 16	Capt. Baylis			12.30 p.m.	3 05 p.m.	1
Nov 20th	Breguet	M. Bajac	12.40 p.m.	3.00 p.m.			goods
	D.H. 16	Lt. Campbell-Orde	12.45 p.m.	2 40 p.m.			3
	D.H. 4a	Lt. Lindley	12.55 p.m.	2.55 p.m.			1 and Mail
	D.H 4a	Lt. Powell			12.30 p.m.	3.05 p.m.	1
Nov. 21st	D.H. 9	Lt. Bradley	12.55 p.m.	3 00 p.m.			1 and Mail
	D.H. 4a	Lt. Tebbit			12.30 p.m	3.25 p.m.	1
Nov. 22nd	D.H. 4a	Lt. Armstrong	12.45 p.m.	Landed L'mpne			Mail
	D.H. 4a	Lt. Lawford	1.10 p.m.	Landed L'mpne			1
Nov. 23rd	D.H. 9	Lt. Shaw			1.00 p.m.	3.30 p.m.	2

On Nov. 17th and 19th no machines started from Hounslow or Le Bourget owing to adverse weather conditions.

On Nov. 20th a Breguet machine, carrying the French mails, left Le Bourget for Hounslow, but was forced to land before reaching the French Coast owing to some minor mechanical defect.

On Nov. 21st a Breguet machine carrying the mails from Paris was forced to descend at Lympne and the mails were brought to London by rail.

On Nov. 22nd the DH4a, piloted by Lt. Lawford, crossed the Channel, but on reaching Calais encountered such bad weather that the pilot deemed it advisable to return. Both the machines which landed at Lympne returned to Hounslow on the following day.

THE HANDLEY PAGE SERVICE.

On Nov. 18th Capt. Davies flew a Handley Page machine from London to Brussels, carrying two passengers and 1,201 lb. of freight. Mr. Pager piloted a machine with two passengers and 238 lb. of freight from Lympne to Paris, and at three o'clock in the afternoon a Handley Page machine alighted at Hounslow from Paris with one passenger and 200 lb. of cargo.

During the week ending Nov. 19th, on the London-Paris service, 17 passengers and 1,224 lb. of freight were carried. Severe rain and windstorms made flying totally impossible on two days out of the week.

During the last 10 weeks a total number of 554 passengers and 9,637 lb. of freight have been carried on this service, and a distance of 26,850 miles covered. This has been accomplished without one accident, although the majority of the flights had to be carried out in bad weather.

On the London-Brussels service during the week ending Nov. 19th 14 passengers and 3,432 lb. of freight were carried.

A total of 206 passengers and 16,036 lb. of freight have been carried on this service during the last seven weeks, a distance of 12,850 miles being covered.

There is an increasing demand for the conveyance of freight from London to Brussels in Handley Page aeroplanes. Consignments of cloth, drapery, carpets and handkerchiefs are being carried to Belgium for sale in the stores of that city and Antwerp. Manufacturers in the North of England are utilising the service for the rapid conveyance of their products to the Continent.

"Carrying carpets to Brussels" is reminiscent of "Carrying coals to Newcastle."

On Nov. 20th Mr. Massot flew to Paris in 2¾ hours with a passenger and 428 lb. of freight. Lieut. Hope flew from Hounslow to Brussels with two passengers and 1,243 lb. of cargo, mostly drapery and woollen goods.

BOURNEMOUTH.

Weather permitting, the Avro Air Fleet will visit Bournemouth on Saturday, 29th, and Sunday, 30th insts. Exhibitions of flying will be given on both afternoons, starting at 2 p.m. There will be a sham fight, trick flying, and Miss Nellie Gibson will make her parachute descent. The Avro "Baby" will take part in the performance, and the Limousine will be there. The arrangements are in the hands of Mr. E. J. Hucks.

BRADFORD.

In spite of the heavy snow and gales of wind encountered during the week ending Nov. 23rd, the Berkshire Aviation Co. gave a flying week at the Leeds Road aerodrome, Bradford, without interruption. Many passengers were carried.

During the past six months the Berkshire Aviation Co. have carried more than 4,000 passengers, and the distance flown exceeds 18,000 miles. During this time only one minor mishap occurred, in which nobody was even scratched.

BROOKLANDS.

A correspondent writes :—One hears various rumours of private owners of aeroplanes taking over hangars on the Brooklands aerodrome, but there is nothing at present to show that such is the case.

At the Vickers works they are reported to be constructing an amphibian, a biplane, fitted with floats and landing wheels, which is to be tested soon at Brooklands. Sir John Alcock now has a residence in Weybridge, and will be engaged in testing work.

Contrary to what has hereinbefore appeared, the Air Navigation and Engineering Co. (Blériot's), of Addlestone, have not entirely stopped aircraft work. The works are reported to be devoting a small part of their energies to some special type of aeroplanes, of which no details are to hand.

A two-seater machine of large dimensions, but of orthodox Martinsyde design, fitted with a 450 h.p. Napier "Lion" engine, is being constructed by Martinsyde, Ltd. One is at present ignorant of the purpose for which it is being built. —J. F. S.

LONDON.

HOUNSLOW.—On Nov. 21st, two Airco DH9a biplanes, fitted with Napier Lion 450-h.p. engines, left Hounslow at 1.55 p.m., piloted by Lieuts. Robins and Game, for The Hague. One machine carried two passengers and the other their luggage.

MIDDLESBROUGH.

The Berkshire Aviation Co. are giving flights at a site at Middlesbrough this week ending Nov. 30th.

IRELAND.

Sanction was granted by the Cork Corporation on Nov. 14th to A. V. Roe and Co., Ltd., for the erection of an aerodrome in Cork : The town is to be used as a base for the air services to connect the principal towns and watering places.



THE BOULTON & PAUL—P. 9.

An Aeroplane which is a Sound Commercial and Private Proposition

In this P. 9 Machine we have, we feel, solved the problem of providing an Aeroplane which is a sound business proposition—and which combines with low cost the great essentials for Commercial and Private use. All our great resources of material and craftsmanship have been utilised. Scientific Research and Experiment by a staff associated with flying from its beginnings coupled with the great Experience gained through the building of thousands of Aeroplanes during the War, have been concentrated in the production of this P. 9 Model.

It is a Two-Seater—Single Engine Tractor—which has attained on test a speed of over 100 miles per hour.

Its outstanding features are :—

CHEAP AND EASILY HOUSED. The Initial cost is extremely low—£700—and the cost of running for a machine of this type and performance is reduced to a minimum. Owing to its small size it is easy to handle on the ground and requires but little accommodation. The principal dimensions are: Span, 27 ft. 6 in.; Length, 25 ft.; Height, 10 ft.

EASY TO FLY. The P. 9 has a big speed range, and low landing speeds, and this combined with Stability at all trimming speeds and well-balanced controls, allows the machine to be flown for long periods without undue fatigue. It also gives the maximum of Safety possible.

COMFORT AND CONVENIENCE. The comfort of the Pilot and Passenger has been specially considered. Each Cockpit is roomy and fitted with our special Seats. Controls for both Flying and Engine are fitted in the fron and rear Cockpits to enable the machine to be flown from either position. The exhaust from engine is discharged behind the rear Cockpit giving a silencing effect and freedom from fumes. Two standard cases are provided for luggage and form part of the fairing immediately behind the rear Cockpit.

The uses to which this compact and efficient machine can be put are wide and various, and will suggest themselves to those who have been awaiting the stage of Aeronautical Development now reached by the P. 9. It can be used for dozens of Commercial Purposes. The same type carried photos from R. 34 direct to London. It has been sent to Australia for Sheep-runs—and will soon be in use in various parts of the world for Exploring Uncharted Territory, Examining Timber Tracts, Fighting Forest Fires, Carrying Mails to Distant Mines, Transition of Colonial Mails to Mail Steamers, and for General Patrolling and Police Purposes.

£700 **If you are interested—write for full particulars. State your needs or purpose, and our engineers will consider every detail closely—to advise soundly.**

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SOUTH AFRICA.

The first flight made by South African Aerial Transports, Ltd., was advertised to take place at Baragwanath Aerodrome (Johannesburg) on Oct. 25th, when the Mayor of the Town was to perform the naming ceremony and make the first flight.

The hours for flying at the aerodrome are from 9 a.m. to 11 a.m. and from 4 p.m. to 6.30 p.m. on Mondays, Tuesdays, Thursdays, and Fridays, and from 2.30 p.m. to 6.30 p.m. on Wednesdays, Saturdays, and Sundays.

Major W. E. Young, D.F.C., of the company, is O.C. at Durban. He has a new 110-h.p. Le Rhône Avro biplane, and flying was to start in the first week of November. The following matter is extracted from the Johannesburg "Star" of Oct. 30th :—

Flights are to be made at Maritzburg and a few other Natal centres, but the home of the machine is to be Durban. The original site selected not being ready, Major Young is endeavouring to obtain the use of the polo-ground as an aerodrome. If he succeeds, the machine will be housed in a shed, it not being expedient to construct a permanent hangar. The immediate programme so far as Durban is concerned is a series of passenger flights.

Major Young said that projected routes for regular services have been prepared as follows :—Johannesburg-Delagoa Bay *via* Imbabane; Johannesburg-Capetown *via* Kimberley-De Aar-Beaufort West; Johannesburg-Durban (possible stop at Newcastle).

Branch services : Johannesburg-Pretoria, Kimberley-Bloemfontein, De Aar-East London, De Aar-Port Elizabeth. It is intended to run two-engine machines, each with a capacity for 14 passengers, with a cruising speed of 90 to 100 miles per hour. The fares are difficult to estimate, but may average £15, though this figure will be reduced as support becomes assured.

The first flight was made by Major A. Miller. He flew from Johannesburg to Durban carrying a special edition of the "Johannesburg Star." General Smuts sent a message of congratulation on the flight to Major Miller.

DENMARK.

A Flight to Sweden.

Lieut.-Col. G. L. P. Henderson arrived at Copenhagen on Nov. 20th with his Armstrong-Whitworth biplane (160-h.p. Beardmore). He flew from Hamburg via Lybeck in two and a half hours. He intended to fly to Stockholm on the next day.

The Danish Air Traffic Co.

After much international and other negotiation, the Danish Air Traffic Company and Air Express have announced that they will start a regular service between Copenhagen and Warnemunde on Dec. 1st.

FRANCE.

The Paris-Melbourne Flight.

A Reuter message from Paris dated Nov. 24th stated that M. Poulet, who is still at Karachi, is receiving instructions from the British authorities regarding the route he is to follow in the further stages of his flight to Australia. M. Poulet has announced that if he arrives safely at Melbourne, after his machine has been overhauled, he will attempt to make a tour of Australia, over the desert parts of which no flight has yet been attempted.

GERMANY.

A New Record.

A message from Berlin states that the airship "Bodensee" made a new record on Nov. 20th. The journey from Friedrichshafen to Berlin was accomplished in three and three-quarter hours.

The Danish correspondent of THE AEROPLANE writes :—

The Effect of the Railway Stoppage.

The ten days' stop of all passenger trains on the German railways appears to have affected German commercial aviation similarly as the recent English railway strike stimulated British aviation, within the limits set by the reduced quantity of German benzole available which results from the low coal production, again the effect of strikes. Though the exact duration of the period of the cessation of railway transport facilities was known in advance, German organisation, skill and enterprise seems for once not to have come fully forward.

A private Berlin telegram to the Copenhagen news-sheet "Politiken" of Nov. 8th announced that activities on the regular air lines were to be restarted on the next day, mainly for mail and newspaper transport, though it was hoped, and depended upon negotiations with the fuel suppliers, that aerial passenger travelling could take place also.

It was announced beforehand that the airship "Bodensee," running on its regular service between Spandau by Berlin and Friedrichshafen, but not landing intermediately at Munich on the trip, would during the period be the chief mail link between central and southern Germany. However, it appears now that the airship has been in need of some overhauling—perhaps as a result of recent unsuccessful storm landing efforts at Berlin and ultimate successful emergency one at Magdeburg, for in the telegram referred to above it was reported that a flight of the airship to Friedrichshafen without passengers, but loaded with 2 tons of mail and parcel-post for South Germany, was likely, and that it would be ready after a short stay at the yard.

It is announced also that the demand for aircraft is increasing, artists requiring their services chiefly.

The lines to be restarted by the "Deutsche Luftrederei" were : Berlin-Johannisthal to Leipzig, Breslau, Hamburg, and Warnemünde. The latter forms, with the Danish ferry service to Gedser, the chief route to Scandinavia. From Warnemünde seaplanes were to link up to Sassnitz for the Swedish Trelleborg ferry line.

Rumpler Werke Aktien Gesellschaft were also to run two services, Berlin-Augsburg-Munich and Berlin-Leipzig.

The First After-War Prize.

Before the war General Direktor Edmund Rumpler offered a complete Rumpler "Dove" monoplane (which was never won) to the first pilot to fly from Berlin-Paris within 24 hours on an aircraft from his works. He has now handed in the first German after-war aviation prize of 20,000 marks to the Air Sport Commission, who will soon propose how the money is to be spent.

Fighting with Camera Guns.

An enterprising company, the Messter Optikon Film Co., has started photography fighting to employ the idle scout machines and their pilots in aerial show fighting, as demonstrated at the late Copenhagen aero exhibition. A Dutch branch has also been formed. A camera is combined with a gun, and 400 shots are fired per minute—i.e., one for every four revolutions of the screw. The film is marked with a cross where hit, and a combined watch registers at the same time the exact time with the accuracy of one-fifth sec.—HI.

ICELAND.

Capt. Cecil Faber, of the Danish Aviation Co., and late R.A.F., has just returned to Great Britain from Iceland, where he has been conducting an interesting experiment in popularising aircraft. The Danish Company sent him out there with a standard 504K Avro and two English mechanics, who had also served in the R.A.F. They established themselves at Reykjavik, and on September 3rd began to take up passengers.

The Icelanders had never seen an aeroplane before, so it was to be expected that they would hesitate at first to entrust themselves to such an unfamiliar contrivance. However, all things considered, they came forward in fair numbers to make flights. In three weeks 140 passengers were taken up, including several old ladies of 60 and upwards.

Capt. Faber remained there for three weeks, and during that time the weather was not all good. It was often gusty and there was a certain amount of rain. But the Avro behaved splendidly. There was no mishap of any sort, and none of the spares for either machine or engine had to be used. Consequently the first impression made on the islanders has been distinctly good.

Iceland seems to offer a very good field for the commercial use of aircraft. All the towns are on the coast, and communication is by steamer. It now takes two days' steaming to get about a third of the way round the island. By air the same journey may be made in four hours. The chances of aquatic aircraft seem to be particularly good.

ITALY.

The Italian correspondent of THE AEROPLANE writes :—

Trade Unionism for Aviators.

Attempts are being made from various centres to band together flying people, the better to move to the attack against the diffidence and sloth of the unenlightened, whoever and wherever they may be.

Postal Activities.

The daily postal service from Sardinia to Campiglia Marittima, Pisa, is now running again and a certain amount of flying duly controlled is being done, though the flying veto has not yet been removed.

The aeropost, carried on since July, 1918, by the 280th Squadron, under the orders of the Admiralty, from Milazzo to the Eolian Islands is now to be extended to all the various islands of the group, Lipari, Stromboli, etc.

Slipways are under construction at both the above places and are to be of a permanent nature in view of their evident usefulness for future inter-continental traffic. So the "Gazzetta dell'Aviazione."

G R

By direction of the Disposal Board

AIRCRAFT DISPOSAL DEPARTMENT

MINISTRY OF MUNITIONS.

AEROPLANE DOPE

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6,000 Gallons S.33 Dope Solvent.

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NOTE.—For further particulars of other Government Property for sale see "SURPLUS" price 3d., at bookstalls, or by quarterly subscriptions of 2s. post free, payable in advance to the Director of Publicity, Ministry of Munitions, Whitehall Place, London, S.W 1.



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A FLYING BILL.

A Bill dealing with flying is likely to receive the Royal signature in a few days. It merely regulates things on the lines of the decisions taken by the Fédération Aeronautique.

A FATAL ACCIDENT.

Lieut. Frank Rudorfer was killed while putting a S.V.A. through her acceptance tests at the Pozzo Strada aerodrome at Turin last week. As before stated, Ukrainia is buying some ten or twelve of these machines, and Rudorfer is thought to have been the usual victim of a belt coming unhasped when doing a steep turn. Anyhow, he fell out, and the machine after planing down landed badly.

THE FIAT OUTPUT.

The Fiat's B.R. has now a big sister which is thinking of taking the wind out of Jules Verne's sails on a globe-circling trip shortly. She is said to have a tank capacity of 5,000 kilometres. Ask Brack-Papa! By-the-bye, two of those 700-h.p. engines would make a nice power plant for the first real aero-char-à-bancs which happens—whenever it does.

MORE RECORDS.

As predicted in my last notes, Ing. Marchetti's new M. Vickers-Terni biplane, with 260 S.P.A., has beaten all climbing records at the aerobatics camp, Monte Celio, Rome.

The figures published are confounding, 5,000 metres in 11 minutes being mentioned in one report. The day was perfectly fine and calm, and the Aero Club's representatives checked matters. Serjt. Elias Luit was, as before, the pilot. One congratulates the inventor, anyway. The lines of the eel-like body alone are a fitting monument of a lifetime spent at work.

RACING IN 1920.

The famous Circuit of Brescia is to be revived next year with a really novel and useful programme. Two races only: A "Maximum Speed Variation" contest over a closed circuit of 1,000 kilometres with a compulsory amount of useful load, and a "Speed Contest for Pluri-motored Machines."

This last will be flown off in three heats. No. 1, 400 kilometres, using all motors. No. 2, a similar distance, but bi-motored machines to use only one, and tri-motored craft only two of their engines. No. 3, same distance, bi-motored machines using motors alternately and tri-motored 'busses only two, changing about. During No. 2 heat, machines are to reach at least 2,000 metres. One lives in hopes of seeing the Schnieder Cup flown for at Venice next September, too. Altogether the New Year promises to be interesting.

GABARDINI PRODUCTS.

When at Cameri the other day, Ing. Gabardini told me he was at work on plans for a tandem-plane. Also I saw the big vertical engine for the new Gabardini projectile. Although it was almost dark, he asked Sig. Zanibelli—who began flying at 16, by-the-bye—to take up the 50 biplane which I had never seen in the air. Signor Zanibelli graciously set out to do tonneaux and similar circus tricks to enlighten my darkness. Like all the other Gabardini stuff, the machine can certainly fly. Stretching himself out à la fingerpost on one leg, Chief Pilot Landini measures from toe to fingertip almost the whole length of the machine's body, if one excepts the rotary engine's cowl. The total surface is called 9 square metres.—T. S. H.

A TRANS-ALPINE FLIGHT.

A very difficult flight over the Alps was accomplished on Nov. 19th, when an aviator flew with a passenger in an Italian hydro-aeroplane, 80 h.p. engine, from Locarno to Zurich. There was a very strong headwind and a heavy snowstorm was encountered, but a cinema film was taken of almost the entire journey.

A WORLD'S RECORD CLAIMED.

Messages from Rome state that on Nov. 20th at the Montecelle aerodrome Elia Luit on a Marchetti aeroplane beat the world's record for speed by flying 171½ miles in an hour. With a new propeller it is hoped that a still greater speed may be achieved.

JAPAN.

During an experimental aerial-post service between Tokyo and Osaka, postage stamps were issued with an overprint representing a monoplane in flight.

NORWAY.

The Danish correspondent of THE AEROPLANE writes:—

"Det Norske Luft Rederi" (The Norwegian Air Navigation Co., Ltd.) has asked the Trade Department for a subvention of 1,2 million crowns (£66,700) on the finance bill for 1920-21. If the subsidy is granted they will, from May 1st, 1920, start a North Sea service from Stavanger to Scotland, as a link in the later northern European air line from London to Petrograd.

They will also start a coastal route, Christiania to Stavanger and a Christiania-Copenhagen connection over Gothenburg in connection with the Swedish and Danish air navigation companies, each sharing one-third of the traffic. Stops will be made at Arendal and Christianssand on the Stavanger route (see map on page 1194, THE AEROPLANE, issue of September 24th). The air services on both the last-mentioned routes will be run every week-day, even if to be run at a loss for a start.

Norwegian detailed cost estimations have been set up for the two services, the total expenditures on plant and building being calculated at 1,750,000 crowns (£97,222), in which sum nine 300-h.p. aeroplanes are included, reckoned each at 100,000 kr. (£5,555). Further, the stations are calculated to cost 310,000 kr. (£17,222) and 150,000 kr. (£8,333) respectively to erect.

The operating costs are worked out at 137,650 kr. (£7,647) monthly, all included. The operating cost per kilometre works thus out at 5,20 kr. (5s. 9½d.). Flying all work-days and with a reliability factor of 80 per cent., twenty flights should be carried out each way per month.

The share of the Norwegian company on the Copenhagen route is to be thirteen trips, the expenses on each of which are calculated at 2,600 kr. (£143). On the profits and revenue side three passengers are reckoned with at each trip, a fare of 250 kr. (£14), or 750 kr. (£42).—HI.

POLAND.

One learns from the German paper, "Luftpost" that an Aero Club is being formed in Posen. The Minister of Posts and Telegraphs in Poland has taken the notable step of making use of aeroplanes for transport work.

A Polish commercial firm has come to an arrangement with the British Handley Page Company to undertake the technical management of an air line running between Dantzig, Warsaw, and Krakau. It is said that each transport vehicle will carry about 1,500 kilos. of load.

PORTUGAL.

Mr. F. P. Raynham, who is demonstrating with a Martinsyde F.4 (300-h.p. Hispano-Suiza), on Nov. 11th flew from Madrid to Lisbon in 3 hr. 5 min. The distance is some 360 miles. The weather conditions were bad and there was a strong wind against him.

It is said that this machine is the first to fly into Portugal, and its arrival has created a great deal of excitement. Mr. Raynham landed at what is going to be the International Aerodrome, but which is now a ploughed field. He was to make a formal entry into the Military Aerodrome escorted by the Portuguese Flying Corps *en masse*.

Martinsyde, Ltd., hope to do a little business in Portugal and say that there appear to be splendid opportunities for aircraft development in the country and also in Spain, but very little money.

SPAIN.

An aeroplane flown by the French aviator, M. Bourgeois, fell to the ground from a height of 300 metres at the Andorra aerodrome (near Lisbon) on or before Nov. 21st. M. Bourgeois was killed.

The "Vickers-Vimy-Rolls" aeroplane which recently made a tour of the Continent is now at Madrid giving exhibition and passenger flights. His Royal Highness Prince Alfonso de Bourbon, cousin of His Majesty the King of Spain, was taken up as a passenger on Thursday, Nov. 20th, in this aeroplane. He expressed great satisfaction with the trip.

SWEDEN.

The Danish correspondent of THE AEROPLANE writes:—

NEW FLYING STATIONS.

The Swedish Air Navigation Co. has hired space for seaplanes at Askims Fjord, and by Tingstadssvarren for land-going aircraft, for the experimental Norwegian-Swedish-Danish air service, planned for next spring. It is hoped that a municipal flying station will be laid out, for which the technical and financial calculations have been given under Norway.

A correspondent writes from Sweden on Nov. 13th:—

THE ITALIAN PRESENTATIONS.

The only thing of any importance of late is the propaganda work done by the Italian pilots last week. They finished up here by a big show, in which they bedecked two of their boats with the Swedish colours, and said a few words on the great pleasure they had in presenting the King of Italy's greetings to the Swedish people, and also in presenting two of their boats to the Swedish Navy.

The Count had practised his Swedish and made the speech in that language. He was later presented in return with the Order of Wasa (First Class). The other two pilots were also presented with various Orders, and I believe also the mechanics. They have all left for Finland now, and are about to present their last machine to that Government.

AERONAUTICAL ENGINEERING

SUPPLEMENT TO "THE AEROPLANE"

INCORPORATING AIRCRAFT ENGINEERING, AERODYNAMICS, AIRCRAFT FINANCE AND COMMERCIAL AERONAUTICS AND MATTERS PERTAINING TO THE AERONAUTICAL ENGINEER AND THE AIRCRAFT TRADER.

THE WEEKLY COMMENTARY.

The German account of the Rolls-Royce aero-engine, which began in last week's issue, is completed in the following pages.

It has been necessary to interrupt temporarily the article on the experimental work of the Isle of Grain Experimental Station. Some account of the work connected with the development of machines for shipboard use will be given in a later issue.

Photographs of some machines built by the German Mercédès-Daimler Motoren Gesellschaft are given on page 1804. These machines are noteworthy in that they employ an engine of the 8-cylinder Vee type—a class of engine by no means usual in German aero practice.

A note on the applications of meteorology to the running of commercial air services by the meteorologist of the Air Transport and Travel Co. appears on page 1806.

A GERMAN APPRECIATION OF THE ROLLS-ROYCE AERO ENGINE.

TRANSLATED BY ERIK HILDESHEIM, COPENHAGEN.

(*Continued.*)

The cylinders are made of steel, built up of several parts. To avoid large masses of metal round the valve seats, which are found in many models, short sockets are provided on the cylinder into which the valve caps are inserted. Hereby the welding is moved farther above the valve seats, improving thus the cooling efficiency of these important points.

For the inlet valve the valve stem guide is made in one part with the valve cap, together with a boss for the bolt holding the camshaft case. These parts are made separately at the exhaust valve and welded on to allow of cooling the stem guide. Special bronze bushes are pressed into the steel guide. Round the cylinder is a water-jacket pressed from sheet steel. All welding seams have been made very clean, no more welding material being employed than is absolutely necessary to obtain a tight and rigid welding seam. The plug sockets are screwed into the cylinder from above and welded to the water-jacket. No compression cocks are provided. The inlet and exhaust port flanges are screwed on to the pipes forming the valve ports.

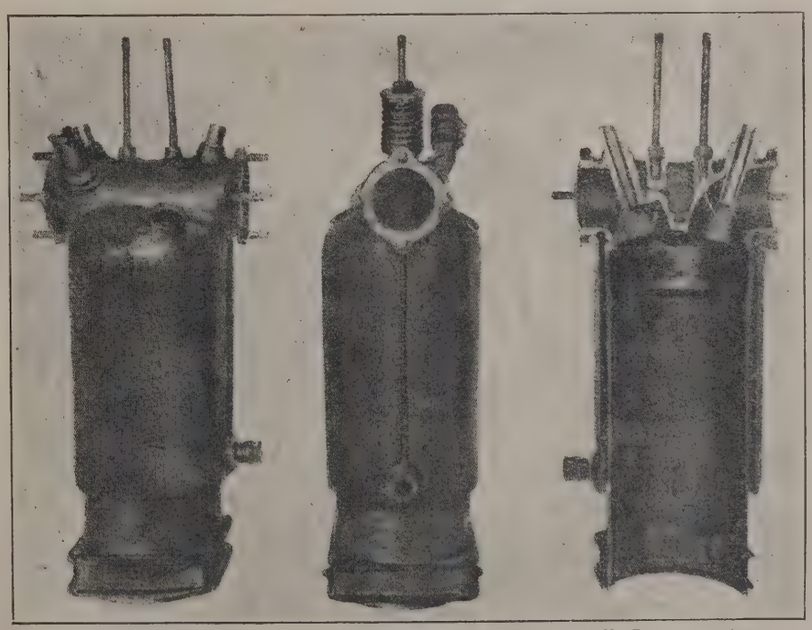
For mounting on the crankcase a very strong double flange is machined from the solid at the lower end of the cylinder, which scheme cannot be recommended too highly. The cooling water enters through a pipe at the lower end of the water-jacket from outside, leaving at the highest point of the water-jacket at the inner side of the angle between the cylinders. All outlet pipes of each cylinder row connect to a common water-pipe.

Inlet and exhaust valves are similar. Their form is the so-called umbrella model, which is only rarely to be found in aero-engines, though it produces very good flow conditions for the gases. The stem of the valves is lightened by being drilled, and a tempered piece of steel is screwed into the stem end and locked by a split pin to take the blows of the tappet. The washer for the two springs is screwed on and locked by a castle nut. The lower spring washer is a loose fit on the valve stem guide.

The valves are controlled by means of a camshaft, resting in a bronze case, made of three parts. It is shown with all details in a figure, so that a further description is not needed. No half-compression arrangement is provided, and in view of the small dimensions of the cylinders this can be spared.

Automatic lubrication takes place through the hollow camshaft. At the front end of the case a flow of the oil downwards back to the crankcase is provided, while at the rear side the oil can return through the case of the driving shaft.

In older specimens the air-pump for the petrol pressure or the tachometer drive was mounted at the front end of the camshaft, but these parts have later found their places at the rear part of the case, which gives better protection of these parts and shorter lengths of pipes and shaft connections.



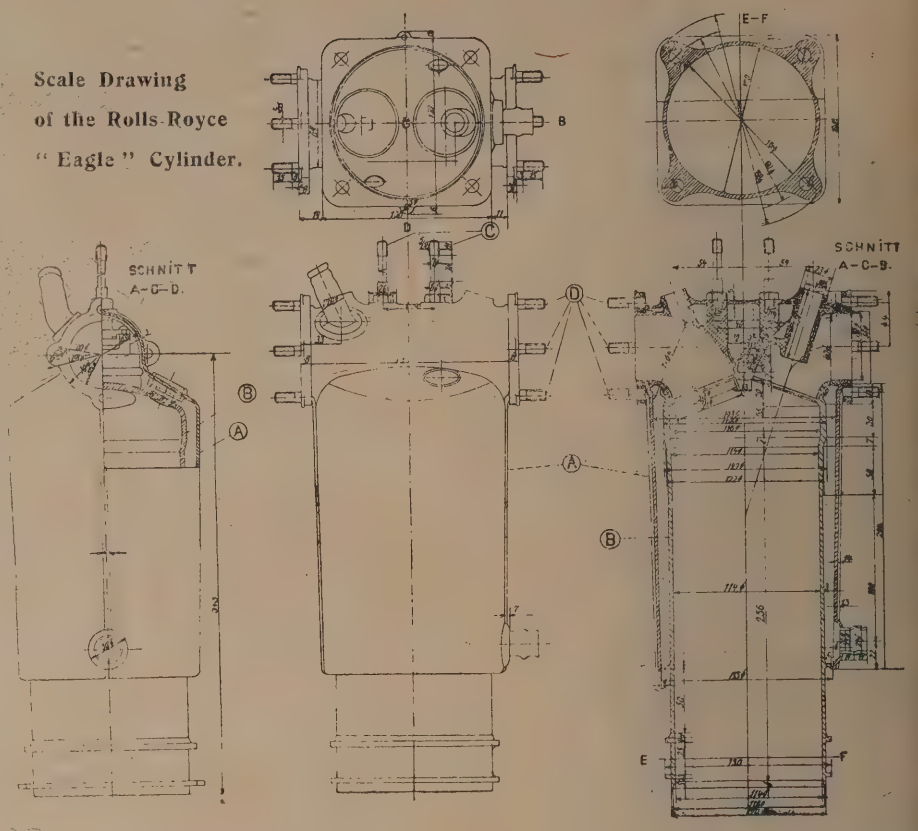
End, Side and Sectional Views of Cylinder of an "Eagle" Rolls-Royce engine.

The opening times and movements of the valves are good, which, combined with the high compression ratio, explains the favourable mean pressure of 8.7 kg. per sq. cm. for the 352-h.p. model.

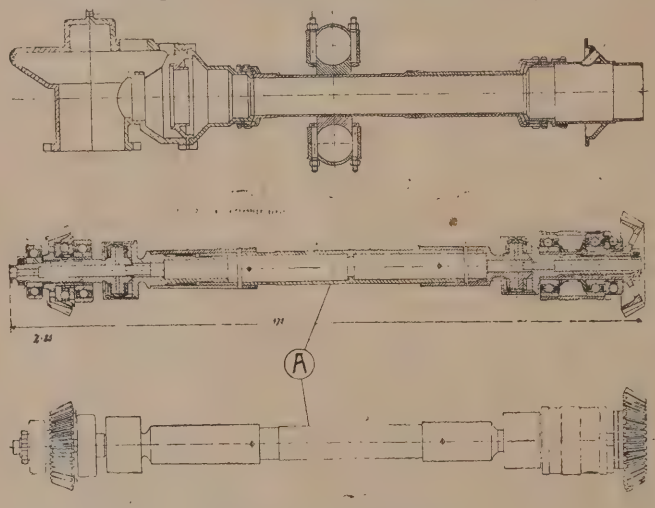
The camshaft drive contains a number of interesting intermediate parts. At the rear end of the crankshaft a worm-wheel is coupled with the shaft by means of a sprung clutch and a cone hub. The aim of this arrangement is to keep harmful torsion oscillations from the camshaft drive and the auxiliary apparatus driven by the worm-wheel

This worm-wheel has 24 teeth and engages a second one with 16 teeth that is mounted on a cross-shaft. Beside this worm-wheel, two spur bevel-wheels with 20 teeth are mounted on the ends of the cross-shaft and drive the intermediate shafts driving the camshafts through bevels of 30 teeth. The transmission first to a high number of revs. and then to a low one again is required, as two of the four magnetos are driven from the cross-shaft and have to rotate at $1\frac{1}{2}$ times the number of revs. per min. of the crankshaft. The camshafts are driven from these intermediate shafts by bevel-wheels of 50 and 25 teeth.

The intermediate shaft is a very clever and well-founded design. To keep an exact engagement of the spur bevel-wheel certain always, in spite of heat elongation and vibrations, this shaft is made to swivel in all directions. The vibrations are made harmless by top and bottom universal joints; to side movement attention is paid by means of a sliding splined hub construction, which is repeated in almost all drives and possesses many advantages compared with the cone and key locking, and with careful manufacture affords the highest possible reliability. The correct combination is always made certain by varying the width of the grooves. Lubrication of the universal joints is by the oil from the camshafts returning through the shaft and its case. In the same way attention has been paid to the circulation of the oil in the design of the intermediate case.



Scale Drawing of the Rolls-Royce "Eagle" Cylinder.



The Universally Jointed intermediate shaft driving the camshaft, and its casing.

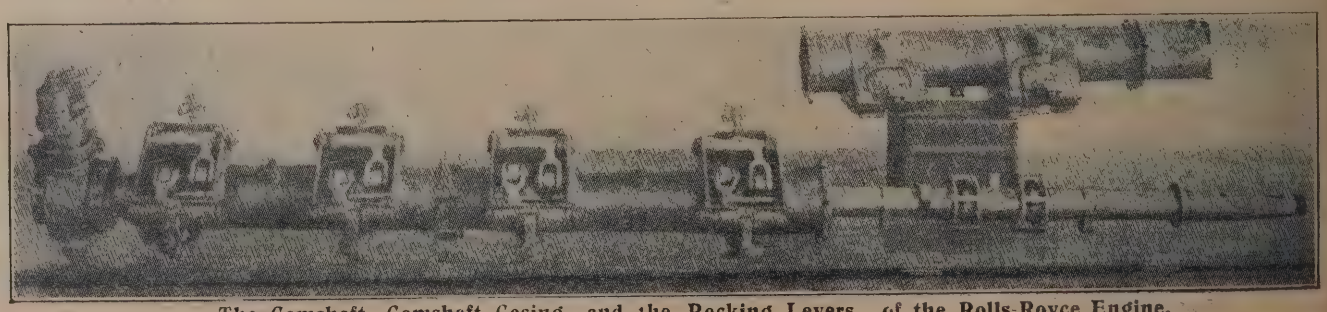
One pair of magnetos is driven from the cross-shaft through a splined coupling and a spring buffer. The other pair of magnetos is driven by a second cross-shaft by the interposition of an intermediate shaft. The shaft arrangement of the second magneto drives is similar to the first one. This same cross-shaft serves at the same time for the drive of the tachometer and the air-pump, both of which are driven by worm-wheels.

The synchronised gun gear is made for two guns, and is driven from the rear end of the crankshaft. Running unengaged on the shaft the cam disc is driven at the speed of the airscrew by two pairs of gear-wheels, which are, together with the whole gearing, enclosed in an aluminium case. The cams operate each of the two trigger levers twice during each revolution. The contact points of the lever rollers with the cam disc subtend an angle of 153 deg., which depends upon the arrangement of the guns on the aeroplane.

The water-pump is also mounted on the rear part of the crankcase, and is driven by the worm-wheel on the crankshaft, with a transmission ratio of 1 to 1.5. The rotor is provided with double-side tread, so that the normal stuffing-box has only to tighten against suction pressure, which can be reduced to a minimum by a suitable arrangement of the cooling water circulation. Thus the risk of leakage and loss of water is very small. The rotor wheel with its shaft is made in one piece. On both sides of the rotor wheel the shaft runs in bronze bearings, lubricated by grease cups. The mounting of the pump with its drive on the crankcase is made in two parts.

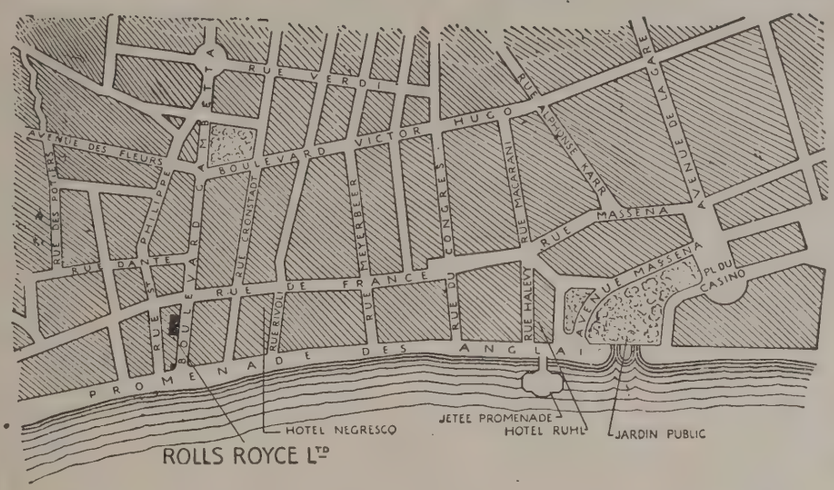
The delivery piping separates at once aft the pump into two tubes, which are led along the two exterior sides below by the cylinders, diminishing forwards in diameter. From these pipes the cooling water is distributed to each cylinder, and having passed them collects again in two tubes mounted above the cylinders which lead to the radiator.

The ignition was originally arranged for single ignition, and accordingly only two magnetos were at first provided. Later twin-ignition was taken up and a second pair of magnetos added.



The Camshaft, Camshaft Casing, and the Rocking Levers of the Rolls-Royce Engine.

ROLLS-ROYCE



¶ ROLLS-ROYCE LIMITED ARE RE-OPENING THEIR GARAGE IN NICE AT 5/7 BOULEVARD GAMBETTA, FOR THE COMING SEASON 1919-1920, FOR THE BENEFIT OF THEIR CLIENTS WHO MAY BE USING THEIR ROLLS-ROYCE CARS DURING THE WINTER SEASON ON THE RIVIERA.

¶ AN EXPERT MECHANIC FROM THE ROLLS-ROYCE WORKS AT DERBY WILL BE IN ATTENDANCE FROM NOVEMBER 1st, 1919, TO MAY 1st, 1920.

¶ A COMPLETE STOCK OF SPARE PARTS WILL BE AVAILABLE.

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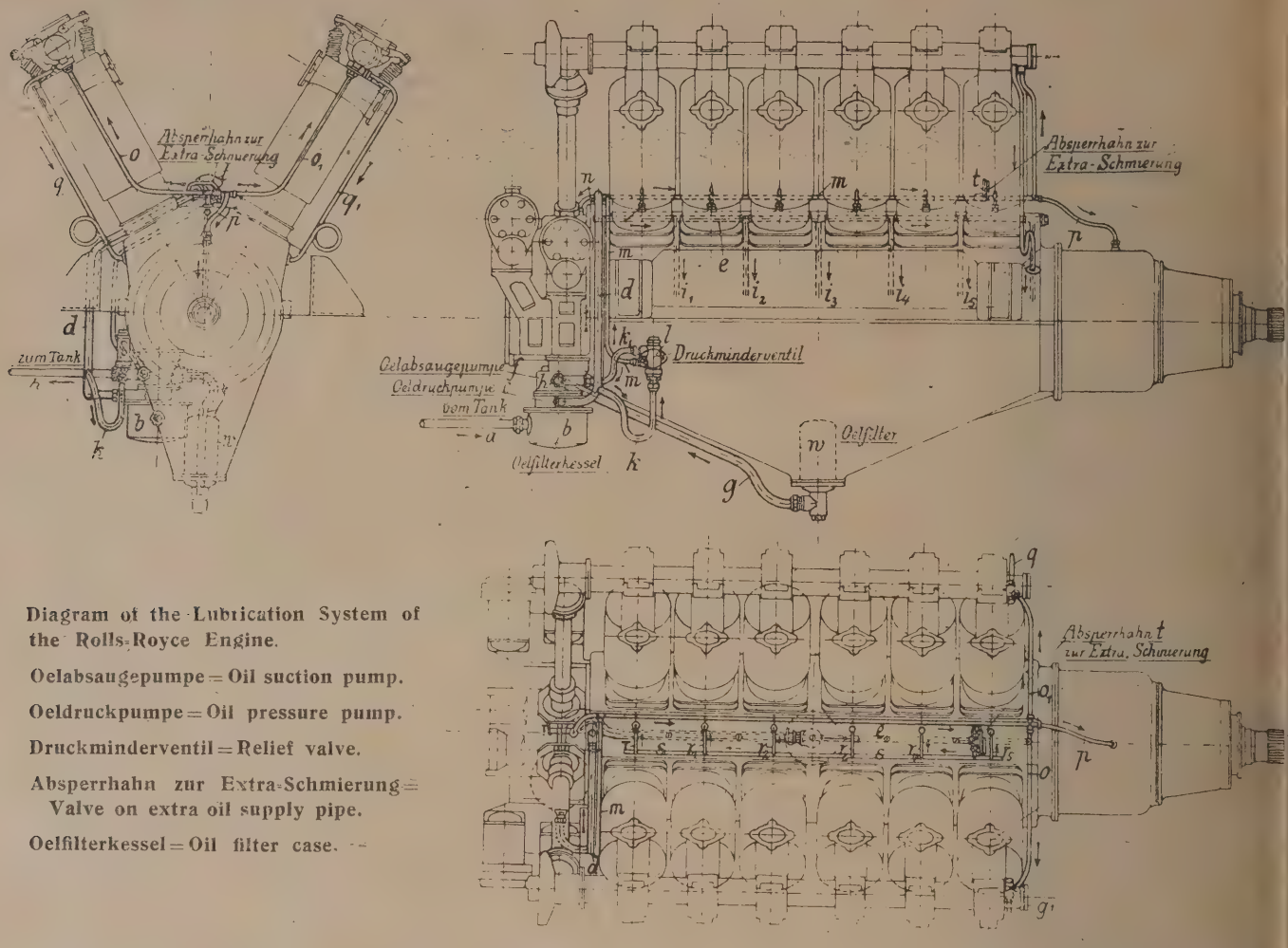


Diagram of the Lubrication System of the Rolls-Royce Engine.

Oelabsaugepumpe = Oil suction pump.

Oeldruckpumpe = Oil pressure pump.

Druckminderventil = Relief valve.

Absperrhahn zur Extra-Schmierung = Valve on extra oil supply pipe.

Oelfilterkessel = Oil filter case.

The lubrication is arranged according to the so-called "dry sump system"—i.e., the oil gathering in the deep lower part of the crankcase is continuously sucked off by the oil pump, passing through a filter, so that the case is practically oil-free.

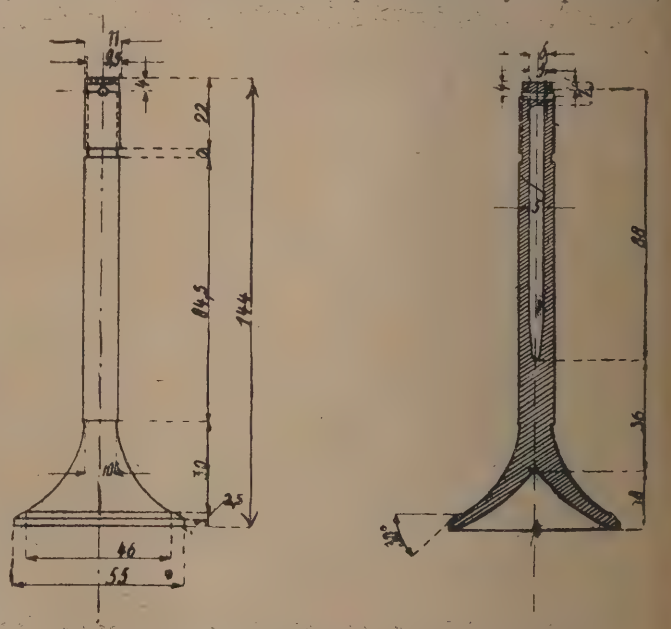
A figure of the lubrication system is shown in detail.

The force-feed oil, sent by the pump, is lead to the oil-pipe for the main bearings, cast in the top part of the crankcase, through the pipe *d*. Shortly after the oil-pump a pipe *k* is branched off this tube and leads to a pressure reduction valve *l*. Here the oil enters first through a spring-loaded valve, a chamber, from which a narrow pipe *m* branches off, carrying the oil by *n* to the worm-wheel, driving the valve gear, and further forwards through the branch pipe *p* to the gear and through *p* and o_1 to the camshafts, from where it floats back to the crankcase through the pipings *q* and q_1 and the inclined driving shafts. Further, an auxiliary pipe *s* branches off the pipe *m* near the gear above a stop-cock *t*, small tubes *r*, r_1 and r_2 starting further off from the former and ending in the crankcase. By means of this auxiliary pipe extra lubrication can be applied when needed for running in new motors, the oil being injected direct on the connecting-rod bottom and bearings. Through a second spring-loaded valve in the head of the pressure-reducer abundant oil passes through the pipe *k* and back to the tank together with the oil from the oil pump of the crankcase.

The oil-pump is made as twin gear-wheel pump. The lower gear-wheel pump is surrounded by a wire gauze filter with a large surface and mounted in a small riveted case, to which the oil floats from the gravity oil tank. Above this pump a second gear-pump is arranged, pressing the oil, gathering in the bottom part of the crankcase back to the tank. Both pumps are driven from the worm-wheel for the valve gear drive by means of a worm-wheel with vertical shaft. As the speed of the former is too high for the oil-pump drive, a small epicyclic gear is provided for transmission, from the planet wheel of which the movement for the pump shaft is taken. The two pumps are clutched mutually together with this planet gear by means of a splined hub.

With respect to the carburetter the motor has undergone various changes. The first specimens were equipped with two twin-carburetters, but the newer engines are provided with single carburetters. The type of carburetter is the Claudel-Hobson model, much employed in hostile aero engines, and so may be assumed to be well known.

In the single carburetters two different editions are to be distinguished with regard to the altitude adjustment. While the old editions showed the regulation of the pressure in the float chamber of the Gillet-Lehmann regulation nature, also employed on the twin-carburetters, petrol throttling has been used for the new carburetters, the details of which are evident from a figure. The throttle-needle causes the pressure gradient between the float chamber and the jet to vary as required. Three different positions of this throttle-needle are marked on the carburetter: "weak" for altitude adjustment, "normal" for the normal performance, which worked out on brake at 320 h.p. for a petrol consumption of 226 grams per h.p. hour, and "strong" for a rich mixture. In this position the motor exceeds the normal performance by 10 per cent.,



The Valves of the Rolls-Royce "Eagle" described on page 1789.



TRANSPORT
by AIRCRAFT

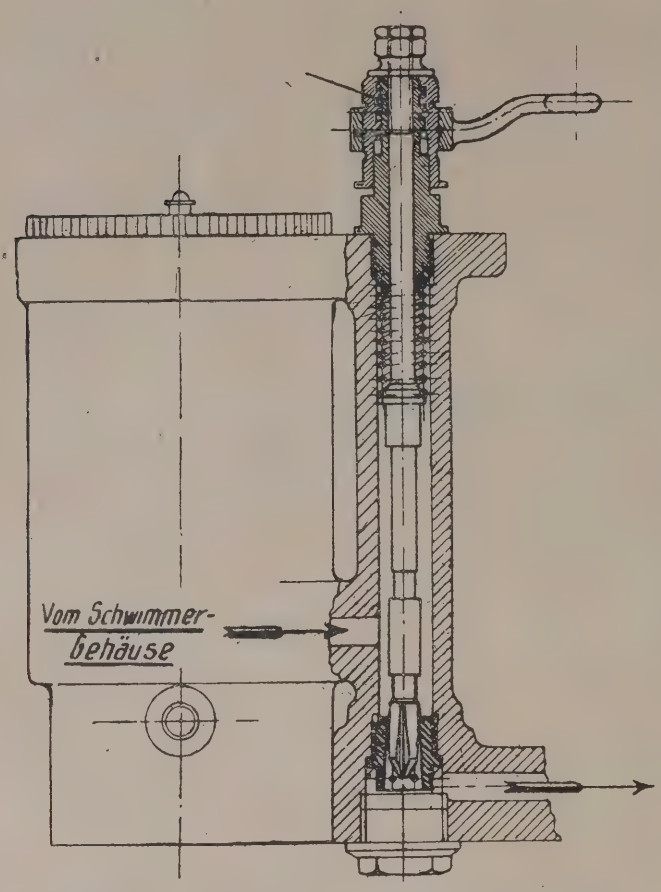
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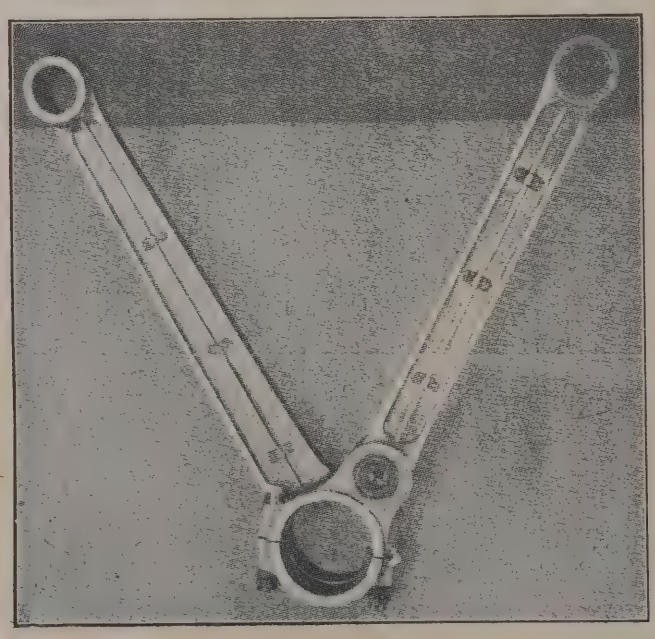
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The Petrol Adjusting Needle Valve for Altitude Control.
Vom Schwimmer Genause = from float chamber.

becoming 352 h.p. which is given on the signboard of the firm as full b.h.p.

The carburetter is not provided with a heating jacket, and can probably do without it, owing to the protected position between the cylinders inside the fuselage. No special pre-heating of the carburetter air is provided, as the air is drawn direct from the body, where sufficient warm air is available, the more when the radiator (of car type) is arranged between the airscrew and the motor. The induction pipe is, however, provided with a heating jacket, which is connected with the cooling water circulation. The value of this heating jacket is very questionable, as it possesses only a limited heating area, and, no doubt, it could be dropped without harm. To inject petrol into the induction pipe before starting, a nipple is provided on the underside, through which the petrol can be injected by means of a small hand-pump.

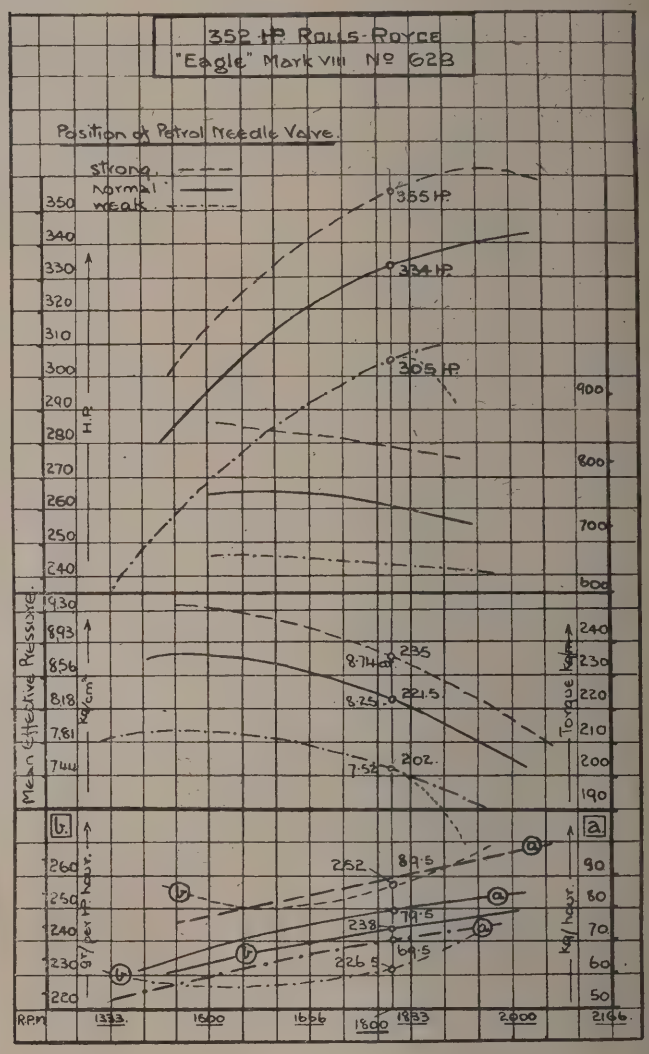


Assembled connecting rods of the Rolls-Royce "Eagle" engine.

For the petrol feed an air-pump is provided which is driven from the second magneto shaft by worm-wheels.

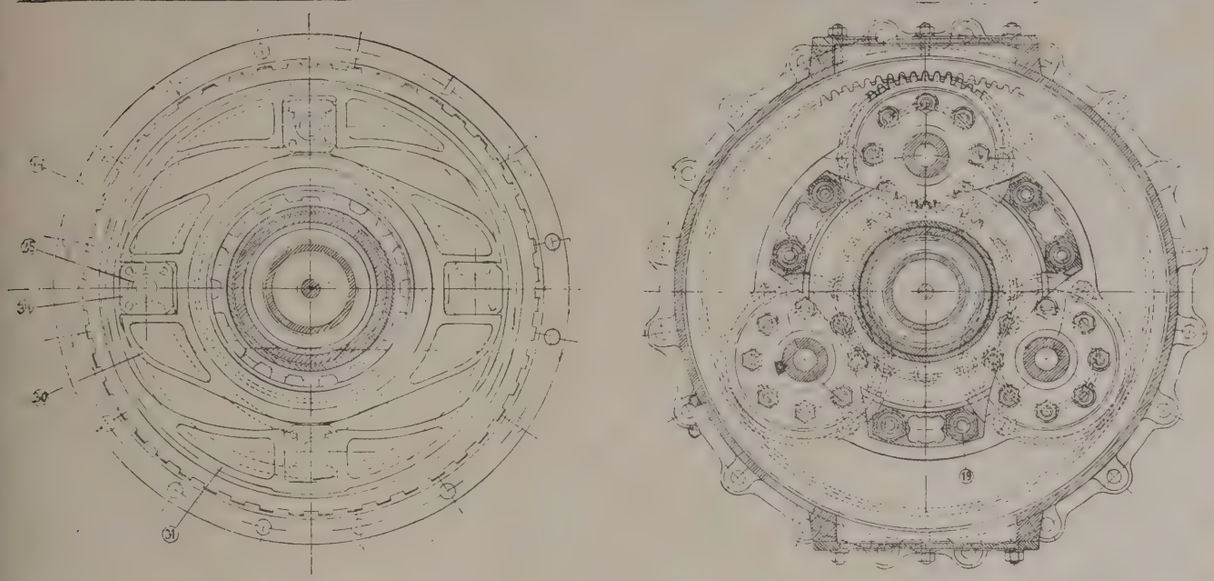
In earlier editions this air-pump was, as in many German engines, forward on the camshaft case, and thus always exposed to damage when the aircraft stands on its nose in landing. It is extraordinary that even the crankshaft of this air-pump is balanced by counterweights, which is owing to the high number of r.p.m. of the pump. The dimensions are very ample, so that sufficient pressure is still left, even in the deepest nose-dive, or with a large tank nearly empty. In former models sufficient attention was not paid to this need.

Yet in itself pressure-fed petrol must be regarded as an antiquated method for aircraft, as with a modern war aeroplane a non-force petrol tank is needed for fire safety. In this case the air-pump must be replaced by a fuel-pump, the construction of which is, however, rather difficult, especially with regard to packing and the suction capacity of such fuel-pumps, driven by the motor, is apt to diminish at great altitudes (above 21,000 ft.)

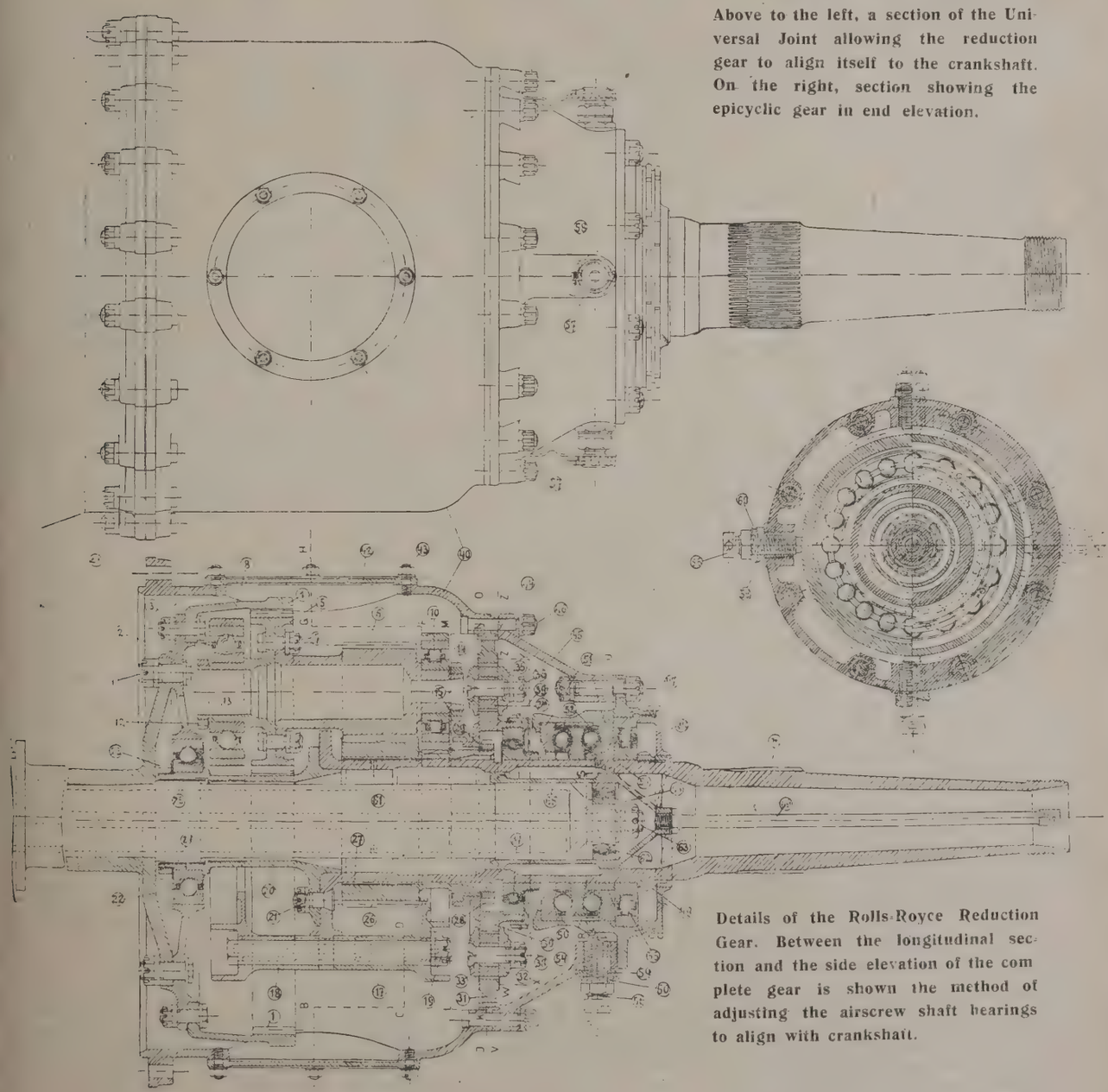


The Chart representing German test results on a Rolls-Royce "Eagle 8" engine.

The reduction gear for the airscrew is one of the most interesting parts of the design. It is made as epicyclic gear, and the airscrew shaft is at the same height as the crankshaft, which from the point of view of the aeroplane designer may be considered a drawback, as high landing chassis and thus high aeroplane designs are the result. It possesses, however, advantages to the motor designer. First, the form of the gear-box as a cylindrical body is very favourable for absorbing the stresses. A drawback results from employing ball bearings instead of journals in the reduction gear that with bearing adjustment of the crankshaft the ball bearings in the gear have to be adjusted also. This difficulty can be evaded either by providing the shaft with a universal joint or by allowing the gear-box to swivel in relation to the crank-case by means of a universal joint. In the Rolls-Royce the latter proposition has been chosen. Here the universal joint is found between the case and the shaft of the epicyclic gear, so that the shaft can take up a position as required



Above to the left, a section of the Universal Joint allowing the reduction gear to align itself to the crankshaft. On the right, section showing the epicyclic gear in end elevation.



Details of the Rolls-Royce Reduction Gear. Between the longitudinal section and the side elevation of the complete gear is shown the method of adjusting the airscrew shaft bearings to align with crankshaft.

inside the gear-box without interfering with the equal level bearing of the gear shaft and the crankshaft. The construction of this universal joint is shown in a figure. In relation to the gear-box only the double thrust ball bearing and front roller bearing for the airscrew shaft require adjustment. This adjustment is made by means of four strong pressure screws, provided in the gear-box. As these bearings adjust themselves by rotating of the motor, if the mounting and pressure screws are slackened, the difficulties of an exact adjustment are small.

The stresses are very low compared with the spur wheel reduction gears, otherwise used generally on aero engines, which is to be explained by the simultaneous engagement of three wheels. As regards the stress on the flank of the teeth, one which caused in so many cases the destroying of the flanks of teeth and thus lead to a failure of the reduction gear, this is decided by the radius of curve of the flank of the teeth at the contact point. The larger the radius the more favourable the stress is. For this case the internal teeth has an advantage, so that these stresses work out specially low, so far as the internal teeth are concerned, while naturally here again also the employment of three gear wheels engaging at the same time reduces this stress.

A further and no less important advantage is that small gear wheels and pitch suffice, so that favourable engagement and very exact manufacture can be attained.

Further, the epicyclic gear supplies an effective flywheel mass in the large internal teethed gear wheel. The only drawback to be found for the motor designer is the relative high weight. The impossibility of tempering and grinding the internal wheel is not a serious drawback, as non-tempered gear wheels suffice for the very low compressive stresses, which work out only at one third of the permissible figure for tempered wheels. Owing to the very small heating effect on the gear wheels the reduction gear requires no exceptional lubrication. Mainly the gear is lubricated from the crankshaft oil chamber, but a special oil pipe branching off from the camshaft lubrication takes a limited quantity of oil to the gear. The oil splashed off by the gear wheels runs back into the crankcase.

Finally, the results of tests on one of the latest captured Rolls-Royce motors are given. The motor ran faultlessly at all carburetter adjustments and showed no back-fire explosions even with weak mixtures. The regulation capacity is altogether good, as evident from the curves given, in which the mean pressure, the performance, and the r.p.m are recorded in their relation to the petrol adjustment position.

RECENT GERMAN WAR MACHINES.

II.—Mercedes Daimler.

The Mercédès Daimler Motor Gesellschaft have achieved aeronautical fame as the builders of the Mercédès aero engine, but it is not so generally known that they also manufactured aeroplanes.

It is not known certainly that any of the aircraft produced at their aeroplane factory at Singelfinden ever reached any of the fighting fronts, but they undoubtedly produced the machines illustrated. All the three machines shown are of extreme interest in that the photographs show that they are equipped with a Vee-type engine, which evidence of German origin shows to be an 8-cylinder product of the Daimler factory, nominally of 185 h.p.

The first of these machines—the L.6—is a single-seater fighter with a streamlined body of oval section, fitted with upper wings of slightly greater span and chord than are the lower ones,



The Mercédès Daimler "L.6."



The Mercédès Daimler "L.9."

fitted with a single row of interplane struts on either side the fuselage, and with the usual cable interplane wiring.

The second machine illustrated—the L.9 type—is also a single-seat fighter, but appears to be devoid of interplane wiring, and has but one single I-form strut on each side.

The third—the L.11—is a rigid truss monoplane of the parasol type, somewhat reminiscent of the Leonig monoplane.

The fairing of the axle, which is in the form of a heavily cambered wing section, should be noted. This feature is characteristic of certain type of German aircraft, and made an appearance in the early editions of the Fokker triplane.

In addition, the same works have turned out a type known as the L.8—a two-seater machine somewhat similar to the L.6, but fitted with upper and lower wings of equal chord and with a heavy stagger.

All the machines of this make are fitted with balanced ailerons, rudders, and elevators, and their general appearance suggests that they are of late 1918 manufacture.

Although the engine in all these machines is of the same general type, it would appear to have undergone sundry modifications, as each of the three machines illustrated has a slightly different arrangement of exhaust pipe, which seem to involve changes in the position of the exhaust ports on the engine.



A Mercédès Daimler Monoplane, the L.11.

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THE WEATHER AND COMMERCIAL AVIATION.

By R. BERNARD, F.R.MET.SOC.
Meteorologist to Aircraft Transport and Travel, Ltd.

One of the most noticeable features of the articles and speeches made by the authorities on Aerial Travel is the persistent reference to meteorology. No one who has studied problems of reliability of an aerial service can doubt that the question of weather is one of the most important factors, but although mention of it is invariably made, little has been written as to the actual methods of obtaining and using such information as is available.

It was only during the last year of the war, one might almost say months, that the value of elaborate weather information for aerial work was recognised; the weather expert was looked upon as a crank, and his failure to forecast on Monday what the "weather for the next week-end" was to be caused many sarcastic remarks, and very little faith was placed in his forecasts. The directors of flying operations, if they consulted the meteorologist at all, wanted to know what the actual weather was like, and not what the meteorologist thought it would be, and as a natural result a system of direct reports by telephone grew up which no doubt proved invaluable, but at the same time caused the purely scientific aspect of meteorology to fall rather into the background.

There is, perhaps, some justification for the sceptics who have seen long-shot forecasts, such as those issued to the newspapers, go wrong; but when one considers that they are virtually forecasts for 36 hours ahead in a country that is noted for its changeable weather, it is extremely creditable to the forecaster that the percentage of failures is not larger. It is, however, no criterion that because of these failures it is impossible to place reliance on scientific meteorology for commercial purposes. When the actual requirements of an aerial service are considered it will be seen that on the system of short-stage working as advocated by Mr. Holt Thomas a forecast for six hours ahead will cover nearly all requirements, and such a forecast can be given with a high percentage of accuracy.

Information is available in the shape of simultaneous observations by skilled observers throughout N.W. Europe four times daily, and we can thus roughly split the 24 hours into four periods, which mean that four six-hour forecasts will cover the whole day, and the flight organiser will always have a reasonably accurate knowledge of what the weather during the whole of any of these short-stage flights is going to be.

It is on such a system that the Meteorological Department of Messrs. Aircraft Transport and Travel, Ltd., is being organised; arrangements have been or are being made to receive from the Air Ministry Meteorological Department and the Meteorological Office all the observations above, and although the department has only been in active existence for about two months it is already receiving and using information which has not hitherto been supplied to any commercial firm.

From this information maps are at once drawn, showing the weather over the whole of North-Western Europe, on similar lines to those compiled by the Air Ministry and Meteorological Office, and it is on the information revealed by such mapping of the various weather characteristics that forecasts are based.

In addition to these details, reports of pilot balloon ascents at various stations in the British Isles and France are received. These balloons give the direction and velocity of the upper winds, and this is also plotted on maps, giving at a glance the direction and velocity of the currents in the upper air.

The direct reports which are obtained by the Air Ministry hourly complete the chain of information, and the department, with the whole of the foregoing information at its command, is in a position to give reliable reports to the company's aerodrome managers and pilots for practically any aerial route in North-Western Europe.

I have so far confined myself to details of information received by the company's meteorological department, but what is perhaps of more interest is the information that the department can place at the company's disposal. It will be advisable to consider briefly what weather information an aerodrome manager or pilot requires.

This falls naturally under two headings: information as to weather conditions well in advance to enable arrangements for the flight to be made, and to prevent unnecessary work if conditions are to be too bad for flying; and information given to the pilot of conditions over his actual route at the time of the start of the flight, together with particulars of any expected changes during the flight.

With regard to the first, forecasts are issued twice a day (later these will be issued four times daily), giving general conditions as to wind, cloud height and amount, visibility, etc., and the probable changes in these features during the ensuing periods. At present one is issued at about 10 a.m. covering the period up to 5 p.m., and at between 4.30 and 5 p.m. another is circulated giving the prospects for the ensuing evening, night, and following morning. These forecasts must naturally be divided into districts, and at the present time are confined to South-East England, Channel, and Northern France; but the department is in a position to give forecasts for any district in North-Western Europe if required.

With the morning forecast a map is issued giving at a glance the actual cloud amount, height of clouds, visibility, surface winds and upper winds at about half a dozen stations between London and Paris, and with the afternoon forecast a similar map showing conditions at about 15 places distributed over the district south of a line drawn from Spurn Head to Liverpool and extending to Paris.

The particulars given to a pilot at the start of his journey are based on the information contained in the direct reports received from the Air Ministry, and include particulars as to the *actual* weather conditions at points over his route during the preceding hour, and in some cases as recent as the preceding half-hour.

In addition to this he is informed of any variations likely to be encountered, together with a forecast of probable changes during the time of his journey. Wherever possible he is also supplied with particulars of the strength and direction of the wind at different heights to enable him to take advantage of any favourable wind-current.

One of the principal uses to which the department is being put is the compilation of statistics of climatic conditions over the company's prospective routes. It is an example of the thorough way in which the organisation of the company is being built up that no route which is contemplated gets past the embryonic stage without the consideration of the effect that weather conditions will have on the percentage reliability of service which can be maintained on such route, and the statistical information which has been and is being collected is proving invaluable.

THE BRITISH INDUSTRIES FAIR (BIRMINGHAM), 1920.

The committee of management of the Birmingham Section of the British Industries Fair have succeeded in overcoming their initial difficulty, and have now secured buildings which will provide them with 150,000 sq. ft. of space for the housing of their exhibits. The rapid booking of space has had an effect which will in the ultimate result be of widespread benefit—it has, in short, compelled the committee to make a drastic alteration in their original arrangements, and they are to be heartily congratulated on successfully negotiating for and obtaining the loan of the extremely suitable buildings which were erected during the war at the Castle Bromwich Aerodrome.

The Air Ministry has consented to the buildings being used for the purpose, and this means that there need be no further irritating limitation of space—that exhibitors showing their products in two or more groups will be able to have the same under their eye, as it were, without traveling to other locations—and finally that the buyers who have more than one interest will not be called upon to move from one district to another. The site has many natural advantages: firstly, the buildings could not be better suited for the purpose; secondly, the station (Castle Bromwich) is practically in the grounds on which the buildings stand; and thirdly, there are railway sidings for the occupants' special use.

It is understood the subsidiary arrangements are as under: the Town Hall will be used as a reception bureau for all buyers visiting the fair, and here they will be able to obtain all the needed information as to hotel accommodation, transport services, places of interest, and the many other points on which strangers to the city will require assistance and advice.

A special service of trains will be run on the Midland Railway from New St. Station, and at regular and frequent intervals during the whole period of the fair motor-'buses will leave the Town Hall for the Aerodrome, and the Aerodrome for the centre of the city.

One effect of the new situation of the fair is that, while at present some 500 firms have taken space, within a very short time all those firms who have been hesitating will undoubtedly apply, hence every firm who is desirous of widening its trade connections should make immediate application for space.

Letters should be addressed: General Manager, British Industries Fair (Birmingham), Chamber of Commerce, Birmingham.

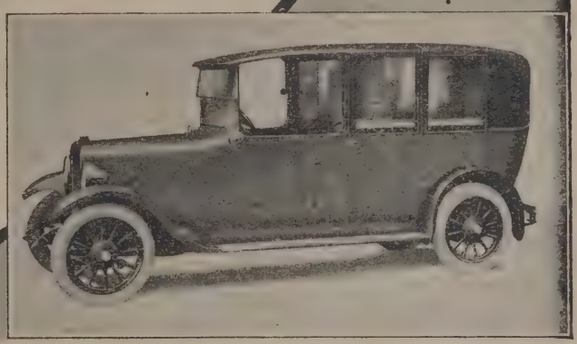


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MODEL EXPERIMENTS AND FULL-SCALE RESULTS.

With the approval of the Technical Department and under the auspices of the Société Française de Navigation Aerienne, M. Toussaint gave a very interesting lecture on the aerodynamic progress made by the Germans during the war.

M. Toussaint, who is recognised by everyone who has had anything to discuss with him as the foremost technical authority on aircraft construction in France, is the director of the Aerotechnical Laboratory at St. Cyr and also in charge of the Testing Squadron of the French Technical Department (corresponding to our Martlesham Heath).

As is well known, the German professors at the Aerodynamic Laboratory at Gottingen carried on their pre-war programme of experimental study without any reference to the war, and indeed complained officially in 1918 that the official "experts" were making no use of the epoch-making discoveries they had made.

It is in order that French aircraft constructors should have the advantage of these discoveries before their authors are able to make use of them that the Technical Department have arranged for this lecture and the publication of the diagrams and formulæ.

Very briefly, these eminent professors have determined very simple formulæ by which, given the graph and characteristics of model tests of a given wing, one can calculate to within an error of 2 to 3 per cent. the exact head-resistance of a given cellule, and separate out the resistance due to the form of each wing, the resistance due to work done (lift and drag separately if desired), and the increased resistance on each wing due to mutual interference, with exact corrections for swept-back or variable curve wings, etc.

In short, one can calculate from the model the "sigma" of the resistance curves of the graph for a given full-size machine.

M. Toussaint has proved these figures against the known model and full-scale figures for the major part of Allied aircraft, and the error in every case is less than 3 per cent.

When it is remembered that the British "experts" still contend that it is impossible to calculate full-scale figures from models, the value of these German formulæ will be immediately apparent, and it shows remarkable foresight on the part of the French authorities in having circulated this information amongst French constructors so quickly. In one week it brings French practice ahead of the British, and will prove an imporant factor in next year's competitive designs.
—John Strong.

A DOUBLE LIBERTY.

The United States Air Service authorities have constructed a 24-cylinder Liberty engine by the process of joining two upper crankcase halves, each with its 12 cylinders, one inverted and the other the right way up, and making certain alterations to the connecting-rods.

It is said that the engine thus constructed gave 673 h.p., weighed 1.97 lb. per h.p. dry, and used 0.55 lb. per h.p.-hour.

As the 12-cylinder engine is said to give 400 h.p., it appears that the 24-cylinder set was run at a lower speed, or that the compression was reduced.

THE WIRELESS SOCIETY OF LONDON.

The Wireless Society of London held their first general meeting since the war at the Institution of Civil Engineers, Westminster, on Tuesday, Oct. 28th. The meeting was attended by over 150 members.

The President, Mr. A. A. Campbell Swinton, F.R.S., was in the chair, and opened the meeting by referring to the state of suspended animation the Society had been in during the war, and that with the close of the war the Committee and Officers had met and decided to bring the Society into activity once more. Owing to the resignation of Mr. R. H. Klein from the office of Hon. Secretary, Mr. Leslie McMichael had been asked, and had agreed, to take over the duties entailed. Mr. Klein had been elected an Acting Vice-President. Admiral Sir Henry Jackson, G.C.B., F.R.S., one of the very earliest experimenters in wireless telegraphy had also been included, and was taking keen interest in the welfare of the Society. Dr. F. C. Knight had been made a Member of the Committee. The meeting was invited to confirm these appointments, and, by an amendment, it was decided that the present Officers and Committee should remain during the year 1920.

The President spoke of the loss sustained to the Society by the death of Sir William Crookes, O.M., Mr. Russell Clark, O.B.E., Prof. Silvanus Thompson, and Mr. Dudell, and a number of members had unfortunately lost their lives in the war.

The matter of licences for wireless telegraphy was touched upon at some length, and it was pointed out that every effort has been and will be made to influence the Post Office authorities to come to some decision, so that experimental work among amateurs may again be established.

Mr. Hope Jones, M.I.E.E., the Chairman, spoke of the application of other wireless societies and clubs with a view to unity of action, and said that the Committee were alive to the possibilities, and further developments may be expected—in the meantime, all secretaries of wireless societies and clubs are invited to communicate their views to the Hon. Secretary.

After the business of the meeting closed, the attention of members was directed to an exceptionally interesting show of wireless exhibits which had been brought, and brief descriptions were given. Dr. Erskine Murray explained details of the Air Force telegraphy and telepathy sets exhibited, including a Robinson Direction Finder. Mr. Scott Taggart had a fine array of valves, made by the Ediswan Company, showing their manufacture in detail. The Marconi Company and Messrs. Read and Co., and the Zenith Manufacturing Co. had lent some of their most up-to-date apparatus. Mr. Maurice Child, Mr. Burbury, Mr. Clinker, Mr. Leslie Miller, and Capt. Donisthorpe had brought pieces of interest, and the President had on exhibition a compact and sensitive valve amplifier, which, together with a specially constructed loop aerial, was capable of making signals from European stations audible at a considerable distance from the telephones.

[The reference to the R.A.F. use of telepathy is somewhat startling, but it is presumed to be a typist's error, and that telephony is meant.—Ed.]

A NEW FRENCH ROTARY ENGINE.

A French engine, of which little has yet been heard in this country, is the "Sega," built by M. Seghers, of 11, Rue Scribe, Paris. This engine, in its first edition produced in 1917, gave 250 h.p. for a weight of 0.85 kg. (1.87 lb.) per h.p.

A new model, giving 500 h.p. for a weight of 0.65 kg. (1.43 lb.) per h.p. is, it is said, to be exhibited at the forthcoming Paris Aero Show. This engine is a 9-cylinder affair, with extremely novel valve gear, which it is not yet permissible to describe.

A NEW REVIEW.

A new technical publication, entitled "La Vie Technique et Industrielle," has recently made its appearance in France. This review, which is excellently produced, is practically an index of the important articles in technical and industrial subjects which have appeared in the newspapers of the world during the previous month. Those who are interested in industrial production in its higher phases, will do well to write to the Director of "La Vie Technique et Industrielle," at 18, Rue Seguier, Paris, 6, and ask for a specimen copy.

THE ROYAL VISIT TO OLYMPIA.

Readers will probably be interested to learn that whilst at the Motor Show at Olympia this morning (Friday, Nov. 14th), Her Majesty the Queen, accompanied by Her Royal Highness the Princess Mary, honoured Messrs. Mann, Egerton and Co. by a special visit to their Stand. Her Majesty was graciously pleased to inspect the bodies exhibited, which were made at the Norwich works of the company, and showed special interest in a saloon body on an Armstrong-Siddeley chassis, and a Coupé body on an Austin chassis. All will appreciate this signal honour shown to a Norfolk firm.

20TH CENTURY MASCOTS.

At the present moment it seems quite the thing to ornament the radiator filler cap of one's car with some form of frightfulness ranging from a golliwog of the Domestic Bazaar Co. type, to a streamline nymph "en deshabille" carried out in silver. There must be many people in the R.A.F. who were wont, during the late war, to fly with a horrible monstrosity, characterising the British toy, squatting astride the Pitot tube or Aldis sight.

Now that flying is, at any rate, for most people, a luxury only to be indulged in during a war, it is possible, by the introduction of the 20th-Century Mascot to reverse the order of things and carry a scale model aeroplane on the radiator cap of that expensive British toy—the motor-car.

Rogers Bros., of the "Tabloid" Aero and Engineering Works, Farnham Royal, Slough, are producing a series of scale model aeroplanes, ranging from a twin-engined Handley Page to a Bristol monoplane or a Sopwith "Pup," made in brass, heavily silver-plated. They are riveted and hard-soldered together, and are, therefore, quite able to stand all shocks and vibration likely to be met with in a car.

They can also be mounted on suitable stands as paper weights, ash trays, ornaments, etc. The models range in size from 5½ in. to 12 in., and are absolutely to scale. A complete range of all types of standard service aircraft are ready, and if drawings are available any type of machine can be made to order.

L. C. Rawlence and Co., Ltd., of 40, Sackville Street, W., who are the sole London agents for these models, showed some specimens on their stand at the Olympia Motor Show, and some models are also on view in the windows of the Lepaerial Transport Bureau in Piccadilly Circus, W.

(*Continued from page 1786.*)

AWAITING A HANDLEY PAGE.

The H.P. hangar has been erected here for the past two weeks, awaiting the machine which so far has failed to arrive.

AN "ACK WAGON."

Col. G. L. P. Henderson, M.C., is due here this week or next with a large "Ack Wagon" for the P.O. Flygkompani. It is fitted to carry two passengers, and the company believes that it will do a lot of work.

THE FATE OF THE RIVALS.

The Svenska Lufttraffik, the only rivals of the P.O. Flygkompani, started work the other day, with a German pilot and a seaplane, they also cut the Flygkompani's price by 50 crowns and threatened to go even lower, but they had to pack up on the second day, owing to all the waterways and the seaplane harbour being frozen over.—K. F. S.

SWITZERLAND.

The Danish correspondent of THE AEROPLANE writes :—

AD ASTRA.

The German quarterly aero review, "Illustrated Flying World," reports that in the first days of November a Swiss Air Navigation Co., Ltd. (Aviation Suisse S.A.) was formed in Zürich under the name of "Ad Astra," with the aim of making air stations at the chief Swiss traffic centres. The company will be served by army pilots and mechanics, trained by the Government, and will keep also a stock of aircraft ready for flight and at the disposal of the Government.

Much consideration was given to the choice of type of machine. Seaplanes were finally decided upon for air traffic, as most resorts are situated by the lakes. Italian 180-200-h.p. engined Savoia two-passenger aircraft and some land-going machines are to be considered.

A continual aerial service, Geneve-Luzern-Zürich-Friedrichshafen, is already being prepared, joining the service to Berlin.

The "Ad Astra" is purely a Swiss enterprise, with Swiss money and personnel. The technical manager is Lieut. Wild, who is stated, before and during the war, to have been in the service of an Italan aeroplane company. (One remembers a Lieut. Wild, who was the designer of a monoplane with his own propeller, produced by Gustav Otto in Munich. This machine, piloted by Baierlein and with the designer as passenger, won the first German Aerial Derby round Berlin. It was looked upon by all competitors as a freak, but beat them all by some 10 min. in the pure speed contest.)

So that the service might be started this autumn with a relatively small capital the formation of the Zürich and Luzerne stations only has been decided for the present. At Zürich a shed has been erected near Zürichhorn on ground placed at the disposal of the company by the city.

The company is expecting the arrival of a large German flying-boat which the Swiss Flight Lieut. Frick has gone to fetch from Friedrichshafen. It is stated to be a quite new type (likely a variant of the model from the Lindau works of the Zeppelin concern in Bavaria), with a gliding gondola, 15 m. in length, and with a beam of 2.6 m., above which two unsupported Maybach motors of 270 h.p. each are mounted.

The pilot's cockpit is in front of the propellers, and the passenger-cabin with seating accommodation for six persons is below. The flying-boat weighs 3 tons when empty and more than 4 tons when loaded with crew and fuel. It is made exclusively of an aluminium alloy with the exception of the planes, and should thus be fireproof. It is to stay one or two months in Switzerland to carry out tests.—HI.

The Italian correspondent of THE AEROPLANE writes :—

A NEW COMPANY.

Great activity is reported by all correspondents and also officially at Dubendorf. Recently twenty Zeppelin-built C.2 machines with 200-h.p. engines were delivered there for a company now being formed. Evidently the Huns can deliver the goods.

THE DEMAND FOR ITALIAN WATERPLANES.

The Avions-Tourisme Company of Geneva and the Ad Astra firm at Zurich are taking delivery of various Italian-built and designed waterplanes. One is glad to learn that Macchis and S.I.A.I. machines have been going into the territory of the Confederation fairly frequently.—T. S. H.

UNITED STATES OF AMERICA.

THE TRANSCONTINENTAL AIR ROUTE.

The Army Aeroplane Race, New York-San Francisco, made the air route between the Atlantic and Pacific Oceans a reality, suitable for practically every type of machine, and marked by sufficient landing grounds, with short distances separating each. The greatest distance being 180 miles between Buffalo and Cleveland.

The route chosen over the Rocky Mountains is the one which entails the least amount of high flying, although machines have to rise to perhaps nine or ten thousand feet to safely clear the mountains. Rivers, valleys and mountains, etc., have been utilised to the greatest extent possible in fixing a route that can be followed easily from the air.

The landing grounds, with distances from the East, are as follows :—

Mineola (Long Island), Binghampton, 142; Rochester, 267; Buffalo, 323; Cleveland, 503; Byran (Ohio), 650; Chicago (Ill.), 810; Rock Island (Ill.), 965; Des Moines, 1,123; Omaha, 1,241, St. Paul (Neb.), 1,373; North Platte (Neb.), 1,491; Sidney, 1,603; Cheyenne, 1,696; Rawlins (Wyo.), 1,809; Green River (Wyo.), 1,946; Salt Lake City, 2,083; Salduro, 2,183; Battle Mountain (Nev.), 2,345; Reno (Nev.), 2,514: Sacramento, 2,626; San Francisco, 2,701.

There is a curve to the North between New York and Buffalo which might be straightened out to the route flown over by the mail-aeroplanes from New York-Chicago. This route is due west out of New York to Bellefonte (Pa.). The highest landing ground on the transcontinental route is Rawlins (Wyo.), which is 6,623 ft. above sea-level.

Some of the above-mentioned landing grounds have just been laid out, some are Army Stations, and others are only open spaces. But all have been mapped and charted, and provide a start on which much development may be based.

THE ROYAL AERO CLUB NOTICES.

FLYING SERVICES FUND COMMITTEE.

A meeting of the Flying Services Fund Committee was held on Thursday last, November 20th, 1919, when there were present Group Captain C. R. Samson, C.M.G., D.S.O., R.A.F., in the chair; Squadron Leader T. O'B. Hubbard, M.C., R.A.F.; and the Secretary.

Applications for Assistance.—Forty-three applications for assistance were considered, and grants and allowances were voted amounting to £478 10s.

FRENCH RECORDS.

The Royal Aero Club has received from the Aero Club de France the following French records established during 1919 :—

ALTITUDE.

Aviator alone : Jean Casale, Issy-les-Moulineaux, June 14th, 1919, 9,520 metres.

Aviator and one passenger : Jacques Weiss, Villacoublay, August 13th, 1919, 9,000 metres.

Aviator and four passengers : Bossoutrot, Toussus, April 1st, 1919, 6,290 metres.

Aviator and thirteen passengers : Bossoutrot, Toussus, April 3rd, 1919, 5,090 metres

Aviator and twenty-four passengers : Bossoutrot, Toussus, May 5th, 1919, 4,360 metres.

THE RAYMOND ORTEIG $25,000 PRIZE.

PARIS—NEW YORK; NEW YORK—PARIS.

CROSS-ATLANTIC FLIGHT.

(Under the Competition Rules of the Aero Club of America.)

A prize of $25,000 has been offered by Mr. Raymond Orteig, of New York, to be awarded to the aviator who shall cross the Atlantic in a land or water aircraft (heavier than air) from Paris or the shores of France to New York or from New York to Paris or the shores of France, without stop, within five years from May 28th, 1919. (The flight may be made either way across the Atlantic.)

Qualification of Competitors.—The competition is open to persons of any allied nationality holding an aviator's certificate issued by the International Aeronautical Federation and duly entered on the Competitors' Register of the Aero Club of America.

Entries.—The entry form, which must be accompanied by the entrance fee of $250, must be sent to the Secretary of the Aero Club of America, 297, Madison Avenue, New York City, at least fourteen days before the entrant makes his first attempt.

No part of the entrance fees is to be received by Mr. Raymond Orteig, the donor. All amounts received will be applied towards payment of the expenses of the Aero Club of America in conducting the competition. Any balance not so expended will be refunded to the competitors.

Starting Place.—Competitors must advise the Aero Club of America of the starting place selected, and should indicate as nearly as possible the proposed landing place.

The start or landing may be made from land or water. If a land plane is used, the point of starting or landing must be within 50 miles of Paris or New York. If a seaplane or flying boat be used, the start or landing must be made from a point within 50 miles of New York, and the start or landing may be from or on any point on the coast of France. The time will be taken from the moment of leaving the selected starting place, in the case of land machines. In the case of starts made from the water, the time of start and finish will be taken from the moment of leaving or reaching land or crossing the coast line. In each case the pilot must report in person immediately to the Aero Club of America or the Aero Club of France.

All starts must be made under the supervision of an official or officials appointed by the Aero Club of America.

Identification of Aircraft.—Only one aircraft may be used for each attempt. It may be repaired en route. It will be so marked before starting that it can be identified on reaching the other side.

THE ROYAL AERO CLUB GOLF MEETING.

Lieut.-Colonel J. T. C. Moore-Brabazon (scratch) won the medal competition, at the Royal Aero Club's meeting at Addington, Surrey, on November 18th, with a score of 82. In the afternoon Colonel Brabazon tied with Mr. F. Mead (handicap 2) at 4 down in the bogey competition.

The scores in the medal competition were :—Lieut.-Colonel J. T. C. Moore-Brabazon (scratch), 82; Mr. F Mead, 88 minus 2 equals 86; Mr. P. Stanley May, 86 plus 1 equals 87; Mr. E. B. Parker, 99 minus 10 equals 89; Mr. H. G. Burford, 101 minus 10 equals 91; Major S. V Sippe, 110 minus 18 equals 92.

The scores in the bogey competition were :—Lieut.-Colonel J. T. C. Moore-Brabazon (scratch), 4 down; Mr. F. Mead (handicap 2), 4 down; Mr. P. Stanley May (plus 1), 5 down; Mr. E. B. Parker (10), 6 down; Mr. S. Goodchild (9), 6 down.

AIRCRAFT IN PARLIAMENT

HOUSE OF COMMONS.

The following written answers were given on November 17th :—

AIRMEN UNDER SENTENCE.

Mr. LUNN asked the Under-Secretary of State to the Air Ministry what is the number of men of all ranks now serving sentences of more than three months' duration for military offences.

Mr. CHURCHILL: The number of airmen serving sentences of more than three months' duration for Air Force offences is twenty-eight.

TRANSPORT OFFICERS.

Mr. RAPER asked the Under-Secretary of State to the Air Ministry whether he is aware that the civil aviation transport officers have far more responsibility than officers holding a corresponding rank in the Royal Air Force; and why the Royal Air Force officers of equivalent rank receive considerably higher pay, free medical attention, and qualify for pensions.

Mr. CHURCHILL: In reply to my hon. friend's question, it is recognised that civil aviation transport officers have considerable responsibility, but not necessarily more than that of officers holding a corresponding rank in the Royal Air Force. Further than this, civil aviation transport officers do not have the additional risk incurred in flying and have not executive command of a fighting or other Service unit. I may add that the rates of pay have been under revision, and revised rates on an increased scale have recently been sanctioned by the Treasury.

Mr. RAPER asked the Under-Secretary of State to the Air Ministry whether the civil aviation transport officers' agreements are for six months only and terminable at one month's notice on either side.

Mr. CHURCHILL: The reply to my hon. friend's question is that civil aviation transport officers are appointed for six months, and that their agreements are terminable on three months' notice on either side thereafter.

Mr. RAPER asked the Under-Secretary of State to the Air Ministry whether it is laid down that only ex-pilots and ex-observers shall be eligible for appointments as civil aviation transport officers.

Mr. CHURCHILL: While it is the general intention to appoint ex-pilots and ex-observers as civil aviation transport officers, it is not intended that this ruling should be absolutely binding, as this might eliminate exceptionally suitable candidates who may not have had practical experience of flying.

HOUNSLOW AERODROME.

Mr. RAPER asked the Under-Secretary of State to the Air Ministry whether there is any intention of discontinuing the use of Hounslow Aerodrome as a control aerodrome.

Mr. CHURCHILL: I cannot make a statement with regard to the future of Hounslow Aerodrome at present. The question is now under consideration.

MARRIED OFFICERS (ALLOWANCES).

Mr. T. THOMSON asked the Under-Secretary of State to the Air Ministry whether he is aware that the regulations governing the issue of lodging and fuel allowances to married officers are not the same in the Air Force as in the Army, and that in the former case a married officer under the rank of major who was under thirty years of age when the present regulations came into force is treated less favourably than an officer serving under similar conditions in the Army; and, if so, is he prepared to reconsider the matter with a view to putting officers of both branches of the Service on the same footing.

Mr. CHURCHILL: The scheme of emoluments for the Royal Air Force must be taken as a whole, and a comparison of particular items with particular items in the arrangements of other Services is misleading. There are, however, points of difference in the system of allowances which are now being considered, one of these being the question whether all officers married at the date of the order may draw lodging allowance irrespective of age.

TRAINING, FARNBOROUGH

Viscount WOLMER asked the Under-Secretary of State to the Air Ministry whether civilians are still being trained as pilots at the Royal Aircraft establishment, Farnborough, while certificated pilots are at present willing to fly and are not allowed to do so.

Mr. KELLAWAY: I have been asked to answer this question. A certain number of civilians are employed at the Royal Aircraft Establishment on special research work. In order to obtain the fullest advantage from their work it is necessary that some of them, at any rate, shall actually take up and fly machines themselves. At the present time one civilian is so employed and three more are under training. Apart from this special work, all flying tests or experiments are carried out by R.A.F. pilots.

* * *

The following oral answers were given on November 18th :—

FLYING BOATS.

Lieut.-Col. BURGOYNE asked the Under Secretary of State to the Air Ministry whether it is proposed to encourage the development of flying boats as distinct from seaplanes; and, if so, what steps have been taken towards such encouragement?

Capt. GUEST (Joint Parliamentary Secretary to the Treasury): The reply to the first part of my hon. and gallant friend's question is in the affirmative; and to the second part that three different types of experimental boat seaplanes are on order and that, as already announced, one of the prizes in the British Aircraft Competition for 1920 is for a boat or float seaplane.

Mr. BILLING: Have the Admiralty been consulted as to the possible requirements of these seaplanes, or are experiments conducted without the co-operation of the Admiralty?

Capt. GUEST: I understand that the Admiralty have not been consulted.

Mr. BILLING: Having regard to the fact that all flying boats are essentially operative with the Navy, will he see that they are consulted?

Capt. GUEST: I will refer to the Secretary of State.

CIVIL AVIATION.

Lieut.-Col. BURGOYNE asked the Under Secretary of State to the Air Ministry what competitions have been organised by the Government for the development of civil aviation; do these competitions pay regard to the possible military value of the designs to be entered; and does he consider that it is possible in the future development of flying to combine the dual functions of both war and peace with practicability?

Capt. GUEST: The reply to the first part of my hon. and gallant friend's question is that three competitions are being organised for the year 1920. They are to be open to small aeroplanes, large aeroplanes, and seaplanes, respectively, the seaplane competition being framed with the object of developing a type of aircraft capable of alighting on and rising from land as well as water. The total prizes amount to £64,000. It is also under consideration whether, in addition to these, at a later date, a fourth competition should be organised for a large type of flying boat not required to possess amphibious qualities.

The reply to the second part of the question is that the above competitions are designed with a view to the attainment of safety and comfort of air travel. It is expected that a number of valuable lessons will be learned as the result of them, and many of these will undoubtedly be of great use from a military point of view. Where, however, military requirements diverge from safety requirements, the latter will be given the preference.

In regard to the third part of the question, it seems probable that the designs of civil and military aircraft will diverge as time goes on. But, whatever class of aircraft is experimented with, certain improvements are sought for; those may be in regard to aerodynamic qualities, method of construction, reliability of engines or petrol installation, etc., and the knowledge thus gained can be used equally in designing new civil or military aircraft.

* * *

The following oral answer was given on November 19th :—

ROYAL AIR FORCE CAMPS, SHROPSHIRE.

Capt. Sir B. STANIER asked the Secretary of State for War whether it has yet been settled which of the four camps used during the War by the Air Force in Shropshire are to be kept as permanent camps and which are to be dismantled?

Capt. GUEST (Joint Parliamentary Secretary to the Treasury): It is assumed that Shrewsbury, at which there is an Aircraft Acceptance Park, and a Mechanical Transport Repair Depot, but no aerodrome, Shawbury and Ternhill are the four camps referred to. Owing to the unavoidable delay in deciding the future size of the Royal Air Force, it has not been possible to settle the fate of many stations. It is, however, possible to say that either Shawbury or Ternhill will shortly be relinquished, and that in all probability the Mechanical Transport Repair Depot at Shrewsbury will be kept, while the Aircraft Acceptance Park will be disbanded. Decisions on all these points will very shortly be reached.

* * *

The following written answer was given on November 19th :—

POST OFFICE.—CONTINENTAL AIR RAIDS [*sic*]

Mr. GWYNNE asked the Postmaster-General what is the present charge to the public per letter for delivering mails to the Continent by air, in addition to the postal fees; what is the similar charge made by France and Germany for air mails outside their country; what charges are made by the transport company to the Post Office; and what profit the Post Office makes on these transactions per letter.

Mr. PEASE: A special fee of 2s. 6d. per ounce in addition to the ordinary foreign postage is charged on correspondence accepted for transmission by the Air Mail Service from London to Paris. The special fee charge by the French Post Office in the reverse direction is 3 francs per 20 grammes. I am unable to state the charges levied in Germany for any similar service. Payment is made to the British company performing the London to Paris service at the rate of 2s. per ounce; and the remainder of the fee is intended to cover the cost of the special treatment of the correspondence and its express delivery.

* * *

The following oral answer was given on November 20th :—

ROYAL AIR FORCE.

Lord HUGH CECIL (by private notice) asked the Prime Minister whether his attention has been called to the anxiety expressed by some Members of the House in regard to the relation between the War Office and the Air Office now existing, and the consequent effects upon the Royal Air Force; whether the Government will make a full statement of their policy in regard to the Air Ministry and the Royal Air Force; and whether they will fix a day for a full discussion of that policy.

The PRIME MINISTER: My attention has been called to a resolution to that effect carried at a meeting of Members of this House. There has been no change whatever in the policy of the Government in regard to the Air Force, and I see no need for any discussion at present. If, however, there should be any general desire for such a discussion, my right hon. friend will, I am sure, try to arrange it, but the pressure of business is so great that it will be difficult to find time.

A CHILEAN MISSION.

One understands that the Special Mission from the Chilean Government, which is at present visiting this country in return for the visit paid to South America by the British Mission under Sir Maurice de Bunsen, will, in addition to its numerous engagements, visit the Elswick works and shipbuilding yards of Sir W. G. Armstrong, Whitworth and Co., Ltd., at Newcastle-on-Tyne, on Nov. 14th.

Special interest attaches to the visit in view of the fact that during recent years this firm has had very close associations with the Chilean Government and has undertaken large contracts in connection with additions to the Chilean Navy.

An immense amount of English capital is invested in Chili, and this visit will draw still closer the commercial trade relations between this country and Chili.

THE TURNHOUSE AERODROME.

At a recent meeting of the Lord Provost's Committee of the Town Council of Edinburgh, a letter from the Air Ministry was read. It stated that the Air Council were now compelled to dispose of Turnhouse aerodrome and that if the Corporation desired to consider the acquisition of the aerodrome and buildings they should communicate with the Director-General of Lands. The city appear to be willing to take control of Turnhouse aerodrome, but do not want to be saddled with the entire financial responsibility, which, they think, is a matter for the Government.

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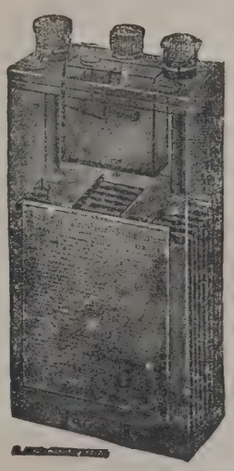
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EXTRACTS FROM "THE LONDON GAZETTE."

GREAT BRITAIN.

NAVAL.

ADMIRALTY, Nov. 17th.

R.N.R.—Lt. to be Lt.-Comdr.:—H. E. M. Watkins (Capt., R.A.F., temp. Maj.), Oct. 17th.

MILITARY.

WAR OFFICE, Nov. 17th.

TERRITORIAL FORCE.—INFANTRY.—8th Bn., Middx. R.—Sec. Lt. L. D. Wright to be Lt., and to remain secd. (R.A.F.), July 1st, 1917.

WAR OFFICE, Nov. 18th.

REGULAR FORCES.—ESTABLISHMENTS.—R.F.C.—Mil. Wing.—The notification in the "Gazette" of Aug. 20th, 1917, regarding temp. Lt. and Hon. Capt. C. A. Hooper, Spec. Res., is cancelled.

Special Appt. (graded as a Park Comdr.):—Temp. Lt. and Hon. Capt. C. A. Hooper, Spec. Res., and to be temp. Maj. whilst so empld., July 2nd, 1917.

MEMORANDUM.—Sec. Lt. A. Ward (attd. R.A.F.) retires, receiving a gratuity, Nov. 19th.

WAR OFFICE, Nov. 19th.

REGULAR FORCES.—INFANTRY.—SERVICE BATTALIONS.—R. W. Fus.—Temp. Sec. Lt. J. W. Kemberry resigns his commn. on appt. to R.A.F., Nov. 9th, 1918.

WAR OFFICE, Nov. 21st.

REGULAR FORCES.—INFANTRY.—SERVICE BATTALIONS.—S. Wales Bord.—Temp. Sec. Lt. W. A. Wright, from R.A.F., to be temp. Sec. Lt., March 3rd, 1918.

MEMORANDUM.—Lt. L. E. Taylor, M.B.E. (attd. R.A.F.), retires, receiving a gratuity, Nov. 22nd.

OVERSEA FORCES.—CANADA.—C.A.S.C.—Temp. Capt. V. H. Huston, M.C., ceases to be secd. to the Royal Air Force for duty, Sept. 30th.

TERRITORIAL FORCES.—YEOMANRY.—R. N. Devon.—Lt. A. R. Churchman, D.F.C., relinquishes his commn. in the T.F. on appt. to a permanent commn. in R.A.F., Aug. 1st, and retains rank of Lt.

Hamps.—Capt. R. A. Cooper, D.S.O., relinquishes his commn. in the T.F. on appt. to a permanent commn. in R.A.F., Aug. 1st, and retains rank of Capt.

Lincolnshire.—Lt. C. S. Porri relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains the rank of Lt.

2nd County of Lond.—Lt. S. P. Marcus relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains the rank of Lt.

1st Lovat's Scouts.—Capt. G. J. C. Maxwell, M.C., A.F.C., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains the rank of Capt.

Notts (Sherwd. Rgrs.).—Lt. D. F. Stevenson, D.S.O., M.C., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains the rank of Lt.

Shropshire.—Capt. W. G. P. Young, O.B.E., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains the rank of Capt.

North Somerset.—Maj. J. H. S. Tyssen, M.C., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains the rank of Maj.

Surrey.—Capt. J. Everidge, M.C., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains the rank of Capt.

ROYAL ENGINEERS.—Field Cos.—Capt. (Brev. Maj.) A. Cleghorn, High. Divl. Engrs., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains his rank; Lt. F. H. Ronksley, M.C., W. Rid. Divl. Engrs., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains the rank of Lt.

Signal Cos.—Capt. A. ap Ellis, W. Rid. Divl. Engrs., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains the rank of Capt.

WAR OFFICE, Nov. 22nd.

REGULAR FORCES.—MEMORANDA.—Col. E. B. Ashmore, C.B., C.M.G., M.V.O., relinquishes the temp. rank of Maj.-Gen., and retains his appt. as Comdr., London Air Defence Area (Oct. 31st).

TERRITORIAL FORCE.—ROYAL HORSE AND ROYAL FIELD ARTILLERY.—Maj. S. Smith, D.S.O., A.F.C., 3rd E. Anglian Bde., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F. (Aug. 1st) and retains the rank of Maj.

Capt. C. C. Durston, "A" Bty., H.A.C., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F. (Aug. 1st) and retains the rank of Capt.

Lt. G. Henderson, 3rd E. Lancs Bde., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F. (Aug. 1st) and retains the rank of Lt.

Lt. R. S. McClintock, M.C., 3rd W. Lancs Bde., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F. (Aug. 1st) and retains the rank of Lt.

Lt. J. L. Vachell, M.C., 4th Welsh Bde., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F. (Aug. 1st) and retains the rank of Lt.

Lt. C. M. Eastley, 4th Wessex Bde., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F. (Aug. 1st) and retains the rank of Lt.

Lt. H. M. Coombs, D.F.C., 2nd Wessex Bde., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F. (Aug. 1st) and retains the rank of Lt.

AIR FORCE.

AIR MINISTRY, Nov. 18th.

The King has approved of the following rewards, conferred by the General Officer Commanding the North Russian Expeditionary Force:

DISTINGUISHED SERVICE ORDER.

Sqdn. Leader (A./Wing Comdr.) ROBIN GREY (Gren. Gds.).—Commanded the R.A.F., Archangel Area, with great distinction. Owing to the lack of pilots and observers during the winter, he carried out personally the most dangerous reconnaissances. On April 8th, 1919, at Obozerskaya, he carried out a reconnaissance in bad weather, bringing back valuable information. On April 22nd he carried out two most important reconnaissances with success, but met with a bad accident on landing the second time. Although considerably shaken physically, he continued to command the R.A.F. with marked success until the conclusion of the operations in North Russia.

Flight Lt. NORMAN GORDON STEWART-DAWSON, D.S.C.—Successfully led several raids with great success during the operations with the "Syren" Force in North Russia from June to September, 1919, notably in the attack on the enemy at Koikori on September 7th. Flight Lt. Stewart-Dawson has displayed exceptionally good qualities in leadership during these operations in the air, and equally distinguished services in ground-work organisation, where the difficulties were many.

BAR TO THE DISTINGUISHED FLYING CROSS.

Observer Officer PARCELL REES BOWEN, M.C., D.F.C. (5th Welsh R.).—On Aug. 24th, 1919, whilst observer on reconnaissance over the enemy aerodrome (Toima), he was fired upon at long-distance range from an enemy machine, both himself and the pilot being wounded. The pilot having collapsed from his wound onto the controls, Observer Officer Bowen managed to guide the machine from the back seat and flew homeward for a distance of 100 miles, by which time the pilot had slightly recovered and took control of the landing, which was safely made on the Bereznik Aerodrome. This officer's action was highly meritorious, and the guiding of the machine over a long distance was especially noteworthy in view of the wound which he had sustained in the right elbow.

Flying Officer JOHN SHARPE GRIFFITH, D.F.C.—Between May 5th and July 24th, 1919, this officer carried out 40 bomb raids and reconnaissances, all with great success and generally from a low altitude. On June 3rd, 1919, he dived to within 100 ft. of the ground and destroyed an enemy balloon, as well as several of its attendants. When a two-seater machine was not readily available he fitted a camera to his scout and, although it is very difficult to take photographs from such machines (and, moreover, he was inexperienced in such work), he succeeded in taking a very good mosaic which proved of great utility to the Commander of the Vologda Force. Flying Officer Griffith is an intrepid pilot and a very skilful all-round officer.

Flying Officer (A./Flt. Lt.) FREDERICK IVES LORD, D.F.C.—On June 27th, 1919, whilst piloting an R.E.8 machine, he found the position of the enemy on the Pinega River, four versts from Pilegori, and attacked the moving columns from a height of 200 ft. with such effect that their transport was stampeded and their expected attack broke down, without any casualties being sustained by our forces.

DISTINGUISHED FLYING CROSS.

Flying Officer CYRIL ARTHUR BOUCHIER.—A very skilful pilot of marked initiative and courage. Has been brought to notice on many occasions for the determination shown in his attacks. His methods are somewhat original. By flying low, parallel with and behind the enemy's lines, stampeding convoys and destroying wagons, he has caused the greatest confusion amongst the enemy, to the great advantage of our own forces. Flying Officer Bouchier is a highly competent reconnaissance officer.

Flight Lt. OLIVER CAMPBELL BRYSON, M.C., A.M. (Dor. Yeo.).—Has commanded a squadron of heavy bombing machines in North Russia during the whole of the summer of 1919, during which period he carried out a large number of successful raids on the enemy's territory. During the operations on the Dwina in August, and on the Pinega in September, 1919, he flew a Snipe machine with excellent skill and daring. A very gallant officer he has proved himself during these exceptionally difficult aerial operations.

Flight Lt. (A./Sqdn. Ldr.) CHARLES RODERICK CARR.—On June 17th, 1919, this officer flew a scout machine over the enemy aerodrome at Puchega, at an average height of only 50 ft., for 30 min. During this time he succeeded in setting fire to a Nieuport enemy machine, to a hangar which contained three aeroplanes (all of which were destroyed), drove all the personnel off the aerodrome, and killed some of the mechanics.

Observer Officer FREDERICK TALBOT EADES.—On June 9th, 1919, whilst serving with the "Syren" Force in North Russia, this officer was on night patrol (observer) in heavy rain, investigating the enemy's position off Schunga, on Lake Onega. Their position was attacked from a height of 300 ft. by machine-guns and bombs, the latter being thrown from the observer's cockpit. Having expended all ammunition, the machine returned to base, and after refilling again attacked and drove one gunboat ashore. A second gunboat was later seen to be in tow, presumably damaged in the attack. On the night of June 11th this officer was observer in the seaplane piloted by Flying Officer Isaac, when the enemy's line was twice cut, the machine sustaining considerable damage in the second attack.

Flying Officer HAROLD ALFRED HAINES.—During June and July, 1919, this officer performed numerous acts of gallantry in the operations of the "Syren" Force, North Russia. His work has been characterised by care and judgment, coupled with a total disregard of personal danger. He has taken part in numerous actions against the enemy from a very low altitude, and consequently at great risk, which resulted in the infliction of heavy casualties and great damage being done to the enemy's rolling-stock, ships, and bridges.

Pilot Officer BERNARD ALLEN HEENEY.—During the entire winter in North Russia this observer officer flew almost continuously over the enemy's lines on reconnaissance duties, under very arduous and dangerous circumstances. Pilot Officer Heeney was severely wounded on June 20th, 1919, whilst flying very low, assisting our Allied troops.

Flying Officer FREDERICK HARRY ISAAC.—On June 11th, 1919, whilst serving with the "Syren" Force in North Russia, this pilot was on patrol endeavouring to prevent reinforcements from reaching the enemy's front; he descended to within 50 ft. of the ground and, whilst exposed to heavy fire, succeeded in cutting their line with bombs. During the night the enemy repaired the line, and Pilot Isaac on hearing of this proceeded to the scene and again destroyed it from a height of only 30 ft., his machine sustaining heavy damage from the enemy's fire, as well as from his own bombs. The gallantry and determination of this officer will be more readily appreciated when it is borne in mind that his machine was a seaplane, operating seven miles inland.

Flying Officer ARTHUR EDWARD LETTINGTON.—During the operations of the "Syren" Force in North Russia, from July to September, 1919, this pilot has proved himself a gallant officer with marked ability and initiative. In machine-gunning the enemy from very low altitudes he has met with signal success. On August 3rd, 1919, in co-operation with our Lake Flotilla off Tolvuya, he descended and attacked the enemy quite near the water in the face of concentrated machine-gun fire, which resulted in the capture of the town and three of the enemy's steamers. Many other instances are recorded wherein this officer displayed gallantry of a high order in circumstances of great difficulty.

Flying Officer LLOYD WESLEY MASON.—This officer has shown great dash and courage whilst flying a Snipe at extremely low altitudes. He has taken part in operations throughout the summer both on the Dwina and Railway Fronts, and has attacked many targets with his machine-guns, dispersing troops and breaking up counter-attacks. In an attack on Puchega Aerodrome he descended very near the ground

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in an endeavour to silence machine-guns which were concentrating on his Squadron Commander's machine.

Flight Lt. ALFRED PRICE MAURICE.—Commanded the R.A.F. Unit at Obozerskaya since May 5th, 1919, with marked success, proving himself a most capable and reliable officer, adapting himself readily to the unusual and often unfavourable conditions. Flight Lt. Maurice has constantly carried out reconnaissances over the enemy's lines in dangerous circumstances, and has conducted bomb raids from low levels, notwithstanding the strong opposition from the enemy's anti-aircraft guns and machine-guns.

Flying Officer JOHN PERCIVAL MORKAM (Northants R.).—For more than six months, including the coldest and most inclement portion of the Arctic winter, this officer has displayed marked qualities of good leadership. In May, 1919, great efforts were made to prepare a forward summer aerodrome, but not with much success, and owing to the unsuitability of the available machines all attempts to rise from it failed—in one of these attempts at rising Flying Officer Morkam's machine was smashed and he himself severely injured. Notwithstanding these difficulties this officer, under urgent necessity, voluntarily undertook a reconnaissance flight of three hours over unknown and unmapped country, and returned with very valuable information, his petrol being absolutely exhausted on alighting. The nature of the country is such that no landing was possible anywhere on the return journey until his own base was reached. ("Syren" Force, North Russia.)

Flight Lt. WALTER HENRY PARK, M.C.—An exceptionally good pilot who has displayed marked ability and courage during the operations with the "Syren" Force in North Russia. His service flights have been specially praised on six occasions by the Commander of the Force during a period of three months, and his determination in pressing home the attacks on the enemy contributed in a large measure to the success which attended the work of the Air Force.

Observer Officer EDWARD ERIC SPENCER WHEATLEY (R.A.).—Has rendered valuable services in artillery observation from low altitudes, having been mentioned several times for this work. During the operations on the Dwina in June, 1919, he carried out many contact patrols, flying very low over the heads of the enemy, keeping our headquarters constantly and accurately informed as to the position.

DISTINGUISHED FLYING MEDAL.

No. 207177 Sjt. CHARLES VICTOR ROBINSON, late 205th Squadron, R.A.F. (France).—On May 18th, 1918, whilst acting as observer in a bombing attack on Chaulnes Railway Junction, his formation was attacked by seven enemy scouts. His machine was attacked simultaneously by two of these, one of which he shot down in flames. On the pervious day he dropped a 112-lb. bomb on this junction, causing a great conflagration. Sjt. Robinson has carried out 100 successful bombing raids, and is a most reliable observer.

FOREIGN DECORATIONS

The King has granted unrestricted permission for the wearing of the following decorations conferred for valuable services rendered in connection with the war:—

CONFERRED BY THE PRESIDENT OF THE FRENCH REPUBLIC.

Croix de Commandeur, Legion d'Honneur.—Maj.-Gen. Sir Frederick Hugh Sykes, G.B.E., K.C.B., C.M.G. (Retd. List).

Croix de Guerre, avec Palme.—Flying Officer Arthur Rowan (Salonika), Flight Lt. Charles Ernest Sherwin, M.C. (R.E., T.F.) (Aden).

CONFERRED BY THE PRESIDENT OF THE PORTUGUESE REPUBLIC.

Chevalier, Military Order of Avis.—Capt. Bernard Purvis Broackes Carter, D.F.C. (France)

CONFERRED BY THE KING OF ROUMANIA.

Chevalier, Order of the Crown.—Sec. Lt. George Ercole, late R.A.F.

CONFERRED BY THE SULTAN OF EGYPT.

Order of the Nile, 3rd Class.—Wing Comdr. Charles Stuart Burnett, C.B.E., D.S.O. (H.L.I.); Wing Comdr. Norman Goldsmith, O.B.E. (R.A.); Sqdn. Leader Eric Lewis Conran, M.C. (21st Lcrs.); Maj. (T./Lt.-Col.) Robert Hall, O.B.E. (Capt., R.W. Fus.).

Order of the Nile, 4th Class.—Capt. Albert John Gordon Anderson (Lond. R.); Capt. Lionel Mundy Bailey, A.F.C.; Flying Officer Robert Charles Jenkins, M.C. (D.C.L.I.); Sqdn. Leader Charles Henry Nicholas, A.F.C. (S.W. Bordrs.); Flying Officer David Norrie Thomson, M.C. (Glas. Yeo.).

MILITARY MEDAL.

The King has approved of the award of the Military Medal for bravery in the field to No. 26712 Flight Sjt. Edward Wardell (Putney), R.A.F., for gallantry in numerous actions extending from June, 1917, to the close of the war.

AIR MINISTRY, Nov. 18th.

R.A.F.—Flying Officer J. Edelsten is granted a permanent commn. (A.), Aug. 1st.

The following temp. appt. is made:—Staff Officer, 3rd Class.—(P). Flight Lt. D F. Massy, Sept. 1st (substituted for notification in "Gazette" of Oct. 10th, wherein this officer's initials were shown as "D. P.").

FLYING BRANCH.—The following Lts. are graded for pay and allowances as Capts. whilst empld. as Capts. (A.):—W. Henderson to May 16th; (Hon. Capt.) I. G. Roberts to Sept 6th, May 1st.

Sec. Lt. F. Thomasson, D.F.C., to be Lt., Feb. 24th.

Pilot Officer E. A. Siegrist to be Flying Officer, Sept. 10th.

Pilot Officer T. Q. Harvey relinquishes the grading for pay and allowances as Flying Officer on ceasing to be empld. as Flying Officer (O.), Oct. 21st.

Flight Cadet H. H. Bracher is granted a temp. commn. as Sec. Lt. (O.), Aug. 8th, 1918 (since killed).

The following relinquish their commns. on ceasing to be empld.:—Sec. Lt. (Hon. Lt.) P. R. Cook, July 8th, 1918 (substituted for notification in "Gazette" of Aug. 5th); Maj H. Wyllie, O.B.E. (Capt., Wilts. R.), Capt. C. R. Robbins, M.C., D.F.C. (Lt., R.F.A.), Oct. 31st; Lt. H. J. Bullock (Lt., Norf. R.), Nov. 5th; Lt. (Hon. Capt.) R. E. Wilson (Capt., Hamps. R.), Nov. 6th; Sec. Lt. (Hon. Lt.) A. Cox (Lt., R. Welsh Fus.), Nov. 8th

Transferred to unempld. list:—Lt. (Hon. Capt.) H. A. Henry, Jan. 15th; Sec. Lt. C. G. Ball, Sec. Lt E. K. Blair, Sec. Lt. C. R. Card, Sec. Lt. E. A. Locking, Sec Lt D. A. McCuaig, Sec. Lt. R. C. MacKinnon, Sec. Lt. J. C. McLachlan, Sec. Lt. R. J. Payne, Sec. Lt. G. C. Phillips, Sec. Lt. H. A. Phinney, Sec. Lt. G. L. Reid, Sec. Lt. C. W. Riley, Sec. Lt. W. J. Sturgeon, Feb. 1st; Lt. E. A. Newton, Feb. 17th; Lt. W. A. Bartlett, Feb. 24th; Sec. Lt. H. I. Terry, Feb. 28th; Capt. T. C. Trumble, March 1st; Lt. H. R. Casgrain, March 6th; Capt. C. T. Latch, March 9th; Lt. C. J. W. McKeown, March 16th; Sec. Lt. R. E. F. Tivy, March 22nd; Lt. C. I. Van-Nostrand, April 3rd; Capt. R. A. Logan, April 7th; Sec. Lt. J. O. Bach, April 8th; Lt. E. J. A. Burke, Lt G. B. Wigle, Sec. Lt. W. J. Wigmore, April 13th; Sec. Lt. C. Cutler, April 17th; Sec. Lt. (Hon. Lt.) R. L. Cobham, April 19th; Sec. Lt. A. T. Wood, April 23rd; Capt. R. W. Buswell, April 30th; Sec. Lt. M. McIsaac, May 1st; Lt. S. Hill, May 2nd; Sec. Lt. P. V. Bedore, May 8th; Lt. W. W. Vick, May 10th; Lt. L. F. Williams, May 20th; Sec. Lt. F. G. H. Bar, June 16th; Lt. F. D. Slee, June 23rd; Sec. Lt. J. W. M. Proubert, June 27th (substituted for notification in the "Gazette" of July 4th); Sec. Lt. R. B. Wiggins, July 10th; Sec. Lt. F. Whiskin, July 11th; Sec. Lt. E. Wells, July 12th; Sec. Lt. S. L. Walters, July 25th; Lt. R. D. C. Blake, D.F.C., Aug. 12th; Lt. E. Blythe, Aug. 14th; Lt. R. de R. Brett, M.C., Aug. 25th; Sec. Lt. W. F. McCunn, Sept. 3rd; Lt. E. R. Danks, Sept. 7th; Lt. D. H. Batty, Lt. T. P. Fox, Sept. 9th; Lt. A. E. Chittenden, D.F.C., Sept. 10th; Lt. D. E. P. Chaplin, Sec. Lt. G. Graham, Sept. 11th; Sec. Lt. H. S. Cook, Lt. G. W. F. Darvill, D.F.C., Sept. 12th; Sec. Lt. W. H. Boite, Sec. Lt. S. G. Burgess, Lt. W. J. P. Jenner, D.F.C., Sept. 13th; Sec. Lt. J. H. Gray, Sept. 20th; Lt. G. H. Langley, Sept. 24th; Lt. H. S. Fey, Sept. 26th; Lt. T Capps, Lt. F. Pooley, Sept. 27th; Sec. Lt. F. C. Annett, Sec. Lt. E. J. Edwards, Sec. Lt. E. V. Finland, Sec. Lt. H. R. Waddell, Sec. Lt. C. O. White, Sec. Lt. R. E. Williams, Sept. 28th; Sec. Lt. C. T. Ward, Sec. Lt. J. Weeding, Sept. 29th; Sec. Lt. H. W. Featherstonehaugh, Oct. 6th; Sec. Lt. J. Collins, Capt. R. C. Davies, Oct. 10th; Sec. Lt. J. D. Shotter, A.F.C., Lt. W. W. White, Oct 22nd; Lt. W. T. Edwards, Capt. D. M. Tidmarsh, M.C., Oct. 28th; Lt. R. B T. Hedges, Oct. 30th; Lt. A. M. Ross, Oct. 31st; Lt. R. K. Muir, Nov. 1st; Sec. Lt. R. S Winter, Nov. 2nd; Lt. J. A. W. Armstrong, Lt. F. R. Keen, Capt. A. N. Kingwill, Sec. Lt. W. E. Osterburg, Capt. E. Selby, O.B.E., Lt. J. Spencer, Nov. 3rd; Sec. Lt. (Hon Lt.) W. A. S. Blucke, Capt. W. P. McDuff Brettell, Sec. Lt. H. S. R. Burt, Lt. B. Hackforth, Lt. B. A. Hewett, Maj. E. E Hodgson, Lt. E. W. Horncastle, Lt. E. C. K. Kingston, Sec. Lt. A. Maybaum, Lt. H. F. Potter, Sec. Lt. (Hon. Lt.) C. W. Saggs, Lt. J. G. Simpson, Sec. Lt. J. M. Walmsley, Lt. J. C. Williamson, Lt. T. W. Williamson, Lt. E. B. Wilson, Lt. C. C. Woodall, Nov. 4th; Lt. G. G. L. Blake, D.F.C., D.C.M., Capt. P. L. Bryant, Lt. B. B. Caswell, Sec. Lt. G. P. W. Chandler, Lt. M. B. Lewis, Lt. W. A. McCulloch, Sec. Lt. J. J. W. Nelmes, Lt. (actg. Capt.) W. R. Phillips, D.F.C., Lt. K. MacP. Smith, Sec. Lt. W. T. K. Wallington, Lt. S. Wilkinson, A.F.C., Nov. 5th; Sec. Lt. A. Findley, Nov. 6th; Capt. M. Faux, Lt. L. W. R. Grubb, Sec. Lt. E. G. Marchant, Lt. F. R S. Southon, Lt. P. E. Wood, Nov. 7th; Lt. A. R. Clark, Nov. 9th; Sec. Lt. B. Lones, Lt. J. W. Webb, Nov. 11th; Sec. Lt. J. E. Foden, Lt. J. G. Horne, Lt. A. J. R. F. Johnson, Nov. 14th; Lt. S. W. Walker, Nov. 16th.

The following Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—P. J. Casey (caused by wounds), Nov. 10th; W. A. Horan (Lt., S. African F.A.) (caused by wounds), Nov. 14th; H. E Hyde (contracted on active service), Nov. 16th.

The following Sec. Lts. relinquish their commns. on account of ill-health contracted on active service, and are permitted to retain their rank:—G. R. Newton-Bridle, July 25th (substituted for notification in "Gazette," Aug. 1st); H. Frew, Nov. 6th; V. M. Mitchell, Nov. 12th.

Sec. Lt. C. F. Lawson is antedated in his appt. as Sec. Lt. (O.), July 29th, 1918.

The notification in "Gazette" of Nov. 11th concerning Lt.-Col. G. C. St. P. De Dombasle is cancelled.

The notification in "Gazette" of Oct. 3rd concerning Sec. Lt. J. A. Peterson is cancelled.

The notification in "Gazette" of Oct. 28th concerning Sec. Lt. L. E. G. Judge is cancelled.

The notification in "Gazette" of Aug. 22nd concerning Sec. Lt. H. Toms is cancelled. "Gazette" of Aug. 5th to stand.

ADMINISTRATIVE BRANCH.—Sqdn. Ldr. (actg. Group Capt.) W. P. Alexander to be Sqdn. Ldr. (from Aug. 1st to 31st), and relinquishes the actg. rank of Group Capt.

Maj. R. H. Howell to be Maj., from (S.O.), June 21st, 1918.

Lt. A. E. Burrowes is graded for purposes of pay and allowances as Capt. whilst empld. as Capt., from May 1st to Aug. 9th.

Flight Lt. H. C. Jones relinquishes the grading for pay and allowances of Sqdn. Ldr. on ceasing to be empld. as Sqdn. Ldr., Oct. 14th.

Flight Lt. H. W. M. Paul, O.B.E., M.C., to be Flight Lt., from (S.O.), Oct. 15th.

Lt. (Hon. Maj.) C. A. Cutbill to be Lt. (Hon. Maj.), from (S.O.), Nov. 26th, 1918.

Pilot Officers to be Flying Officers:—J. Earl-Willson, Aug. 17th; F. W. Garley, Oct. 1st.

P.F.O. L. F. Joyner is granted a temp. commn. as Sec. Lt., Sept. 12th, 1918 (substituted for notification in "Gazette" of Sept. 5th).

M. W. Binns is granted a temp. commn. as Sec. Lt., Dec. 7th, 1918.

Lt.-Col. (actg. Col.) A. W. C. McFall, O.B.E. (Lt.-Col., ret., Mil.), relinquishes his commn. on ceasing to be empld., and is permitted to retain the rank of Col., Sept. 18th (substituted for notification in "Gazette" of Oct. 10th).

The following relinquish their commns. on ceasing to be empld.:—Lt. S. J. Stokes, Oct. 30th; Lt. A. H. Bottrell (Lt., R. War. R.), Oct. 31st; Capt. B. G. M. F. Nixon (Capt., Indian Army), Nov. 8th.

Transferred to the unempld. list:—Lt W. Sutherland, Jan. 27th; Sec. Lt. F. J. E. Brake, Feb. 1st; Sec. Lt. R. F Hyett, March 20th; Sec. Lt. L. J. Farley, April 1st; Sec. Lt. R. J. Williams, July 12th; Lt. M. R. Williams, July 23rd; Sec. Lt. W. J. Collins, Aug. 2nd; Lt. R. F. Leather, Sept. 4th; Lt. H. F. G. Findlay, Sept. 29th; Lt. R. B. Fricker, Oct. 9th; Lt. H. Harker, Oct. 10th; Lt. J. J. Wilson, Oct 21st; Capt. W. J. Coombes, Sec. Lt. A. E. C. Halliday, Oct. 22nd; Lt. (Hon. Capt.) A. A. J. Poole, Lt. (Hon. Capt.) H. G. Whyte, Oct. 30th; Sec. Lt. A. Barrett, Sec. Lt. H. S. Harwood, Oct. 31st; Sec. Lt. (actg. Maj.) A. E. H. Hales, Nov. 1st; Lt. E. R. Seymour, Nov. 2nd; Sec. Lt. A. W. Howard, Sec. Lt. I. Powell, Sec. Lt. W. J. Tuckwell, Nov. 3rd; Lt. C. H. Stonham, Capt. E. Watson, Nov. 4th; Lt. H. L. McNaughton, Sec. Lt. (Hon. Lt.) R. E. Shears, Sec. Lt. B. Stone, Sec. Lt. H. C. Wilkin, Nov. 5th; Maj. N. C. Sampson, Nov. 6th; Lt. O. C. George, Nov. 8th; Lt. J. B. Pirie, Nov. 11th; Sec. Lt. R. Bentley, Nov. 14th.

Lt. T. Rumney (R.A.) relinquishes his commn. on account of ill-health contracted on active service, Nov. 7th.

Sec. Lt. B. L. Levi resigns his commn., being physically unsuited for duties of Pilot or Observer, and is permitted to retain his rank, April 4th (substituted for notification in "Gazette," Nov. 8th, 1918).

Transferred to unempld. list, and not "emold. list," as stated in "Gazette," Nov. 7th:—Lt. G. J. Maunsell, Aug. 21st; Sec. Lt. J. H. Norman, Aug. 25th; Capt. C. W. O'Connor, Sept. 1st; Lt. R. G. C. Pinfield, Sept. 3rd; Sec. Lt. A. H. Petch, Sept. 4th; Lt. J. Pell, M.C., Sept. 11th; Capt. A. Pantin, Sept. 12th; Lt. J. Woolfenden, Sept. 15th; Sec. Lt. J. Randall, Sept. 18th; Sec. Lt. S. St. Clare Stone, Sept. 23rd; Lt. A. Mitchell, Oct. 8th; Sec. Lt A. A. Mackay, Oct. 9th; Sec. Lt. D D. Carcary, Lt. G. D. Rowden, Lt. J. L Stewart-Moore, Capt. W. McIvor Watt, M.B.E., Oct. 10th; Lt. J. Sharman, Oct. 11th; Sec. Lt. W. H. Bayley, Sec. Lt. (Hon. Lt.) R. S. Cowen, Lt. A. Lee, M.B.E., Oct. 12th; Maj. E. W. Hugh Kennedy, Oct. 13th; Maj R. D. Carey, O.B.E., Oct. 14th, Lt. (actg Capt.) J. C. Cantrill, Oct. 16th; Capt. E. P. L. Baker, Oct. 20th; Sec. Lt. H H. Watson, Oct. 21st; Lt. W. E J. Roberts, Oct. 22nd; Lt. N. A. Hardie, Lt. J. F. Nalder, Oct. 24th; Lt. (Hon. Capt.) L. F. Bettinson, Lt. P. Dalton, Capt. H. C. Mallett, M.B.E., Oct. 26th; Sec. Lt T. Bathurst, Oct. 27th.



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TELE { GRAMS: Aircraft / PHONE: 1176 } EASTBOURNE

The notification in the "Gazette" of Sept. 16th concerning Sec. Lt. T Norman Drake is cancelled. The notification in the "Gazette" of Oct. 28th to stand.

The notifications in the "Gazettes" of May 27th and June 17th concerning Maj. R. H. Howell are cancelled.

The notification in the "Gazette" of Nov. 7th concerning Sec. Lt. C O. D. Kidd is cancelled.

TECHNICAL BRANCH.—Flight Lts. to be Flight Lts., Grade (B), from (S.O.):—Flight Lt. L. Auker, O.B.E., Nov. 1st; (Hon. Sqdn. Ldr.) E. J. Sayer, M.C., Nov. 8th.

The following Lts. are graded for purposes of pay and allowances as Capts. whilst empld. as Capts., Grade (A):—W. F. Floyd, from May 1st to July 31st; C. F. Blunt, July 17th.

Lt. (Hon. Capt.) D. A. English is graded for purposes of pay and allowances as Capt. whilst empld. as Capt., Grade (B), May 1st.

Lt. J. A. Rutherford to be Lt., Grade (B), from (A. and S.), July 1st, 1918 (substituted for notification in the "Gazette" of Aug. 23rd, 1918).

Flying Officers to be Flying Officers, Grade (B), from (S.O.), Nov. 1st:—H. J. Birtles, E. H Eldridge.

Sec. Lt. E. Hague to be Lt., April 19th

Sec. Lt. W. Parkinson to be Lt., Jan. 16th, without the pay and allowances of that rank prior to April 9th.

Sec. Lt. H. W. Nicholl to be Lt., April 19th, without the pay and allowances of that rank prior to May 1st (substituted for notification in the "Gazette" of May 24th).

Pilot Officer J. W. Caddy to be Flying Officer, Oct. 1st.

Sec. Lts. to be actg. Lts. whilst empld. as Lts., Grade (A):—H. H. Weller, May 1st; (Hon. Lt.) D. Sinclair, from May 1st to Oct. 14th.

Pilot Officer A. E. Gliddon to be Flying Officer without the pay and allowances of that rank, Oct. 1st.

Pilot Officer (actg. Sqdn. Ldr.) J. W. Tattersall relinquishes the actg. rank of Sqdn. Ldr. on ceasing to be empld. as Sqdn. Ldr., Grade (A), Oct. 8th.

Sec. Lt. C. H. N. Nunn relinquishes the grading for pay and allowances as Lt., Grade (B), May 13th (substituted for notification in the "Gazette" of Oct. 3rd).

Transferred to the unempld. list:—Sec. Lt. J. M. Blake, Jan. 13th; Lt. C. M. Seth-Ward, May 13th; Lt. A. W. Allan, Sept. 16th; Lt. A. Champion, Sec. Lt. S. E. White, Sept. 19th; Sec. Lt. (Hon. Lt.) H. I. Allen, Sept 26th; Lt. H. G. Welsford, M.B.E., Sept. 29th; Capt. S. H. Bird, Oct. 7th; Lt. H. P. Bramwell, Lt. A. R. Jones, Oct. 10th; Sec. Lt. L. J. Clements, Lt. W. Dawson, M.B.E., Oct. 14th; Capt. K. J. Young, Oct. 23rd; Sec. Lt. (Hon. Lt.) C. M. W. Park, Capt. O. S Stiles, Oct. 30th; Lt. (Hon. Capt.) H. Gardiner, Sec. Lt. R. A. Hornsby, Oct. 31st; Capt. D. P. Geddes, Capt. A. E. Siddons-Wilson, M.B.E., Lt. W. E. Westwood, Nov. 1st; Sec. Lt. (Hon. Lt.) J. J. Galvin, Lt. R. F. Howard, Sec. Lt. U. Jacques, Nov. 3rd; Sec. Lt. K. E. Beswick, Maj. M. K. Cooper-King, Lt. L. A. Mudge, Sec. Lt. S. Maunder, Lt. W. J. Scott, Lt. D. B. Thorp, Nov. 4th; Sec. Lt. (Hon. Lt.) N. A. Grandage, Sec. Lt. R. E. Hardy, Sec. Lt. R. A. Munday, Sec. Lt. J. W. Rodmell, Nov. 5th; Sec. Lt. E. Downer, Sec. Lt. G. W. Webb, Nov. 6th; Lt. J. H. Hill, Sec. Lt. J. W. Watts, Nov. 7th; Sec. Lt. C. B. Brown, Capt. H. E. Horne, Sec. Lt. R. H. B. Tomlinson, Nov. 8th; Sec. Lt. H. O. Keenan, Maj. H. M. Whitley, Nov. 11th.

Lt. H. J. Dolan relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, Nov. 7th.

Lt. A. Ward (Sec. Lt., Extra Reg. Empld. List) resigns his commn., Nov. 19th.

The notification in the "Gazette" of Oct. 17th concerning Pilot Officer E. Parrett is cancelled.

MEDICAL BRANCH.—Capt. J. A. Giles to be actg. Maj. whilst empld. as Maj., July 2nd.

Flight Lt. G. Cranstoun to be actg. Sqdn. Ldr. whilst empld. as Sqdn. Ldr., Sept. 4th.

Capt. G. W. Harbottle is transferred to the unempld. list, Nov. 1st.

DENTAL BRANCH.—S. G. Smith is granted a temp. commn. as Lt., July 1st, 1918 (substituted for notification in "London Gazette" of June 28th, 1918, in which he is shown under "Medical" Branch).

MEMORANDA.—The following Prob. Flight Officers are granted hon. commns. as Sec. Lts.:—A. C. Law, Nov. 30th, 1918; J. Cumberbirch, Dec. 10th, 1918; B. M. Bell, Feb. 3rd; E. E. Mays, Feb. 12th; A. W. Brayley, Feb. 14th; G. R. A. Booker, Feb. 18th; J. A. H. Chancellor, Feb. 22nd; W. J Costello, Feb. 27th; L. H. K. Ingham, March 8th; J. H. Allen, W. E. W. Holder, March 14th; W. M. Cowper, March 20th; C. W. Brown, April 8th; G. L. H. Byrne, April 15th; H. V. Glover, April 16th; A. J. Barrett, April 18th.

The following Cadets are granted hon. commns. as Sec. Lts.:—137293 F. S. W. Brice, March 21st; M/6496 R. D. Pollock, March 27th; 69425 W. G. White, April 3rd; 110060 F. N. Carwin, April 20th; 202263 S. J. Burrell, June 20th.

Group Capt. A. M. Longmore, D.S.O., is placed on the half-pay list, Oct. 20th.

The following temp. Hon. Lts. relinquish their commns. on ceasing to be empld.:—T. G. Green, W. E. Pickerill, W. J. Speller, H. T. Woodsmith, Sept. 16th

Transferred to the unempld list:—Lt. W. Watters, from (S.O.), March 14th; Lt. J. A. W. Bourne, from (S.O.), Sept. 12th; Capt. C. A. W. Taylor, from (S.O.), Oct. 7th; Capt. L. P. Ball, O.B.E., from (S.O.), Oct. 31st; Capt. H. G. Wheeler, from (S.O.), Nov. 3rd; Lt. A. G. Stradling, from (S.O.), Nov. 5th.

Lt.-Col. J.-D. Mackworth, C.B.E. (R.W. Surrey R.), relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, Oct. 24th (substituted for notification in the "Gazette" of Nov. 7th).

Lt.-Col. G. R. A. Holmes, C.M.G., O.B.E., relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, Nov. 12th.

PERSONAL NOTICES.

NAVAL.

ENGAGEMENT.

EVANS—LINDSELL.—A marriage has been arranged between Mr. M. W. H. Evans, late flight lieutenant, R.N.A.S., only son of Mr. W. J. Evans, C.B.E., and Mrs. Evans, of Glencourt, Brondesbury Park, and Nancy, elder daughter of Mr. and Mrs. R. J. Lindsell, of Fairfield Bury, St. Ives, Huntingdonshire.

BIRTH.

NICHOLL.—On Oct. 29th, at 55, Welbeck Street, W.1, to Peggy, wife of Lieut.-Col. Vincent Nicholl, D.S.O., D.S.C., R.A.F.—a son.

MILITARY.

DEATH.

GILBERTSON.—Lieut. Dennis Henry Stacey Gilbertson, 6th Northamptons and 70th Squadron, R.A.F., who was previously reported missing on Sept. 4th, 1918, is now officially presumed to have been killed in action on that date at Ecaillon. He was the only son of A. Stacey Gilbertson and Mrs. Gilbertson, of Mangrove, Hertford, and 41, Earls Avenue, Folkestone.

ENGAGEMENTS.

GRAHAM—BODINGTON.—A marriage has been arranged and will shortly take place between Squadron Leader J. B. Graham, M.C., A.F.C., R.A.F., son of the late Malcolm Graham, Yankalilla, South Australia, and Lillias, widow of Capt. C. H. Bodington, Royal Horse Guards, elder daughter of Mr. and Mrs. C. May Somerville, 49, Holland Park, W.

WEBB-BOWEN—HADLEY.—A marriage has been arranged, and will take place very shortly, between Air Commodore T. I. Webb-Bowen, C.B., C.M.G., R.A.F. (late Brig.-Gen. R.F.C.), and Violet, elder daughter of Mr and Mrs. C. A. Hadley, of Johannesburg, South Africa.

MARRIAGES.

ROBERTS—WEST.—On Nov. 7th, at St. Paul's, Covent Garden, Herbert Charles Roberts (late H.A.C. and R.A.F.), youngest son of the late Henry Roberts, of Upper Clapton and Henllan, North Wales, was married to Marjorie Beatrice West, only daughter of the late Stephen West, of Croydon, Surrey, by the Rev. A. Monks.

STATON—WORKMAN.—On Nov. 15th, 1919, at Holy Trinity Church, Northwood, Lieut. William Ernest Staton, M.C., D.F.C., R.A.F., elder son of Mr. and Mrs. W. N. Staton, of Hatton, Burton-on-Trent, was married to Norah Carina, second daughter of Mr. and Mrs. R. D. Workman, of Overdene, Northwood, Middlesex, by the Rev. H. V. Farnfield, M.A.

BIRTHS

GOSSAGE.—On Nov. 21st, 1919, at 12, Cornwall Gardens, S.W.7, the wife of Squadron-Leader E. L. Gossage, D.S.O., M.C., Royal Air Force, late Royal Artillery, of a son.

HEGARTY.—On Oct. 15th, at Lampeter, Mount Hermon, Woking, the wife of Captain H. G. Hegarty, M.C., late R.A.F., of a daughter.

AIR FORCE.

ENGAGEMENTS.

HUGHES—MAINE-TUCKER.—The marriage between Captain Eric Yorath Hughes, late R.A.F., elder son of Sir Thomas Hughes and Lady Hughes, O.B.E., of Cardiff, to Miss Dulcie Maine-Tucker, younger daughter of the late Mr. W. H. Maine-Tucker, of Penarth, Glam., will take place at St. James's Church, Piccadilly, on Wednesday, Dec. 17th.

McKEAN—WARREN.—A marriage has been arranged, and will take place shortly, between Capt. Lionel Douglas Dalzell McKean, R.A.F., youngest son of Mr. and Mrs. Hugh McKean, of Rathgar, Dublin, and Phyllis Maude, youngest daughter of A. J. Warren, late British Vice-Consul of Java, and Mrs. Warren, of Burghdown, Epsom.

MATHEW—ALEXANDER.—The engagement is announced between Flight Lieut. Cecil George Mathew, R.A.F., younger son of A. C. Mathew, of Cranford, Church Crookham, Hants, and Emily Geale Hester Lowry, youngest daughter of the late Colonel C. M. Alexander and Mrs. Alexander, of Termon, Carrickmore, Tyrone.

VOSPER—VAUGHAN.—The engagement is announced between Mr. R. A. Vosper, R.A.F., only son of H. O'D. Vosper, Esq., and Mrs. Vosper, of Plymouth, and Hilda, youngest daughter of Mr. A. Vaughan and Mrs. Vaughan, of New Cross, London.

YOUNG—JAMESON.—The engagement is announced between Capt. P. H. Young, R.A.F.M.S., Halton Camp, Bucks, and Jean, younger daughter of Mr. H. Jameson, Craigard, Perth, N.B.

MARRIAGE.

BEETON—TILLSTON.—On Nov. 11th, by special licence, at St. Peter's Church, Brighton, Capt. Bernard James Beeton, M.B.E., R.A.F., was married to Dulcie, daughter of Mr. and Mrs. Tillston, of Brighton, by the Rev. Canon and Prebendary F. Dormer Pierce, B.A., Vicar of Brighton.

BIRTHS.

BOUSTEAD.—On Sunday, Nov. 2nd, at Hove, the wife of Capt. Cedric Boustead, late R.A.F., of a daughter.

SMYTHIES.—On Oct. 26th, at Colasta, The Avenue, Andover, the wife of Major B. E. Smythies, D.F.C., R.A.F.—a daughter.

STREATFEILD.—On Oct. 26th, at 68, Holland Road, Kensington, W., to Marjorie and Geoffrey H. B. Streatfeild (late Capt., R.A.F.)—a daughter.

DEC. 3, 1919.

THE AEROPLANE

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ON SIX MONTHS OF CIVIL AVIATION—II.

Records, Satisfactory and Unsatisfactory.

Ignoring the first paragraph, which is merely a promise, or a threat, of more Regulations, and seems to have wandered into this position by accident, the figures which follow from the official document are of remarkable interest:—

An Air Navigation Bill, to make operative the International Air Convention recently signed in Paris in accordance with its requirements, is being drawn up under which the Regulations revised to date will be reissued.

The following approximate figures, which have been supplied voluntarily by certain of the firms engaged in civil air traffic, are interesting as showing the extent of the work carried out, and for the mileage covered the number of accidents must be regarded as remarkably small.

Number of hours flown	4,000
Number of flights	21,000
Number of passengers	52,000
Approximate mileage	303,000
Total number of accidents	13
Number of fatal accidents	2

	Total Numbers.	Per 1,000 Flights.	Per 1,000 hours flown.
Pilots killed	2	.095	.5
Pilots injured	6	.286	1.5
Passengers killed	Nil	Nil	Nil
Passengers injured	10	.476	2.5

Percentage of passengers injured to those carried, .019; in other words, for every 5,200 passengers carried only one has been injured.

It will be noted that the great majority of the flights were of short duration.

Indeed, much of the work during the period under review may be said to have been of an educative character. At the same time, since the greater number of accidents occur in getting off and landing, the proportion of accidents to flights made is a truer guide than that for hours flown. The figures clearly establish the fact that firms are intent on securing the safety of the public and also that the regulations in force are in principle suitably designed to attain that object.

The figures speak for themselves and need no explanation. The total number of passengers carried (52,000) is probably an under-estimate, for it is supplied "voluntarily by certain of the firms," which leaves one to assume that others, especially the unlicensed pilots with uncertificated machines, did not supply their figures. Also it does not include the illicit "joy-rides" given to civilians on R.A.F. machines.

The mileage is certainly an under-estimate, at any rate if calculated on a "passenger-mile" basis. It is probably about right as a "machine-mile" calculation, but the shortest joy-ride of 10 minutes must cover quite 10 miles, and so three passengers and a pilot in an Avro represent 40 "passenger-miles." On that basis, 750,000 passenger-miles for the four months from mid-June (when flying really began) to mid-October (when it ended) would be quite a fair estimate.

A very ingenious and quite sound point is made by the compilers of the Synopsis in claiming that "the proportion of accidents to flights is a truer guide than that for hours flown"—or, one would add, for passenger-miles. But, for comparison with other means of transport, especially with steamer lines and railways which keep careful statistics, passenger-mile figures count for most. One doubts whether any railway line can beat half a million passenger-miles without a death and with only two railway servants killed.

One's only quarrel with this section of the Synopsis is the claim that "the figures clearly establish the fact that . . . the regulations in force are in principle suitably designed to attain" the safety of the public. This is, in effect, a claim that the Department of Civil Aviation is largely responsible for the excellent passenger-mile record.

One denies any right to such a claim. The Department delayed the start of civilian flying for months, when joy-ride concerns might have been making good money. It prevented good pilots and good machines from getting to work by its eternal delays and imbecilities and petty annoyances over certificates and permits and so forth. It allowed incompetent minor officials to be a perpetual nuisance to everybody. And compared with its method of conducting correspondence, those of the famous Circumlocution Office were models of expeditiousness.

If there is anything to be said on the subject it is simply that "the figures clearly establish the fact that firms intent on securing" business will get it, in spite of any civilian Government Department.

The Question of Accidents.

We now come to the all-absorbing question of accidents, as follows:—

(*d*) Accidents.—Stress has been laid on the necessity for the punctual report and investigation of accidents, as only by this means can the weak points in administration, personnel and material be eliminated and the safety of the public proportionately increased. The organisation for this work built up during the war by the R.A.F. has been absorbed by the Civil Aviation Department. On receipt of the report of an accident involving a fatality, or injury to personnel, or serious damage to a machine, experts are immediately sent to investigate matters on the spot. This work has fortunately been exceedingly light and the facilities afforded by the firms concerned have enabled the necessary investigations to be carried out satisfactorily.

It is certainly satisfactory to know that accidents have been so few and that the firms concerned have afforded facilities to the Accidents Committee to investigate. But what is the good of investigating accidents if nobody is any the wiser for the investigation except a few people in the Air Ministry?

These are two excellent reasons why a report should be published on every accident which is investigated by the Committee, whether fatal or not. The first is that all who are concerned with the design and construction of aircraft, or who are interested in using, buying, or selling aircraft, should know why accidents happen, and

should thus be educated in means of preventing them or should be instigated to think out ways of preventing them in future. The second is that the publication of such reports would dispel once and for all the crop of foolish rumours which surrounds every notable accident immediately after it has happened.

The publication of such reports is desirable in the interests of Civil Aviation in general and of the makers of the smashed machines in particular. It is possible that reports on accidents are circulated to certain British aircraft constructors, but that is not enough. Knowing the habits of British business offices one is sure that such reports would never reach the right people in the works, and even if they did they would not be seen by the thousands of others to whom they would be of great value.

It would probably be inadvisable to circulate them to the daily Press, who would merely seize upon the most ghoulish details and star them in big headlines. But they should certainly be published in the technical papers.

Disappointing Figures.

The next section is devoted to the disappointing figures for licenses, thus :—

(*e*) Aerodromes and Licensing.—In the same way as ships require harbours, so aeroplanes and seaplanes require aerodromes, which have to be built, inspected and licensed. Licences also are necessary for the pilots competent to control the machines, and for the officials at the aerodromes qualified to pass machines as fit for flying, while every civil machine has to be registered and numbered in the same way as a motor-car, and, if flying for hire, must in addition be certified as "airworthy." A special branch of the Department of Civil Aviation deals with this and kindred questions, and between May 1st and October 31st has granted the following licences and certificates :—

Licences for Pilots	374
Licences for Ground Engineers	258
Licences for Engineers	1
Licences for Navigators	2
Licences of Aerodromes	92
Certificates of Registration	303
Certificates of Airworthiness	241

The reason that there has as yet been little or no demand for engineers' or navigators' licences, is that conditions which would necessitate the inclusion of these classes in the crew of an aircraft are not yet common.

The large majority of the aerodromes licensed have been those in the vicinity of towns required temporarily by firms engaged in carrying passengers for short flights.

It is believed that the London terminal Customs aerodrome at Hounslow is the only one of its kind in Europe, and that the organisation for dealing with regular traffic arriving by air from other countries has not elsewhere been so fully developed. Lympne for aeroplanes and Felixstowe for seaplanes have also been constituted as Customs aerodromes.

During the six months under review, an approximate sum of £2,000 has been received at Hounslow, in payment of housing and accommodation fees, etc., apart from the sale of petrol and oil. From this fact it is fair to assume that a definite revenue will be derived from the main aerodromes of the future.

In addition to the licensing of aerodromes already carried out negotiations are in progress for the establishment of land or sea aerodromes under the control of the Municipal Authoities, to serve the undermentioned localities :—

Edinburgh.	Bradford.
Newcastle.	Hull.
Southport.	Manchester.
Liverpool.	Margate.
Leeds.	Southampton.

For emergency landing grounds a large number of possible sites have been notified by Lords Lieutenant. The inspection of these sites, however, must, of necessity, cover a considerable period, and some time must elapse before maps showing the emergency landing grounds available in each county can be completed.

The figures for all licences are very unsatisfactory, and show in a most disappointing manner how small is the total amount of civilian flying. It is true that a certain number of unlicensed aviators and aeroplanes are flying, but there are not enough of them to affect the figures noticeably.

When one considers the thousands of pilots who were flying during the war it is lamentable that less than 400 should be flying to-day. There must have been nearly as many before the war, seeing that 863 aviators' certificates had been issued up to August 4th, 1914, in this country alone. It is true that many of them were Service people and that many never flew after qualifying for their certificates, but there certainly seemed much more flying before the war than there has been this year.

The figures for airworthiness certificates are equally disappointing. It hardly looks as if there can have been much civilian flying if only 241 machines were employed.

Still, it must be remembered that the Air Ministry prohibited civilian flying until so late in the year that it was impossible to make proper preparations for commercial work, and so all the organisation was of the sketchiest kind. Also, it must be remembered that the Committee of the Royal Aero Club, which appointed itself many years ago as the governing body for the Sport of Flying, has done nothing whatever to promote sporting flying right through the year, and that when it did busy itself over one event (the Schneider Cup Race) it made such an unholy mess of it that it did far more harm than if it had stopped at home and attended to its job of hotel-keeping—the only job at which it displays any competence or intelligence.

Therefore perhaps the figures are not so bad as they look, and indicate that the Aircraft Industry has achieved some success in spite of the Air Ministry and the Royal Aero Club.

The Hounslow Error.

One is mildly puzzled by the claim that Hounslow is the only terminal Customs aerodrome in Europe. One was under the impression that Le Bourgêt near Paris, Soesterburg near Amsterdam, and the aerodrome near Brussels fulfilled similar functions.

In any case Hounslow is no cause for congratulation, for it is the worst place possible for the purpose, being utterly inaccessible either by road or rail, as well as being on the wrong side of London. It is a consolation to learn—though not from this document—that Cricklewood is to be a Customs aerodrome in future. The astute Mr. Handley Page is to be congratulated. Indubitably Cricklewood will oust Hounslow as the recognised London terminal, for no other aerodrome can be found so near London or so well situated for quick communication by road.

One regrets to read that the impoverished Aircraft Industry has been "soaked" for £2,000 "in payment of housing and accommodation fees, etc." This accommodation could well have been given free of charge for the first few years.

Lympne is perhaps useful as an emergency landing aerodrome, and Felixstowe is the natural port of call for seaplanes from Holland, but one believes that a Southampton-le Havre air line will be very successful ere long, so it seems that another station will be necessary at Southampton.

It is encouraging to see that some Municipal Authorities are considering taking control of local aerodromes. As a rule town councils and such bodies are at least as stupid as Government departments or the Committee of the Royal Aero Club, but doubtless there are exceptions. It will be interesting to see which of the cities mentioned do in fact display intelligence and become possessed of municipal aerodromes.—C. G. G.

(*To be continued.*)

THE GREAT PEACE SCANDAL.

Probably the most scandalous of all the scandals of this devastating Peace is the finding of the Tank Inquiry Committee, which was published on Nov. 28th.

By this finding Sir William Tritton and Major Wilson were given £15,000 to divide between them. Major-General Swinton was given £1,000. Sir E. Tennyson d'Eyncourt was given £1,000. Mr. R. F. Macfie was given £500, and Mr. A. C. Nesfield was also given £500.

Nobody grudges the £15,000 to Sir William Tritton and Major Wilson. If anything, they deserved more. As engineers they were set to work to make a production job of the elementary armoured caterpillars on which the Landships Committee of the period decided. They produced in quantities, they did good work, and they are now rewarded.

Major-General Swinton also probably deserved more, for, besides doing the organising work which was his duty, he turned his great ability onto supplementary work as a propagandist. Also, being a Sapper officer, he contributed materially to the mechanical efficiency of the apparatus.

Why Sir Tennyson d'Eyncourt received anything is not very clear. As an Admiralty designer he was turned onto design, and he designed, as was his duty. His regular pay was presumably based on his ability as a designer, and if his ability in this instance appeared abnormal the Admiralty should have increased his pay. Still, none can grudge him a £1,000 bonus for his share in producing an absolutely novel instrument of war.

Nor presumably will anybody grudge Mr. A. C. Nesfield the gift of £500 for any extra brainwork or overtime which he may have expended at his works when they were occupied in producing the experimental models of tanks ordered by Commander Boothby, then O.C. Armoured Car Division, R.N.A.S.

The scandal is that Mr. R. F. Macfie, the real originator of the Tanks, should be insulted with a paltry £500 after having introduced not only the vehicle itself but its proper method of operation to the Government.

QUEER PROCEEDINGS.

Some of those who attended the meetings of the Inquiry Committee, among them the present writer, were surprised at the curious way in which some evidence was admitted while other evidence of greater importance was ruled out of court. It was plain that under such conditions the Committee could never have the whole story placed before them.

And it was equally surprising to find that the various claimants were limited as to the number of witnesses whom they were allowed to call. The impression conveyed to one was that the Committee was more anxious to get the whole thing over and finished than it was to thrash each claim out to the limit in an endeavour to discover the truth.

Nevertheless, after Colonel DelaCombe had stated that he had introduced Mr. Macfie to the Admiralty in order that his armoured caterpillar design might be considered: after Colonel Risk, the first O.C. Armoured Cars, had stated that he had introduced Mr. Macfie to his armament officer in order to discuss details of the machine: after Colonel Boothby, the second O.C. Armoured Cars, had related how he detailed Mr. Macfie to construct a working model of his machine: and after it was clearly shown that the ultimate Tanks derived from these early experiments, one would have thought that even a Government Committee would have recognised his right to be considered the originator of the idea.

Given such recognition it is difficult to see how he deserved less reward than did the two excellent engineers who produced the design which at last went into action on the Somme in September, 1916, just on *two years* after Mr. Macfie introduced an almost identical general design to the Armoured Car Division and to the Admiralty.

THE CUSTOM OF THE COUNTRY.

The result is perhaps not very surprising, for the inventor or the designer, of a genuinely novel machine never makes as much money as those who make to his designs. One could not expect Mr. Macfie to be given a sum equal to the profits made by the firms who supplied the parts of the tanks which broke and left the gallant crews at the mercy of German guns. Nor could one expect him to receive a sum equal even to the profit on the paint with which the tanks were rendered conspicuous. But one might reasonably have expected that he would receive enough to set him up in a nice little business in this country, instead of merely a sum about equivalent to that which the Treasury would have expended if he had been tried and deported as an undesirable alien when he first landed in this country with the Tank scheme in his head.

TANKS AND AIRCRAFT.

The reason why one devotes space to this subject in THE AEROPLANE is that in future wars Tanks and aircraft will be very closely allied. Tanks with aeroplane reconnaissance will operate much as ships will operate with aeroplane scouts at sea.

Also, in 1915, long before Tanks ever went into action, this paper did its best, guardedly in print, and by private correspondence, to force those in authority to pay attention to this new weapon. But, as usual, all efforts failed to move the civilian experts in charge, though the active service soldiers were quick enough to see the value of the machine.

It may be of interest to note that Mr. Macfie's designs have always been a year or two in front of the official designs, until quite lately when some very able people have taken charge of Tank affairs, and have not disdained to treat Mr. Macfie as an engineer whose suggestions are worthy of consideration.

One suggests that the best use that Mr. Macfie can make of his paltry £500 is to go to Germany or America, where his latest designs for high-speed landships capable of standing up to gun fire are likely to be appreciated and useful.—C. G. G.

SPECIAL BRITISH AIRCRAFT CONSTRUCTORS' ISSUES.

The Paris Aero Show begins on December 19th. On December 17th THE AEROPLANE will publish the first of Three Special Issues devoted to the products of British Aircraft Constructors. These Special British Aircraft Constructors' issues will provide a complete review of the British Aircraft Industry while the French Aircraft Industry is enjoying the advantages of its Exhibition. Copies of these issues should be ordered in advance so as to assure delivery. If desired copies will be sent by post for 7d. from The Aeroplane Publishing Offices, 61, Carey Street, W.C.2.

M. HENRI DEUTSCH (DE LA MEURTHE).

There are men in life who, possessed of wealth and all things that tend to make existence happy, make no effort to achieve those great things which bring public fame, yet who quietly and unobtrusively give material and moral assistance to struggling science or impoverished art. Of these was M. Henri Deutsch (de la Meurthe) who died in Paris on Nov. 24th. Born in 1846 he became in early life a pioneer in the development of the oil industry in France. With his brother he controlled the great firm of A. Deutsch (de la Meurthe) and Sons, vegetable and mineral oil merchants. It was an unpoetic beginning.

He took a great personal interest in the development of the internal combustion engine and in 1899 he demonstrated to President Carnot at the Paris Exhibition a new oil-driven car. But his efforts were directed towards the general furtherance of motoring and aeronautics. He was a founder member both of the Automobile Club de France and the Aero Club de France—of which he became President in later years.

Not only did he finance early experimenters with airships and aeroplanes, but he gave large sums of money in prizes for specific feats in aeronautics. One prize of £4,000 was won by M. Santos-Dumont with his dirigible in 1901 by a flight from St. Cloud to the Eiffel Tower and back within a period of half an hour. Other prizes followed, including many specifically allotted to aviation. Often in these matters he worked in co-operation with M. Archdeacon, another patron of aeronautics.

He gave the money (500,000 francs) with which the Aero Technical Institute at St. Cyr was founded and he endowed a Chair of Aeronautics at the Conservatoire des Arts et Métiers.

To the country itself he has displayed direct generosity. In 1909 he presented an airship, "La Ville de Paris," which he had had constructed at his own expense, to the Government in replacement of the airship, "La Patrie," which had recently been destroyed.

In 1911 he was present in company with the Premier and many leading members of the Government at the start of the Paris-Madrid race and was injured in the accident which killed M. Berteaux, the Minister of War, and amputated the arm of M. Monis, the Premier.

Many of the great aeronautical firms in France owe their existence to the money of M. Deutsch. Not only had he the interest of a patron in the matter but he showed a close practical interest in aviation, flying as passenger in many aeroplanes created by firms with which he was connected. Many machines he purchased and so accumulated a greater private stable of aeroplanes than any, save M. de Mumm.

The Government of the French Republic showed appreciation of his services by appointing him a Commander of the Legion of Honour in 1911.

Not only was he interested in the somewhat mechanical art of aviation but he had a great knowledge of music. In this, again, he was a patron of discrimination and gave assistance to many artists whose sole crime was poverty. In company with the Prince of Monaco and the Comtesse Greffulhe he subsidised competitions to encourage composers whose talents had met little public recognition. Here again he had practical knowledge and had composed many pieces, including an opera, suitably entitled "Icare," which was produced in 1912 at the Opera, in Paris.

At Deauville in the past autumn he had an accident in a motor-boat which revived the old troubles consequent upon his injuries of 1911, and from this relapse he failed to recover.

France has suffered a great loss by his death, and the world of aeronautics is robbed of one of its most distinguished figures. Modesty, coupled with true enthusiasm, directed his career.—H. F.

THE FLIGHT TO AUSTRALIA COMPETITION.

THE VICKERS MACHINE.

The following telegram from Crete, dated Nov. 17th, was received on Nov. 25th :—

Left Rome yesterday morning 9 a.m.—landed Taranto 11.45.—Again low clouds—visibility bad.—Passed over Capua Naples then turned east over mountains. Flew low over Vesuvius, but weather too bad to photograph.—Very bumpy over mountains, machine falling several hundred feet at times.—Good wind helping us.—Greatest assistance afforded us Taranto by aerial route.—Spent afternoon on machine.—Suda Bay reported good so decided land there to avoid long sea stretch.—Left Taranto 8 to-day.—Arrived Suda 3.45.—Strong wind on our beam.—Low clouds, rain all way to South Greece.—Attempted get above clouds but too high so flew at 800 feet.—Following coast nearly hit small island in mist.—South Greece to Crete good weather, slight head wind.—Aerial route station here giving all assistance.—Hope Cairo to-morrow.—Crew fit.—Hoping better weather now much warmer.—(Signed) ROSS SMITH.

The following telegram from Cairo dated Nov. 18th was received on Nov. 24th :—

Left Suda Bay eight to-day.—Arrived Cairo 3.30.—Weather again bad.—Low clouds made crossing Crete mountains difficult.—Wind slightly favourable.—Steered South course after leaving, but had fly through rain at 2,000 feet most way across Mediterranean.—Passed two steamers half way, checked ground speed and drift on them.—Crossing took two and half hours.—Struck African coast Sollum, then flew east to Cairo across desert via Matruh and Wadinatrun.—Hope Damascus or Bagdad to-morrow.—All very pleased to have got here.—Hope for better weather now.—So far have taken thirty flying hours mostly through rain and storms.—Throughout greatest assistance rendered by aerial route stations.—Nothing being too much trouble.—Largely due their excellent organisation we here so soon.—Vimy going perfectly.—Ross SMITH.

The machine was then reported to have reached Damascus on Nov. 19th.

The following telegram from Delhi dated Nov. 25th has been received :—

Ross Smith arrived Delhi, 4.15, 25th. Everything O.K. Proceeding Allahabad on 27th.

The Air Ministry announced on Dec. 1st that advice had been received from India that the Vickers-Vimy machine arrived at Allahabad at 5.0 p.m. on Nov. 27th, and left for Calcutta at 8.30 a.m. on the next day.

THE BLACKBURN MACHINE.

The Blackburn "Kangaroo" which left Hounslow on Nov. 21st left Romilly at 9.40 a.m. on Nov. 25th. St. Raphael was reached at 4 p.m. on Nov. 28th, and the machine left for Capua at 9.30 a.m. on the next day. The weather was fine but cloudy.

A message received from Italy stated that the "Kangaroo" landed at Pisa on Nov. 29th, where the pilot reported heavy wind and rain. On the next day the flight was resumed and the machine arrived at Rome at 4.45 p.m. They intended to fly on to Taranto on Dec. 1st.

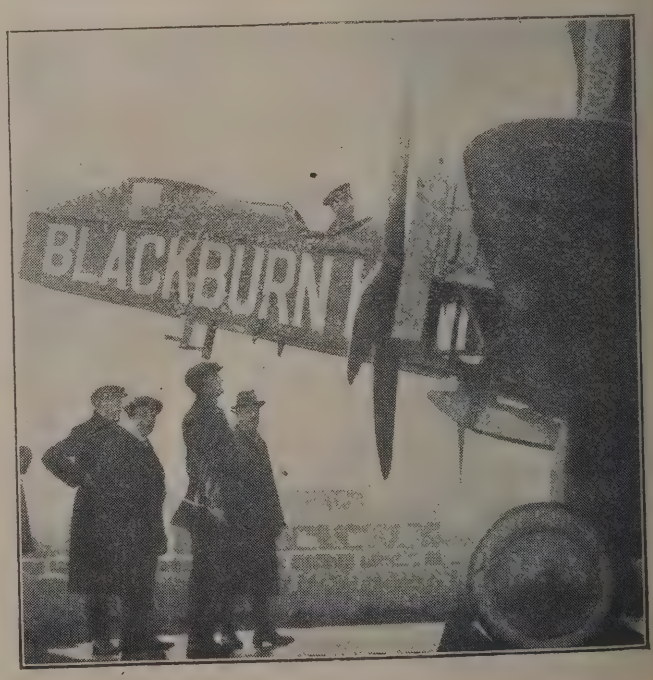
BRITISH AIRCRAFT COMPETITIONS, 1920.

The Air Ministry announced on Nov. 28th :—

Owing to the representations made by British Aircraft Manufacturers, the Air Ministry has decided to alter the date of the commencement of the Small Type Aeroplane Competition to June 1st, 1920. Entries for this competition will, therefore, not close until Feb. 1st, 1920. The dates already announced in connection with the other two competitions will remain the same.

Both of the aeroplane competitions will take place at the Aeroplane Experimental Station at Martlesham Heath, near Woodbridge, Suffolk.

The Seaplane (Amphibian) Competition will take place at Felixstowe, with the exception of the tests for landing upon and rising off the ground for this class which will be held at Martlesham.



THE BLACKBURN "KANGAROO."—The machine being tested before leaving Hounslow.



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NAVAL & MILITARY AERONAUTICS

[The official "Gazettes" and Personal Notices will be found on p. 1878.]

GREAT BRITAIN.

FROM THE COURT CIRCULAR.

BUCKINGHAM PALACE, Nov. 26th.

The King held an Investiture in the Ball Room of the Palace at 11 o'clock this morning.

The following were severally introduced into the presence of the King, when His Majesty invested them with the Insignia of the respective Divisions of the Order into which they have been admitted :—

THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE (MILITARY DIVISION).—Commander.—Lt.-Col. Alexander Reiss, R.A.F.

THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE.—Officers.—Military Division.—Maj. Thomas Baxenden, R.A.F.; Maj. Alban Ellerton, R.A.F.; Maj. Albert Levick, R.A.F.; Maj. William Michie, R.A.F.; Maj. George Stevens, R.A.F.; and Sqdn. Leader George Williamson, R.A.F.

Members.—Military Division.—Capt. the Hon. Edward Knollys, Lond. R., attd. R.A.F. (also received the Distinguished Flying Cross); Mrs. Florence Day, W.R.A.F.

The King then conferred decorations as follows :—

THE MILITARY CROSS AND BAR.—Capt. Erskine Lindop, Indian Army, attd. R.A.F.

THE DISTINGUISHED FLYING CROSS AND BAR.—Lt. Horace Young, R.A.F.

THE DISTINGUISHED FLYING CROSS.—Capt. Robert Caley, R.A.F.; Capt. William Carrothers, R.A.F.; Capt. Thomas Dickinson, 16th Cavalry, Indian Army, attd. R.A.F.; Flt. Lt. Bernard Cross, R.A.F.; Flt. Lt. Grahame Donald, R.A.F.; Flt. Lt. Eric Donaldson, R.A.F.; Flt. Lt. Cecil Fawssett, R.A.F.; Capt. Alan Hill, R.A.F.; Lt. Victor Beechcroft, R.A.F.; Lt. Oliver Cassels, R.A.F.; Flying Officer Thomas Coates, R.A.F.; Flying Officer James Craig, R.A.F.; Flying Officer Charles Findlay, R.A.F.; Lt. Spencer Ford, R.A.F.; Lt. Horace Hern, R.A.F.; Flying Officer Oscar Heron, R.A.F.; Flying Officer Walter Simon, R.A.F.; Sec. Lt. William Dollery, R.A.F.; and Sec. Lt. Norman Frome, R.A.F.

THE AIR FORCE CROSS.—Wing Comdr. Sydney Harris, R.A.F.; Sqdn. Leader John Graham, R.A.F.; Sqdn. Leader Irving Hartford, R.A.F.; Flt. Lt. Robert Hughes-Chamberlain, R.A.F.; Flt. Lt. Edward Davis, R.A.F.; Flt. Lt. Ronald Dean, R.A.F.; Capt. Norman Dimmock, R.A.F.; Capt. Alfred Gilligan, R.A.F.; Capt. John Gotch, R.A.F.; Flt. Lt. Geoffrey Hall, R.A.F.; Flt. Lt. Frederick Hartridge, R.A.F.; Flt. Lt. Harold Hemming, R.A.F.; Flying Officer Ralph Dixon, R.A.F.; Flying Officer Charles Hatcher, R.A.F.; Flying Officer Reginald Houghton, R.A.F.; and Lt. Charles Hyde, R.A.F.

The following had the honour of being received by His Majesty, when the King handed to him, as "Next-of-Kin," the decorations won by his relative in the War :—

THE VICTORIA CROSS, THE DISTINGUISHED SERVICE ORDER AND TWO BARS, AND THE MILITARY CROSS AND BAR.—Mr. Mannock : Awarded to his son, the late Maj. Edward Mannock, R.A.F.—On June 17th, 1918, Maj. Mannock attacked a Halberstadt machine near Armentières and destroyed it from a height of 8,000 ft. On July 7th, 1918, near Doulieu, he attacked and destroyed one Fokker (red-bodied) machine, which went vertically into the ground from a height of 1,500 ft. Shortly afterwards he ascended 1,000 ft. and attacked another Fokker biplane, firing 60 rounds into it, which produced an immediate spin, resulting, it is believed, in a crash. On July 14th, 1918, near Merville, he attacked and crashed a Fokker from 7,000 ft. and brought a two-seater down damaged. On July 18th, 1918, near Merville, he fired 80 rounds into an Albatros two-seater, which went to the ground in flames. On July 20th, 1918, east of La Bassée, he attacked and crashed an enemy two-seater from a height of 10,000 ft. About an hour afterwards he attacked at 8,000 ft. a Fokker biplane, near Steenwercke, and drove it down out of control, emitting smoke. On July 22nd, 1918, near Armentières, he destroyed an enemy triplane from a height of 10,000 ft. Maj. Mannock was awarded the under-mentioned distinctions for his previous combats in the air in France and Flanders :—Military Cross. Gazetted, Sept. 17th, 1917. Bar to Military Cross. Gazetted, Oct. 18th, 1917. Distinguished Service Order. Gazetted, Sept. 16th, 1918. Bar to Distinguished Service Order (1st). Gazetted, Sept. 16th, 1918. Bar to Distinguished Service Order (2nd). Gazetted, Aug. 3rd, 1918. This highly distinguished officer, during the whole of his career in the R.A.F., was an outstanding example of fearless courage, remarkable skill, devotion to duty, and self-sacrifice, which has never been surpassed. The total number of machines definitely accounted for by Maj. Mannock up to the date of his death in France (July 26th, 1918) is 50—that total specified in the "Gazette" of Aug. 3rd, 1918, was incorrectly given as 48, instead of 41.

BUCKINGHAM PALACE, Nov. 27th.

The King held an Investiture in the Ball Room of the Palace at 11 o'clock this morning.

His Majesty decorated the following with the Victoria Cross :—

Flying Officer Andrew Beauchamp-Proctor, R.A.F. (also received the Distinguished Service Order and the Distinguished Flying Cross).—Between Aug. 8th, 1918, and Oct. 8th, 1918, this officer proved himself victor in 26 decisive combats, destroying 12 enemy kite balloons, 10 enemy aircraft, and driving down four other enemy aircraft completely out of control. Between Oct. 1st, 1918, and Oct. 5th, 1918, he destroyed two enemy scouts, burnt three enemy kite balloons, and drove down one enemy scout completely out of control. On Oct. 1st, 1918, in a general engagement with about 28 machines, he crashed one Fokker biplane near Fontaine and a second near Ramicourt; on Oct. 2nd he burnt a hostile balloon near Selvigny; on Oct. 3rd he drove down, completely out of control, an enemy scout near Mont d'Origny, and burnt a hostile balloon; on Oct. 5th, the third hostile balloon near Bohain. On Oct. 8th, 1918, while flying home at a low altitude, after destroying an enemy two-seater near Maretz, he was painfully wounded in the arm by machine-gun fire, but, continuing, he landed safely at his aerodrome, and after making his report was admitted to hospital. In all he has proved himself conqueror over 54 foes, destroying 22 enemy machines, 16 enemy kite balloons, and driving down 16 enemy aircraft completely out of control. Capt. Beauchamp-Proctor's work in attacking enemy troops on the ground and in reconnaissance during the withdrawal following on the battle of St. Quentin from March 21st, 1918, and during the victorious advance of our Armies commencing on Aug. 8th, has been almost unsurpassed in its brilliancy, and as such has made an impression on those serving in his squadron and those around him that will not be easily forgotten. Capt. Beauchamp-Proctor was awarded Military Cross on June 22nd, 1918; Distinguished Flying Cross on July 2nd, 1918; Bar to Military Cross on Sept. 16th, 1918; and Distinguished Service Order on Nov. 2nd, 1918.

The following were severally introduced into the presence of the King, when His Majesty invested them with the Insignia of the respective Divisions of the Orders into which they have been admitted :—

THE MOST DISTINGUISHED ORDER OF SAINT MICHAEL AND SAINT GEORGE.—Companions.—Air Commodore Charles Longcroft, R.A.F. (also received the Air Force Cross); Wing Comdr. Arthur Godman, R.A.F.; Wing Comdr. Felton Holt, R.A.F.; Wing Comdr. Roland Hunt, R.A.F.

THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE.

Member.—Military Division.—Lt. Joseph Andrews, R.A.F.

His Majesty then conferred decorations as follows :—

THE MILITARY CROSS, THE DISTINGUISHED FLYING CROSS, AND THE AIR FORCE CROSS.—Flt. Lt. Gerald Maxwell, R.A.F.

THE MILITARY CROSS AND THE DISTINGUISHED FLYING CROSS.—Lt. George Gibbons, R.A.F.

THE MILITARY CROSS AND THE AIR FORCE CROSS.—Flt. Lt. Thomas Martyn, R.A.F.

THE DISTINGUISHED FLYING CROSS AND BAR.—Flying Officer John Griffith, R.A.F.; and Flying Officer William Harvey, R.A.F.

THE DISTINGUISHED FLYING CROSS.—Capt. Joseph Hallonquist, R.A.F.; Capt. Claud Morley, R.A.F.; Lt. Victor Dreschfeld, R.A.F.; Flying Officer William Green, R.A.F.; Lt. Gerald Griffin, R.A.F.; Lt. Philip Holligan, R.A.F.; Flying Officer James Holmes, R.A.F.; Flying Officer John Mayer, R.A.F.; Lt. Allan McGregor, R.A.F.; Lt. Bernard Porter, R.A.F.; and Lt. James Young, R.A.F.

THE AIR FORCE CROSS.—Flt. Lt. Herbert Irwin, R.A.F.; Flt. Lt. Neville Kemsley, R.A.F.; Flt. Lt. Frederick Lander, R.A.F.; Capt. Edward Landon, R.A.F.; Capt. James Line, R.A.F.; Capt. Peter Martin, R.A.F.; Flt. Lt. Angus McColl, R.A.F.; Flt. Lt. Cedric McDonald, R.A.F.; Flt. Lt. Denis Mulholland, R.A.F.; Flying Officer John Jennings, R.A.F.; Flying Officer John Lawson, R.A.F.; Flying Officer William Leete, R.A.F.; Flying Officer Harold Lydford, R.A.F.; Lt. Ivor McIntyre, R.A.F.; and Flying Officer Arthur Moody, R.A.F.

* * *

The following is extracted from the "Court Circular" of Dec. 1st :—

"The Prince of Wales arrived at Portsmouth on board H.M.S. 'Renown' (Capt. Ernest Taylor, R.N.) on his return from Canada and the United States of America. . . .

"The Prince of Wales was received on landing by the Prince Albert and . . . the Air Officer Commanding, Coastal Area. . . .

"The Prince of Wales, accompanied by the Prince Albert, with the Staff in attendance, travelled by special train on the London, Brighton, and South Coast Railway to Victoria Railway Station. . . .

"There were also present at the Railway Station . . . representatives of the Royal Navy, the Army, and the Royal Air Force. . . ."

NAVAL.

ADMIRALTY APPOINTMENTS.

The following appointments have been made :—

Nov. 25th.—Lt. C. R. Price, to "Pegasus," on recommg., Nov. 24th.
Sub-Lt.—E. T. Young, to "Pegasus," on recommg.
Mate.—T. Culliford, to "Pegasus," on recommg.
Nov. 27th.—Lt.—H. A. Taylor, to "Pegasus."
Payr. Commr.—H. E. Symons, O.B.E., to "Ark Royal," Jan. 1st.

H.M.S. "PEGASUS."

The following particulars are to hand concerning the aircraft-carrier "Pegasus." Built during the war, she was given the name of the light cruiser which was sunk by "Konigsberg" while at anchor at Zanzibar repairing her machinery. "Pegasus" joined the Grand Fleet after the Battle of Jutland, and last April was allocated for duty with the new Atlantic Fleet. She was recently sent away on detached service under Commander Oliver Stokes, D.S.O., R.N.

IN THE PRIZE COURT.

Mr. Wilfred Lewis, who appeared on behalf of the claimants, read, on Nov. 25th in the Prize Court before the President the Rt. Hon. Sir Henry Duke, an affidavit by Capt. Charles Edward Stafford Lusk, who said that he was senior surviving officer of His Majesty's seaplane 8,695, which on Sept. 22nd, 1917, was operating under the directions of the Admiralty and was then under the command of Flight Lieut. Norman Ausley Magor, who was killed in action on April 25th, 1918. When they were over the North Sea the crew of the seaplane saw an enemy submarine, which was believed to be the U.C.72. Bombs were dropped and one destroyed the submarine, with her crew of 32 hands.

The President granted a declaration that the bounty payable was £160 for the U.C.72.

Solicitors.—Messrs. A. Tyler and Co. (instructed by Messrs. Stilwell and Sons, Navy and Prize Agents) for the claimants; the Treasury Solicitor for the Procurator-General.



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SPECIFICATIONS WILL INCLUDE

285 H.P. ROLLS-ROYCE FALCON ENGINE, or
300 H.P. HISPANO-SUIZA ENGINE.

APPROXIMATE PRICE £2,500.

Note.—All above Types can be fitted with interchangeable land undercarriage or seaplanes.
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MILITARY.

THE CASUALTY LIST.

Reported on Nov. 28th.

Previously Reported Missing, now Reported Killed.—RAPER, Sec. Lt. S. E., Seaf. Highrs, attd. R.F.C.

Reported on Dec. 2nd.

Previously Reported Missing, now Reported Killed.—Ellis, Lt. P. C., High. L.I., attd. R.F.C.
Sage, Sec. Lt. D. M., R.F.C.
Streather, Lt. E. H. P., R.F.C.

THE WAR IN AFGHANISTAN.

A good deal of damage has been done by the air raids over the Mahsud territory. Up to Nov. 19th the casualties amounted to a hundred dead. Among the killed at Kamicuram, the chief town, was the son of the Chief of the Bahdozai. Over five tons of bombs have been dropped by twenty-five aeroplanes.

A Bristol Fighter recently made a bad landing near Datta Khel. The occupants were unhurt.

Reuter telegrams from India dated Nov. 28th show that the frontier situation is improving. In view of the peace feelers put out, it is proposed to inform the Mahsud Maliks that if they really are considering the acceptance of the terms the bombing of the local jirgah will be suspended for 24 hours.

AIR FORCE.

UNDER MILITARY LAW.

An Order of the Army Council and the Air Council issued recently provides that officers and airmen of the Royal Air Force acting with the military forces under or within the Command of the General Officer Commanding-in-Chief the British Army of the Rhine shall in all respects be subject to the Army Act while on active service as if they were officers and airmen attached to the Army.

THE RE-OPENING OF RECRUITING FOR THE R.A.F.

The Air Ministry announced on Nov. 28th :—

Owing to the large number of men who are due for discharge on the completion of their engagements, recruiting for the R.A.F. has now been re-opened, and there are vacancies for skilled mechanics of various trades.

Engagements are for four, six or eight years with the colours, with eight, six or four years respectively with the reserve.

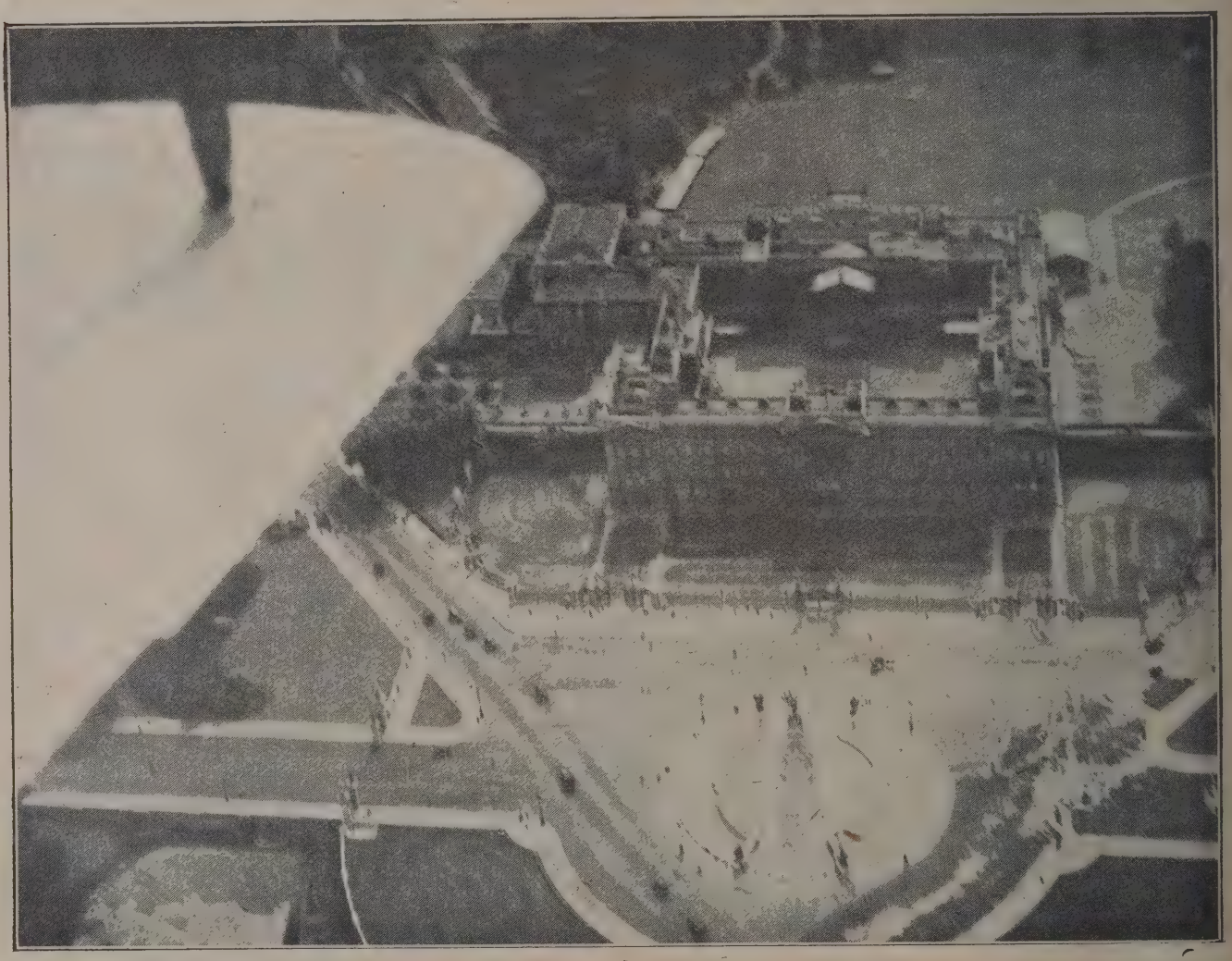
In view of the newly revised rates of pay of the Force the openings are distinctly attractive, particularly as men will be working at their own trades and constantly gaining fresh experience which will be of great value to them on their return to civil life, by which time, in all probability, there will be a greatly increased demand for aircraft workers of all categories.

Skilled aircraft workers who are at present unemployed, of thos ewho are not employed in their own trades would, therefore, be well advised to consider the possibilities of the careers offered by the Service.

Full details as to pay, etc., may be obtained from 4, Henrietta Street, London, W.C., or from any R.A.F. Station.

"DEFICIENCIES."

Demobilisation and reductions in establishments always produce trouble and dissatisfaction. It is unavoidable under the conditions governing these matters. But there are certain grievances requiring redress. One of these is the liability of commanding officers for the deficiencies in the accounts and stores of their units. In ordinary times, and under ordinary conditions, it is proper that commanding officers should be held liable for losses and omissions, which presumably would not have happened had their powers of command been exercised with due efficiency. But of recent months Air Force units in course of dissolution have changed their commanding officers with great rapidity, and it has become increasingly difficult to allocate the blame for deficiencies. Each new commanding officer has had to take over from his predecessor in order that the unit might be closed down and the accounts have frequently been in inextricable confusion, with the result that the last C.O. has had to pay large sums of money when the closing down has been completed. It is hard that he should have to pay for the carelessness or inefficiency of those who went before. Would it not be possible to "write off" these deficiencies when it is found impossible to discover who was originally



An aerial photograph of Buckingham Palace taken from an Airco Biplane.

The "Bristol" Aeroplanes



"BRITAIN'S PIONEER AIRCRAFT CONSTRUCTORS."

The "BRISTOL" Tourer has proved a great success as a high-speed carrier of passengers or cargo, whilst the "BRISTOL" construction is in itself the highest guarantee of dependability, economy of upkeep and length of service.

Dual controls are normally fitted, though the machine can be supplied with pilot's controls only. Either 275 h.p. Rolls-Royce Falcon III engine or 230/240 Siddeley Puma engine can be fitted. The main specifications are;—

Weight Empty	1750 lbs.
Weight Loaded	2800 lbs.
Wing Span	39 ft. 3 in.
Wing Area	405 sq ft.
Wing Loading	6.92 lbs. per sq.ft.
Maximum Height	10 ft. 1 in.
Overall Length	25 ft. 9 in.
Petrol Capacity	70 gals.
Best Speed	125 m.p.h.
Cruising Speed	90 m.p.h.
Range	560 miles.

Further particulars will be supplied on application to—

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responsible for the losses? It is customary in the Army to "write off" losses when the elements of fraud or criminal negligence are absent. Why should not the Air Force adopt a similar procedure?

An Egyptian Incident.

On Nov. 22nd an aeroplane while flying over Cairo fell upon a private house in Abdin Square, thereby stopping a demonstration which was to have been held there. The top storey was badly damaged, but one of the aviators escaped unhurt, and the other was only slightly injured.

Major McCudden's Will.

Major James Thomas Byford McCudden, V.C., D.S.O., M.C., M.M., R.F.C., of Burton Road, Kingston-on-Thames, who was accidentally killed in France on July 9th, 1918, left an estate valued at £266 14s. 3d. As he died intestate and a bachelor, letters of administration have been granted to his father, Mr. William Henry McCudden, retired warrant officer, Royal Engineers, as next of kin.

Rugby Football.

On Nov. 26th the R.A.F. played against the United Services at Richmond, the result being 34 points to nil. A victory for the United Services.

This match again showed that the United Services are much too strong a side for the R.A.F. team, who played one man short throughout and two men short in the second half.

The Air Force seem to get together no better and are still very scratch. The forwards playing so short put up a very good fight under the circumstances. The United Services played very good football in the second half, the backs handling the ball accurately and running well. In the first half they were not so good, and missed chances.

R.A.F. Team:—Flying Officer Damant, full back; Flying Officer Wagner, Sqdn. Ldr. Neale, M.C., Flt. Lieut. Thomas, D.F.C., Sqdn. Ldr. Penny, threequarter backs; Sqdn. Ldr. Smart, Sqdn. Ldr. Pulford, half backs; F. Os. Maxwell, Wakefield, Rose, Flt. Lieuts. Simpson, Munday, Scroggs and Lees, forwards.

BRAZIL.

Military Organisation.

The military aeronautical programme now in course of fulfilment arranges for the creation during this year of three escadrilles of ten aeroplanes, and allocated respectively for fighting, bombing, and observation. In 1920 another eight escadrilles are being formed—four for observation, two for fighting and two for bombing.

A French military mission has organised a school of aviation near Rio de Janeiro, which was opened officially last July. Good workshops are already in existence and there are 30 school aeroplanes.

An officer is being sent to Europe to study the latest methods of aerial photography and its connection with cartography.

HOLLAND.

On Nov. 24th Lts. Land and Van Dyk, of the Royal Netherlands Flying Corps, were killed at Soesterberg while flying a Rumpler biplane, owing to the machine catching fire in the air.

Mr. Land was preparing for a flight from Holland *via* India to the Dutch East Indies. His death will be deeply regretted by all who knew him. He visited England recently and achieved remarkable popularity in the short time which he spent in this country. Also he was a frequent visitor to the E.L.T.A. Show at Amsterdam, where he met and made friends with many British aviators.

As a pilot he was very skilful and capable, flying always with care and good judgment, and he was eminently fitted for the great flight to the East which he had undertaken. He married recently an English lady who left Germany during the war. To her all Mr. Land's friends will offer their deep sympathy in her great sorrow.—C. G. G.

FRANCE.

A squadron of aeroplanes recently left St. Raphael for Dakar. The squadron is destined for an aviation centre in Senegal.

ITALY.

The Italian correspondent of THE AEROPLANE writes:—

The "Official Gazette" gives the following as the peace-time establishment of the Italian Aeronautical Corps:—

An Inspector of Aeronautics.
A Brigade of Chaser Aeroplanes.
A Brigade of Reconnaissance Aeroplanes
Two "Groups" of Balloonists.
One "Group" of Dirigibilists.
One Training Command.
A Head of the Armament Department.

Three hundred and ninety officers are to remain in the Aeronautical Corps under the command of a Major or Brigade-General.

Post-War News.

Now that the depression of the armistice is wearing off, I find that in one of my "hushed to sleep" brain-cells there are numerous records of the Great War activity of the Ponte S. Pietro flying camp, the nearest Military flying centre to my part of the world.

A fleet of brigantines is reported as being fitted with subsidiary aero-engines for use in calm weather and in harbour. Here is something better than the scrap heap for old war horse-power.

The Italian technical papers continue to sound a loud note of alarm about the Huns hiding their best 'planes. Certainly, of the 100 or so German booty machines at Monte Celio, none are of late type.

One awaits more about the S.I.A.I. 1,200 h.p. with four engines and central boat, building at Sesto Calende.—T. S. H.

PERSIA.

It is understood that British aeroplanes are assisting in the restoration of order to the Urumian-Tabriz region.

RUSSIA.

According to the "Morning Post" correspondent a Bolshevik balloon recently landed at Nykyrka, Finland. The occupant of this stated that the garrison of Krasnaya Gorka at present consists of 1,500 men. At Kronstadt there is such a serious scarcity of fuel that the population have begun to break up the wooden quays for firing. All the food supplies are exhausted.

U.S.A.

An Appropriation for Army Aviation.

An additional appropriation has been unanimously voted by the Military Committee for Army Aircraft Construction. The amount is $15,000,000 (normally £3,000,000) and it is allocated in order to cover the additional charges incidental on the establishment of aerial routes (military) to Panama, Alaska, and possibly Asia. The plans of these routes were outlined to the Committee by Secretary Baker and Brig.-Gen. William Mitchell, Director of Military Aeronautics.

The total appropriation for construction is now £8,000,000. With this sum it is proposed to build 200 pursuit, 200 bombing, and 200 experimental pursuit aeroplanes. In the bombing machines 300-h.p. Hispano-Suiza engines will be fitted, and in the remainder Liberty engines will be used. Over 12,000 of the latter are available.

NEW BRITISH RECORDS.

On Nov. 15th an Airco D.H.9R biplane, fitted with a 450-h.p. Napier engine, and piloted by Capt. G. W. Gathergood, secured the following 18 official British records, certified by the Royal Aero Club.

Distance in a Given Time—Closed Circuit.

Time Hours.	Distance Kiloms.	Distance Miles	Kilometres per Hour.	Miles per Hour.
¼	57.09	35.47	228.36	141.89
½	115.35	71.67	230.70	143.35
1	232.57	144.51	232.57	144.51
2	403.13	250.49	201.56	125.24

Greatest Speed—Straight Flight.

Distance. Kiloms.	Time. Hr. Min. Sec.	Kilometres per Hour.	Miles per Hour.
5	0 1 14.85	240.48	149.43

Speed—Closed Circuit without Alighting.

Distance. Kiloms.	Time. Hr. Min. Sec.	Kilometres per our.	Miles per Hour.
5	0 1 24 1/5	213.77	132.84
10	0 2 36 1/5	230.47	143.21
20	0 5 25 1/5	221.40	137.57
30	0 8 13 1/5	218.97	136.07
40	0 11 1	217.85	135.37
50	0 13 9 3/5	227.96	141.65
100	0 26 7 4/5	229.62	142.68
150	0 38 44	232.35	144.38
200	0 51 37 1/5	232.47	144.45
250	1 4 29	232.61	144.54
300	1 17 11	233.21	144.91
350	1 29 50 4/5	233.72	145.23
400	1 42 32	234.07	145.44

A SUCCESSFUL CLUB.

It is stated in the "Aircraft Journal" of Sept. 20th that the Aviators' Club of Pennsylvania had only been formed one month. In that time 300 former Army, Navy, and Marine aviators had joined. At a recent meeting it was decided that they would not merge with the Aero Club of Pennsylvania.

Arrangements are being made to obtain several aeroplanes and to place them at the disposal of the members of the club. Pilots only are accepted as active members.

WESTLAND



If you are visiting the Paris Aeronautical Exhibition we shall be pleased to show you the Westland "Limousine" on Stand 20.

We shall also have another machine at Le Bourget Aerodrome for giving demonstration flights.

Above is illustrated the model we intend to exhibit. The first machine, which has been flying since last July, has proved an ideal machine for mail carrying or passenger transport-de-luxe.

For full particulars and arrangements as to trial flights apply to our London Representative, **Lieut.-Colonel C. H. MEARES**, c/o MESSRS. PETTERS LIMITED, 6, DEAN'S YARD, WESTMINSTER, LONDON, S.W.1.

WESTLAND AIRCRAFT WORKS

(Branch of Petters Limited)

YEOVIL.

Telephone:
141 and 142 YEOVIL.

WESTLAND AIRCRAFT WORKS BRANCH OF PETTERS LTD

Telegrams:
AIRCRAFT, YEOVIL.



COMMERCIAL AERONAUTICS
& CIVIL AERIAL TRANSPORT

GREAT BRITAIN.

CIVIL AERODROMES.

The Air Ministry announced on Nov. 22nd that the following lists of aerodromes are issued as an addition to or amendment of the lists already published.

LIST A.—Service Stations only available for Civil use in emergency.

AMENDMENTS.

The following aerodromes have been transferred to List E, and are now published in that list :—

Aerodrome.	Nearest Railway Station.	Nearest Large Town.
Tangmere	Drayton	Chichester
Tresco (S)	Penzance	St. Marys

Reference : (S) seaplane station.

LIST C.—Aerodromes temporarily retained for Service Purposes.

AMENDMENTS.

The following aerodromes have been transferred to List E, and are now published in that list :—

Aerodrome.	Nearest Railway Station.	Nearest Large Town.
Collinstown	Portmarnock	Dublin
Crail	Crail	Crail
Ford Junction	Ford Junction	Arundel
Gullane	Gullane	North Berwick
Helperby	Brafferton	Ripon
Lincoln	Lincoln	Lincoln
Port Meadow (Oxford)	Oxford	Oxford
Tadcaster	Thorrer	Tadcaster
Throwley	Charing	Faversham
Upper Heyford	Lower Heyford	Bicester
Whitley Abbey	Coventry	Coventry
Witney	Witney	Oxford

LIST D.—Aerodromes licensed as "Suitable for Avro (504 K) and similar types of Aircraft" only. Except in very few instances, accommodation does not exist. The licences have also in the majority of cases been issued for limited periods only.

Aerodrome.	Location of Aerodrome.	Nearest Large Town.
Ipswich	Priory Heath	Ipswich
Kidderminster	Somerleyton Avenue	Kidderminster
West Timperley	Lies to N.W. of Timperley	Altrincham

LIST E.—Stations no longer in use by the R.A.F. These stations have been passed to the Government Property Disposal Board. They will be relinquished as soon as the Government property thereon has been disposed of. In many cases the aerodromes are now under cultivation, but it is probable that the sites still form the best emergency landing-grounds in the immediate neighbourhood.

Aerodrome.	Nearest Railway Station.	Nearest Large Town.
Anglesey (A)	Llangefni	Holyhead
Collinstown	Portmarnock	Dublin
Crail	Crail	Crail
Ford Junction	Ford Junction	Arundel
Gullane	Gullane	North Berwick
Helperby	Brafferton	Ripon
Hythe	Hythe	Hythe
Lincoln	Lincoln	Lincoln
Port Meadow (Oxford)	Oxford	Oxford
Tadcaster	Thorrer	Tadcaster
Tangmere	Drayton	Chichester
Throwley	Charing	Faversham
Tresco (S)	Penzance	St. Marys
Upper Heyford	Lower Heyford	Bicester
Whitley Abbey	Coventry	Coventry
Witney	Witney	Oxford

References : (A) airship station; (S) seaplane station.

THE CONTINENTAL AIR SERVICES.

THE AIRCO SERVICE.

The weather during the past week ended Nov. 29th has been consistently unfavourable for flying, although only three of the scheduled flights had to be abandoned.

Aircraft Transport and Travel, Ltd., have now completed fourteen weeks' flying on the London-Paris service as follows :—Flights scheduled, 213; flights accomplished, 177; prevented by weather, 19; interrupted by weather, 12; interrupted by mechanical defects, 5; number of miles flown, 48,090; average speed (m.p.h.), 104.

Date.	Type.	Pilot.	Left Hounslow	Arr. Paris.	Left Paris.	Arr. Hounslow.	Pass
Nov. 24th	D.H. 4a	Lt. McMullin	12.45 p.m.	3.10 p.m.			Ma
	D.H. 16	Lt. Lindley			12 30 p.m.	3 00 p.m.	2 and Mail
Nov 25th	D.H. 16	Lt. Powell	12.45 p.m.	2.55 p.m.			3 and Mail
	D H. 9	Lt. Bradley			12.30 p.m.	2.50 p.m.	1
	Breguet				—	3 50 p.m.	Mail
Nov. 26th	D.H. 16	Capt. Baylis	12.45 p.m.	2.55 p.m.			2
	D.H. 4a	Lt. Tebbit	12.50 p.m.	3.00 p.m.			1 and Mail
Nov. 27th	D.H. 4a	Lt. Powell			12.30 p.m.	Both landed at Penshurst (Kent) owing to fog	2
	D.H. 16	Lt. McMullin			12.30 p.m		3 and Mail
Nov. 28th	D.H. 16	Capt. Baylis	Thick fog		12.30 p.m.	Landed Lympne	1 and Mail
Nov. 29th	D.H 4a	Lt. Lawford	12.30 p.m.	Landed Wimereaux	Carbur	ettertrouble	2 and Mail
	D.H. 9	Lt. Robins	12.40 p.m.	3 30 p.m.			1 mechanic Mail
	Breguet				—	3.30 p.m.	

An improved wireless telephone installation is to be placed on the roof of the seven-storey building in Westminster, which is now the headquarters of the Aircraft Transport and Travel Company. Wireless telephones will also be fitted in the aeroplanes, and it will be possible to receive messages from pilots while they are actually in flight between London and Paris.

The regular operation of a wireless telephone service, not only between aeroplanes and terminal points, but also between aeroplanes and alighting grounds, will enable the flight of machines between London and the Continent to be signalled stage by stage as is the progress of a train. In the head offices of the company in London will be installed a special map of the Continental routes, with small model aeroplanes attached to it; and mechanism will be provided whereby the position of these aeroplanes can be changed from hour to hour, by the wireless operator on the roof, according to the messages he receives from aircraft in flight and from land stations. Thus it will be possible, at any time, to see at a glance the position of the aeroplanes which are actually in flight.

THE HANDLEY PAGE SERVICES.

Despite fog, rain, and snow, 154 passengers and 19,990 lb. of goods were carried during November on the London-Paris and Brussels air services. The number of flights made in the best previous month was beaten by four.

LONDON-PARIS.—Nov. 24th, four passengers and 510 lbs. of freight were carried.

Nov. 25th, six passengers and 400 lbs. of clothing were carried.

During the week ending Nov. 26th, fifteen passengers and 1,342 lbs. of freight, including Christmas cards to Paris, were carried.

Nov. 28th, Lieut. Blake flew from Paris to London with passengers and freight. Fog was encountered along the entire route.

THE AIRCRAFT MANUFACTURING COMPANY LIMITED
AIRCO
HENDON LONDON N.W.9.

Chairman and Founder (1911): G. HOLT THOMAS

The Largest Aircraft Enterprise in the World

THE Aircraft Manufacturing Company, which with its associated Companies, is the largest aircraft enterprise in the world, is in a unique position to undertake the construction and complete equipment of aircraft for every kind of commercial, scientific and administrative purpose.

While many firms are dependent upon outside industries for essential parts of their output, the vast Airco resources and experience enable the associated companies to carry out practically every phase of modern aircraft construction in their own works and under their own skilled supervision. The importance of this fact will be appreciated by those responsible for the inauguration and development of public air services.

Among the highly specialised products of the associated Companies are:

HIGH-SPEED AEROPLANES, AIRSHIPS AND KITE BALLOONS, SEAPLANES AND FLYING BOATS, AERO-ENGINES, PROPELLERS, INSTRUMENTS OF PRECISION, etc., etc.

THE AIRCRAFT MANUFACTURING CO., LIMITED.

AIRSHIPS LIMITED. GNOME & LE RHONE ENGINE CO, (Peter Hooker, Ltd.),
MAY, HARDEN & MAY, Seaplane Base, HYTHE. INTEGRAL PROPELLER COMPANY, LTD.

London Offices: 25-27, OLD QUEEN STREET, LONDON, S.W.1.

Dressmakers, costumiers, and furriers frequently fly on the Continental air service with cargoes consisting of women's dress, which is carried in large quantities.

[Which seems a lamentable use for a service destined to higher purposes.—Ed.]

LONDON-BRUSSELS.—Nov 24th, two Handley Page biplanes flew side by side to Brussels, carrying 2,807 lbs. of clothing for Belgium.

Nov. 25th, two machines flew together from Brussels to Hounslow with cargoes of raincoats, boots and furs. The journey was made in four hours.

During the week ending Nov. 26th, twenty-two passengers and 5,094 lbs. of freight were carried.

There is an increasing demand for the conveyance of goods to Belgium by air, owing to the fact that by steamer or rail delivery takes three weeks, whilst by air the journey is accomplished in three or four hours. Over 10,000 lbs. of velvet, dress material, and bales of wool have been carried by air to the Belgian capital during the last fourteen days. To hasten delivery, Handley Page machines have been flying to and from Brussels in pairs, which is the first stage of a future scheme to run daily formations of commercial aeroplanes to carry freight and passengers on the Continental Air Services.

BOURNEMOUTH.

The Avro Air Carnival at Bournemouth, announced for Nov. 29th and 30th, has been postponed until Dec. 6th and 7th.

BROOKLANDS.

A correspondent writes :—

It is reported, on good authority, that the Sopwith Schneider Cup machine, fitted with a land under-carriage, has flown here at over 170 m.p.h.

It is said that the "Vimy" commercial machines which Vickers, Ltd., are constructing here for China, are being elaborately finished and fitted up, even to expensive silk curtains for the side windows in the fuselage.—J. F. S.

GLASGOW.

The British Science and Key Industries Exhibition of Glasgow made arrangements with the West of Scotland Aviation Co. for an aviation "spectacle" to be given on Nov. 29th. Capt. Reeve, of the company, whose headquarters are at Renfrew was to fly over the exhibition buildings and give a display of "stunt" flying. Tickets were to be dropped from the machine entitling the recipients to free admission to the exhibition, and others were to be dropped giving a present of £1 in addition to free entrance.

LONDON.

CRICKLEWOOD.—Handley Page Transport, Ltd., from the inauguration of civil flying on May 1st to Nov. 20th have carried 3,895 passengers and 27,465 lb. of freight. The total mileage flown was 50,150. This flying was accomplished without one serious mishap and includes long flights in rain, snow, fog and gales.

Among the passengers carried were H.M. The King of Greece, H.R.H. The Prince of Wales, and T.R.H. The Crown Princes of Roumania and Sweden. Lord Milner, the Lord Chancellor, Mr. Bonar Law, and the Emir Faisul of the Hedjaz.

The interior of the Handley Page passenger-carrying machine is silk lined and fitted with electric light and rose vases. There are gilt mirrors on the walls and dainty boxes containing wool for passengers who wish to plug their ears as protection against the roar of the engines.

NORTHOLT.—There is still a great amount of activity at Northolt aerodrome. The R.A.F. do a certain amount of flying on Avros and Bristol "Fighters," and also possess many other machines of varied type.

The Central Aircraft Co. are very busy, and some seven pupils are learning to fly on the Centaur biplanes. One of these machines, one believes the first to be built, is fitted with a 70-h.p. Renault engine and has been flown for some 80 hours by Mr. Herbert Sykes, O.B.E., including a voyage over South Wales.

The machine has now been examined by the A.I.D., who, forgetting that the strength of a chain is the strength of its weakest link, have demanded that several somewhat absurd alterations shall be made. The other Centaur machines are fitted with 100-h.p. Anzani engines and have a remarkably good performance, but are beaten on speed by the Renault.

The first large machine with two 160-h.p. Beardmore engines, which was built some months ago, flew very successfully until inspected by the A.I.D. During the inspection the tail of the machine was dropped heavily, and the fuselage was broken. It would be interesting to know whether the Department of Civil Aviation is responsible for damage done while machines are in its charge.

The second commercial machine is now being built, and has an enclosed cabin to seat eight passengers. The seats are easily removable and a considerable amount of freight may be carried. This machine should be completed in January next.

NEWCASTLE-ON-TYNE.

Owing to the number of passengers taken up at Middlesbrough last week, the Berkshire Aviation Co. have decided to prolong their stay and to postpone the start of the Newcastle flying week until Monday, Dec. 8th.

SHEFFIELD.

The Development Department of the Sheffield Corporation held a meeting on Nov. 27th to discuss the question of whether the manufacturers of Sheffield will co-operate with the civic authorities in retaining Coal Aston aerodrome as a civil aviation station.

Councillor Blanchard said that although Sheffield had been selected as a station on the national air routes, it was on a switch line from Nottingham, and if the Government decided to cut down the civil air stations the switch lines might be the first to go.

Lieut.-Col. Lockwood Marsh said that he understood that the Civil Aviation Department of the Air Ministry were anxious the Coal Aston should be maintained as Sheffield's aerodrome. Unfortunately they had no funds available to justify them keeping Coal Aston.

He understood that Vickers Limited intended to lay a scheme before the Development Department in a week or two. He was informed that the Air Ministry intended to bring before Parliament a short Bill which would authorise municipalities to acquire aerodromes with public funds. He believed that Leeds and Bradford contemplated participating in a joint scheme, and that Birmingham and Newcastle also had the matter under consideration.

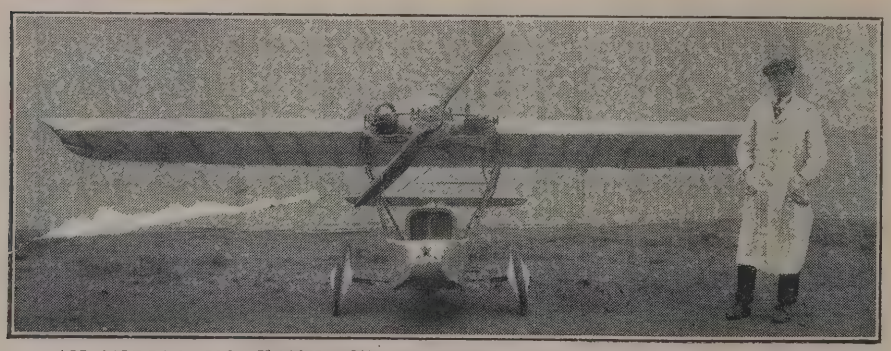
The Chairman said the Development Committee were keeping the matter in hand, and would do all they could to encourage civilian aviation if the people of Sheffield supported such a proposal.

WESTON-SUPER-MARE.

As stated in a recent issue of THE AEROPLANE, the Urban District Council, Weston-super-Mare, refused an application from A. V. Roe and Co., Ltd., and the Warwick Aviation Co. for flying rights on the sands next year.

The matter was first considered by the Sands Committee, and a deputation representing the Golf Club and the residents in the South Ward waited upon them to protest against the granting of any concession. The main point made was that spectators had tramped down the bents and so caused a sand-drift, the removal of which would be an expense to the Golf Club, while mention was also made of the nerve strain suffered by certain residents through aeroplanes flying over their houses. The Sands Committee were evidently impressed, and by six votes to four decided to recommend that there should be no more flying from the sands.

When this recommendation was considered by the District Council, some opposition was manifested, and one Councillor alleged that the only reason for the objection to flying from the sands was that some golfers were put off their stroke. He said that exponents of the ancient game of golf were trying to crush the young sport of aeronautics. A letter was also read from the Avro manager, Captain Westgarth Heslam, stating that more than three thousand passengers had been carried during the season. His company was prepared, he said, to accept a site nearer to the River Axe.



AN AERIAL NOVELTY.—The B.A.T. "Crow" Monoplane, as described in "Aeronautical Engineering" this week.



ILLUSTRATED ON THE LEFT IS THE NIEUPORT NIGHTHAWK FIGHTING MACHINE. ON THE RIGHT IS THE SPECIAL CIVILIAN 2-SEATER MACHINE.

Ultimately the Council accepted the recommendation of the Sands Committee by eight votes to four.

It will therefore be necessary for aircraft companies to consider the acquisition of inland aerodromes for next year if flying is to be continued at Weston. That flying is popular with the people of Weston is shown by the number of passengers who booked flights during the season. Also, the interest of a still wider public is proved by the complaint of the Golf Club about the crowds.

CANADA.

The aeroplane, Pathfinder II, piloted by Mr. W. H. Brown, and with a passenger, left Victoria on Oct. 2nd for a voyage to the United States of America. The flight to Puyallup, a distance of 110 miles, was completed in 95 min. After giving exhibition flights at the fair at Puyallup, the machine was detained for a few days by the Custom authorities on a technicality.

The machine then proceeded to Friday Harbour in the San Juan County. Two photographic flights and a message-carrying flight to Anacortes were made from Friday Harbour. Several persons were taken up, including two trips of two passengers at a time.

The Pathfinder left Friday Harbour at 6.45 p.m. on Oct. 5th in thick mist and rain. Without a compass, and flying at 500 ft. in the clouds, the pilot landed safely at Victoria at 7.10 p.m. in the dark.

Recently a flight was made from Victoria to Seattle in 65 min., a time which created a record. In the first clearance certificate issued to the aeroplane at Seattle it was treated as an automobile, and the following questions had to be answered: Has the machine a wind-shield? Yes. Has it a top? Yes. License number ——. Number of cylinders? Eight. Tail light? No. The document was so unique in regard to aircraft that the Aerial League have had it photographed and a record is being kept of similar "clearances."

An aerial camera of the regular Royal Flying Corps type has now been fitted to Pathfinder II, and many pictures of the surrounding country and towns are to be taken.

SOUTH AFRICA.

Capt. S. Wood, the representative of Handley Page, Ltd., is in Cape Town preparing to establish an aerial passenger and mail service throughout South Africa, and to that end he is obtaining a number of machines from England. The daily service is to be between Cape Town, Pretoria, Johannesburg, and Durban. The complete journey from Cape Town to Johannesburg, including stoppages at Kimberley, Bloemfontein, and possibly other places, would occupy approximately thirteen hours. Exhibition flights will be made in Cape Town and other towns, before the service is started, to accustom the South Africans to aviation.

THE ARGENTINE.

It is reported from Buenos Aires that the French Air Mission is proving quite successful and so far there has been no accident. Passenger flights are being made in Farman Limousines and Bréguet Coupés three times a week. Up to Nov. 22nd two hundred and fifty passengers had had flights in aeroplanes and four hundred in gliders. [Presumably hydro-plane boats with airscrew drives are indicated by the word "gliders."—ED.]

The French Aviation Mission have organised routes for aerial services in the Argentine. It is hoped that an inauguration flight will soon be made.

BRAZIL.

The Brazilian Aero Club intends at an early date to organise two aviation schools for civil use.

The existing seaplane school is increasing in size. It is at present almost entirely equipped with American aeroplanes.

An Italian company intends to open a seaplane service between Rio Grande do Sul and the Amazon.

The Aero Club of Brazil has encountered the difficulties and confusion arising from the absence of a standardised system of aeronautical nomenclature, which is identified by the fact that the majority of aviators in Brazil have been trained in various countries abroad and have imported the aerodrome slang of the place of their apprenticeship. A committee has, therefore, been appointed to draw up a Brazilian glossary of aeronautical terms.

FRANCE.

THE PARIS-MELBOURNE FLIGHT.

M. Poulet arrived at Karachi on Nov. 11th, after a journey of 29 days from Paris, of which 12 days were lost through bad weather. He left Karachi a day or two later for Delhi, but had to land at Nasirabad, half-way between Karachi and Bombay, owing to the oil tank becoming unsoldered.

M. Poulet arrived at Calcutta on Nov. 26th, and left for Akyab (Burma), on Nov. 28th.

GERMANY.

AERIAL POSTAGE STAMPS.

Two types of postage stamps have been issued in Germany, a 10-pfennig orange and 40-pfennig green. The stamps are inscribed Deutsche Flugpost. The designs on them respectively are a winged posthorn and an aeroplane in flight.

GREECE.

THE BRITISH INDUSTRIES EXHIBITION.

A note from the Federation of British Industries states that the Exhibition of British Industries at Athens, which opened on Oct. 14th, closed on Nov. 23rd. H.M. the King of Greece manifested the very greatest interest in the Exhibition from its start to the final closing. He paid continual visits to the Exhibition, and his interest has been reflected through all classes of the Greek commercial community.

Intense interest was shown in the flights by the Handley Page machine over Athens. Although definite figures are not yet to hand, there is no doubt that this was a very popular feature of the Exhibition, and that large numbers availed themselves of the opportunity of a flight.

The Greek community in general were very kind in extending constant hospitality to the exhibitors, and the officials of the Federation of British Industries responsible for the Exhibition. At all these gatherings expressions of goodwill and sympathy towards the British nation and the British manufacturing community were frequent.

The business community of Serbia, Roumania, Constantinople, Smyrna and other Near Eastern and Balkan centres arrived in large numbers. It is estimated that 100,000 people visited the Exhibition.

THE HANDLEY PAGE AT THE EXHIBITION.

Capt. William Shakespeare, M.C., writes from Athens:—"I have the pleasure to report the successful completion of the first civilian trans-Europe flight. I arrived at Athens after the most trying and unpleasant stage of the journey from London. Taking advantage of what seemed to be good weather at Valona, I left in the early morning, and made quite good time, under good conditions, to Prevesa

"Shortly afterwards I landed at Tatoi, having done the journey from Valona in 4½ hours. This, I was afterwards told, was a record time. The people—Greek and English flying officers—were very surprised to see us, as the weather had been practically impossible all day; in fact, five minutes before we landed, an R.A.F. Handley Page machine, securely picketed, had been picked up by the wind and blown completely on its back, being a nasty mess of wreckage, which was spread out in front of us.

"Needless to say, after the buffeting I had received, I was greatly relieved to make our final landing; in fact, we were all pleased with ourselves at the successful completion of this long journey, although it had taken longer than we expected. This fact was due to conditions over which I nor the mechanics had any control. Altogether, the machine had been out in six whole days' rain. The engines, with the attention they received, stood very well

"On the day fixed for the inspection by H.M. the King of Greece, the Press turned up in copious numbers. We initiated them in the mysteries of the H.-P. and trans-Europe flight. I did two flights of Press people over Athens, and all went home very pleased with the machine, the new 'sensation,' and themselves. On these trips we did some pamphlet dropping over the city. Saturday, Nov. 1st, was a memorable day, for H.M. the King of Greece turned up and inspected the machine. He was greatly interested, and finally I persuaded him to come up for a flight. Since that occasion His Majesty has had two further flights, the last trip being from Athens to Corinth."

HOLLAND.

Mr. Fokker is said to be arranging a flight from Holland to the Dutch Indies, with Lausanne as the first stopping place.

ITALY.

The Italian correspondent of THE AEROPLANE writes:—

RAISING RECORDS.

Sérjt. E. Luit on the Marchetti-Vickers biplane has been trying for the speed record as well as the climbing record. On Nov. 20th, at the Monte Celio aerodrome, Rome, he raised his own February record of 260.8 kilometres per hour to 274.2. The weather was wet and the machine according to its designer not quite *au point*. Ing. Marchetti has not resolved the propeller question to his satisfaction, according to one of the dailies whose correspondent is usually well-informed.

THE ROME-TOKIO FLIGHT.

Reports of the start for Tokio being imminent are widespread, and it seems a fact that Gabriele D'Annunzio is to be at Rome before the end of the month.

(*Continued on page* 1871.)

AERONAUTICAL ENGINEERING

SUPPLEMENT TO "THE AEROPLANE"

INCORPORATING AIRCRAFT ENGINEERING, AERODYNAMICS, AIRCRAFT FINANCE AND COMMERCIAL AERONAUTICS AND MATTERS PERTAINING TO THE AERONAUTICAL ENGINEER AND THE AIRCRAFT TRADER.

THE WEEKLY COMMENTARY.

In a note on the future development of aero-engines M. S. M. Viale suggests that the multitudinous poppet of the standard type of aero-engine could be replaced by a simple rotary sleeve valve, and that for horse-powers of 1,000 or so the Diesel type of engine is almost immediately practicable.

The Aeroplane's Danish correspondent has extracted from some of the German journals a series of interesting reflections on war-time practice. These will be found of considerable interest.

The call for engines specially designed for seaplane work is instructive, and the notes on practical war-time experiences with multiple-engined "Giant" aircraft are worthy of note.

The B.A.T Co.'s "Crow"—a diminutive machine of unusual design—is described and illustrated in this issue. To a certain extent the "Crow" resembles the famous Santos Dumos' "Demoiselle' of 1909, but the extreme simplicity and robustness of the design render it a noteworthy example of modern practice.

FUTURE DEVELOPMENTS OF AERO ENGINES.

By S. M. Viale.

Present-day aero engines, as developed during the war, have reached a fairly high standard of efficiency and reliability, and one may safely assert that they will be quite satisfactory for commercial purposes. As regards wear, conditions would be materially improved simply by slightly reducing the speed; the weight per h.p. would, of course, increase, but the life of the engine would be lengthened in much greater proportion.

Against the present standard system of high-powered aero engine (Vee, water-cooled type), there is, however, a very strong objection; excessive complication, leading to high manufacturing cost and decreased reliability. Many engines look complicated at first sight; some look simple and compact only because complication is, wisely, hidden under protecting covers.

One important reason for complication is the number of cylinders, as the power per cylinder cannot go over a certain figure without increasing the weight-power ratio owing to the limited piston speed. Very little can be done towards simplification on this side, except on some quite different principle.

Valve Limitations.

A second limiting condition which makes for complication is the number of valves, quite independently of the number of cylinders.

Roughly speaking, it does not seem possible or practical to get more than 15 h.p. per valve, at the best. As each valve requires at least five parts, if a 1,500 h.p. engine is wanted it will require 100 valves, and at least 500 small parts, all of them vitally important. It is useless to have a stiff crankshaft and a perfect lubrication if the engine will stop for a broken spring or a missing cotter-pin or a badly screwed nut, and there are one hundred of each. Supposing everything is well, think of grinding 100 valves and of overhauling the corresponding gear!

A solution which would give a real simplification is the adoption of the sleeve valve; all the objections that were made when the Knight system was suggested for car engines will be raised against the adoption of a similar system for aero engines, but one firmly believes that the practical result will be exactly the same. Instead of discussing, some enterprising firm will make an engine, and after careful (and probably long) testing, it will be a success. The chief objection would possibly be the excessive oil consumption; a large oil circulation is necessary, but this does not necessarily mean large consumption.

However, it is thought that the best solution, at least, in rather large engines of the Vee type, is not to be found in two or even one reciprocating sleeves, but in a rotary sleeve. This was suggested in 1910 by Mr. Butler, and if one remembers well an engine of the same type, single cylinder, for a light car was made, if not actually put on the market, in 1908 or 1909 in France. These particular engines were not, so far as is known, very successful. In the case of the French engine at least, the chief drawback was the rotation of the piston-rings. But this difficulty can be overcome, and there is no impossibility in the realisation of an aero engine of this type. The simplicity of the system is well worth a fair trial.

Rotary Valve Possibilities.

A steel sleeve rotating in an aluminium cylinder and driven by helical gearing will replace all the small parts of the ordinary timing gear. A slight reciprocating motion must probably be imparted to the sleeve in order to avoid the wear taking place in some definite portions of the cylinders. This will only require a fixed roller engaged in a cam cut in the sleeve; this roller with its pin, one skew pinion on the distribution shaft and the sleeve itself will supersede four valves, and, perhaps, 30 small parts of the standard type of distribution.

There will be only one shaft between the two lines of cylinders, and it will be much easier to drive; and all motions are smoother and without shock. In very large cylinders which would require six valves, it will be possible to increase substantially the dimensions of the ports by giving the sleeve a composite movement; uniform rotation, and harmonic angular motion superposed, the latter obtained by a harmonic sliding motion of the driving pinion on the distribution shaft. But for cylinders up to 7½ in. bore, uniform rotation of the sleeve will provide quite sufficient port area.

In the appended table some data are given for four engines of this type, two of them of the air-cooled type, as it seems possible to adopt this system of cooling, owing to the uniform temperature obtained through the rotation of the sleeve. Weights, of course, appear slightly greater than for the "Liberty" engine, given as a term for comparison; it must be remembered, however, that these engines were calculated for a low and commercial number of revolutions.

Even if the sleeve will simplify the engine itself very much, it does not allow of increasing the power without increasing, proportionately, the number of cylinders. There are now, flying or building, aeroplanes of 2,400 h.p., which represents six engines, 72 cylinders and . . . some valves. The time seems ripe for the 1,500 or 2,000 h.p. engine, either for aeroplanes or for airships. Taking 60 to 80 h.p. per cylinder, which is probably a maximum for engines of the accepted type, this means 24 to 30 cylinders. We think that this num-

ber is excessive; at any rate, it would be a boon if it could be reduced.

The simplest idea is to adopt the two-stroke cycle; but in order not to lose any precious fuel we are led to do the scavenging with pure air; hence to the Diesel principle.

As no Diesel has been made weighing less than some 50 lb. per H.p. (unless the report of a German Diesel aero engine, of which we heard something months ago, be true), conservative people will say that it cannot be made light. The same would certainly have been strongly held 25 years ago by any responsible maker of petrol engines if asked if it was possible to get one h.p. for, say, 10 lb. The truth is that no Diesel engine has ever been made with the modern materials now used in aero engines, and designed by a brain with flying tendency, if we may say so.

Ordinary Diesel engines work with only 100 lb. mean effective pressure, stationary petrol motors as well as gas engines work with some 60 lb. M.E.P.; we have now got 125 lb M.E.P. in aero engines, which is the double of the standard commercial figure. One hundred lb. is by no means a limiting figure for Diesel engines, Sulzer Brothers having obtained 177 lb. indicated pressure in their Diesel locomotive tested in 1914. Theoretically, by using exactly the quantity of air required for the complete combustion of the fuel it is possible to obtain in a two-stroke Diesel cylinder slightly supercharged as much as 180 lb. M.E.P.; with about 1/5 excess air 160 lb. are obtained. This does not take into account the work absorbed by the scavenging pump.

It may be objected that it is difficult to run a Diesel engine at high speed; but speed limits have so much increased during recent years that this is not a very strong objection. "Fiat" Diesel submarine engines are already running at 600 revs., and nothing proves that this is the highest possible speed.

In aero-engines it would be necessary to reach from 900 to 1,000 revs. This will prevent using both the hot bulb system and injection of fuel without air, as in these cases the initial combustion is more or less localised and cannot be spread with sufficient velocity. The best plan seems to be to spray the fuel with supercompressed air taken from the cylinder itself, without any independent compressor. Thus the fuel will be injected by hot air and the combustion will be very rapid. The apparatus required is not complicated and can be made with only two moving parts, including the fuel regulator.

As regards scavenging, two solutions are possible; reciprocating double acting pumps or turbo-compressor. Although less efficient, the latter is probably the best, as it is much lighter and does not require attention or lubrication.

Cylinders can be made either with double ports, for exhaust and scavenging, or with valve scavenging. The latter, again, is to be chosen if a high speed is required; double ports could be adopted only if the speed, for particular reasons and disregarding the increase of weight, could be reduced to some 700 or 750 revs.

The weight of an engine does not increase in exact proportion as the maximum pressure developed, as often the strength of parts increases more rapidly than the weight. Anyhow, present engines, for a M.E.P. of, say, 125 lb., are calculated for a maximum pressure of 450 lb., which governs the dimensions of parts. A Diesel engine with a M.E.P. of 160 will have a combustion pressure of 500 lb., although in a sudden explosion the pressure may reach anything up to 1,500 lb.; but with a well-devised safety valve it is possible to reckon on a maximum emergency pressure of about 850 lb. The ratio between maximum and mean pressure is then 3.6 for standard engines and 5.3 for Diesel engines. The weight, roughly speaking, would be increased by about 35 to 40 per cent. Whether this can be accepted is an open question; but for very high-powered engines there seems to be no other choice.

This increase of weight has been taken account of in the weights given in the appended table for Diesel engines. Figures for two-stroke, both with a turbo-compressor and with reciprocating pump, and four-stroke are given. The latter engine is not only much heavier, but requires four or perhaps six, valves per cylinder, half of which are exhaust valves. Three valves per cylinder are also necessary in the suggested two-stroke engine, but these are inlet valves and need much less attention. In this case we should have three inlet valves for about 165 h.p., which is a much better proposition than 12 exhaust and 12 inlet valves for 400 h.p. as in ordinary engines of the present time.

The Diesel two-stroke engine would not be interesting for less than 1,000 h.p.; but for larger engines the following advantages will more than compensate the difference in weight.

(1) Simpler engine, as the power per cylinder will be much larger, 250 h.p. per cylinder being a possible proposition.

(2) Lower fuel consumption, even taking into account the power lost in scavenging.

(3) Greater safety against fire, paraffin being used instead of petrol.

(4) Quality of fuel indifferent; can be run on crude oil, vegetable or even animal oil if necessary. Most important in colonies and desert countries.

(5) No electric ignition. This advantage is apparent when one thinks of the wiring of a 32-cylinder double-ignition engine.

(6) Engine can be easily reversed both for manœuvring airships and for braking big aeroplanes when landing.

(7) If the turbo-compressor is adopted, the power output is practically constant at any height up to 5,000 or 6,000 feet. Although not as important as in war time, this advantage is not to be despised even for commercial aviation.

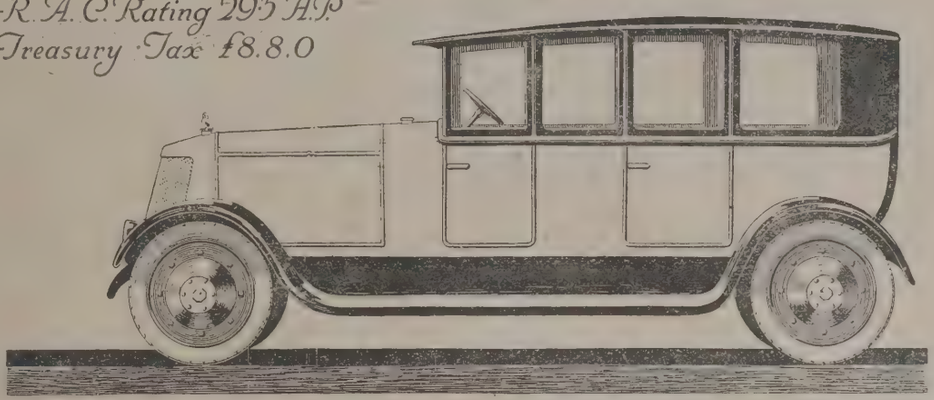
In conclusion, one is firmly convinced that, barring air-cooled radial engines (offering an alluring solution both for small cheap power plants and for large ones too when the question of weight is paramount, as in fast military machines), the development of aero engines should be directed towards the adoption of a rotary sleeve as distribution organ for powers up to 1,000 or 1,200 horse; but from 1,000 h.p. upwards the Diesel two-stroke engine with turbo-compressor scavenging offers the best and probably the only possible solution.

AERO ENGINES (Twelve-Cylinders. Vee Type).

Type of Engine ...	Liberty	Sleeve	Sleeve	Sleeve	Sleeve	Diesel	Diesel	Diesel
Cycle	4. Str.	4.Str.	4.Str.	4.Str.	4.Str.	2.Str.	2.Str.	4.Str.
Bore and Stroke	5″×7″	5″×7½	6″×9″	6″×9″	7¼″×8½	8″×10″	8″×10″	8″×12″
Cooling	Water	Air	Air	Water	Water	Water	Water	Water
Engine Speed, R.P.M.	1500	1350	1250	1250	1650	950	950	900
Propeller Speed, R.P.M.	1500	1350	1250	1250	950	950	950	900
Mean Effective Pressure, lbs./□″	125	120	120	120	125	155	155	155
Developed H.P.	400	360	575	575	1100	2260	2260	1360
Scavenging System and Efficiency %	—	—	—	—	—	Turbo	Pumps	—
H.P. Required for Scavening	—	—	—	—	—	55	80	—
	—	—	—	—	—	250	170	—
Net H.P.	400	360	575	575	1100	2010	2090	1360
Fuel Consumption per H.P./Hour, lbs.	.48	.48	.46	.46	.45	.39	.39	.885
Oil Consumpton per H.P./Hour. lbs.	.04	.058	.055	.045	.048	.04	.045	.040
Total Consumption, per H.P. Hour, lbs.	.52	.538	.515	.505	.498	.43	.435	.425
Weight of Engine, alone, lbs.	820	840	1440	1500	2325	4930	49 0	5540
Weight of Cooling System, lbs.	240	—	—	350	600	1100	1100	675
Weight of Scavenging System, lbs.	—	—	—	—	—	480	1200	—
Total Weight in Running Order, lbs.	1060	840	1440	1850	2925	6510	7230	6215
Do. per H.P., lbs.	2.65	2.34	2.50	3.22	2.66	3.24	3.47	4.57
Weight with 2 hours' Fuel, lbs.	1475	1230	2030	2430	4020	8450	9190	7370
Do. per H.P.,	3.70	3.42	3.55	4.24	3.65	4.20	4.40	5 43
Weight with 5 hours' Fuel, lbs.	2100	1808	2920	3300	5660	113.0	12140	9100
Do. per H.P.	5.25	5.02	5.09	5.74	5.15	5.65	5.94	6.70
Weight, with 8 hours' Fuel, lbs.	2720	2390	3805	4170	7305	14270	15080	10830
Do. per H.P.	6.80	6.64	6.63	7.26	6.67	7.10	7.23	8.00

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GERMAN POST-BELLUM REFLECTIONS ON WAR EXPERIENCES.

By ERIK HILDESHEIM, B.A., Copenhagen.

The technical aero journals of each of the former belligerent countries in their trade reports bear witness to the general eagerness to make the accumulated experiences of the war period universally known both with a view of claiming priority for new ideas and of showing the national interest to the best advantage.

So far as Germany is concerned the underlying idea in reviewing the work of the various aircraft firms is to illustrate how far German developments had gone in the various lines now that the end of the war may deprive the works for some time of the necessary means for going ahead experimentally.

The general condition of Germany may even foster commercial aviation beneficially in so far as cost proves not to be prohibitive, owing to the breakdown of other means of transportation. The delivery of their aircraft stores to the Allies leaves the Germans without inducement to convert existing war material, and they are thus free to discuss and enter upon the best lines for future development.

As the latter are best shown by commenting upon the past, the following news for which the source of information is given in each instance, may claim interest.

The Professor of aero engine design at Charlottenburg, himself the chief designer to the Mercédès firm, stated that beyond tempering before machining, heat-treatment of crankshafts for aero engines had now been abandoned in Germany.

The after treatment only increased the resistance of the shaft to repeated shocks, and as a life of 100 hours could be relied on from the untreated shafts, it is presumed that the saving in the time of production justified the step.

In this connection it is of interest to note the difference in the physical characteristics of the crankshafts of the 260 h.p. Mercédès and the 230 h.p. Benz engines, and that of the Basse-Selve engine, given in the British official reports on these engines. These are :—

	Ultimate Tensile stress Tons per sq. in.	Elongation on 2 inches %	Yield point Tons per sq. in.
Mercédès	62	13·5	55·7
Benz	62.5	21·3	55·2
Basse-Selve	55·5	19·5	44·5

It may be assumed that the Basse-Selve engine is a case of the untreated crankcase, the two earlier types showing the earlier practice.

The same Professor also stated that the Germans experimented for one year with copying the Rolls-Royce reduction gear, experiencing troubles from steel failures. Which should be read in conjunction with a statement by Naval Lieut. von Dewitz in a paper read before the German Aero Club that at one period the German Naval Air Force had difficulties in opposing the British opponent, owing to the Rolls-Royce motors in use there. The Hispano-Suiza reduction gear was also experimented with, the gears, however, failing after a few hours' running.

In an article by Marinebaumaster Fuhrberg, Berlin, asking for the development of a special motor for seaplanes in "Der Motorwagen," various well-known aero-motors are dealt with from the seaplane point of view.

The author first states that owing to lack of material German aero designers could not cut weights to such limits as their opponents, and that the works, having quantity production as the chief aim, had but small chances for experimental developments.

In fact, the Germans started with the Mercédès for their land-going and Benz aero-engines for their naval aircraft, which models remained favourites all through the war, and except for the introduction of three more makes of the same 6 cyl. vertical type (Opel, Selve and Maybach, the latter, as developed from the airship version), and the old favourite Argus of same type, only two new engines arose from the special needs of aerial warfare.

These were the B.M.W. (Bayern) motor and the Siemens 11-cylinder rotary.

To overcome the disadvantage of the high initial weight of the German engines, every effort was made to reduce the fuel consumption. As the most effective means super compression was chosen, which was driven almost to the limit of possibilities. For this reason the German aeromotors were too heavily built to attain good altitude flying.

Further arrangements for reducing the fuel consumption were a favourable designed form of the cylinder head, preheating of the gas mixture and attention to the carburetter, etc. Thus a reduction in petrol consumption to 185 grams per h.p. hour was achieved with the Bayern motor on test, and similar favourable results were obtained with the Maybach motor in airship service by the employment of a saving nozzle.

Low fuel consumption is, of course, of fundamental importance for long flights, and the figures for two German

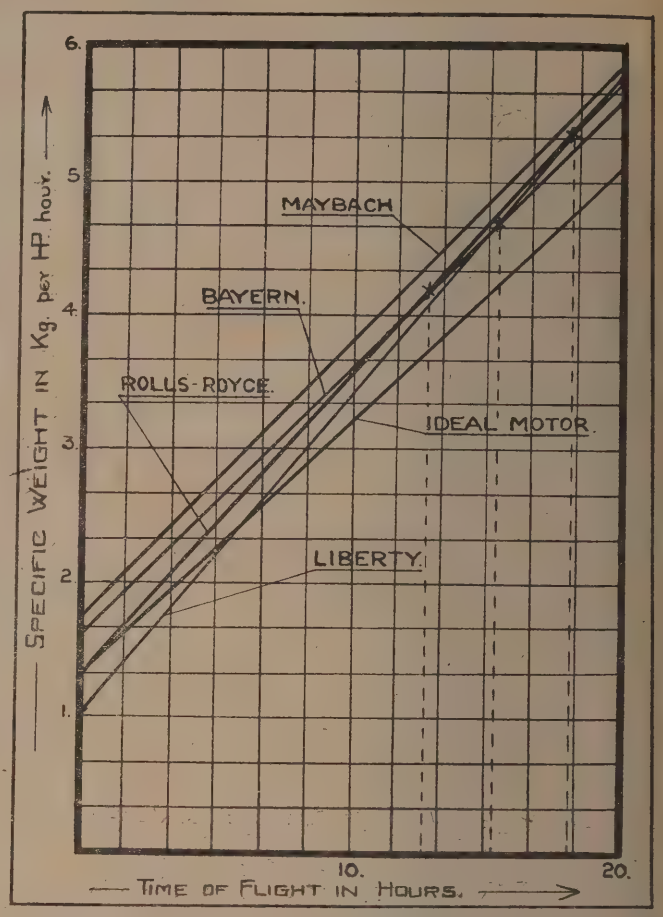


Chart showing total weight per B.H.P. of engine plus fuel for German and Allied aero-engines.

motors with special carburetter adjustment for sea flying are given together with two of the best enemy motors, viz., the 320 (350) h.p. Rolls-Royce and 400-h.p. Liberty.

It will be seen that the latter is the most favourable owing to the low engine weight up to flights of 15 hours' duration. At this point it crosses the curve of the B.M.W.IIIa. The Rolls-Royce motor is superior to the latter so far as about 13 hours' flight, though it must be remembered that the former is provided with a reduction gear, which improves the screw efficiency considerably. The Maybach IVa is absolutely the most unfavourable during the whole flying time.

The qualities required of the ideal motor for seaplanes include a super performance of 10 to 15 per cent. above the normal brake h.p. for about five minutes, as this increased power is needed to rise from the water, and the output should keep almost constant to an altitude of 4,500 ft., which is the normal flying height for seaplanes, and a petrol consumption of 190 grams per h.p. an hour, that of oil being left out of consideration as of little importance for the weight.

A further point commented upon is the radiator question, the author saying that a cooling area sufficing in flight will be insufficient for the oft-needed taxying.

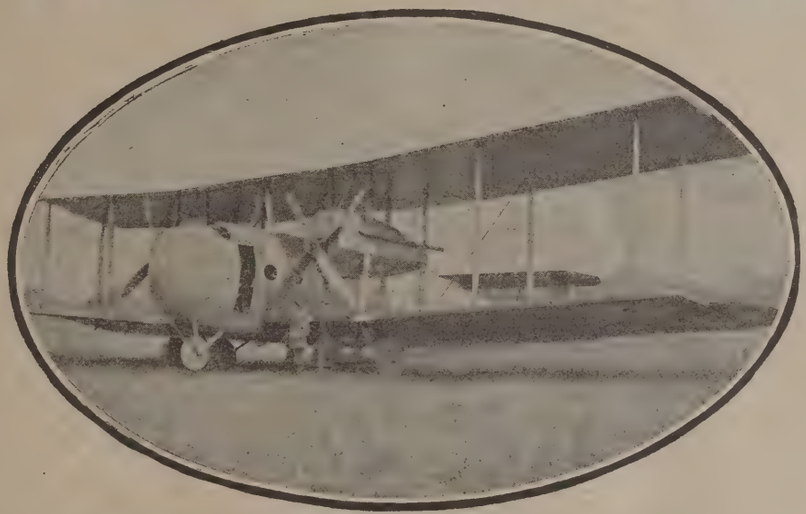
It is mentioned that the Windhoff radiator, the normal one for German landgoing aircraft, turned out a failure for seaplanes, as leakages resulted from the mounting angles, and when the radiators had for some time to be made of iron sheets owing to lacking material, they got eaten away by rust in a few months.

Quoting an instance of the variation in conditions for land- and seagoing aircraft, the 195-h.p. Benz motor (model BzIIIa) is quoted. The magnetos were removed from the rear to the front above the reduction gear, which rendered the motor useless for seaplanes, as the sea spray hindered the function of the magnetos, and this could only be remedied at the cost of considerable weight, though the change was much appreciated for landgoing aircraft owing to the shortened length of the motor.

It is further stated that the conditions for seaplanes and giant aircraft are similar, the former having to avoid alighting in open sea, and the latter being unable to land outside specially-suited grounds, and as the writer believes that giant aeroplanes, for instance, above the present sizes will always

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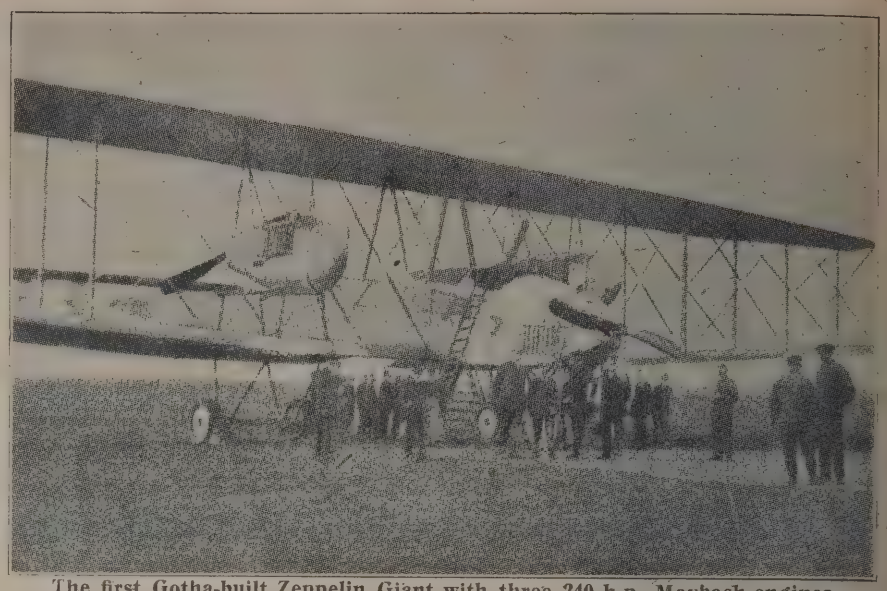
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be equipped with floats. He intimates, by the way, that much danger was experienced in landing the giant seaplanes, wherefore petrol tank dropping experiments were entered upon in Germany, too, though from a different prime reason than the Allied fire-prevention efforts.

A paper, read before the German Aero Club by Lieut. Offermann, of the Reserve, can next be proceeded to for the information to be derived both with regard to details and to the history of the origin of German giant aeroplanes. It is both stated and illustrated how the first 3-engined biplane was built at the Gotha works to the order of Count Zeppelin, who, together with the Bosch firm, had been converted to the idea by the well-known German flying champion, Hellmuth Hirth, before the war, with a view to a transoceanic flight, and Count Zeppelin was induced to resume the project when an inventor offered him a 1-ton bomb capable of destroying the whole British fleet. Who would have neglected this statement without investigating its prospects? the German text asks with emphasis where one would have considered interrogation more appropriate. Count Zeppelin asked the assistance of Professor Baumann, as the best known aeroplane designer and of the technical director of the Bosch works, Klein, who lost his life together with the well-known pre-war pilot, Vollmoeller, in an experimental flight of the giant biplane; two other old-timers who gave their lives for the cause being Reichardt and Wittenstein.



The first Gotha-built Zeppelin Giant with three 240 h.p. Maybach engines.

The first giant was fitted with three 240-h.p. Maybach motors, one as tractor in the fuselage nose and two pusher plants, each in interplane engine nacelles, where later another motor was coupled to the other or drove a tractor screw. These German distributed drive giants were built by the Zeppelin works in Spandau and Staaken and by the licensees: Aviatik, Albatros, and Schütte-Lanz.



The first Siemens Steffen Giant Aeroplane.

The rest of German giant aeroplane types were provided with central power installation, viz., the Linke-Hoffmann 4-engined single-and twin-screw models, the 4-engined D.F.W. twin-tractor and twin-propeller type and the 6-motored 1,800-h.p. twin-screw and twin four-bladed propellered Siemens-Schuckert.

The first Zeppelin-Gotha was otherwise of normal design, of a span of 43 metres, weighed 6½ tons and could carry a useful load of 2½ tons, the 1-ton bomb hanging in a central body cage; all three engines drove through reduction gears. The first giant to be used on active service was R.12, in August, 1916, equipped with six 160-h.p. Mercédès motors. The first Siemens giant was built with the support of the firm's managing director, Secrete Chancellor Reichel, to the design of Engineer Steffen, under the supervision of Engineer Wolff, in Neumünster, 1914, flew to Johannisthal with seven passengers in June, 1915, and engaged on active service in the winter, its successors being employed, too, for school service. Great difficulties have been experienced with regard to insufficient lateral control, the first means of help being the Flettner auxiliary ailerons, while, owing to the Armistice the experiments planned by the giant aircraft inspection department, with a third pilot in form of a Servo motor combined with an automaton could not be carried out.

To raise the ceiling and increase the speed of the giants by maintaining the engine performance at high altitudes the R.30 aircraft was equipped with a turbo-blower supercharger, built by the firm of Brown, Boveri and Co., of Mannheim, to the designs of Engineer Noack (which may be the German aero turbine of rumours, equalling the French Rateau instrument comments). So far the ceiling of this Staaken biplane had amounted to only 11,400 ft., but on April 24th, 1918, an altitude of 18,000 ft. was reached, the speed being, at the same time, increased to 160 kilometres by the employment of adjustable airscrews to the design of Professor Reissner.

Further statistics and flight reports are quoted, as rendered hereafter. Twenty giant aeroplanes carried out 150 flights over enemy area, the distance covered amounting to about 50,000 kilometres, and 110 tons of bombs were carried. London was many times the object of the flights, those of greatest length going to Rouen and Le Havre.

The biplanes were often flown without intermediate landings from Berlin to the front station Gant in 7½ hours. R.33 reports of a flight to London that both engines of the left motor nacelle gave out, the front one stopping altogether, owing to the oil freezing. By cutting the tank and filling the motor by hand a landing in the sea was prevented.

R.25 reports:—Owing to some clips getting loose the left rear motor lost water; the clips were repaired and the engine continued running throttled. Then the motor lost several exhaust pipes, whereby the oil tank-covering was set on fire,



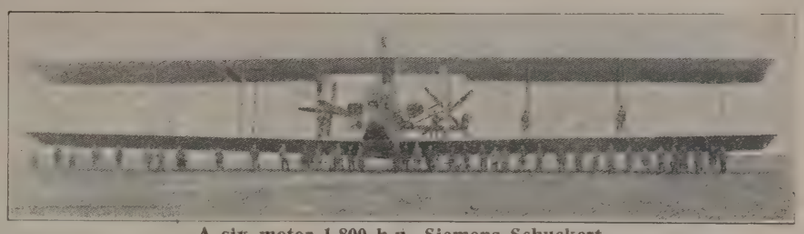
The airscrew drive housing of an A.E.G. Giant Aeroplane.

which was, however, extinguished, but the motor had to be stopped.

R.33 reports another time: A petrol pipe breakage and some ignition cables having come loose, but could be repaired in flight

R.13 report: A valve spring broke, the valve had to be lifted by hand on the whole return flight.

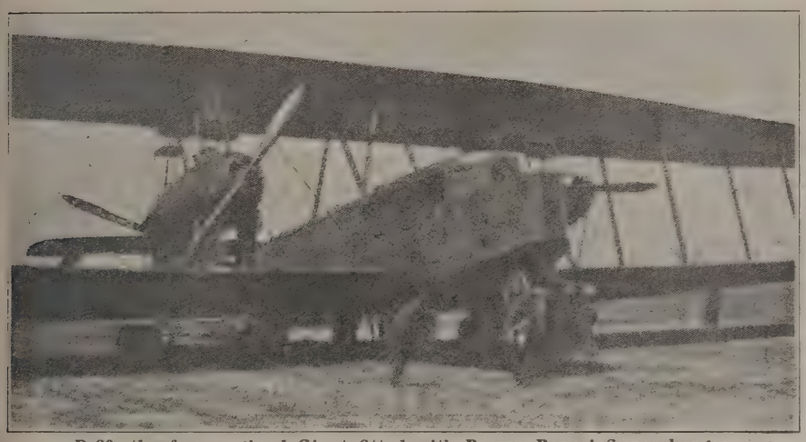
R.31 reports: Left rear motor stopped at the start, owing to non-circulation of the oil, yet the flight to Compiègne was carried out.



A six motor 1,800 h.p. Siemens Schuckert.

R.12 reports: The gear-drive in the left cabin broke and a fire started, which was extinguished during the flight. The landing was carried out safely with stopped left engine nacelle.

A fatal accident with R.21 was the result of a propeller made hurriedly to expedite front interests, that broke and caused the reduction-gear to break, whereby the cardan shaft got free and continued its eccentric movement, thereby destroying the plane, from which the accident resulted.



R.30, the four-engined Giant fitted with Brown Boveri Supercharger.

The weight of the instruments of a German giant aircraft is given as 500 kilos, 300 of which are, however, war equipment. This is naturally higher for aircraft with separated power units than for central power plant installation. The equipment includes tachometers for the number of revs. of engines and propellers, distance thermometers for the temperature of the radiator water and the oil in the motors and gears that must be kept constant, all in twin arrangement, first in the engine room, next in the pilot cockpit, electric transmission being generally adopted.

Of great importance are the means of communication, needing much improvement, long experiments with acoustic tools, like telephones, sirens, speaking tubes, having proved their uselessness for giant aircraft, as human hearing is, after long flying, unable to hear any more owing to the engine and propeller noise. Order transmission through a lens and prism system failed, as the orders written and projected on a ground glass screen blurred and got illegible. The engine telegraph has alone proved good, being in the latest form capable of submitting twenty orders, or even more by certain combinations. Special information is transmitted by means of a pneumatic mail tube as a supplement.

For night and cloud-flying the Drexel gyroscope position indicator is employed. The air speed is indicated to the pilot by either the Morell aneatachometer or by the Bruhn nozzle air current meter. The variometer tells the pilot whether the aircraft climbs or descends.

The value of the wireless receiving and sending plant, of a 600-kilometre capacity, is shown in the flight report of the commander of the giant aircraft squadron 501, reading:—

Report of the war flight in the night between August 24th and 25th, 1918, to B and C. "In favourable weather I started the flight to the aim, A, ordered by the 4th Army Headquarters, giving: Object, A; secondary object, B. Petrol was carried for 6½ hours' flight and 12 tons of bombs. The following giant aeroplanes participated: R.12, 13, 25, and 39. I am on board R.39. We were allowed to start after half-past 9 in the evening and must take the sea course, owing to the moonlight night, to avoid unnecessary losses. The barrier of the night scout region is felt to be a great hindrance, as the pointed-out route by the Dutch frontier means a considerable prolongation of the flight and holds in itself the danger of flying over Dutch territory. During the flight the weather conditions changed and the danger of fog had to be reckoned with from 3 o'clock in the morning. When I received this report by wireless, I made out by calculation that the aeroplanes could not be home before 3 p.m., and so ordered the squadron by wireless to attack B, this order being received by all aircraft. The ordered aim was attacked by three aeroplanes with three ½-ton bombs, with clearly observed good effect, while a fourth aeroplane had perforce to attack C, owing to engine trouble."

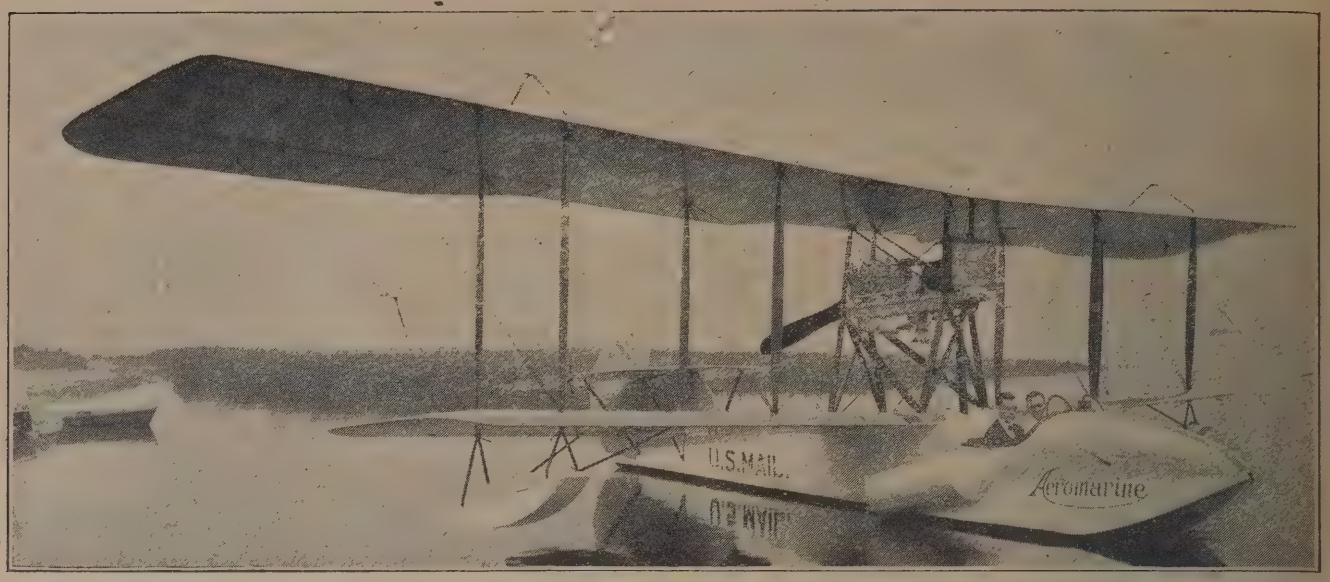
These reports from enemy sources clearly show that the accessibility of the power plant in the German central-drive type of machine possesses real advantages in the case of engine trouble. The report of repairs carried out in flight, extinction of fires, and so forth would in all probability have been entirely impossible in an interplane engine installation on a night flight.

[The note as to the R.30 being fitted with superchargers and with variable pitch propellers is of interest as showing the parallel lines of development in Allied and enemy countries.—ED.]



The Airscrew housing of a Siemens Schuckert Giant.

AERIAL MAIL DELIVERY TO SHIPS AT SEA.



The Aeromarine Flying Boat used for the mail delivery tests. The chute for the mail bag is seen on the side of the hull.

The following information as to a recent test of a method of delivering mails to a ship at sea has been supplied by The Aeromarine Plane and Motor Co., of Keyport, New Jersey.

As a means of expediting delivery of overseas mail, Mr. Otto Praeger, Second Assistant Postmaster-General of the United States, ordered the experiment of delivering mail by aeroplane to a ship at sea to be tried.

The Post Office entrusted the aerial part of the experiment to the Aeromarine Co., and with this end in view Mr. Uppercu, the president of the firm, started experimenting at his factory in Keyport. A number of plans were considered, but one suggested by Mr. Uppercu and thought most feasible by Pilot C. J. Zimmermann, was adopted. This consisted of trailing a weighted line about 200 feet long from the flying-boat. To the inner end of this line the mail-bag was attached, the idea being to entangle the trailing line in the rigging of the steamer, the release of the mail-bag taking effect as soon as the line became entangled. To try out this idea a 50-foot mast with guys, representing the rigging of a ship, was located on the beach at Keyport, and for a week daily tests were made until the apparatus used in the actual attempt was developed. It was found at the outset that to entangle the rigging and make the "tie" hold, more than one weight would be required.

A kind of cat-o'-nine-tails with seven tails was therefore adopted, five of the tails being of sash cord and two of steel cable, each being weighted by a bag containing one and one-half pounds of lead shot. The first attempt with this arrangement and a 100-pound mail-bag resulted in the parting of the main sash cord line. The cord was then replaced by five-thirty seconds cable and a half-inch strand rubber shock absorber. The trial resulted in breaking the shock absorber, and a larger one was substituted and two other shorter and heavier shock absorbers were added in the line, the line in this attempt being continuous to the bag. The mail-bag was carried in a built-up veneer chute firmly attached to the right-hand side of the hull of the flying-boat at an angle of 15 degrees slanting to the rear, the bag resting in it and being held by friction until pulled out from the open rear end by the cable when caught in the rigging.

Several attempts were made with this arrangement and the bag was found to be too weak. A heavily reinforced bag was then made and trials were continued.

It was found possible to hook the rigging on the stationary mast on every attempt, thus making a perfect score.

It was decided to make the actual trial by delivering mails to the White Star liner "Adriatic," which sailed from New York on August 14th, 1919.

Considerable apprehension was, however, felt as to the results with a moving ship, and this was by no means lessened by the fact that on the morning of August 14th the weather was far from favourable. Mr. Uppercu, however, decided to make the attempt and accordingly ordered Pilot Zimmermann to bring the boat to New York. After the necessary formalities with the Post Office officials, at which time Pilot Zimmermann and Mechanic Greisinger were sworn in as temporary messengers of the Post Office Department, the mail was placed in the special sack, taken aboard the flying-boat, and at 1.30 p.m., fully an hour after the sailing of the "Adriatic," the flight was started. Mr. Uppercu's yacht, the "Lounger II," had left the Columbia Yacht Club, New York, at 10.30 to be on hand to render any assistance necessary.

At 2.10 p.m., one hour and 45 minutes after the sailing of the "Adriatic," the mail-boat was encircling the ship.

A few seconds later the attempt was made, the cat-o'-nine-tails catching the forward stay, as planned, and the mail-bag dropping into the sea to be hauled aboard by the "Adriatic" sailors a few minutes later. Pilot Zimmermann made certain the mail was safely delivered and then flew home to Keyport.

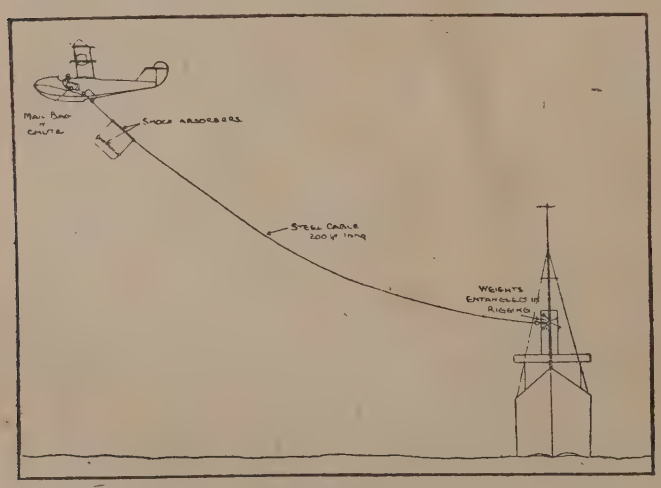


Diagram of the Aeromarine mail dropping device.

BRITISH INDUSTRIES IN SCANDINAVIA.

The Federation of British Industries has appointed Mr. Montagu Villiers to act as their Trade Commissioner in the Scandinavian countries.

Mr. Villiers has spent many years in the Consular Service, and lately in the commercial diplomatic service. He is well known in Stockholm, Copenhagen, and in commercial circles in Norway, and among other positions he held was that of British Consul at Stockholm from 1906 to 1913.

He speaks Norwegian, Swedish and Danish with the fluency of a native. The manufacturers of this country have been fortunate in securing his services.

Mr. Villiers was to leave for Scandinavia on the 25th inst., and he will make a tour of inspection, returning to England early in January next, when he will be able to make a report as to the economic conditions in Scandinavian countries, after which he will set up offices in Norway, Sweden, and Denmark.

Mr. Villiers will be accompanied by Mr. John Pitcher, who has made a special study of transport and trade conditions in various countries.

British Aircraft Constructors, please note.

G R

By direction of the Disposal Board

AIRCRAFT DISPOSAL DEPARTMENT

MINISTRY OF MUNITIONS.

AEROPLANES FOR SALE

AT

Greatly Reduced Prices.

ARMSTRONG-WHITWORTH. **DE HAVILLAND 6.**

F.E.2B. **B.E.2E.**

SOPWITH CAMEL.

The above Aeroplanes, although not of the latest type, would prove eminently suitable for School Machines or Joy Rides. They are complete with engines and instruments, and spare parts are also available.

Enquiries and application to view should be addressed

THE CONTROLLER, AIRCRAFT DISPOSAL DEPARTMENT, WELCOME CLUB, EARL'S COURT.

Telephone—WESTERN 4950. Telegrams—"CLEARHOUSE, AEROSUPPLY, LONDON."

Nearest Station—WEST KENSINGTON.

NOTE.—For full particulars of other Government Property for sale, see "SURPLUS," Price 3d., at all Bookstalls; or by quarterly subscription of 2/- post free, payable in advance to the Director of Publicity, Ministry of Munitions, Whitehall Place, London, S.W.1.

G R

By direction of the Disposal Board

AIRCRAFT DISPOSAL DEPARTMENT

MINISTRY OF MUNITIONS.

AEROPLANE DOPE

FOR SALE BY PUBLIC TENDER.

The following quantities of Aeroplane Dope are available for disposal:—

18,292 Gallons Cellulose Acetate Dope.
7,252 Gallons Nitro Cellulose Dope.
1,834 Gallons Mixed Dope.
6,000 Gallons S.33 Dope Solvent.

The material is located at Coventry, Sheffield, Liverpool, Hendon and Farnborough, where it can be inspected in bulk.

Tenders are invited for the whole or part thereof.

All enquiries for information and tender forms should be addressed to:

The Controller, Aircraft Disposal Department, Welcome Club, Earl's Court.

(*Nearest Station—West Kensington—District.*)

Telephone: Western 4950. Telegrams: "Clearhouse, Aerosupply, London."

IMPORTANT.—Please note change of address from York House, Kingsway, to Earl's Court.

NOTE.—For further particulars of other Government Property for sale see "SURPLUS" price 3d., at bookstalls, or by quarterly subscriptions of 2s. post free, payable in advance to the Director of Publicity, Ministry of Munitions, Whitehall Place, London, S.W.1.

Above these main girders and towards their forward end a single-piece wing 18 feet in span is attached. This wing is built on two spars which taper in depth from the centre to the wing tip and which are sufficiently strong to support the wing loads without bracing wires.

Below the wing a long wooden skid is suspended from the main girders by six steel tubes and across the skid there is fastened a laminated wood axle carrying at its outer ends a pair of landing wheels. On the skid is built up the pilot's habitacle, consisting of a light wickerwork seat aft, and an arrangement resembling the fore end of a side-car for the reception of the pilot's feet.

The whole affair is extraordinarily simple—for instance, the wing may be removed for storage purposes by undoing 12 nuts and resecured by doing up again the same 12. There are no bracing wires to adjust and no trueing up to do.

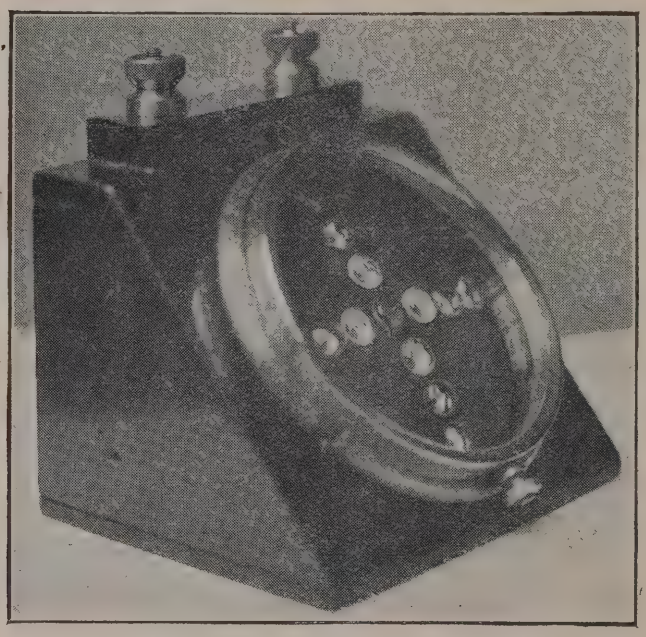
The petrol and oil tanks are contained within a torpedo-form casing over the wing, and are attached to the engine mounting so that the whole power plant forms one unit and can be detached from the machine as such. The tank capacity is five gallons of petrol and ½ gallon of oil—sufficient for nearly two hours' flight or 130 miles.

The following are the chief figures relating to this machine :

Overall span	18 ft.
Overall length	14 ft.
Overall height	5 ft. 8 in.
Weight empty	265 lb.
Speed (maximum)	65 m.p.h.
Speed (minimum)	30 m.p.h.

THE CLAYTON CLINOMETER.

The instrument shown in the attached photograph embodies an extremely ingenious form of indicator of a type suitable for night flying. The instrument itself is a gravity controlled clinometer and it is so arranged that when the machine is on a level keel laterally or in any other position of no sideslip, and is also at its normal flying angle, a central small electric lamp coloured green is kept illuminated.



This green lamp is at the point of intersection of two rows of similar red lamps, which are caused to light up by any divergence of the machine from these conditions. The indication is extremely vivid and cannot fail to attract notice—which is by no means the case with the usual type of bubble clinometer.

This method of indicating could be applied to a number of instruments of varying types, and the inventor is open to receive offers to take up the British patent rights.

AN AMALGAMATION.

Arrangements have been completed for the amalgamation of the business carried on by Mr. Robt. W. Paul at New Southgate, London, with the Cambridge Scientific Instrument Company, Ltd. Mr. Paul will join the Board of Directors and the manufacture of instruments will be continued both at Cambridge and at New Southgate. Until the end of the year the selling and manufacturing arrangements will be unchanged, but on January 1st, 1920, the name of the Company will be altered to the Cambridge and Paul Instrument Company Ltd., and as soon as possible the Head Office and Showrooms transferred to London.

THE MARTINSYDE MOTOR-CYCLES.

Like so many large aircraft firms who, since the signing of the Armistice, which brought with it the cancellation of all large aircraft contracts, have taken up the construction of sundry articles likely to be more in demand to a war-worn nation than fighting aeroplanes, Martinsyde, Ltd., of Woking and Weybridge, have turned their attention to the manufacture of motor-cycles on a large scale.

A brief specification of their 6-h.p. Vee-twin Martinsyde-Newman combination is as follows :—

Engine : 70 mm. bore by 88 mm. stroke, 680 c.c. 50 deg. twin cylinder. Overhead exhaust, and side inlet valves. Automatic lubrication.

Ignition : M.L. high-tension magneto.

Carburetter : Special two-lever Amac.

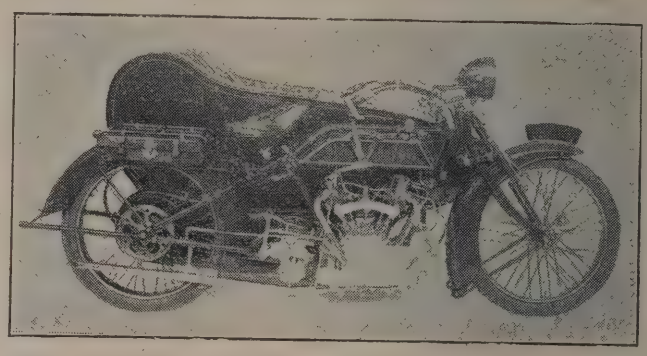
Gear Box : A.J.S. 3-speed countershaft with cork inset plate clutch and kick starter.

Forks : Brampton Biflex.

Tank : Square design , two gallons of petrol and ½ gallon of oil, with large filler caps, priming tap, hand pump and semi-automatic drip-feed.

Saddle : Brook's.

Wheels and Tyres : 650 by 65 Dunlop special.



Equipment : Includes carrier, two Brook's long pannier tool-bags, number plates, inflator, horn, oil can and spanners, separate stands to both wheels.

Side-car : Chassis specially designed for accessibility and quick detachment, 3-leaf Cee springs, large mudguard (well balanced), coach-built body with luggage carrier at rear.

Finish : Bicycle and side-car chassis enamelled black lined gold, all bright parts heavily plated. Side-car finished in Royal blue lined gold and upholstered in Royal blue.

A model has been on the road for some time and has been thoroughly tested, as the following letter given hereafter shows.

"After it had undergone a test of 5,000 miles we had the pleasure of personally testing the Martinsyde-Newman 1920 Combination for several hundred miles. We found it to be exceedingly speedy, an excellent hill-climber and, moreover, a very comfortable mount, and one that we highly recommend. "(Signed) J. L. and W. H. BASHALL."

Deliveries commence in January, 1920, and the makers state that there will be no increase on the present price of £170 during 1920.

THE TRANS-AMERICAN RACE.

The following letter has been received :—

Sir,—Some interesting data has just come to hand from Washington, D.C., in connection with the performance of the Rolls-Royce engined "Bristol Fighter" which was entered as a competitor in the recent American Transcontinental race and was piloted by Brig.-Gen. L. O. Charlton, C.M.G., D.S.O., the British Air Attaché at Washington.

This race started on October 8th last. The first day witnessed a number of accidents, amongst which was the forced landing of the above-mentioned "Bristol Fighter." Some misleading reports stated that the reason of the machine making a forced landing was due to engine trouble.

In response to our inquiries we have now received a letter from Brig.-Gen. Charlton reading as follows :—

"Many thanks for your letter of October 9th, and it was, as you say, a great disappointment for me to have been put out of the Transcontinental event at such an early stage, more especially as I consider that I had the best machine and engine in the race.

"It is not quite correct to say that I had carburetter trouble. What happened, actually, was that owing either to bad luck or bad management some water got in the petrol, with the usual consequences of a forced landing in not very favourable country. *I attribute no blame whatever to the engine,* and hope, in fact, to have it in the air again before many days elapse."

We venture to hope that you may be able to publish this communication. (Signed) For Rolls-Royce, Limited.

C. JOHNSON (Managing Director).

(*Continued from page* 1846.)

SOME NEW MACHINES.

From down South I am told of a very, very big seaplane on the stocks, as well as the three-metre biplane and a similar span triplane with 35 motor, previously mentioned. Still, one waits for the Government competition spoken of in the spring for these tiny flying things. I am told that the regulations are constantly being modified, and one constructor assured me that there is no call for a thing that will fly with 35 h.p., but would be infinitely more comfortable and comforting with 50.

THE U.S. AERO CLUB'S TOUR.

Secretary Augustus Post and Mr. Franklin Hunt of the U.S. Ae. Club are passing through Milan and other Italian cities on behalf of their organisation and in connection with the "Round the World" contest. They are not flying, but are busy choosing routes and assuring the co-operation of the Italian sporting authorities for the coming event. Comm. Mercanti met them at Milan and showed them the various aeroplane works and other places of interest in the city of Milan, not forgetting "Ceva"—not yet dry, or likely to be, despite American forced thirsts.—T. S. H.

JAPAN.

Further details of the aerial postage service Tokyo-Osaka are now to hand. The service, a distance of about 290 miles, was to have started on Oct. 4th. Prizes were offered in connection with the flights for the quickest successful round trip.

Unfortunately the weather on Oct. 4th was not favourable, and the next day it was worse, so the first air mail, for which 40,000 postage stamps had been issued and bought, went to its destination by rail. It was intended to renew the project on about Oct. 20th.

SWEDEN.

AN AERIAL TOUR.

Lieut.-Col. G. L. P. Henderson (ex-R.A.F.) reached Stockholm on Nov. 29th, from Copenhagen, on his own Armstrong-Whitworth biplane. The flight from Norrköping to Stockholm was accomplished in 55 minutes. He encountered heavy snowstorms and fog on the way, and had to land several times.

UNITED STATES OF AMERICA.

THE TRANS-ATLANTIC HANDLEY PAGE.

The four-engine Handley Page aeroplane, which was entered for the Atlantic Flight, piloted by Major H. G. Brackley, flew recently from Parrsboro', Nova Scotia, to Greenport, with twelve passengers, covering a distance of 600 miles in eleven hours. Hundreds of Americans waited half the night in the rain for the machine to arrive, the landing ground being illuminated with flares and searchlights similar to those which formed a beacon of welcome for the British airship R.34.

The flight was accomplished in wind, rain, and darkness, which made the task of Admiral Mark Kerr, the navigator, a difficult one. Whilst over New England coast in darkness and torrential rain the many lighthouses along the seashore were utilised as guiding landmarks.

A SEAPLANE HEIGHT RECORD.

What is claimed to be a height record for a seaplane was made on Sept. 30th last at Port Washington, Long Island, U.S.A., by Mr. C. S. Bragg, accompanied by Mr. C. J. Younger on a Leoning sea-monoplane. In 49 minutes from leaving the water the machine reached an indicated height of 19,100 ft.

The machine used was practically identical with the Leoning land monoplane two-seater and was fitted with a 300-h.p. Hispano-Suiza engine.

AIRCRAFT IN PARLIAMENT

HOUSE OF COMMONS.

Nov. 24th.—The following oral answer was given:—

DOUGLAS-PENNANT INQUIRY.

Sir J. BUTCHER asked the Prime Minister whether he can state the approximate total cost to all parties concerned of the recent Committee of Inquiry of the House of Lords into the case of Miss Violet Douglas-Pennant; what portion of that cost will fall on the public purse; and whether a method can be devised whereby persons who are, in the course of such an Inquiry, made the subject of charges which turn out to be totally unfounded may be protected against the cost of defending themselves against such charges?

Mr. BONAR LAW: It is not possible at present to state the approximate total cost of the recent Inquiry, or what portion of it will fall on the public purse. As regards the last part of the question, my hon. and learned Friend's suggestion is receiving consideration.

Sir J. BUTCHER: Will my right hon. Friend consider the propriety of making provision that evidence given before these Committees of Inquiry shall not be regarded as privileged?

Mr. BONAR LAW: Nobody knows better than my hon. and learned Friend that that would be a very big departure to make

The following written answer was given:—

AIR MINISTRY (STORES).

Mr. HOHLER asked the Under-Secretary of State to the Air Ministry how many yards of cloth (various), how many pairs of boots, how much hosiery, flannel, leather, hardware, crockery, and glass, how many brushes and brooms, and what amounts of timber are held by this Department; and will he give particulars of the amounts disposed of and to whom from April 1st last to October 1st last?

Mr. CHURCHILL: The stocks of cloths, hosiery, leather, and timber held by the Air Ministry are given below. The preparation of a list of the stocks of hardware, crockery, glass, brushes and brooms would involve an amount of clerical labour which would not be justified in the present reduced state of staff.

Cloth in yards: Gabardine, blue, 147; overcoating, khaki, 31,401; serge, blue, 136,963; tartan, blue, 67,930; serge, khaki, Canadian, 13,266; serge, drab mixture, 102; whipcord, blue, 3,220; whipcord, khaki, 20,658.

Boots, ankle, pairs, 15,535.

Hosiery in pairs: Socks, worsted, 445,947; drawers, woollen, 109,846; vests, woollen, 33,341; Shirts, flannel, 232,390; flannel, nil.

Leather in pounds: Soles, bend, 1,014; bellies, struck, 24; shoulders, 9; tongues, 5½. Lifts, assorted and in pairs, 4,217; soles, half, 32,404; tip, fillings, 17,568.

Timber in standards: Aeronautical timber, 338; other timber, 157.

None of the above classes of materials were declared surplus between April 1st and October 1st.

The following quantities of cloth were declared surplus on October 22nd and 25th, and are being handed to the Disposal Board:—Cloth in yards: Gabardine, blue, 147; overcoating, khaki, 31,401; serge, blue, 100,000; tartan, blue; 50,000; serge, khaki, 13,266; serge, drab mixture, 102; whipcord, blue, 1,165; whipcord, khaki, 20,658; cord, khaki, 20,658.

* * *

Nov. 25th.—The following oral answer was given:—

CIVIL AVIATION.

Major GLYN asked the Secretary of State for War whether the Government contemplate assisting the industry engaged in civil aviation by any of the suggested methods contained in Section III of the Air Ministry's Synopsis of Progress of Work in the Department of Civil Aviation (Cmd. 418).

Captain GUEST (Joint Parliamentary Secretary to the Treasury): Indirect assistance by the provision of key aerodrome and shed accommodation, the collation and issue of information and the provision of communication is being afforded to civil aviation. The question whether any further action is necessary is under consideration.

* * *

Nov. 26th.—The following oral answer was given:—

ROYAL AIR FORCE (HAIR FOR MATTRESSES).

Mr. PARKER, replying for the Secretary of State for War to Mr. Macquisten, said that a request was made to the Disposal Board by the Air Ministry to reserve 90 tons of hair, and that the Ministry has been informed that the hair so reserved is at Neasden. To a considerable extent airmen have hitherto been sleeping on straw palliasses and on bed boards, and the hair referred to above has mainly been obtained for the manufacture of hair mattresses to remedy this state of affairs at the stations to be permanently retained by the Royal Air Force. It is not the intention of the Air Ministry to store hair in excess of immediate requirements.

Mr. MAQUISTEN: Is the hon. Gentleman not aware that there are thousands and thousands of beds, belonging to the Army, stored up and down the country? I could give him instances. For what purpose are they making new ones when these stores are enough?

Mr. PARKER: I do not know anything further about the matter.

* * *

The following written answer was given:—

ROYAL AIR FORCE.—AIRSHIP SERVICE.

Lieut.-Comdr. KENWORTHY asked the Under-Secretary of State for the Air Ministry how many large rigid airships are now in commission; how many large rigid airships are under construction; how many large airship sheds are in use; and how many have full staffs and crews in attendance for handling airships; and what is the estimated total cost next year of the Airship Service, rigid and non-rigid, for the Royal Navy?

Mr. CHURCHILL: The reply to the hon. and gallant Gentleman's first question is that there is one large rigid airship (R34) in commission for the Navy, and that two (R32 and R33) are being maintained temporarily, pending a decision as to the most advantageous method of disposing of them.

The reply to the second question is that the construction of R38 is proceeding under an arrangement for her sale, when completed, to the Government of the United States of America. A certain amount of work is being done on three other ships, pending the issue of negotiations for their use for commercial purposes.

The reply to the third question is that the large airship sheds in use are five in number, at Pulham, East Fortune, and Howden. It is intended to retain permanently for service purposes the airship station at Howden with two large sheds. The reply to the fourth question is that none of the air ship stations has full staffs and crews. The reply to the fifth question is that the Estimates for the Airship Service are included in the general Estimates for the Royal Air Force, and that these latter being still under consideration no figure can be given. Even when the Royal Air Force Estimates are passed, it is not intended to show separate Estimates for the airship side of the Air Force, because the personnel of the different branches will, to some extent, be interchangeable within the Service.

* * *

Nov. 27th.—The following oral answer was given:—

ROYAL AIR FORCE.—GOVERNMENT POLICY.

Maj.-Gen. SEELY (by private notice) asked the Prime Minister whether the Air Policy of the Government in respect to the Air Ministry is the same as it was on Nov. 14th, 1917, when the present Lord Privy Seal stated that the whole of the Air Service must be independent of either the Admiralty or the Army Council; why the Secretary of State for War is now President, both of the Army

Council and the Air Council, and whether the Air Council is now independent of or dependent on the President of the Army Council?

The PRIME MINISTER: I regret that my right hon. Friend did not see his way to put notice of this question down on the Paper. Nothing has arisen in the course of the last two days which was not in existence before, and, therefore, notice might have been given. I will, however, do my best to answer, as far as I can, in the short time at my disposal.

It has already been stated that there is no change whatever in the Air Policy of the Government, which remains the same as it was when my right hon. Friend accepted the position from which, to my regret, he has recently retired.

Maj.-Gen. SEELY: May I ask the Prime Minister how he can say that there is no change in the policy of the Government as announced by the Lord Privy Seal when he said that the Air Ministry must be independent of the Admiralty and the Army Council; further, will he give an opportunity to this House to express its opinion on a change of policy from a decision which was so strongly endorsed by his own colleagues?

The PRIME MINISTER: The Army Council has no control whatever over the Air Force—none. It is perfectly independent of the Army Council.

Lord H. CECIL: Not of the President of the Army Council.

The PRIME MINISTER: That is the Secretary of State for War, who holds both positions. That has been done many times in the history of this country, and it is thought desirable in this case. With regard to the latter part of my right hon. Friend's question, I have already said, in answer to my noble Friend, that if there is a general desire on the part of the House for a discussion of the subject, the Government will find time—(Hon. Members: "No, no!")—but I would point out that the pressure of business is very great, and we do not wish to allocate time unless there is a general desire on the part of hon. Members.

Lord H. CECIL: Will the Prime Minister consider whether a few hours or half a day would not be quite sufficient for this purpose; has not recent experience shown that there is often half a day at the disposal of the Government, if they cannot promise a whole day, and could we not have a friendly arrangement that half a day should be assigned, without any inconvenience to the Government, to give the Government an opportunity of explaining to the House the rather metaphysical obscurities which have arisen?

* * *

Dec. 1st.—The following written answer was given:—

THE R.A.F. IN RUSSIA.

Capt. GUEST, replying to Lt.-Col. Malone, said that 277 aeroplanes had been sent to the forces serving under General Denikin. There were at present 101 Royal Air Force officers and 300 airmen serving with these armies. These troops volunteered for this service, and were to be maintained up to March 31st, 1920. The actual date of their withdrawal had not yet been settled.

ON AIR POLICY.

The following letter written by Major-General J. B. Seely, C.B., D.S.O, appeared in the "Times" newspaper on November 26th—

Sir.—In your leading article of November 13th, headed "The Turning Point in Air Policy," you pointed out that a fundamental issue had been raised. I venture to ask space in your columns in order to define that issue

In his letter to you last week Lord Montagu reminded your readers of the manifold drawbacks which were found in the old system of a divided Air Service, with divided control. Impelled by these reasons, the Government, in November, 1917, introduced the Air Force Bill

The scheme was commended to Parliament and to the country by Ministers who then formed, and still form, part of Mr. Lloyd George's Government, and it is well to recall the reasons then given by those responsible Ministers.

Major Baird introduced the Bill in the House of Commons on November 12th, 1917, and explained, in detail, the objects of the Bill, namely, to create a separate Secretary of State for the Air, a separate Air Council, and a separate Air Service. With regard to the first point he said:—

"The head of the fighting Service will have to discharge various duties now discharged by the Secretary for War, and which cannot be performed under our Constitution except by a Secretary of State. I will give one example. I believe the channel of communication between the Sovereign and an officer who feels himself aggrieved or the officer who has the right of reply is only through a Secretary of State It would not be satisfactory if an officer of the Air Service felt aggrieved that he should have to apply to his Sovereign through the Secretary of State of another Department. Another reason is to give to the Air Force the same status as we give to the Army and Navy to recognise that the Air is an element in which it is as necessary to make provision for national defence and offence as it is for us to do on sea and land. These are the main reasons why it was thought wise to have a Secretary of State instead of a Minister of lesser rank."

The present Lord Chancellor, then Attorney-General, in supporting the Bill, said:—

"It is the spirit and object of this Bill that the Air Service shall be recognised as an entirely distinguishable Service, that those who are responsible for it shall form a new and important Department answerable to Parliament and responsible for the Service for which it so answers to Parliament, and with complete control unfettered by any other Service over all those who belong to it."

Mr. Bonar Law two days later stated definitely the Government's determination that

"the whole of the Air Services must be treated as one and transferred to the new Department and become a new Service independent of either the Admiralty or the Army Council."

In the House of Lords Lord Crawford, the late Privy Seal, introduced the Bill on November 21st, and emphasised the independence of an Air Service in the following words:—

"Your lordships should remember that it is impossible for our Army to conduct a campaign without the assistance of the Navy, and I do not suppose there has ever been a naval war in which we have been engaged without the Army giving its assistance; but it is quite conceivable that without the help either of the Army or of the Navy a whole campaign could be conducted by aircraft. For these reasons the Government has presented this Bill. It creates an Air Council, an Air Staff, and an Air Force. It makes a distinct Service, which, although closely and indeed intimately connected with the Navy and with the Army, will have its own ideals and its own personality. It will be governed and controlled in a manner specially devised to develop its great and incalculable resources."

And, finally, on the same day, Lord Curzon, then, as now, Leader of the Government in the House of Lords, stated the Government's intentions quite definitely, and, as always, with admirable precision. These were his words:—

"The noble and learned viscount, Lord Haldane, made another observation which was perfectly true. I will give in substance what he said. He told us that this is not only a war measure, but a post-war measure too. Nothing could be more true than that remark. Astonished as we all have been by the scale and magnitude of the development of air service in the war, it ought by no means to be supposed that that development will cease with the war. On the contrary, every one of us knows that there are futures which lie before the Air Service—into which I need not enter to-night—which will render it not only for years to come, but permanently, a necessary part of what I may call our Imperial organisation. This Air Ministry is not wanted for France, Flanders, Salonika, or the East only, but it is required as a part of the material and mechanical resources of the country."

The Bill was unanimously approved by both Houses and duly received the Royal Assent.

Following on this great reform, our air power increased to an astonishing degree on the military side. On the civil side, we obtained the lead over all other countries, a fact which they have been the first to acknowledge. As will be seen from the report of the American Aviation Mission, which was issued as a Parliamentary Paper last month, the Mission definitely recommends the concentration of military, naval, and civil air activities in the United States within the direction of a single Government agency created for the purpose, co-equal in importance with the departments of War, Navy, and Commerce. It is not uninteresting to observe from the same Parliamentary Paper that the United States Secretary for War does not accept the report on behalf of his Department.

In the face of all this, the Prime Minisetr endorses a plan by which the air is placed under the Secretary of State for War. In addition to the fact, to which reference will be made later, that this proceeding is contrary to the declarations of Ministers and to the decision of Parliament, it is in itself a fantastic arrangement. No man can possibly be a responsible Minister at the head of two wholly independent Services, any more than a man can be a captain of two ships or colonel of two battalions. One must be subordinate to the other, and the work of one or both must suffer. In this case, it is the air which suffers now and must suffer still more in the future from the inevitable lack of attention by its responsible head, who already has to fulfil one of the most exacting duties under the Crown. In view of these facts, the Prime Minister's statement, in reply to a question by Lord Hugh Cecil last Thursday, that "there has been no change whatever in the policy of the Government in regard to the Air Force" is inexplicable to the plain man, for it is clearly at variance with the facts. Indeed, to make such a statement is to trifle with the House of Commons and the country. The present system cannot possibly continue, and the Government must frankly adopt one of three alternatives:—

1. To abolish the Air Ministry and again divide up the Air Force between the Navy and the Army, and hand over the immense possibilities of civil aviation to some existing Government Department;
2. To create a Ministry of Defence to which the Ministers of Land, Sea, and Air should be responsible;
3. To free the air entirely from control by the head of another Department.

The first plan would be resisted to the utmost by all those who care for our future position in the air. The second would have the immense advantage of securing a proper co-ordination of our war efforts, but must take long to achieve. The third is to abide by the decision of Parliament and the declarations of Ministers. It is proper now to inquire and to press for an answer to the question whether those Ministers still adhere to their emphatic declarations of two years ago—that there should be a separate Secretary of State, presiding over a separate Air Council, directing a separate Air Service; that the need for a separate Secretary of State was inherent in the scheme, as pointed out by Major Baird; that the new arm of the air was established "for all time" in the words of the present Lord Chancellor, and in the words of the present Foreign Secretary, Lord Curzon; that the creation of the new organisation was not only a war measure, but a post-war measure, too, and "a permanent and necessary part of our Imperial organisation."

If the Prime Minister and his colleagues do not abide by the statements then made, Parliament and the country have a right to be informed what reasons they can give for the reversal of a policy which they then announced as being vital to the safety and well-being of our country and our Empire.

I am, Sir, your obedient servant,

JOHN BERNARD SEELY.

AN INTERESTING CHANGE.

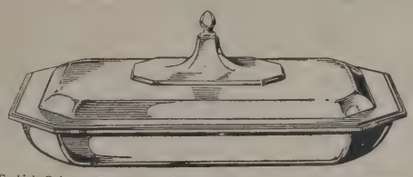
It is interesting to note what one time prominent people in the Aircraft Industry are doing now, and one is glad to hear that Mr. and Mrs. Latimer-Voight—formerly managing directors of the Integral Propeller Company, Ltd., and the Pegasus Aircraft Co., Ltd.—are doing well. They have established the City of London Service Co., Ltd., with offices at 43, Dover Street, W.1., where they are engaged in a large way of business.

They have also opened offices in New York, Brussels, Lisbon, Cologne, Athens, and Constantinople, and are actively engaged in importing and exporting articles, principally food stuffs. Later on, Mr. and Mrs. Latimer-Voight intend establishing branches in all important continental cities. Mr. and Mrs. Voight have as co-directors several men well known in commercial circles, and their prospects of building up a large business are exceedingly bright.

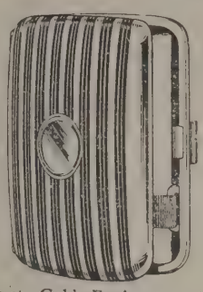
The City of London Service Company would be pleased to hear from firms in the engineering trade who wish to be represented in foreign parts. One of the directors is established in New York, and another is now proceeding to the Balkans. Mr. Voight will shortly be making an extended tour on the Continent.

THE PROCEEDS OF A THÉ DANSANT.

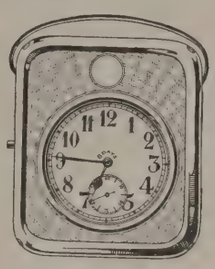
Lady (Milsom) Rees has handed over to the authorities of the Charing Cross Hospital a cheque for £300, being the proceeds of the Thé Dansant given at the London Flying Club, Hendon, on Saturday, November 22nd.



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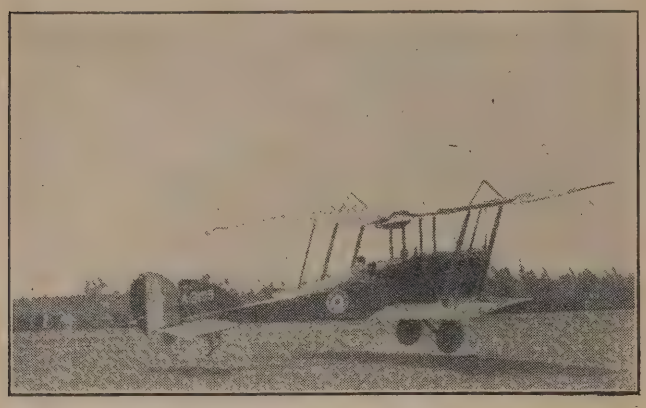
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A TRIP TO BANANA SIDING.

News from South Africa travels slowly. A copy of the "S.A. Pictorial," dated June 28th, has been received only recently. In that issue of the weekly paper, there is an account of a flight by Lieut. A. H. Gearing (late R.A.F.), which is written as a result of an interview with him by Mr. H. Goldstone.

Lieut. Gearing flew with a passenger in a B.E.2E. biplane from Johannesburg to Banana Siding, 115 miles by rail from Pietersburg. They left Johannesburg on May 20th at 9.30 a.m., and climbing to 3,000 ft., arrived over the Square at Pretoria at 10 a.m. Two pictures of the town from the air were taken from about 2,000 ft.



Just Off.—The start of the Flight.

The remaining 100 odd miles to Pietersburg was flown along the edge of huge slow moving clouds. They arrived over the landing ground near Pietersburg at 12 noon at an altitude of 6,000 ft. After spiralling down to 2,000 ft., a photograph of the landing-place was taken. There is a big lined cross showing the smooth ground on which to land. A landing was made at 12.10 p.m. amidst a great crowd, the whole town having turned out to witness their arrival.

On the following day an exhibition flight was given. People came from miles round to see the first aeroplane which had ever visited those parts.

They left for Banana Siding on the morning of May 22nd. Helped by a strong wind the cross-country journey was made in 40 minutes. Mr. Stamford, the Native Commissioner, met them on arrival. Before they touched the ground not a native was to be seen, but as soon as the machine came to a standstill, the place became alive with Moshlaba's people in all their war-paint.

The natives, who had all been amongst the trees and bushes, headed by their chief, then formed a huge square around the machine.

Lieut. Gearing was treated to the royal salute, "Bayete!" an honour seldom accorded to a white man. For the rest of the day they were fêted and feasted.

The following day was spent in watching the different schools of dancing rehearsing for the big dance. They saw the Circumcision Schools, which had never been visited before by white people.

On May 23rd an exhibition of flying was given. The Chief was invited to go up, but firmly refused.

Special trains from Pretoria and Pietersburg arrived on the following morning (Empire Day). Then the real dancing began. After days and days of rehearsing the different schools formed up in a double circle some thousands of yards in diameter. Day and night the tom-toms boomed reverberatingly. A most awe-inspiring sight. The dancers flung themselves into ecstasies of movement for nearly 48 hours. When they became exhausted others replaced them. Their dress was a waving mass of headdress, armlets, rings and bands of all descriptions. The arms and lower limbs only were visible. They had worn those costumes for three months previous to the day of the dance.

Before leaving Banana Siding Lieut. Gearing gave an exhibition of bomb-dropping. He demolished a small kopje in three shots. "King of the Air" was his native name after that. The Chief invited him to a hunt and provided a small army of beaters and attendants.



Lieut. Gearing and his pet squirrel which accompanied him on several flights, and has recently died.

After exchanging mutual good wishes, a return was made to Pietersburg on May 26th, where a stay was made and exhibition flights given during the Agricultural Show on June 4th and 5th.

The return trip to Johannesburg was made in a non-stop flight of 2 hr. 50 min. Not a single hitch marred the flying during the whole of the trip. Some 1,000 were flown over country never before traversed by air. No difficulty would have been found if a landing had had to be made in any part of the country covered. South Africa is a wonderful country for aviation.



PRETORIA.—Photographed from 1,000 ft., showing Market Square.

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THE 1920 MONACO MEETING.

The following further details of the seaplane competition which is to be held at Monaco next spring are now available.—

The contest is open to machines of all the Allied nationalities, but each machine is to be wholly the product of one nationality.

The pilot must be a citizen of an allied nation and must hold a pilot's certificate of a body affiliated to the Fédèration Aeronatique Internationale. He need not be of the same nationality as that of the machine he is to fly.

Machines must make the flights hereafter laid down, carrying a useful load of 400 kgms., in addition to crew, fuel, etc. Any machine carrying a complete wireless outfit independent of the main power plant will be allowed an abatement of 30 kgs. in the load carried—i.e., need carry only 370 kgms.

A start may be made on any day and at any time in the day which may be chosen by the competitor on or after 6 a.m., April 18th; provided that the whole test is completed by 6 p.m on May 2nd.

The first stage shall be Monaco-Corsica (alighting at Ajaccio or Bastia, at the competitor's choice)—Corsica-Bizerta. Distance, 750 kms.

The second stage shall be from Bizerta, round the Bizerta lighthouse, round the lighthouse at Sousse, and back to Bizerta. Distance, 500 kms.

The third stage is, Bizerta-Monaco direct. Distance, 750 kms.

The controls are open on each day from 6 a.m. to 6 p.m., and every complete stage must be made in one day between those hours.

The actual time taken on the last stage only will be taken —this stage being a speed test, and the speed on this stage will be used to discriminate between machines scoring equally on the other two stages for reliability and economy.

Each machine before starting on the trials is required to climb to 2,000 metres in not more than 45 minutes with its full load on board.

The prizes will be :—

1st prize	.....	100,000 francs
2nd prize	.....	30,000 francs
3rd prize	.....	12,000 francs
4th prize	.....	8,000 francs

During the course of the meeting there will be two other contests for seaplanes, each for 5,000 francs prize.

The first is an altitude test, and the second a speed contest. For the latter contest all entrants must qualify by climbing to 3,000 metres in less than one hour.

SPORTING FLYING AND THE ROYAL AERO CLUB.

The following letter has been received from a member of the Royal Aero Club who has long been intimately concerned with aviation. As a business man of proved ability his views are worthy of attention, not only by the Committee of the Royal Aero Club, but also by those of higher intelligence :—

Sir,—Apropos your leader in a recent issue, the contents of which reflect much thought for the powers that be at our clubs :—Perhaps they fed on those thoughts as well as Mr. Frisbee's good things the other day when "sitting" in one of the most comfortable rooms for lunch. I bowled in there myself, not having seen the notice on the door that the Committee was "sitting," because it was natural since they were also lunching, until my "faux pas" was, just in time, pointed out to me.

However, all that is by the way—my point is that if the R.Ae.C. are going to conduct the sporting shows of aviation, which I think they should do, now is the time for them seriously to consider the contests for next year. It would do Aviation a power of good if we had a series of really good sporting and international contests. In fact all contests should be international, because we might learn things from our friends abroad, and if constructors and designers can consider details after, say, Christmas, they can build machines and make plans in good time.

Claude Grahame-White, I understand, was in favour of the London-Paris, or London-Manchester race being not for speed but for general commercial reliability, and with this view I entirely agree, but, on the other hand, if we can have a series of races or competitions next year we can combine both speed and reliability.

I venture to suggest a programme, details as to prizes, distances, etc., to be worked out, of course :—

SPRING.—Two speed races, one for land machines and one for seaplanes, the power to be carried being specified. Two reliability trials over long distances in or round the coast of England

SUMMER.—Two speed races, one over land and one over sea for long distances.

Two reliability trials over land and sea for all countries, and the course embracing France.

AUTUMN.—One each speed race and reliability trial in or around England.

A series of good, sound competitions, such as I have suggested should find a great deal of support if efficiently worked by *our* Club. As you say, there are several people who *can* organise these shows, and the Royal Aero Club, being an impartial body, are the people to do it.

I would like to make one or two suggestions as to the programme set out :—

(1) Although the S.B.A.C. should certainly be consulted, *i.e.*, they should appoint one or two people to discuss details, the details and organisation should be settled by the Club Committee, or some other impartial body.

(2) The members of the Committee deciding the details should be specially selected for the work, and should not necessarily be Committee men appointed by the members of the club to run the club as a club.

(3) Speed races should be for machines carrying a fixed horse-power in one or more engines.

(4) Reliability trials should mean that machines must carry passengers and goods, or passengers only, or goods only, of a specified load. Also landings and stops should form a condition of some contests, and marks should be given for a separate trophy or prize for commercial utility as to arrangements for passengers and cargo.

(5) The amount of monetary prizes should not be the chief aim of competitors, but the contests should be made so attractive that firms winning them will get kudos and publicity helpful to them commercially.

The whole matter is one for long and careful consideration, but as I was hopeful at the beginning of this year that contests would be held, I am still convinced that the holding of contests will do more for Commercial Aviation than anything else.—OBSERVER.

BANKRUPTCY.

George Harold Humphrey, director of public companies, 23, Hangar Lane, Ealing, and late of 4, Ellison Place, Newcastle-on-Tyne.

The first meeting of creditors under a receiving order made against this debtor on his own petition was held on November 27th at the London Bankruptcy Court.

Mr. F. T. Garton, Official Receiver, who presided, said that a statement of the debtor's affairs had been lodged showing gross liabilities £8,500, unsecured £17,770, and contingent debts £58,500, which were not expected to rank for dividend. The assets were valued at £10,065. The debtor had stated that in August, 1914, he and another person formed the Rural Developments Co., Ltd., of which he was appointed managing director. The company was successful until November, 1915, but two years later went into voluntary liquidation. In June, 1914, a company in which he had been interested having given up certain works near Fawkham, Kent, he registered the Fairby Construction Co., Ltd., to work in conjunction with the Rural Developments Co. in building cottages on the Fairby Farm Estate. He was appointed managing director and acted in that capacity until 1917 when he became an ordinary director. In January, 1917, at the suggestion of a representative of Armstrong Whitworth and Co. who promised him contracts, he took the Victoria Works, Newcastle-on-Tyne, and formed John Dawson and Co. (Newcastle-on-Tyne), Ltd., to take over his interest and manufacture aircraft wings. The nominal capital of the company was £10,000. The debtor became managing director and took up the issued capital of £2,100, but later he transferred some of his shares to other persons who became directors. The company was financed by payments made on account of contracts with Armstrong Whitworth and Co. until December, 1917, but afterwards the company made contracts direct with the Government, who paid week by week. The company was very successful until the Armistice, when notice was given terminating the contracts, and differences arose between the company and the Government as to the amount due to the company. Pending the settlement of these differences the debtor endeavoured to sell his interest in another company (Allan Jones and Co. (1918), Ltd.); to George Clare and Co., Ltd., and out of the money so raised he paid the accounts and financed John Dawson and Co. On June 4th last the Government settled the claim for £30,000, which was less than the amount expected. The debtor then endeavoured to amalgamate the company with Allan Jones and Co. (1918), Ltd., a company of which he was governing director, which carried out contracts for aircraft parts. In anticipation he guaranteed debts of John Dawson and Co. to the amount of £15,000. Eventually the amalgamation fell through and John Dawson and Co. went into liquidation. The debtor was pressed on his guarantees and decided to file his petition. He attributed his insolvency to the failure of the company, of which he claimed to be a creditor for £10,000.

The creditors appointed Mr. Oliver Sunderland, accountant, as trustee of the debtor's estate. A committee of inspection was also nominated.

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EXTRACTS FROM "THE LONDON GAZETTE."

GREAT BRITAIN.

MILITARY.

WAR OFFICE, Nov. 24th.

REGULAR FORCES.—ESTABLISHMENTS.—R.F.C.—MIL. WING.—FLYING OFFICER (OBSERVER).—Capt. F. H. Prichard, R.G.A., May 10th, 1915.

TERRITORIAL FORCE.—YEOMANRY.—WELSH HORSE.—Lt. G. H. Hall, A.F.C., relinquishes his commn. in the T.F. on appt. to a permanent commn. in R.A.F., Aug. 1st, and retains the rank of Lt.

ROYAL GARRISON ARTILLERY.—Lt. J. H. Jephson, Suss. R.G.A., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains rank of Lt.

Lt. P. Warburton, E. Rid. R.G.A., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains rank of Lt.

Lt. R. S. Aitken, A.F.C., M.C., E. Anglian (Essex) R.G.A., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains rank of Lt.

WAR OFFICE, Nov. 25th.

REGULAR FORCES.—R.F.C.—MIL. WING.—GEN. LIST.—The name of temp. Sec. Lt. (on prob.) Lou Htin. Wah is as now described and not Htin Wah Lou as in "Gazette" of March 1st, 1918.

OVERSEA FORCES.—BR. W.I.R. SERVICE BNS.—Temp. Sec. Lt. A. T. Essex resigns his commn. on appt. to R.A.F., April 1st, 1918.

TERRITORIAL FORCE.—YEOMANRY.—DENDIGHSHIRE.—Capt. J. J. L. Williams, M.C., relinquishes his commn. in the Territorial Force on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains the rank of Capt.

WAR OFFICE, Nov. 26th.

The following decoration has been awarded by the President of the French Republic for distinguished services rendered during the course of the campaign. The King has given unrestricted permission to wear the decoration in question:—

CROIX DE GUERRE.—Lt. R. P. Harvey, M.C., 5th Lcrs., attd. R.A.F.

WAR OFFICE, Nov. 27th.

REGULAR FORCES.—FOOT GUARDS.—G. Gds.—Capt. R. Grey is restored to establ., Nov. 8th.

TERRITORIAL FORCE.—YEOMANRY.—Sussex.—Capt. A. J. L. Scott, C.B., M.C., A.F.C., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains rank of Capt.

Westmorland and Cumberland.—Capt. B. E. Sutton, O.B.E., D.S.O., M.C., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains the rank of Capt.

INFANTRY.—9th Bn., Middx. R.—Lt. O. Stewart, M.C., A.F.C., relinquishes his commn. in the T.F. on appt. to a permanent commn in the R.A.F., Aug. 1st, and retains the rank of Lt.

5th Bn. High. L.I.—Sec. Lt. D. H. Cameron to be Lt., and to remain secd., R.A.F., Sept. 27th.

WAR OFFICE, Nov. 28th.

REGULAR FORCES.—INFANTRY.—Wilts R.—Lt. E. W. Leggatt, M.C., attd. R.A.F., resigns his commn., Nov. 29th.

GENERAL RESERVE OF OFFICERS.—INFANTRY.—Wilts R.—E. W. Leggatt, M.C., late Lt., Wilts R., to be Lt., Nov. 29th, with seny. from July 23rd, 1916.

TERRITORIAL FORCES.—INFANTRY.—7th Bn., L'pool R.—Lt. R. S. Capon relinquishes his commn. in T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains rank of Lt.

4th Bn., Ches. R.—Capt. H. J. Edgar relinquishes his commn. in T.F. on appt. to a permanent commn. in R.A.F., Aug 1st, and retains rank of Capt.

AIR FORCE.

AIR MINISTRY, Nov. 21st.

R.A.F.—Flt. Lt. J. C. Brooke, D.S.C. (S.), is granted a permanent commn. in the rank stated, with effect from Aug. 1st.

The notification in "Gazette" of Aug. 1st appointing Capt. T. E. Longridge (S.O.) to a permanent commn. is cancelled.

FLYING BRANCH.—Sec. Lt. G. R. Fleming to be Lt., April 25th, 1918.

Pilot Officer R. Nicholson to be Flying Officer, Oct. 1st.

Sec. Lt. E. W. Richardson (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt. (O.), Aug. 8th, 1918.

P.F.O. W. J. Densham (late R.N.A.S.) is granted a temp. commn. as Sec. Lt. (A.), June 13th, 1918 (since killed).

Sqdn. Ldr. M. G. B. Copeman is placed on the h.p. list, Nov. 22nd.

The following relinquish their commns. on ceasing to be empld.:—Sec. Lt. W. W. Baker (Sec. Lt., Hamps. R.), Sept. 6th; Lt. A. W. Frazer (Lt., S. Wales Bord.), Oct. 9th (substituted for notification in "Gazette," Sept. 30th); Lt. D. C. Birch (Lt., Northn. R.), Oct. 21st; Capt. J. W. Havers (Lt., R.N.), Sec. Lt. C. A. Howe (Lt., R.A.), Nov. 1st; Capt. N. Grabowsky-Atherstone, A.F.C. (Lt., R.N.), Capt. G. S. Greenland (Lt., R.N.), Nov. 3rd; Lt.-Col. R. C. S. Hunt (Comdr., R.N.), Nov. 4th; Lt.-Col. H. M. Meyler (Capt., Bord. R.), Lt.-Col. H. L. Woodcock (Comdr. R.N.), Nov. 7th; Capt. G. F. M. Warner (Capt., R. Berks R.), Nov. 10th.

Transferred to the unempld. list:—Sec. Lt. S. Marshall, Sec. Lt. J. R. Watt, Feb. 1st; Capt. P. M. Woodland, March 18th; Capt. C. Gilmour, D.S.O., April 7th; Lt. W. C. Strickland, April 15th; Sec. Lt. E. Hughes, Lt. J. A. Van-Tilburg, April 18th; Sec. Lt. E. C. W. Dobbin, Sec. Lt. H. C. W. Dobbin, April 19th; Sec. Lt. W. Wilson, April 25th; Sec. Lt. H. V. Fellowes, May 1st; Lt. W. Gilchrist, May 15th; Lt. L. J. Williams, May 20th; Sec. Lt. W. W. Brown, May 21st (substituted for notification in "Gazette," May 30th); Sec. Lt. J. B. Wood, May 22nd; Lt. N. D. Willis, July 2nd; Sec. Lt. H. E. Wilson, July 12th; Lt. J. N. Bartlett, Aug. 1st; Sec. Lt. L. C. Willcocks, Aug. 16th; Lt. R. B. P. Wilson, Aug. 22nd; Capt. J. S. Williams, M.C., A.F.C., Aug. 29th; Sec. Lt. F. N. Brink, Sec. Lt. L. Futerman, Lt. W. A. Hunter, Sept. 9th; Lt. C. Jackson, Sept. 10th; Capt. G. J. King, Sept. 22nd; Sec. Lt. J. H. Bauer, Sec. Lt. B. L. Ford, Lt. G. W. Welch, Sec. Lt. H. B. Wilson, Sept. 26th; Lt. L. F. Homer, Sec. Lt. A. H. Hull, Sept. 27th; Sec. Lt. J. F. Fraser, Lt. F. R. L. Lazier, Sec. Lt. M. Watt, Sec. Lt. L. Wernher, Lt. T. F. Williams, M.C., Capt. H. A. Wilson, A.F.C., Sept. 28th; Sec. Lt. E. P. Eveleigh, Capt. W. R. Walker, Lt. R. W. Welsh, Sec. Lt. M. F. Whitaker, Sept. 29th; Sec. Lt. A. S. Webb, Oct. 6th; Lt. C. G. Ferrell, Lt. (Hon. Capt.) G. M. Smyth, Sec. Lt. E. J. Wing, Oct. 8th; Sec. Lt. J. R. Dean, Sec. Lt. J. F. R. Greef, Sec. Lt. G. Holland, Sec. Lt. H. V. Roberts-Taylor, Lt. R. Wannell, Lt. S. L. Whitehouse, Oct. 9th; Lt. F. H. Phillips, Oct. 10th; Sec. Lt. J. W. Paine, Lt. J. F. Rigdeway, D.C.M., Sec. Lt. W. Wilson, Oct. 11th; Lt. J. B. Hall, Oct. 12th; Sec. Lt. K. Preston, Oct. 13th; Sec. Lt. H. J. Armitage, Capt. K. N. Pearson, M.C., Oct. 15th; Sec. Lt. S. A. Brabner, D.F.C., Lt. T. Hayes, A.F.C., Lt. A. Wild, Oct. 16th; Lt. A. Copley, Lt. F. B. Wilson, D.F.C., Oct. 20th; Sec. Lt. R. M. Tate, Oct. 25th; Capt. F. H. Furness-Williams, Lt. L. W. Harrison, Sec. Lt. L. A. West, Oct. 26th; Lt. (Hon. Capt.) H. W. Beck, Lt. A. G. MacGowan, Sec. Lt. S. McKeever, Oct. 27th; Lt. C. A. Moffatt, Oct. 29th; Capt. E. M. Pizey, Oct. 30th; Sec. Lt. (Hon. Lt.) G. M. Angier, Sec. Lt. A. C. Maynard, Oct. 31st; Lt. N. H. Astley, Lt. (actg. Capt.) D. F. Lapraik, D.F.C., Nov. 1st; Lt. F. R. Kitton, Sec. Lt. A. R. Macdonald, Lt. E. W. Nicholson, Lt. F. W. Norris, Nov. 3rd; Lt. R. J. Bevington, Sec. Lt. E. K. Dashwood, Sec. Lt. J. H. Nickson, Nov. 4th; Lt. D. R. B. Bentley, Lt. J. E. Bonniksen, Lt. H. E. Clark, D.F.C., Lt. C. R. V. Cook, Lt. W. R. Cowles, Sec. Lt. M. C. Dudding, Lt. L. F. A. Green, Maj. G. A. N. Mitchell, A.F.C., Sec. Lt. R. N. Smith, Nov. 5th; Lt. J. H. Cooper, Nov. 6th; Lt. C. G. Constanduros, Lt. M. B. Lewis, Nov. 7th; Sec. Lt. W. Mellor, Sec. Lt. E. L. Mobbs, Nov. 8th; Sec. Lt. A. E. C. Largen, Nov. 9th.

Capt. A. C. Wilson (Lt., 12th Lcrs.) resigns his commn., Nov. 22nd.

Capt. L. H. Wilkins, D.S.C., relinquishes his commn. on account of ill-health contracted on active service and is granted rank of Maj., Nov. 13th.

Lt. R. Main relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain his rank, Sept. 29th.

The following Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—W. L. Watt (contracted on active service), March 10th (subtsituted for notification in "Gazette" of Jan. 31st); J. H. F. Baker, Oct. 11th (substituted for notification in "Gazette" of July 22nd).

Lt. A. I. Campbell-Robertson (Lt., Hsrs.) relinquishes his commn. on account of ill-health contracted on active service, Nov. 14th.

Sec. Lt. W. G. Greenaway, M.C., relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain his rank, Nov. 11th.

Lt. H. M. Edwards-Evans, M.C. (Lt., R. W. Fus.) resigns his commn., Nov. 22nd.

The notification in "Gazette" of Oct. 24th concerning Lt. R. Main is cancelled.

The notification in "Gazette" of Aug. 19th concerning Lt. E. T. Rogers is cancelled.

ADMINISTRATIVE BRANCH.—Flt. Lt. C. Mason to be Flt. Lt., from (S.O.), Nov. 3rd.

Flying Officer V. Stranders to be Flying Officer, from (S.O.), Sept. 8th (substituted for notification in "Gazette" of Oct. 21st, wherein this officer was shown under "Flying Branch").

Pilot Officer W. Ranger to be Flying Officer, Nov. 3rd.

The following relinquish their commns. on ceasing to be empld.:—Maj. R. Cockburn, O.B.E. (Maj., Suff. R.), Aug. 15th; Lt. R. A. Knott (W.O.R.N.), Oct. 31st; Capt. T. G. Southwood (Lt. R.N.), Nov. 6th; Lt. N. C. Buckton (Lt., E. Lancs. R.), Nov. 11th; Lt. H. Hammond, M.C. (Lt., Dorset R.), Nov. 11th.

Transferred to unempld. list:—Lt. L. N. Waddell, April 10th; Lt. W. H. Bragg, April 12th; Sec. Lt. W. W. Archer, April 30th; Lt. T. F. Davis, Aug. 6th; Sec. Lt. J. S. W. Gair, Lt. J. Gibson, Sept. 9th; Sec. Lt. O. W. Froom, Sept. 28th; Lt. (Hon. Capt.) A. Hay, Sec. Lt. A. Scott, Oct. 10th; Sec. Lt. S. A. Hipple, Oct. 13th; Lt. (actg. Maj.) G. B. Redgrave, Oct. 16th; Sec. Lt. W. A. Wright, Oct. 18th; Sec. Lt. S. J. Swayne, Oct. 27th; Sec. Lt. A. O. Fraser, Sec. Lt. (Hon. Capt.) H. E. Goddard, Lt. P. F. H. Greville-Smith, Lt. E. Hilary, Sec. Lt. (Hon. Lt.) G. E. L. Woodhouse, Nov. 1st; Lt. S. B. Hicks, Lt. J. N. Wilkinson, Nov. 4th; Lt. B. F. Bond, Capt. A. E. Bowen, Lt. H. Clarke, Capt. A. E. K. Davies-Bunton, Nov. 5th; Sec. Lt. W. J. Begley, Lt. C. T. L. Bowley, Lt. T. S. Cowperthawaite, Capt. H. C. Jones, Nov. 17th; Sec. Lt. (Hon. Lt.) J. Parker, Nov. 11th; Sec. Lt. M. W. Binns, Sec. Lt. S. O. Clark, Nov. 13th; Lt. E. E. H. Hamilton-Jackson, Nov. 14th.

TECHNICAL BRANCH.—Flying Officers to be Flying Officers, Grade (B), from (S.O.):—J. L. Denman, Oct. 18th; E. H. Eldridge, Nov. 7th (substituted for notification in "Gazette," Nov. 18th).

Sec. Lts. to be Lts.:—R. B. Dormer, April 2nd, 1918; W. H. Hoile, Jan. 12th (substituted for notification in "Gazette," July 29th).

Pilot Officers to be Flying Officers, without pay and allces. of that rank:—G. N. Coward, P. FitzPatrick, Oct. 1st.

Sec. Lt. J. C. Howard (Sec. Lt., Lab. Corps) relinquishes his commn. on ceasing to be empld., Jan. 21st.

Transferred to unempld. list:—Sec. Lt. (Hon. Lt.) T. Scott (D. of Corn. L.I., T.F.), Feb. 4th; Capt. M. J. Astle, July 1st; Lt. A. H. Meldrum, Lt. E. F. L. Taylor, Sec. Lt. E. Volk, Aug. 31st; Sec. Lt. W. B. Smellie, Sept. 7th; Capt. G. H. Major, Sept. 24th; Sec. Lt. W. P. Williams, Sept. 28th; Lt. A. L. Wilson, Sept. 29th; Capt. F. H. Taylor, Oct. 8th; Lt. W. S. Harms, Oct. 9th; Lt. F. W. Partington, Lt. A. W. O'Q. Shire, Oct. 10th; Sec. Lt. J. G. Wright, Oct. 11th; Lt. R. R. Richards, Lt. A. R. Thomson, Oct. 14th; Sec. Lt. F. Wombell, Oct. 15th; Sec. Lt. (Hon. Lt.) C. A. Assiter, Oct. 17th; Capt. F. V. W. Cooke, Oct. 18th; Lt. D. A. Parker, Oct. 22nd; Sec. Lt. E. Hague, Oct. 23rd; Lt. C. L. Taylor, Oct. 25th; Sec. Lt. H. Cantrill, Oct. 26th; Lt. C. N. Henderson, Oct. 28th; Lt. J. F. J. Perry, Oct. 30th; Sec. Lt. J. H. Hankins, Nov. 1st; Sec. Lt. G. Dunn, Nov. 2nd; Lt. E. W. Brooks, Sec. Lt. V. H. Lurie, Nov. 3rd; Sec. Lt. D. F. Bowering, Lt. G. F. Kite, Sec. Lt. L. G. Morris, Sec. Lt. J. Weeks, Nov. 4th; Capt. A. U. Hansford, M.B.E., Sec. Lt. C. C. Lindsay, Nov. 5th; Lt. H. V. Bevis, Sec. Lt. (Hon. Lt.) W. N. M. Dunkley, Sec. Lt. (Hon. Lt.) W. H. O. Jones, Sec. Lt. H. W. Mapley, Maj. S. P. V. Phillips, Nov. 6th; Lt. A. V. Baker, Nov. 7th; Lt. S. W. Davis, Nov. 8th; Maj. R. F. Le Bailly, Nov. 9th.

Sec. Lt. (Hon. Lt.) F. M. V. Earle relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, June 25th (substituted for notification in "Gazette," Feb. 28th).

Sec. Lt. W. G. Shipwright relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, Nov. 14th.

The initials of Lt. G. G. Bailey, D.F.C., are as now described, and not G. C. as stated in "Gazette," Oct. 24th.

The initials of Sec. Lt. E. F. Thorpe are as now described and not E. J. as stated in "Gazette" of Sept. 12th.

The notification in "Gazette" of Sept. 26th concerning A. Clayton is cancelled.

MEDICAL BRANCH.—Transferred to the unempld. list:—Capt. L. A. Walker, Sept. 20th; Capt. C. P. C. Sargent, Oct. 8th; Capt. E. D. Granger, Nov. 5th.

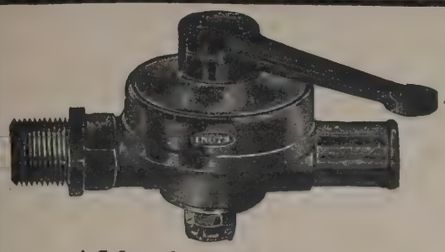
DENTAL BRANCH.—Capt. S. G. Smith is transferred to the unempld. list, Sept. 28th (substituted for notification in "Gazette" of Oct. 31st, wherein this officer was shown under Medical Branch).

WOMEN'S ROYAL AIR FORCE.—To be actg. Deputy Administrator:—Asst Administrator E. M. Trethowan, Nov. 1st.

Asst. Administrator (actg. Deputy Administrator) M. E. Hamilton reverts to substantive rank on ceasing to be empld. as Deputy Administrator, Aug. 20th.

The notification in "Gazette" of Oct. 28th regarding Asst. Administrator (actg. Deputy Administrator) V. M. Orrock is cancelled.

The following officers relinquish their appts. at their own request:—



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Asst. Administrators.—A. M. Cadogan, Oct. 16th; C. H. Peake (actg. Deputy Administrator), Oct. 22nd; Mrs. E. Stephens, Oct. 30th.

The following officers relinquish their appts. on completion of service :—Administrators.—E. Thomson, M.B.E., Oct. 14th; Mrs. L. B. Anderson, Oct. 15th; M. S. Frood (D.A.C.), M.B.E., Oct. 18th; C. F. I. Noel (actg. Asst. Commdt. II.), M.B.E., Oct. 20th; H. H. Montefiore, Mrs. G. B. Carruthers, Nov. 5th.

Deputy Administrators.—C. M. Scott-Holmes, Sept. 22nd; A. O'Donoghue, Sept. 23rd; Mrs. N. Richards, Oct. 9th; Mrs. E. V. F. Fordham, Oct. 14th; V. Armstrong, W. C. Woodstock, V. St. L. Winter, E. J. Scott, Oct. 15th; D. C. Muir (actg. Adm., D.A.C.), M.B.E., Oct. 16th; M. M. Gow, Oct. 17th; P. M. Ralston, Oct. 18th; Mrs. A. Marshall, Oct. 22nd; S. I. Foy, Oct. 24th; D. M. Fenn (actg. Adm., D.A.C.), J. McOlvin, Oct. 25th; Mrs. E. S. Stephens, Oct. 30th; M. Carnley, M.B.E., Oct. 31st; A. G. Moran, Nov. 4th; B. D. F. Couper, Nov. 5th; M. A. Thomson (actg. Asst. Comdt. II.), M.B.E., D. L. Reed, M. Allen, A. E. M. Brook-Taylor, Nov. 8th; P. E. Stapleton-Cotton (actg. Asst. Comdt. II.), Nov. 9th.

Asst. Administrators.—J. R. Anderson, Sept. 15th; K. Ross-Hume, Sept. 18th; E. A. A. Summerhayes, Sept. 22nd; M. V. Cox, Oct. 9th; H. M. Culley, D. E. Cooper, L. Shortridge, Oct. 10th; M. W. Hamilton (actg. Dep. Adm.), E. Gane, Oct 11th; E. M. M. Glenny, Oct. 13th; K. F. Butler, S. W. Lucas, J. G. Foy, Oct. 14th; M. M. Radcliffe, E. A. Mallabone, Oct. 15th; M. E. Johnston, Mrs. E. C. B. Herbert-Hall (actg. Dep. Adm.), G. L. Howard-White, M. Higginbottom (actg. Dep. Adm.), Oct. 16th; C. K. H. Hood, Oct. 17th; A. McNaughton, E. C. Brown, Oct. 22nd; S. Bussell, M. S. Stevenson, Oct. 24th; M. Harris, Oct. 25th; D. B. Fletcher, Oct. 28th; A. A. Anderson, Oct. 28th; Mrs. E. B. Mullen (actg. Dep. Adm.), L. C. Nutt, Oct. 30th; L. M. Wood, Oct. 31st; I. Huleatt (actg. Dep. Adm.), N. Williams, Nov. 1st; N. Lee (actg. Dep. Adm.), M. H. Mackay (actg. Adm.), Mrs. C. E. I. Edwards, Nov. 4th; Mrs. W. M. Coyle, Nov. 5th; A. Cobbold, K. Hargreaves (actg. Dep. Adm.), A. L. Cooper (actg. Dep. Adm.), Nov. 6th; V. B. Rhys-Davids, K. M. Wynn-Werninck (actg. Dep Adm.), Nov. 8th; P. Manning, Nov. 13th.

MEMORANDUM.—The following Proby. Flt. Officers are granted hon. commns. as Sec. Lts. :—K. N. Knapp, Jan. 21st; R. S. Hudson, Jan. 26th.

The following Cadets are granted hon. commns. as Sec. Lts. :—5/172526 N. Smith, April 25th; 117094 J. W. K. Jackson, July 1st; 9489 W. J. Williams, Aug. 23rd.

The following temp. Hon. Lts. relinquish their commns. on ceasing to be empld. :—R. W. Everett, M.B.E., July 31st; (Hon. Capt.) E. Fairbrother, Aug. 31st; W. R. H. Arnold, J. H. Ekins, F. W. Jecock, H. R. Knight, A. McIsaac, S. J. Norton, R. A. Pomphrett, A. R. Woods, Sept. 16th.

Sec. Lt. J. S. Larner is transferred to the unempld. list, Nov. 5th.

AIR MINISTRY, November 25th.

R.A.F.—Flight Lt. D. F. Massy (T.) is granted a permanent commn. in the rank stated, with effect from Aug. 1st.

The notification in "Gazette" of Oct. 28th apptg Lt. R. S. Sorley, D.S.C. (A.), to a permanent commn. is cancelled.

The notification in the "Gazette" of Oct 28th apptg. the following officers to permanent commns. is cancelled :—Sqdn. Ldr. M. E. A. Wright (A.P. (T.)); Flying Officer J. L. Findlay, M.C. (A.).

FLYING BRANCH.—Capt. G. M. Turnbull, A.F.C., is graded for purposes of pay and allowance as Maj. whilst empld. as Maj. (A.), from May 1st to June 30th.

Capt. W. Lambert is graded for purposes of pay and allowances as Maj. whilst empld. as Maj. (K.B.), from May 1st to July 9th.

Sec. Lts. to be Lts. :—H. R. Watterson, May 1st, 1918 (since demobilised); T. H. Langrishe, May 10th, 1918; W. M. Brewer, Jan. 7th; G. S. Smith, March 26th; R. C. Morris, June 6th (since demobilised).

The following relinquish their commns. on ceasing to be empld. :—Lt. T. N. Robinson (Lt., R. Art.), Feb. 11th; Lt. J. F. Gillam (Lt., R.F.A.), Aug. 20th; Sec. Lt. (Hon. Capt.) C. J. P. Copner (Capt., S. Wales Bord.), Nov. 1st; Capt. G. T. Porter (Capt., R.G.A.), Sec. Lt. (Hon. Lt.) H. A. Deakin (Lt., S. Staffs. R.), Nov. 3rd; Lt. F. L. Harding (Lt., Som. L.I.), Nov. 4th; Lt. S. D. Lavelle (Lt., Manch. R.), Nov. 7th; Maj. T. K. Elmsley (Lt.-Comdr., R.N.), Nov. 8th; Sec. Lt. (Hon Lt.) C. W. F. Busk (Lt., R.E.), Nov. 12th

Transferred to unempld. list :—Sec. Lt. H. Cunningham, Jan. 18th; Lt. H. W. Steele, Jan. 23rd; Sec. Lt. R. G. Consterdine, Sec. Lt. V. M. De Long, Sec. Lt. J. I. McNeil, Sec. Lt. D. X. Marks, Sec. Lt. G. L. Mitchell, Sec. Lt. S. H. Phillips, Sec. Lt. H. G. Pitt, Sec. Lt. R. W. Robertson, Sec. Lt. W. C. Soresby, Sec. Lt. G. W. Stewart, Sec. Lt. B. J. Svenceski, Sec. Lt. C. L. Tait, Feb. 1st; Sec. Lt. F. Roy, Feb. 10th; Sec. Lt. A. J. Cobham, Feb. 20th; Lt. James Gray, Feb. 28th; Sec. Lt. T. E. Seferth, March 6th; Lt. H. De C. McDiarmid, March 7th; Lt. R. Duncanson, March 11th; Lt. G. S. Rogers, March 16th; Capt. W. H. Davies, March 18th; Sec Lt. H. W. Orvis, Sec. Lt. W. Wallace, April 1st; Sec. Lt. C. S. Hill, April 8th (substituted for notification in "Gazette," May 2nd); Lt. E. C. J. McCracken, April 11th; Sec. Lt. R. S. Lipsett, April 17th; Capt R. E. Carroll, Lt. W. A. N. Davern, Lt. (actg. Capt.) W. A. Leslie, D.F.C., Sec. Lt. L. E. Stone, Lt. A. J. Wright, M.C., April 19th; Sec. Lt. (Hon. Lt.) W. Taylor, April 23rd; Lt. F. M. Nash, April 30th; Lt. H. S. Pelton, May 1st; Lt. F. G. Sutton, May 2nd; Capt A. T. N. Cowley, May 6th; Sec. Lt. H. F. Binstead, May 8th; Lt. F. G. Powell, May 12th; Lt. R. M. Smith, May 16th; Lt. G. R. Wight, May 22nd; Sec. Lt. P. Lavery, May 24th; Sec. Lt. E. D. Deck, May 31st; Lt. J. W. Chapman, June 12th; Sec. Lt. J. B. Wilson, June 14th; Lt. E. A. Coghlan, June 28th (substituted for notification in "Gazette," June 27th); Lt. R. S. McLatchy, June 30th; Sec. Lt. H. W. Sutton, July 1st; Sec. Lt. F. R. Frizzle, July 11th; Sec. Lt. N. Ferrell, Juy 12th; Sec. Lt. A. G. West, July 16th; Lt. J. E. Drummond, Aug. 14th; Sec Lt. W. Foster, Lt. W. E. G. Mann, D.F.C., Aug. 27th; Lt. H. S. Round, Sept. 2nd; Lt. A. L. Watkins, Sept. 4th; Lt. M. M. Sisely, Sept. 9th; Lt. C. N. L. Lomax, Sept. 10th; Lt. A. F. Fynmore, Sept. 11th; Capt. A. R. Henley, Sept. 15th; Lt. V. G. Record, Sept. 16th (substituted for notification in "Gazette," Sept. 23rd, wherein this officer's rank was shown as Sec. Lt.); Sec. Lt. J. D. Fullerton, Sept. 17th; Sec. Lt. H. C. Harris, Sept. 20th; Sec. Lt. W. Goldbeck, Sept. 26th; Lt. W. Lamont, Sec. Lt. J. Y. Moggridge, Sept. 27th; Lt. R. A. McLaren, Sept 28th; Capt. H. H. Gonyon, D.F.C., Lt. S. Grossberg, Sec. Lt. J. F. Lenahan, Sept. 29th; Sec. Lt. (Hon Lt.) G. S. Astley, Lt. W. B. Clark, Lt. F. K. Crosbe-Choppin, Lt. D. W. Geerdts, Sec. Lt. R. J. Green, Lt. A. Morgan, Oct. 9th; Sec. Lt. L. W. J. Lawson, Lt. E. W. R. Matthews, Lt. L. H. McRober, Oct. 10th; Sec. Lt. H. N. Bradbrooke, Sec. Lt. B. Buckle, Sec. Lt. J. E. Knaggs, Oct. 11th; Capt. S. J. Sibley, Oct. 12th; Sec. Lt. A. R. Murray, Oct. 13th; Lt. F. W. Michell, Oct. 14th; Lt. R. R. Harkus, M.C., Lt. W. J. Lindop, Oct. 16th; Sec. Lt. W. Dalgleish, Lt. E. T. Hunt, Oct. 17th; Sec. Lt. R. Brodie, Sec. Lt. W. G. Rich, Oct. 21st; Sec. Lt. A. E. Warnes, Oct. 22nd; Sec. Lt. G. V. Gordon, Lt. E. P. Mackay, Sec. Lt. D. G. Wassell, Oct. 23rd; Sec. Lt. D. R. Bradley, Sec. Lt. A. M. Broad, Oct. 25th; Sec. Lt. A. Brandrick, Sec. Lt. C. J. Lewin, Oct. 27th; Lt. R. Longman, Lt. J. Toulmin, Nov. 1st; Lt. R. I. Mansel-Edwards, Lt. W. W. Saunders, Capt. L. S. Weedon, Nov. 3rd; Sec. Lt. W. C. Brudenell, Nov. 4th; Lt. A. A. MacArthur, Lt. E. R. MacDonald, Capt. P. J. H. Sumner, Nov. 5th; Sec. Lt. A. H. Ashton, Sec. Lt. J. B. Elton, Lt. J. P. Gibbon, Lt. W. H. Jordan, Lt. S. C. Lockwood, Lt. P. T. A. Reveley, Capt. F. E. Rogers, Nov. 7th; Lt. A. L. J. Bulley, Sec. Lt. (Hon. Lt.) E. Lawson, Capt. G. F. Meager, A.F.C., Lt. J. P. Morkham, Sec. Lt. T. Railton, Sec. Lt. W. M. Tait, Capt. S. E. Taylor, D.S.C., Nov. 8th; Lt. W. F. Evans, D.C.M., Lt. H de V. Leigh, D.F.C., Nov. 9th; Capt. E. H. Bryant, Lt. B. Rennert, Sec. Lt. F. Towler, Nov. 10th; Lt. C. W. T. Colman, Sec. Lt. D. J. Lewis, Sec. Lt. J. P. O'Rourke, Nov. 11th; Sec. Lt. C. H. Abbey, Lt. G. L. Gould, Lt. A. E. Masters, Nov. 12th; Lt. G. C. Grundy, Nov. 13th; Lt. W. A. Reeves, Lt. G. L. Stedman, Nov. 16th; Sec. Lt. (actg. Lt.) W. W. Langdon, Nov. 20th; Sec. Lt. F. Buchanan, Nov. 24th; Lt. C. G. Imeretinsky reigns his commn., April 9th.

The following Lts. relinquish their commns. on account of ill-health caused by wounds, and are permitted to retain their rank :—F. H. Hall, June 25th (substituted for notification in "Gazette" of Dec. 20th, 1918); E. G. Weller, Nov. 15th; C. B. Bateman, J. J. Hickey, Nov. 19th.

The following Sec. Lts relinquish their commns. on account of ill-health contracted on active service, and are permitted to retain their rank :—E. L. Allanson, C. B. Smith, Nov. 18th; R. I. Jenkinson, Nov. 19th.

The surname of W. F. Grainger is as now described, and not "Granger," as stated in "Gazette" of Oct. 3rd.

The surname of Sec. Lt. J. E. Quin is as now described, and not "Quinn," as stated in "Gazette" of Dec. 10th, 1918.

The notification in "Gazette" of Feb. 28th concerning Lt. G. R. Smith (Can. M.G.C.) is cancelled.

The notification in "Gazette" of April 1st concerning Lt. T. N. Robinson is cancelled.

The notification in "Gazette" of Oct. 28th concerning Lt. R. Jones is cancelled.

The notification in "Gazette" of Nov. 4th concerning Lt. E. B. Jones is cancelled.

ADMINISTRATIVE BRANCH.—Flying Officer J. M. Dandy to be Flying Officer, from (A.), Sept. 1st (substituted for notification in "Gazette" of Oct. 3rd).

Lt. (Hon. Capt.) A. A. J. Poole to be Lt. (Hon. Capt.) ("A. and S."), Jan. 6th (substituted for notification in "Gazette" of April 4th)

Pilot Officer G. E. Pyne to be Flying Officer, Nov. 10th.

The following relinquish their commns. on ceasing to be empld. :—Sec. Lt. E. G. Masson (Lt., Military Accountant Officer), June 12th; Lt. (Hon. Capt.) E. V. Tarrant, D.C.M. (Ormr. and Capt., Hamp. R.), Sept. 25th; Sec. Lt. J. E. Slattery (Sec. Lt., Lan. Fus.), Nov. 8th; Sec. Lt. F. C. Peacock, M.C. (Lt., R.F.A.), Nov. 10th; Lt. A. S. Dark (Lt., half-pay list), Nov. 17th.

Transferred to the unempld. list :—Sec. Lt. H. C. Stevens, March 9th; Sec. Lt. W. W. McBain, March 12th; Sec. Lt. (Hon. Lt.) J. Fisher, April 20th; Sec. Lt. E. J. B. Carpenter, April 22nd; Lt. C. Wilderspin, May 20th; Lt. C. P. Browne, June 20th; Sec. Lt. B. J. C. Hamm, Sept. 12th; Sec. Lt. G. A. Richardson, Sept. 25th; Capt. N. Robertson, Sept. 28th; Sec. Lt. J. E. Forbes, Lt. J. M. MacLennan, D.F.C., Sept. 29th; Lt. B. H. Caswell, Oct. 9th; Sec. Lt. (Hon. Lt.) W. Miller, D.F.C., Lt. G. Rainbow, Oct. 10th; Sec. Lt. (Hon. Lt.) E. J. Leedle, Oct. 16th; Sec. Lt. E. P. Gates, Oct. 21st; Sec. Lt. H. B. Shaw, Oct. 23rd; Lt. (actg. Capt.) G. Norrington, Oct. 28th; Sec. Lt. T. J. McL. Davies, Oct. 29th; Capt. H. C. Waghorn, M.B.E., Oct. 31st; Lt. A. Bevan, Sec. Lt. A. B. Henderson, Lt. H. A. Zinn, Nov. 4th; Lt. C. E. B. Binns, Lt. G. W. Riley, Lt. (Hon. Capt.) B. T. Whittaker, Nov. 5th; Lt. G. Lyon, Sec. Lt. P. E. Perry, Nov. 6th; Sec. Lt. (Hon. Lt.) H. O. Newland, Sec. Lt. S. Tew, Capt. W. H. Wynnsford, Nov. 7th; Sec. Lt. E. Bushell, Nov. 8th; Sec. Lt. P. Brown, Nov. 10th; Lt. R. O. Phillips, Nov. 11th; Lt. L. Cable, Nov. 13th; Lt. (Hon. Capt.) J. F. Shaw, Nov. 24th; Lt. (actg. Capt.) E. Burney, M.C., Nov. 25th; Lt. W. R. Collins, Nov. 29th.

The following Capts relinquish their commns. on account of ill-health contracted on active service, and are permitted to retain their rank :—A. D. Dawson (Capt., R.F.A., T.F.), Nov. 13th; G. M. Gordon, Nov. 19th.

Lt. M. Tarbet relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain his rank, Nov. 18th.

The notification in "Gazette," Nov. 14th, concerning Capt. G. A. Revington (Lt., R.N.) is cancelled.

The notification in "Gazette," July 2nd, 1918, concerning Sec. Lt. (Hon. Lt.) J. W. Harling is cancelled.

The notification in "Gazette," Oct. 21st, concerning Lt. F. W. Dogherty is cancelled.

TECHNICAL BRANCH.—Sec. Lt. H. L. Bown is graded for purposes of pay and allowances as Capt. whilst empld. as Capt., Grade (A), May 1st.

Sec. Lts. to be Lts. :—M. A. Doyle, April 2nd, 1918 (substituted for notification in "Gazette," March 7th); H. T. H. Copeland, March 4th (substituted for notification in "Gazette," July 29th).

Sec. Lt. (Hon. Lt.) R. O. C. Bush to be Lt., April 2nd, 1918, without the pay and allowances of that rank prior to Aug. 20th, 1918.

Pilot Officer R. West to be Flying Officer, without the pay and allowances of that rank, Oct. 1st.

Sec. Lt. H. M. Lonsdale to be Sec. Lt. (Grade B), from (Ad.), July 13th, 1918.

Capt. H. W. M Paul, O.B.E., M.C. (Capt., Middx. R.), relinquishes his commn. on ceasing to be empld., Nov. 1st (substituted for notification in "Gazette," Nov. 7th).

Maj. S. Lambert is temporarily transferred to unempld. list, May 17th to June 3rd.

Transferred to the unempld. list :—Sec. Lt. (Hon. Lt.) T. W. Webb, April 14th; Sec. Lt. A. J. Maurer, April 19th; Sec. Lt. F. Walters, Sept. 20th; Lt. A. Patterson, Sept. 22nd; Sec. Lt. J. Dudley, Sept. 25th; Lt. (Hon. Maj.) W. R. Bernard, Sept. 26th; Capt. J. G. Hope, Sept. 30th; Lt. T. H. Maltby, Oct. 7th; Lt. F. H. Beer, Sec. Lt. P. Haselock, Oct. 9th; Sec. Lt. A. Milne, Oct. 13th; Capt. M. J. H. Molyneux, Lt. G. J. Williams, Oct. 14th; Lt. A. G. Edwards, Oct. 16th; Sec. Lt. B. H. W. Hatch, Oct. 17th; Lt. H. W. Taylor, Oct. 21st; Sec. Lt. L. F. Bennett, Oct. 22nd; Sec. Lt. W. Dentith, Oct. 27th; Sec. Lt. R. A. Bell, Oct. 29th; Lt. A. E. Burton, Oct. 30th; Capt. H. E. Maskew, Oct. 31st; Lt. R. N. Corah, Nov. 1st; Sec. Lt. (Hon Lt.) D. Armitage, Nov. 2nd; Lt. H. D. Patterson, Nov. 4th; Lt. A. Smellie, Nov. 6th; Lt. B. Benson, Lt. W. E. Gower, M.C., Lt. C. Mansfield, Lt. E. T. Mitchell, Nov. 7th; Sec. Lt. L. Willment, Nov. 8th; Lt. W. Batcheldor, Lt. E. Trist, M.B.E., Nov. 9th, 1899; Sec. Lt. (Hon. Lt.) T. Morrison, Lt. H. C. Reade, Nov. 10th; Capt. W. H. Miles, Lt. D. Rintoul, Nov. 12th; Sec. Lt. A. G. Edmonds, Nov. 13th; Lt. E. A. Moran-Smith, Nov. 14th; Lt. W. A. Allan, Lt. (actg. Capt.) P. Burke, Lt. J. Mytton, Nov. 15th; Lt. J. A. V. Welsh, Nov. 16th; Lt. K. Arnold, Nov. 18th.

The following Lts. relinquish their commns. on account of ill-health contracted on active service, and are permitted to retain their rank :—H. G. Cooper, Nov. 14th; J. R. Howenden, L. F. Jones, Nov. 19th.

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank :—J. S. Forde, Sept. 30th (substituted for notification in "Gazette," Sept. 30th); (Hon. Lt.) C. D.

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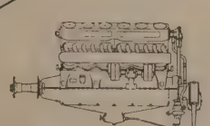






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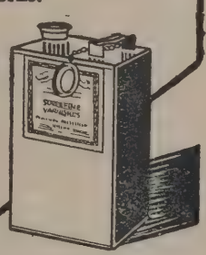
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Jackman (Lt., Norf. R.), contracted on active service, Nov. 11th; J. D. Graham, Nov. 19th.

The surname of Flt. Lt. (actg. Sqdn. Ldr.) J. Curtis Watson is as now described, and not "J. Curtis," as stated in "Gazette," Nov. 7th.

The initial of Sec. Lt. F. Woombell is as now described, and not "A.," as stated in "Gazette," May 27th.

The notification in "Gazette," May 27th, concerning Sec. Lt. H. L. Brown is cancelled.

MEDICAL BRANCH.—Transferred to the unempld. list:—Capt. M. J. Whelton, Nov. 5th; Capt. A. W. Weston, Nov. 9th.

DENTAL BRANCH.—Transferred to the unempld. list:—Lt. G. O. Roper, Feb. 19th (substituted for notification in "Gazette," July 1st, wherein this officer was shown under Medical Branch); Capt. F. R. McCambley, Oct. 25th; Lt. N. A. Goudge, Nov. 11th.

MEMORANDA.—109538 Sjt. P. A. McGuinness, D.F.M., is granted a temp. commn. as Sec Lt., May 3rd.

Sec. Lt. P. A. McGuinness, D.F.M., is transferred to the unempld. list, May 3rd.

The following Cadets are granted hon. commns. as Sec. Lts.:—180921 F. H. E. Pitcher, Jan. 6th; 181980 G. T. O'Callaghan, Jan. 13th; 544121 R. C. Hawkins, Jan. 22nd; 175740 E. W. Fryer, Feb. 27th; 224981 F. C. Mathias, March 4th; 93114 C. J. Watts-Read, March 20th; 318462 S. Bell, 631966 E. H. Welford, April 24th; 110978 A. McLaren, May 4th; 317937 J. W. R. Lamb, M.M., May 27th; 563410 G. H. Walton, Nov. 14th.

The following temp. Hon. Lts. relinquish their commns. on ceasing to be empld.:—H. J. Foxell, L. J. Hill, A. W. Holden, R. Ross, Sept. 16th; (Hon. Capt.) G. R. Groves, Oct 16th; D. M. Anderson, Nov. 8th.

The following relinquish their commns. on ceasing to be empld.:—Maj. C. S. McNabb (Capt., Cam'n Highrs.), Capt. T. E. Withington, A.F.C. (Capt., Oxf and Bucks. L.I.), Nov. 10th.

Transferred to the unempld. list:—Capt. H. Cumming, O.B.E., from (S.O.), Capt. A. W. Farrer, from (S.O.), Sec. Lt. A. O. M. Limb, from (S.O.), Nov. 1st; Capt. R. D. Seddon, from (S.O.), Nov. 7th; Lt. J. G. N. Clift, from (S.O.), Nov. 11th; Capt. E. E. W. Butt, from (S.O.), Nov. 15th.

The notification in the "Gazette" of July 25th concerning Prob. Flt. Officer W. E. W. Holder is cancelled.

The notification in the "Gazette" of Sept. 23rd concerning Sec. Lt. R. D. McEwen Hart is cancelled.

AIR MINISTRY, Nov. 28th.

R.A.F.—The following officers have been granted short service commns. in the ranks stated, with effect from Nov. 28th (except where otherwise stated). They will retain their seniority in the substantive rank last held by them prior to the grant of the short service commn., except that officers gazetted to the rank lower than their previous substantive rank will be placed at the head of the list of officers of the rank to which they are now gazetted, and will retain seniority relative to each other in accordance with their previous position on on the gradation list.

In the case of officers now gazetted Flying Officer from Pilot Officer, seniority will date from the date of the "Gazette."

Sqdn. Ldr.—J. W. Cordingley, O.B.E. (S.O.).

Flt. Lts.—G. M. Boumphrey (A.), H. H. Clarke (S.O.), E. S. Goodwin, A.F.C. (S.), R. A. W. de H. Haig (A.), L. V. Hirst (A.), A. J. Nightingale (A.), H. L. Nunn, D.S.C., D.F.C. (S.), R. L. Stephenson-Peach, M.B.E. (T.).

Flying Officers (from Flt. Lts.).—R. S. Sorley, D.S.C. (A.), with effect from Nov. 27th; W. V. Simons (S.).

Flying Officers.—D. P. Cameron, M.B.E. (A.), O. W. Clapp (T.), L. A. W. Deane (A.), J. L. Findlay, M.C. (A.), B. Holding (A.), W. R. Rogers (Ad.), E. A. Scales (Ad.).

Observer Officer.—J. S. C. Robinson.

Flying Officers (from Pilot Officers).—A. W. C. Bayes (A.), S. McKeever (A.), G. H. Winckworth (T.).

The notifications appearing in "Gazettes" of the dates indicated below, appointing the following officers to short service commns., are cancelled:—Flt. Lt. B. E. Catchpole, R.C., D.F.C. (A.), Flying Officer G. A. F. Gibson (T.), Sept. 16th; Flt. Lt. E. F. Turner (T.), Flying Officer R. Clowes (A.), Flying Officer A. G. Lamplugh (A.), Flying Officer W. E. Lowrie (T.), Flying Officer J. Owen, D.F.C., M.M. (A.), Flying Officer J. W. Pinder, D.F.C. (A.), Flying Officer A. R. Thompson (T.), Oct. 24th; Flt. Lt. B. D. Hobbs, D.S.O., D.S.C. (S.), Nov. 11th.

The surname of Flying Officer A. C. Townend, A.F.C. (A.), is as now described, not "Townsend" as stated in "Gazette" of Oct. 24th.

Sqdn. Ldr. J. C. M. Lowe (T.) is granted a short service commn. with effect from Aug. 1st, not Nov. 11th, as stated in "Gazette" of the latter date, amended by "Gazette" of Nov. 14th.

Flying Officer L. Hamilton, D.F.C. (A.) relinquishes his temp. and short service commn. at his own request, Nov. 28th.

PERMANENT COMMISSIONS.—The following promotions are made:—Group Capts.—Wing Comdr. R. Gordon, C.M.G., D.S.O., Wing Comdr. F. V. Holt, C.M.G., D.S.O., Nov. 1st.

Wing Comdrs.—Sqdn. Ldr. L. A. Strange, D.S.O., M.C., D.F.C., Sqdn. Ldr. A. S. Barratt, C.M.G., M.C., Sqdn. Ldr. J. R. W. Smyth-Pigott, D.S.O., Sqdn. Ldr. L. L. Greig, M.V.O., Sqdn. Ldr. A. H. W. E. Wynn, O.B.E., Sqdn. Ldr. G. P. Grenfell, D.S.O., Nov. 1st.

Sqdn. Ldrs.—Flt. Lt. A. A. B. Thomson, M.C., A.F.C. (Ad.), Flt. Lt. W. Thomas, M.C. (T.), Flt. Lt. W. G. P. Young, O.B.E. (S.O.), Flt. Lt R. G. Parry, D.S.O. (S.O.), Flt. Lt. H. L. Reilly, D.S.O. (A.), Flt. Lt. C. C. Darley (A.), Flt. Lt. G. G. H. Cooke, D.F.C., A.F.C. (Ashp.), Flt Lt. H.R.H. Prince Albert, K.G. (A.), Flt. Lt. G. S. M. Insall, V.C. (A.), Nov. 1st.

Flt. Lts.—Flying Officer F. Fowler, D.S.C., A.F.C. (S.), Flying Officer J. H. Norton, M.C., D.F.C. (A.), Flying Officer W. B. Farrington, D.S.O. (A.), Flying Officer J. F. Lawson, A.F.C. (A.), Flying Officer V. S. E. Lindop (A.), Flying Officer E. J. D. Townesend (S.O.), Flying Officer R. S. Capon (A.), Flying Officer W. H. Longton, D.F.C., A.F.C. (A.), Flying Officer J. S. Goggin (S.O.), Flying Officer F. M. F. West, V.C., M.C. (A.), Flying Officer R. Halley, D.F.C. (A.), Flying Officer C. J. Brockbank, M.B.E. (T.), Flying Officer A. W. Beauchamp-Proctor, V.C., D.S.O., M.C., D.F.C. (A.), Flying Officer A. Rowan (S.O.), Flying Officer W. H. Ellison (T.), Nov. 1st.

The following temp. appts. are made at the Air Ministry:—Staff Officer, 1st Class (Q.).—Maj. A. L. C. Neame, March 19th (substituted for notification in "Gazette," June 3rd).

Staff Officer, 3rd Class (P.).—Flt. Lt. W. D. Budgen, O.B.E., from (S.O., 2nd Class), Oct. 30th.

The following temp. appts. are made:—Col. (actg. Brig.-Gen.) H. C. T. Dowding, C.M.G., is graded for purposes of pay and allces. as Maj.-Gen. while officiating in comd. of an area, from April 5th to 25th.

Staff Officer, 1st Class.—Lt.-Col. (Hon. Col.) J. M. Home, C.B.E., is graded for purposes of pay and allces. as Brig.-Gen. (Admin.), from April 5th to 25th.

Staff Officer, 2nd Class (Air).—Sqdn. Ldr. C. E. Maude, Nov. 14th.

Staff Officer, 3rd Class (T.).—Graded for pay at Air Ministry rates.—Flt. Lt. T. W. Elmhirst, A.F.C., Aug. 1st.

FLYING BRANCH.—Wing Comdr. G. W. P. Dawes, D.S.O., to be Wing Comdr. (A.), from Group Comdr., Oct. 18th.

Sqdn. Ldr C. E. Maude to be Sqdn. Ldr (A. and S.), from (S.O.), Oct. 16th.

Flt. Lt. N. H. Bottomley, A.F.C., to be Flt. Lt. (A.), from (S.O.), Oct. 18th.

Capt. J. C. Croft is graded for purposes of pay and allces. as Capt. while empld. as Capt. (A.), from May 1st to Sept. 15th.

Lt. (actg. Capt.) J. C. Cantrill to be Lt. (actg. Capt.) (A.), from (Ad.), July 26th.

Sec. Lts. to be Lts.:—J. L. Fletcher, D. Martin, Nov. 30th, 1918; C. S. Cope, June 13th.

Pilot Officer C. F. Kearns to be Flying Officer, Oct. 1st.

The following relinquish their temp. R.A.F. commns. on return to Army duty:—Pilot Officer E. M. Matthew (Lt., R.G.A.), Oct. 13th; Flying Officer C. R. H. Firth (Lt., R.G.A.), Oct. 22nd; Flying Officer L. H. Forrest (Lt., Indian Army), Oct. 23rd; Flying Officer A. G. Grant (Lt., Highd. L.I.), Flt. Lt. L. H. T. Sloan (Capt. Cameron Highrs.), Nov. 7th; Flying Officer L. M. S. Essell (Lt., E. Kent R.), Nov. 8th; Flying Officer W. G. B. McKechnie (Lt., R. Scots Fus.), Nov. 11th.

Sqdn. Ldr. the Hon. R. Coke, A.F.C. (Lt.-Comdr., R.N.), relinquishes his temp. R.A.F. commn. on return to Naval duties, Nov. 8th.

Sec. Lt. E. K. Dashwood relinquishes his commn. on ceasing to be empld., Nov. 4th.

Transferred to unempld. list:—Lt. J. E. L. Skelton, Jan. 31st; Lt. H. R. Watterson (R.G.A.), Feb. 10th (substituted for notification in the "Gazette" of April 4th, wherein this officer's rank was shown as "Sec. Lt."); Sec. Lt. J. M. Gray, Feb. 13th; Sec. Lt. R. H. St. Amory, March 8th; Lt. F. C. Dixon (Manchester R.), March 22nd; Capt. F. S. McGill, May 1st; Capt. A. C. Jowett, June 30th; Sec. Lt. A. E. L. Harter, Lt. F. L. Watson, July 12th; Sec. Lt. B. H. Wooler, July 29th; Lt. C. L. Lindberg, Aug. 1st; Lt. A. T. Drinkwater, D.F.C., Aug. 15th; Sec. Lt. W. L. Lidster, Sec. Lt. F. C. Young, Aug. 29th; Capt. G. J. Harter, D.F.C., Lt. J. W. Milner, Sept. 10th; Sec. Lt. J. D. Fullerton, Sept. 17th; Lt. C. E. Lovick, Sec. Lt. R. S. Wood, Sept. 26th; Sec. Lt. W. Evans, Lt. E. D. Gordon, Lt. T. J. J. Griffiths, Lt. E. C. Grimes, Sec. Lt. S. L. Haley, Sec. Lt. M. F. Hall, Sec. Lt. J. C. Hamilton, Lt. D. A. Harding, A.F.C., Sec. Lt. W. A. G. Hawker, Sec. Lt. B. H. Windsor, Sept. 28th; Sec. Lt. G. C. Garner, Sec. Lt. W. R. Godard, Sec. Lt. E. T. Hamilton, Lt. A. A. Harcourt-Vernon, Lt. H. A. Yates, Sept. 29th; Sec. Lt. C. J. Fleming, Lt. H. Goodwin, Oct. 6th; Sec. Lt. H. F. Harper, Maj. S. S. Halse, Oct. 10th; Sec. Lt. J. B. Geyer, Oct. 11th; Lt. T. Gilbert, A.F.C., Oct. 15th; Sec. Lt. A. Roberts, Oct. 23rd; Capt. C. Hanson-Abbott, Oct. 31st; Sec. Lt. H. G. Johnston, Sec. Lt. S. A. Simpson, Nov. 2nd; Lt. A. P. Taylor, Nov. 4th; Sec. Lt. A. B. Fricker, Sec. Lt. C. A. Hall, Lt. R. C. Henderson, Sec. Lt. E. Simpson, Lt. A. J. Taylor, Lt. H. W. G. Trotman, Lt. J. C. Walker, Nov. 5th; Capt. E. G. E. Donaldson, Lt. A. F. Harris, Sec. Lt. G. Hill, Lt. W. H. Howes, Sec. Lt. S. H. Potter, Sec. Lt. (Hon. Lt.) J. E. Radley, Nov. 7th; Lt. J. P. Gibbon, Sec. Lt. (Hon. Lt.) A. E. Tweed, Nov. 8th; Sec. Lt. (Hon. Lt.) R. H. W. Davidson, Nov. 9th; Sec. Lt. M. E. Brown, Capt. H. Thrower, Nov. 10th; Sec. Lt. (Hon. Lt.) W. V. Hyde, Sec. Lt. G. F. Poole, Nov. 11th; Sec. Lt. H. W. Brierley, Lt. J. E. Doyle, D.F.C., Lt. A. G. Lamplugh, Lt. R. J. Nixon, Lt. F. H. Pratchett, Lt. B. Thurston, Nov. 12th; Sec. Lt. G. W. Gant, Sec. Lt. H. Grellier, Sec. Lt. C. B. Hancock, Lt. W. C. Pruden, Sec. Lt. A. G. Renecle, Sec. Lt. G. M. Trundle, Sec. Lt. H. Williams, Lt. R. S. Winpenny, Nov. 13th; Lt. T. H. Ames, Lt. R. Clowes, Lt. J. G. Coombe, Lt. R. M. Dixon, A.F.C., Lt. H. O. Eichholz, Lt. H. G. Eldon, Sec. Lt. W. J. G. Godden, Sec. Lt. E. G. Holloway, Lt. H. A. Le Feuvre, Lt. J. S. Rough, Sec. Lt. A. H. Taylor, M.B.E., Lt. C. E. Wilmot, A.F.C., Nov. 14th; Capt. B. Crossley-Meates, Sec. Lt. R. E. H. Gould, Nov. 15th; Sec. Lt. M. Tait, Nov. 16th; Sec. Lt. G. F. Sharman, Nov. 17th; Sec. Lt. S. R. Ham, Lt. M. Helliwell, Sec. Lt. J. W. Ravenscroft, Nov. 18th; Lt. H. Haycock, M.C., Lt. J. Howard-Brown, Nov. 19th; Lt. C. F. Fyfe, Lt. R. R. Greenlaw, Lt. J. N. S. Stott, Nov. 20th; Lt. C. F. Cotton, Nov. 21st; Sec. Lt. H. A. Fourte, Nov. 22nd.

Lt. L. Hamilton, D.F.C., is retransferred to unempld. list, Nov. 28th.

Capt. E. W. Leggatt, M.C. (Lt., Wilts R.), resigns his commn., and is permitted to retain his rank, Nov. 29th.

The following Lts. relinquish their commns. on account of ill-health contracted on active service, and are permitted to retain their rank:—H. Booth, Nov. 20th; D. Barnett, C. K. Mills, Nov. 21st.

Lt. A. Kiteley (Lt., R.A.) relinquishes his commn. on account of ill-health caused by wounds, Nov. 15th.

Lt. H. T. J. Hynes (Lt., R.G.A.) resigns his commn., Nov. 29th.

The following Sec. Lts. relinquish their commns. on account of ill-health caused by wounds, and are permitted to retain their rank:—R. A. Clarke, Oct. 14th; G. H. Carr, Nov. 15th; J. Turnbull, Nov. 20th.

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—E. O. Korner, Nov. 20th; W. H. Cox, Nov. 21st; R. Lazzari (contracted on active service), Nov. 22nd.

Sec. Lt. K. B. Terry resigns his commn., Nov. 29th.

Sec. Lt. W. A. Grant is antedated in his appt. as Sec. Lt. (A. and S.) to June 28th, 1918.

The surname of Lt. R. S. Buller is as now described, and not "R. S. Butler" as stated in "Gazette" of Oct. 24th.

The notification in "Gazette" of Aug. 29th concerning Sec. Lt. W. Emery is cancelled (notification in July 4th "Gazette" to stand).

The notification in "Gazette" of Sept. 2nd concerning Sec. Lt. C. F. Williams is cancelled.

The notification in "Gazette" of Oct. 3rd concerning Lt. W. R. Eastman is cancelled (notification in Aug. 5th "Gazette" to stand).

The notification in "Gazette" of Nov. 11th concerning Sec. Lt. J. F. M. Phillips is cancelled.

The notification in "Gazette" of Nov. 21st concerning Sec. Lt. E. K. Dashwood is cancelled.

ADMINISTRATIVE BRANCH:—Maj. (actg. Lt.-Col.) R. J. F. Barton, O.B.E., relinquishes the actg. rank of Lt.-Col. on ceasing to be empld. as Lt.-Col., from (S.O.), March 3rd (substituted for notification in "Gazette" of Nov. 7th).

Flt. Lt. G. T. Tait to be Flt. Lt., from (S.O.), Aug. 8th.

Flt. Lt. A. H. Strading to be Flt. Lt., from (S.O.), Oct. 20th.

The following Lts. are graded for purposes of pay and allces. as Capts., whilst empld. as Capts.:—A. Webb, May 1st to July 25th; (Hon. Capt.) G. H. Hill, June 28th to Sept. 26th.

Flying Officer (actg. Flt. Lt.) J. C. Cantrill relinquishes the actg. rank of Flt. Lt. on ceasing to be empld. as Flt. Lt., from (A.), Aug. 29th.

Pilot Officer F. W. Sinclair to be Flying Officer, Aug. 21st.

J. M. Andrews is granted a temp. commn. as Sec. Lt., Oct. 25th, 1918.

The following relinquish their temp. R.A.F. commns. on return to Army duty:—Flying Officer E. King (Lt., R. Ir. R.), Oct. 6th; Flying Officer (Hon. Flt. Lt.) A. E. Miller, M.C. (Capt., W. Rid. R.), Nov. 13th.

Transferred to the unempld. list:—Sec. Lt. A. C. Marquis Douro, March 6th; Sec. Lt. A. A. Dutch, April 1st; Sec. Lt. W. P. Griffiths, Sept. 28th; Lt. D. D. Carcary, Oct. 10th (substituted for notification in "Gazette" of Nov. 7th, wherein he was shown as Sec. Lt.); Lt.-

Col. E. C. Mulgrue, Nov. 3rd; Capt. R. C. Ward, Lt. C. T. Wilson, Nov. 5th; Capt. R. A. Pierpoint, Nov. 6th; Sec. Lt. G. W. Colebourne, Nov. 8th; Lt. H. Higgins, Nov. 10th; Lt. G. T. W. Burkett, M.C., Lt. L. J. S. Dowland, Nov. 11th; Sec Lt. O. B. Paton, Lt. (Hon. Capt.) D. R. Thomas, Nov. 12th; Capt. L. P. Ferris-Scott, Sec. Lt. T. E. Mahoney, Nov. 13th; Sec. Lt. C. E. Beeson, Lt. E. W. Bourne, Nov. 14th; Sec. Lt. (actg. Capt.) J. H. Slingsby, Nov. 16th; Lt. S. J. House, Nov. 18th.

The following relinquish their commns. on account of ill-health, and are permitted to retain their rank :—Lt. J. Woolfenden (S. Lancs R.), caused by wounds, Nov. 17th; Sec. Lt. C. W. Bowman, contracted on active service, Nov. 19th.

The notification in "Gazette" of Oct. 24th concerning Sec. Lt. A. H. Black is cancelled.

The notification in "Gazette" of Sept. 26th concerning Flying Officer J. C. Cantrill is cancelled.

The notification in "Gazette" of Nov. 18th concerning Sec. Lt. C. O. D. Kidd is cancelled.

TECHNICAL BRANCH.—Flt. Lt. (actg. Sqdn. Ldr.) J. C. Watson relinquishes the actg. rank of Sqdn. Ldr. on ceasing to be empld. as Sqdn. Ldr., Grade (B.), Oct. 22nd (substituted for notification in "Gazette" of Nov. 7th).

Lt. L. F. Peaty is graded for purposes of pay and allces. as Capt. whilst empld. as Capt., Grade (A.), from May 1st to July 25th.

Lt. J. W. Gardner to be Lt., Grade (A.), from (Ad.), and is graded for purposes of pay and allces. as Capt. whilst empld. as Capt., Grade (A.), May 20th.

Lt. S. D. Carpenter to be Lt., Grade (B.), from (A.), Nov. 18th, 1918 (substituted for notification in "Gazette" of Dec. 24th, 1918).

Flying Officer J. W. Gardner relinquishes the grading for pay and allces. as Flt. Lt. on ceasing to be empld. as Flt. Lt., Grade (A.), Oct. 11th.

Sec. Lts. to be Lts. :—J. K. Shrimpton, Oct. 13th, 1918, without the pay and allces. of that rank prior to Dec. 1st, 1918 (substituted for notification in "Gazette" of April 11th and May 23rd); J. B. Donald, Feb. 24th; F. Denham, March 13th (substituted for notification in "Gazette" of Sept. 19th); E. R. Beckwith, April 2nd, 1918, without the pay and allces. of that rank prior to March 15th; W. J. Maley, June 22nd.

Pilot Officers to be Flying Officers :—F. A. Cherry, J. Turner, W. Wheatley, Oct. 1st.

Pilot Officers to be Flying Officers, without the pay and allces. of that rank :—F. H. Cashmore, S. A. Conway, C. Dollery, T. F. Emms, D. Y. Mattinson, Oct. 1st.

Capt. T. Goulbourn relinquishes his commn. on ceasing to be empld., Nov. 6th.

Transferred to unempld. list :—Sec. Lt. (Hon. Lt.) S. J. Elliott, Jan. 18th; Sec. Lt. C. D. Wright, Sept. 29th; Sec. Lt. (Hon. Lt.) P. Giblin, Oct. 9th; Lt. A. N. Greg, Oct. 11th; Sec. Lt. G. Mitchell Oct. 15th; Capt. P. E. Gwyer, M.B.E., Sec. Lt. G. G. Hargrave, Oct. 17th; Lt. C. J. Miln, Oct. 28th (substituted for notification in "Gazette," Oct. 24th); Sec. Lt. (Hon. Lt.) E. Y. Fitz-Gerald, Maj. A. E. Oxley, Lt. (Hon. Capt.) L. V. Rothschild, Sec. Lt. M. N. Staight, Maj. C. Suckling, Nov. 2nd; Sec. Lt. (Hon. Lt.) T. J. Fazackerley, Lt. D. N. Keith, Nov. 3rd; Sec. Lt. H. E. Wiltshire, Nov. 4th; Sec. Lt. W. J. Cole, Capt. M. Hodge, Nov. 6th; Lt. W. R. Tuddenham, Nov. 7th; Capt. R. P. Cannon, Sec. Lt. (Hon. Lt.) D. R. J. O'Connor, Lt. F. A. Swoffer, M.B.E., Nov. 8th; Lt. G. J. H. Stein, Sec. Lt. P. G. White, Nov. 9th; Sec. Lt. D. J. Beaumont, Sec. Lt. W. O'Donoghue, Nov. 11th; Sec. Lt. T. G. Boyland, Sec. Lt. (Hon. Lt.) B. N. Goudge, Sec. Lt. (Hon. Lt.) W. V. Gray, Capt. W. E. Tinson, Nov. 12th; Sec. Lt. R. L. H. Hulme, Sec. Lt. C. H. Ivatts, Lt. W. S. Smart, Sec. Lt. G. Wade, Nov. 13th; Lt. H. Darnell, Lt. J. Wheatland-Clinch, Nov. 15th; Sec. Lt. (Hon. Lt.) S. Blore, Lt. D. H. Clement, Nov. 20th; Maj. A. Cleghorn, Nov. 21st; Capt. W. T. Morris, Nov. 22nd.

The notification in "Gazette" of Sept. 23rd concerning Pilot Officer A Robinson is cancelled.

The notifications in the "Gazettes" of Aug. 5th, Sept. 16th, and Oct. 24th concerning Flying Officer J. W. Gardner are cancelled.

The notification in the "Gazette" of July 15th concerning Lt. C. H. Knight is cancelled.

MEDICAL BRANCH.—Capt. (Bt. Maj.) F. C. Cowtan, R.A.M.C., is granted a temp. commn. as Sqdn. Ldr. on seconding to the R.A.F., Sept. 1st.

Flying Officers to be Flt. Lts. :—S. E. Duff, Aug. 27th; A. Parker, Oct. 5th; T. D. J. A. Fuller, Oct. 17th; E. T. McElligott, Nov. 4th; D. C. Farquharson, Nov. 14th; J. T. T. Forbes, Nov. 15th; J. W. Healy, Nov. 18th; M. J. Smyth, Nov. 20th.

Capt C. T. Costello relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Nov. 21st.

DENTAL BRANCH.—Flying Officers to be Flt. Lts. :—N. A. Goudge, Oct. 8th; W Inman, Oct. 25th; L. S. Kettlewell, Oct. 31st; W. J. Singleton, J. Smith, Nov. 11th; J. Jones, J. Wren, Nov. 15th.

CHAPLAINS BRANCH.—Rev. P. R. Butler is transferred to the unempld. list, Nov. 7th.

MEMORANDA.—The following Overseas Cadets are granted temp. commns. as Sec. Lts., with effect from Feb. 15th, and relinquish such commns., with permission to retain the rank, from the day following termination of the standardised voyage in the case of those claiming immediate repatriation, and from the day following demobilisation in England in all other caess :—T4/239315 L. Harris, 41349 H. S. Hurn.

The following Cadets are granted hon. commns. as Sec. Lts. :—179194 M. A. Fogarty, Jan. 7th; 9383 E. W. Ayling, April 6th; 280522 H. C. Scott, May 3rd; 241044 W. R. Marriott, June 1st; 56130 L. K. Forbes, July 8th.

Capt. T. E. Longridge, O.B.E. (Capt., R.A.S.C.) relinquishes his temp. R.A.F. commn. on return to Army duty, Nov. 6th.

The following temp. Hon. Lts. relinquish their commns. on ceasing to be empld. :—F. Dawson, R. G. Underwood, Sept. 16th.

Transferred to the unempld. list :—Lt. F. E. Hobley, from (S.O.), Capt. C. Rayner, from (S.O.), Nov. 1st; Capt. C. S. Nunn, from (S.O.), Nov. 10th; Capt. (actg. Maj.) D. C. James, O.B.E., from (S.O.), Nov. 20th.

Hon. Sec. Lt. F. Smith relinquishes his hon. commn., May 1st.

Capt. G. H. A. Hawkins (Capt., Manch. R., T.F.) relinquishes his commn. on account of ill-health caused by wounds, and is granted the rank of Maj., Nov. 17th.

PERSONAL NOTICES.

NAVAL.

ENGAGEMENT.

SMYTH-PIGOTT—FEILDING.—The wedding of Lieut.-Colonel Ruscombe Smyth-Pigott, D.S.O., R.A.F. (late R.N.A.S.), and Lady Clare Feilding will take place at Newnham Paddox, Lutterworth, on Tuesday, Dec. 30th, at 10.30.

MILITARY.

DEATHS.

KNIGHT.—Frederick Ayshford Knight—or Teddy, as he was usually known—who was recently killed while flying at Cambridge, was the eldest son of Major Eric Knight, M.P., and Mrs. Knight, of Wolverley House, Kidderminster.

A correspondent writes :—

He was educated at St. David's, Reigate, and Eton. He left Eton at the age of seventeen to join the British Army, but being too young he went across to France and succeeded in being taken on as an ambulance driver to the French Army. He went through most of the trying times at Verdun, and eventually came home to England and tried to join the Royal Air Force. For some obscure reason he was turned down as unfit, and eventually was appointed to a cadet battalion for the Guards.

On demobilisation he went up to Trinity College, Cambridge, where at the time of his death he was in his second year.

Teddy Knight was one of that all-too-rare type, the lover of flying for flying's sake. Recently at his own expense he started to learn to fly at a well-known English flying school and had the makings of a really fine pilot. His enthusiasm was unlimited, and he always took a joy-ride when he could get one, and it was during one of these latter that he met his death. So far as one can gather, it was the old story of a failing engine on leaving the ground.

Had he lived, Teddy Knight would undoubtedly have made a great name for himself in the flying world.

Always cheery and ready to help one out of a difficulty, good at games and his work and a brilliant pianist, the world is the poorer for his loss and the writer loses his best and most valued friend.—G. D.

SPENCE.—Lieutenant James Hamilton Spence, R.G.A. and R.A.F., who was previously reported missing on July 16th, 1918, is now officially presumed to have been killed. He was the only son of Mr. and Mrs. Hamilton Spence, Stoke Abbott, Beaminster, Dorset. He was 20 years of age.

ENGAGEMENT.

BODDY—EWEN.—The engagement is announced between Lieut. J. A. V. Boddy, D.L.I. and R.A.F., son of the Rev. and Mrs. A. A. Boddy, All Saints Vicarage, Sunderland, and Marjorie D'Arcy, younger daughter of Mr. and Mrs. A. J. Ewen, of Leicester.

MARRIAGES.

LINDOP—LEVASSEUR.—On Nov. 29th, at the Westminster Cathedral, Captain A. H. E. Lindop, M.C. and Bar, 37th Dogras, Indian Army, attd. R.A.F., elder son of Lt.-Colonel A. H. Lindop, late Royal Dublin Fusiliers, was married to Miss Ivy Gertrude Levasseur, elder daughter of Mr. E. Levasseur, of Frinton, Pinner.

MITCHELL—HINGSTON.—On Oct. 31st, at Brompton Parish Church, S.W., Wing. Comdr. W. G. S. Mitchell, D.S.O., M.C., A.F.C., R.A.F., was married to Essy, widow of the late Capt. F. L. Hingston, Duke of Cornwall's Light Infantry, of 118, Brompton Road, S.W., by Prebendary A. W. Gough.

STUART-WORTLEY—EDWARDES.—On Nov. 12th, at St. James's Church, Spanish Place, Major Nicholas Rothesay Stuart-Wortley, M.C., R.A.F., only son of Major-General the Hon. E. and Mrs. Stuart-Wortley, was married to Marie Louise, widow of the late Captain the Hon. Cecil Edwardes.

WINKWORTH—DONALD.—The marriage of Mr. Henry Winkworth, late Queen's Bay's and R.A.F., and Miss Margot Donald, was celebrated on Nov. 19th, at St. James's Church, Spanish Place, W. Father Thurston, S.J., officiated.

AIR FORCE.

MARRIAGE.

HAWARD—DUNCAN.—On Oct. 23rd, at Brechin Cathedral, Forfarshire, Reginald S. Haward, late R.A.F., younger son of Mr. and Mrs. Percy J. Haward, of Hendon, was married to Margaret Edith Balfour, daughter of Mr. and Mrs. James Duncan, of Balfour, Brechin, N.B.

BIRTHS

FORBES.—On Nov. 23rd, at 8, Kensington Gate, W.8, Marjorie, the wife of Wing Commander J. L. Forbes, O.B.E., R.A.F., of a son.

WARBURTON.—On Oct. 8th, at Simla, India, the wife of Capt. Peter Warburton, M.B.E., R.A.F., of a son.

WILCOCK.—On Nov. 8th, to the wife of Capt. C. A. Wilcock, A.F.C., R.A.F.—a son.

THE ROYAL AERO CLUB NOTICES.

SPECIAL COMMITTEE MEETING.

A special meeting of the Committee was held on Wednesday, Nov. 26th, 1919, when there were present Brig.-Gen. Sir Capel Holden, K.C.B., F.R.S. (in the chair), Mr. Ernest C. Bucknall, Lt.-Col. Spenser D. A. Grey, D.S.O., Sqdn. Ldr. T. O'B. Hubbard, M.C., R.A.F., Lt.-Col. F. K. McClean, Group Capt. C. R. Samson, C.M.G., D.S.O., R.A.F., and the Secretary.

PRESENTATION TO SR. GUIDO JANELLO.—A silver bowl was selected for presentation by the Royal Aero Club to Sr. Guido Janello for his notable flight in the Jacques Schneider Competition at Bournemouth on Sept. 10th, 1919.

BRITISH RECORD.—The following British records were granted :—
Pilot : Capt. G. W. Gathergood.
Machine : Airco 9R (Aircraft Manufacturing Company, Ltd.).
Motor : 450 h.p. Napier "Lion" (D. Napier & Son, Ltd.).
Date : Nov. 15th, 1919.

Distance in a Given Time—Closed Circuit.

Time. Hours.	Distance. Kilometres.	Miles.	Kilometres per hour.	Miles per hour.
¼	57.09	35.47	228.36	141.89
½	115.35	71.67	230.70	143.35
1	232.57	144.51	232.57	144.51
2	403.13	250.49	201.56	125.24

Greatest Speed.

Distance. Kilometres.	Time. Hr. Mins. Secs.	Kilometres per hour.	Miles per hour.
5	0 1 14.85	240.48	149.43

Speed—Closed Circuit Without Alighting.

Distance. Kiloms.	Time. Hr. Mins Secs.	Kilometres per hour.	Miles per hour.
5	0 1 24 1/5	213.77	132.84
10	0 2 36 1/5	230.47	143.21
20	0 5 25 1/5	221.40	137.57
30	0 8 13 1/5	218.97	136.07
40	0 11 1	217.85	135.37
50	0 13 9 3/5	227.96	141.65
100	0 26 7 4/5	229.62	142.68
150	0 38 44	232.35	144.38
200	0 51 37 1/5	232.47	144.45
250	1 4 29	232.61	144.54
300	1 17 11	233.21	144.91
350	1 29 50 4/5	233.72	145.23
400	1 42 32	234.07	145.44

Timekeepers : A. V. Ebblewhite and A. G. Reynolds.
Official Observers : Harold E. Perrin and Capt. J. C. Brooke, D.S.C.

Distance in a Straight Line Without Alighting—Aviator and One Passenger.

Pilot : Capt. Sir John Alcock.
Machine : Vickers-Vimy-Rolls (Messrs. Vickers, Ltd.).
Motor : Two 350 h.p. Rolls-Royce "Eagle" 8 (Messrs. Rolls-Royce, Ltd.).
Date : June 14th-15th, 1919.
Distance : St. Johns, Newfoundland, to Clifden, Co. Galway. Kilometres : 3041. Miles : 1890.

GREAT BRITAIN TO AUSTRALIA FLIGHT.—The following additional entry was reported :—
Pilot and Navigator : Lt. Raymond John Paul Parer, A.F.C. Crew : Lt. J. C McIntosh (2nd Pilot). Machine : F.E.2b. Engine : 200 h.p. Beardmore.

DEATH OF M. DEUTSCH DE LA MEURTHE.—The death of Monsieur Henry Deutsch de la Meurthe on Nov. 23rd, 1919, was reported, and it was unanimously resolved that messages of sympathy be sent to Madame Deutsch de la Meurthe and the Aero Club of France.

The Secretary reported that he had arranged with Mr. Pierre Marechal to represent the Royal Aero Club at the funeral.

THE FLYING SERVICES FUND
(*Registered under the War Charities Act, 1916*).

Administered by the Royal Aero Club for the benefit of Officers, Non-Commissioned Officers, and Men of the Royal Air Force who are incapacitated while on duty, and for the widows and dependants of those who are killed or die from injuries or illness contracted while on duty.

Honorary Treasurer : The Right Hon. Lord Kinnaird.

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Secretary : H. E. Perrin.

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Total Subscriptions received to Nov. 24th, 1919	£16,680 4 7
W. J. Leonard	5 0 0
Capt. D. E. B. K. Shipwright	1 1 0
Mrs. Alfred Amos	0 10 0
Maj.-Gen. the Rt. Hon. J. E. B. Seely, C.B., D.S.C., M.P.	10 0 0
T. W. H. Mitchell	100 0 0
Total, Dec. 1st, 1919	£16,796 15 7

NEW COMPANIES.

The following new companies have been registered :—

WEYBRIDGE MOTOR ENGINEERING CO., LTD.—Private company. Registered Nov. 21st. Capital, £200,000 in £1 shares. Objects : To take over all or part of the business, property, contracts and liabilities of Gordon Watney and Co., Ltd. (incorporated in 1913), and to carry on the business of buyers, sellers, importers, exporters, manufacturers and repairers of motors, engines, machinery, motor vehicles and motor cycles, motor, electrical and mechanical engineers, fitters, etc., and to enter into an agreement with G. E. Sandell and Gordon Watney and Co., Ltd. The subscribers (each with one share) are :—A. H. Hewett, 40, Cambridge Road, Bromley, Kent (secretary to a limited company), A. J. L. Greig, 53, Shepherd's Lane, Dartford, Kent (commercial clerk), J. S. Stack, 145, St. John's Hill, Clapham, S.W. (commercial clerk). The first directors are to be appointed by the subscribers. Solicitors : Piesse and Sons, 15, Old Jewry Chambers, E.C.

DOVER AIRCRAFT VENTURES, LTD.—Private company. Registered Nov. 20th. Capital, £1,000 in 750 ordinary shares of £1 each and 5,000 deferred shares of 1s. each. To establish, maintain and work lines and services of aerial conveyance, and to carry on the business of carriers of passengers, goods and mails, etc. The subscribers (each with one share) are :—J. M. E. Webb, 1, Heathfield Av., Dover (clerk), R. G. S. Williams, 22, Leighton Road, Dover (clerk). Table "A" mainly applies. Solicitor : E. E. Chitty, 19, Castle Street, Dover.

MODERN MOTION, LTD.—Private company. Registered Nov. 21st. Capital, £1,000 in 800 preference shares of £1 each and 800 ordinary shares of 5s. each. To carry on the business of dealers in motors, aircraft and their accessories, general merchants, etc. The subscribers (each with one share) are :—G. H. Bettinson, 93, Old Christchurch Road, Bournemouth (aeronautical engineer), Capt. H. Kirby, Linden Hall Hydro, Bournemouth. First directors : G. H. Bettinson and Capt. H. Kirby. Solicitor : A. Glynne Jones, Cromwell House, Surrey Street, W.C. Registered office : 93, Old Christchurch Road, Bournemouth.

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DEC. 10, 1919.

THE AEROPLANE

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ON SIX MONTHS OF CIVIL AVIATION—III.

Ground Work.

Naturally, after the subject of aerodromes one comes to the subject of communication on the ground, as follows :—

(*f*) Communications.—One of the lessons learnt during the war was the supreme necessity for rapid ground communication. It was early realised that for civil aviation ground communications, wireless, etc., must be speeded up, and greater facilities afforded, in order that the arrival and departure of machines should be promptly reported. For this purpose the ordinary public telegraph and telephone service is often insufficient. Owing to the time occupied in conveying the message to and from the nearest public office, and the pressure of traffic at the present time on the long-distance telephone lines, especially abroad, the aeroplane may arrive as soon as, or even before, the receipt of the message announcing its departure. The scope of the branch at the Air Ministry in charge of this particular work covers the requirements of both civil and Service sides. For the present purpose, however, it is proposed, as far as is possible, to refer only to its functions in regard to civil aviation.

The duties of the Communications Branch may be regarded as falling under two broad heads, which, for the sake of convenience, may be termed *signals* and *navigation*.

Signals.—Under the first heading an important part of the work carried out has been in connection with wireless telegraphy and telephony, and the development of aerial navigation by means of directional wireless. Wireless stations have been erected at Hounslow and Lympne, and wireless liaison has been established with the French for the purpose of the London-Paris air route. By this means machine reports and weather reports have been successfully exchanged, the number of such messages on this route averaging 30 a day. From the experience thus gained it has been possible to inaugurate similar arrangements, which are now nearly complete, for the Belgian and Dutch routes.

Meteorological reports will in future be transmitted almost entirely by wireless telegraphy. At present weather reports are received by this means from British and Continental Stations for the information of the Meteorological Service, and weather forecasts distributed three times a day from the Air Ministry.

A complete scheme of wireless organisations for the entire Meteorological Service has now been prepared. In addition to Communications, the branch is responsible for the supervision of the training and examination of the wireless personnel.

Regulations are also being drawn up in conjunction with the Post Office for a revised wireless operator's certificate in order to provide for qualified "Air" wireless operators. Similarly, the conditions for obtaining licences to work wireless stations have been revised to include the use of wireless in commercial aircraft and from ground to air.

It may be noted that the Communications Branch has, since the armistice, been instrumental in arranging for the release for public use of—

Switchboards	63
Trunk Lines	96
Exchange Lines	324
Telephones	2,040

Navigation.—On the navigational side, the whole of the London to Paris air route has been surveyed, an experimental strip map prepared for aerial purposes and "flying directions" compiled containing information as to aerodromes, landing grounds, wireless and meteorological data. This is the first of a comprehensive library of air maps and flying directions which it is hoped will be produced for all the main routes. Charts and maps are also prepared and issued for all intended flights on new routes.

In co-operation with Trinity House, proposals have been considered for the installation of an aerial lighthouse system on the London to Paris route, and an experimental lighthouse has been erected at Hounslow. Preparations have also been made for the lighting of the aerodromes on this route, in the event of firms setting up services which necessitate night flying.

None will quarrel with the pious resolution to expedite ground communications as an aid to aerial navigation. One is not aware how far the Air Ministry has been able to retain the services of those very able wireless officers who served in the R.A.F. One fears, judging by the wholesale demobilisation of the cleverest technical and research officers in other branches of the Service, that there can be but few left. But in any case the R.A.F. possesses an equipment of wireless apparatus, both telegraph and telephone, which is unsurpassed by any other country. It is only to be hoped that it retains people who are capable of operating the instruments.

On the meteorological side there does not seem to be so much reason for satisfaction. During the war "Meteor"—as the weather-service was commonly called—was reasonably good at guessing the weather for the next few hours, and sometimes for days, ahead. But since the war, either owing to defective communications or the lack of interest among observers, one hears that information concerning the weather even in this country has been anything but accurate.

Of all our sciences that of Meteorology seems to be the most backward. Those responsible for it seem to have their heads too much in the clouds in a metaphorical sense and not enough so in a practical sense. If some of the Meteorological Office officials did some flying they would doubtless learn quite a lot.

The notes concerning maps and the lighting of regular air routes are interesting, but not precisely informative. Something more might be said about these subjects in future communiqués.

Concealed Information.

Doubtless the fact that the Synopsis itself has been compiled by the Department of Information under General Swinton accounts for the modest brevity with which this department is dismissed. Its activities are described thus :—

(*g*) Collation of Information.—Technical information is collected and collated by the Information Branch from the various foreign journals with a view to assisting the constructive side of the industry, civil and Service. From time to time, as thought necessary, technical memoranda on different subjects are issued. The Research Branch of the Air Ministry is kept supplied with information, as also is the business community interested in civil aviation.

In regard to foreign markets, close co-operation has been established with the activities of the Department of Overseas Trade and the various naval and military attachés. By these means British firms are supplied with information in the form of periodical summaries, on such matters as foreign aviation, amalgamation of foreign aircraft firms, regulations and bye-laws affecting civil aviation in foreign countries. During the past two months 45 special notices have been sent out through the Society of British Aircraft Constructors, and numerous requests from British firms for information on urgent questions have been received and answered.

This branch is also responsible for the issue of Official Press Communiqués on all questions affecting civil aviation.

One is glad to hear that so much information is collected and disseminated by this branch, for one confesses to a lamentable ignorance of the fact hitherto. In the good old days when there was a war on, the Technical Department had a sub-department under Major Prance which used to collate technical information concerning enemy aircraft compiled by such eminent writer-artists as Captain Wilfred Aston and Mr. Gordon Crosby, and used to send this to the mere Technical Press, who used to publish it for the education of all in the Aircraft Industry and its ancillary trades.

Since the cataclysm of this devastating peace (to quote Lieut.-Col. Mervyn O'Gorman) no such information has been issued for the education of the ὁι πολλοι of the Aircraft Industry. No doubt—as the Synopsis tells us so—"technical memoranda on different subjects are issued." But they seem to be confined to the consumption of the managing director or the office-boy of the firms to which they are addressed. One has seen none of these memoranda oneself, nor has one heard any of them discussed by practical technical men among aircraft makers and users, as was always the case in the days of war.

Nor has one heard any discussion among the commercial people in the Aircraft Industry concerning "information in the form of periodical summaries on such matters as foreign aviation, amalgamation of foreign aircraft firms, etc." Presumably the circulation of these also is confined to managing directors and office-boys, so that the information does not percolate to such base varlets as sales managers, foreign representatives, and so forth.

Perhaps if the Department of Concealed Information kept more closely in touch with the Technical Press it might be helped in making its "periodical summaries" and "technical memoranda" better known and more appreciated among those for whose benefit they are presumably issued.

So far as "Official Press *Communiqués* on all questions affecting civil aviation" are concerned, one is the first to acknowledge that these are excellently adapted to their purpose. They are admirably suited to the mental capacity of the editorial staffs of the daily news-sheets to whom they are communicated.

Moving "Meteor."

In a previous paragraph one has perhaps indicated that the Science of Meteorology is a trifle backward. It is therefore of interest to learn that "Meteor" is to be moved. The Synopsis records the fact thus:—

(*h*) Meteorology.—To no other form of human activity are the vagaries of the weather so vital as to aviation. Information of air currents, and more especially of mists and fog, may make the difference between success and failure. For this reason, and although the claims upon a Government meteorological organisation of the Army, the Navy, the Board of Agriculture and Fisheries and other bodies concerned were fully recognised, it was recently decided by the Cabinet to transfer the Meteorological Office and attach it to the civil aviation department of the Air Ministry. With the exception of one or two details, the arrangements for this transfer are now complete.

As much as possible of the personnel, etc., are being moved from South Kensington to Kingsway; but lack of accommodation makes a complete transfer at present impracticable. A new Meteorological Committee has been formed, with the Controller-General of Civil Aviation as President, and Sir Napier Shaw, Director of the Meteorological Office, as Chairman. On this Committee the Royal Society has two representatives, and the Admiralty, War Office, the Board of Agriculture and Fisheries, the Board of Trade and Colonial Office have each nominated one representative.

Endeavours are being made further to assist scientific research, and, in addition to the ordinary routine work of the Meteorological Office, special attention is now being devoted to the requirements peculiar to flying.

A system of weather maps is being produced at six-hour intervals from information supplied by a network of R.A.F. and Civil Meteorological Office Stations, and reports and forecasts covering various aerial routes have been prepared and issued, together with maps showing the speed and direction of the upper wind over each.

In connection with the Cape-Cairo route, a statement has been drawn up showing the annual variations of the weather by months.

Special attention has been given to the London-Paris route, for which the service of weather reports is being improved. Good communications are vital to an efficient meteorological service and in this particular some difficulty is necessarily experienced in dealing with the large area and many foreign countries now concerned. All countries signatory to the Air Convention undertake to carry out certain arrangements with regard to communications; but the speed in setting up a through system must necessarily be that of the slowest country.

One of the first steps consequent upon the transfer of the Meteorological Office to the Air Ministry has been the closing down and elimination of many R.A.F. meteorological units called into existence during the war. General after-war requirements for meteorological information have been considered, and a scheme formulated providing for the least possible number of stations necessary. The policy followed has been to obviate overlapping between flying and non-flying meteorology.

The personnel of all meteorological stations at home is being placed on a civilian footing. Where service personnel is employed, as for instance in Egypt, it will be trained by the Meteorological Services. The necessary steps for the demobilisation of Service personnel and their substitution by civilians have been taken.

The formation of the mixed Meteorological Committee is distinctly interesting. It occurs to one that if it included one or two working members of farmers' co-operative societies and a few sea-going members of the Seamen's and Firemen's Union it might get more practical information on what weather is and why than it is likely to obtain as at present constituted. Also a few experienced cross-country pilots might be of value.

The "closing down and elimination of many R.A.F. meteorological units" may be a financial necessity, but it is much to be regretted, for some of these units included men with a "weather sense" which was more valuable than all the pseudo-science of the old Meteorological Office. It is to be hoped that some of those men may have been discovered and attached to the new organisation.

Such an organisation is a vital necessity to Civil Aviation, and one hopes that it will soon become at least as efficient as our telephone system.

Our Abandoned Airships.

We next come to the very sore question of civilian airships. This great subject is covered in one brief and pathetic paragraph thus:—

(*i*) Airships.—Although the rigid airship has not been exploited in this country to the same extent as the aeroplane, the commercial possibilities of this type of aircraft in connection with long-distance flights are fully realised. By the curtailment of the Government airship programme, a certain number of airships, in various stages of construction, became available for civil enterprise. A public meeting was held to explain the position, and those interested were invited to consider the formation of a company with a view to taking over these surplus airships and to investigate the commercial value of this type of aircraft. The formation of this company is now under consideration.

One believes firmly that for the long-distance passenger air lines of the future, such as New York-London, New York-Paris, London-Petersburg, London-Calcutta, Calcutta-Melbourne, and so forth, the airship is a better vehicle than the aeroplane or seaplane, though for mail-carrying relays of aeroplanes will be faster. It is therefore of interest to learn that the formation of a company to take over our abandoned airships is under consideration.

One cannot help thinking that if the great airship-building firms, namely Airships Ltd., Armstrong-Whitworth's, Beardmore's, Short's, and Vickers Ltd., were to pool a certain amount of capital and form a co-operative business to operate existing ships, they could make it

pay its way as a joy-ride concern. Thus they would learn enough to make it worth while to build new and improved ships for long-distance passenger lines. It will be of great interest to see how the existing negotiations develop.

The D.C.A. Staff.

Finally the matter of the Staff of the Department of Civil Aviation is discussed as follows :—

(*j*) **Staff.**—The staff of the Department of Civil Aviation on October 31st consisted of a total of 143, of which 52 are administrative officials and 91 clerical subordinates, at a total salary of £50,000 per annum. These figures include the Air Ministry meteorological staff, but not the personnel of the Meteorological Office recently transferred to the Air Ministry.

It should be borne in mind that the staff of the Communication, Accidents, and Meteorological branches are engaged on technical work for both the civil and Service sides.

The selection of a staff to deal with the many questions involved has not been an easy task owing to the fact that the Department must in the nature of things be a civil one, and that those officers possessing the requisite administrative and technical experience can usually be found only among those who have served in or with the Royal Air Force. It has been impossible until conditions are more certain to offer fixity of tenure in the Department of Civil Aviation and the terms of appointment have been necessarily brought into unfavourable comparison with the improved rates of pay recently conceded to the Royal Air Force. The result has been that recruitment has been difficult and slow. Steps are being taken to remedy this.

The Staff of the D.C.A. has been the subject of much discussion among all those concerned with Civil Aviation. It has been very generally said that though the individual members of the Staff are excellent their number is inadequate to their task. This appears evident when one learns that there are only 52 administrative officials and 91 clerical employees.

The fact that they have to administer only 241 aeroplanes, 374 pilots, and 258 ground engineers does not really affect the question. Their duty is to organise the Department so that it can deal with the future expansion of Civil Aviation. And from that point of view they are obviously too few, even if each and all of them were a genius in his own way.

Such complaints of delays and hindrances as are laid against the D.C.A. are not against the individual official, but against the general system, which is due to the parcimony of the Treasury. And where complaints against officials are justified it will frequently be found that the official in question belongs to another Department working in conjunction with the D.C.A., as for example the R.A.F. doctors who turned own the pilot mentioned early in these notes, or incapable A.I.D. officials who remain in the A.I.D. because they cannot get jobs outside and can command influence inside.

As the Synopsis suggests the pay and conditions of service in the D.C.A. are uniformly bad. Yet a number of very good men are accepting very bad money because they believe in Civil Aviation. The more honour to them. But, if the Treasury refuses to pay the D.C.A. Staff adequately and refuses to permit a staff of adequate size, it seems fairly evident that Civil Aviation would progress better without the Department of Civil Aviation.

Such, at any rate, is the opinion of a good many people in the Aircraft Industry, who believe that the money which is being spent on the D.C.A. might be better spent in subsidising air lines.

Things in General.

The Synopsis is ended by a general consideration of work done. This reads as follows :—



St. Paul's Cathedral and the River Thames as photographed from an Airco biplane.

III.—GENERAL CONSIDERATIONS AND CONCLUSIONS.

This brief summary of the work carried out during the last six months, and the organisation of the Department of Civil Aviation has been written as a record of work done. If it appears that a useful purpose will be served it is proposed to issue a further Synopsis at the end of another period of six months. No attempt has been made to suggest the potentialities of civil aviation. The speed at which it will develop cannot be gauged even approximately, but the possibilities are undoubtedly great, and there seems no doubt that when once the postulates of reliability, safety, comfort and economy have been met, as they will be, civil aviation must play an increasingly important part in the development of civilisation.

It is in any case, perhaps, not too much to say that when civil aviation has developed it will be the main reserve of strength from which the R.A.F. will draw in times of stress. The R.A.F. of the future should be capable of rapid expansion and of the organised assimilation of large numbers of personnel and material at short notice. As the mercantile marine reinforced the Navy during the war, so should civil aviation be regarded as the potential reserve of the R.A.F. in future crises. This source of supply can only be regarded as satisfactory if civil aviation is in itself a healthy and well-developed body. The building up of such a body on a true basis is largely dependent upon the growth of a steady demand for quicker communication. Irregular and spasmodic demands keep the cost of such communications at a high figure, and do not, therefore, assist development.

The carriage of mails promises to be one of the most important and regular demands which can serve to develop civil aviation, and to place aerial transport concerns on a firm footing. The future of aerial mail services lies on those routes where a material saving of time can be effected so that a definite commercial advantage may be obtained. In England, railway communications and distances are such that letters posted at the end of the business day can be delivered early next morning at almost every large town by the regular train services. The Postmaster-General is doubtful, therefore, whether the demand for express mails during the day-time between the more distant towns in the United Kingdom is likely to be sufficiently extensive to meet the considerable expense of running such a service for mails only. But if commercial services were established for passengers and goods, the opportunity would be taken to utilise them for express letters.

The line of development of aerial mails would seem to lie more on the continental and Imperial routes where the long distances give more scope for the element of speed. For example, in normal times the ordinary time of transit by railway is 36 hours to Turin, 48 hours to Rome, 23 hours to Berlin, 58 hours to Christiania, and 24 hours to Berne. Over such distances the potential saving by aerial transport is considerable. If such acceleration could be obtained, and regularity of service kept up, sufficient correspondence might be attracted to enable the extra fee to be fixed at a relatively small figure. When regular services to extra-European countries become practicable, the gain in time will be still more marked.

The more such services can be brought into being, the larger is the area over which the overhead charges are spread, and the lower becomes the cost of each additional service which automatically produces an increased demand for such service on routes where high cost has hitherto negatived the desire for speed.

It has been the object of the Department to ensure the safety both of the flying and non-flying public, without imposing irksome restrictions on the various firms concerned. In numerous problems on which technical advice has been required, the Department of Civil Aviation has received the assistance of the directorates of research and aeronautical inspection of the Department of the Director-General of Supply and Research, which is a separate Department in the Air Ministry from that of civil aviation. Hitherto all machines employed by civil aerial transport firms have been converted war machines, and although numerous new types are on the stocks, it may be said that no true commercial machine has yet appeared. Divergencies in type and construction between service and civil aircraft will, however, rapidly appear.

Partly owing to the difficulty of determining the future composition of the R.A.F., and the consequent uncertainty of what aerodromes will be required by the Service, it has not yet been possible to settle the aerodromes to be retained by the civil side, and to complete negotiations with the municipalities and others concerned. An Advisory Committee has been discussing this and kindred problems, together with the question of Imperial air routes, and their report is expected shortly.

The work of the Department must necessarily be of a pioneer character. The results of its labours—if indeed the foundations of the new scheme of things have been well laid—can only become visible in their entirety in years to come. Had the spade work not been done, however, it is doubtful whether this country would have been able to inaugurate and maintain the first international air services.

It may be questioned whether civil aviation in England is to be regarded as one of those industries which is unable to stand on its own feet, and is yet so essential to the national welfare that it must be kept alive at all costs.

If this question is answered in the affirmative there appear to be three methods of assisting it:—

(1) By means of direct Government subsidies—it is in this way that France has decided to act, and 18,000,000 francs have already been earmarked for this purpose.

(2) By recognising that *at the beginning* the British aircraft industry cannot stand on its own feet, and that to ensure its existence, although foreign to usual British practice, some form of *direct* Government assistance, probably in the shape of a grant to approved aerial transport companies for mileage and weight carried, is a necessity.

(3) By following the principle usually accepted in this country, that if an industry is to survive it must stand as nearly as possible by itself, and that a policy of "doles" is unsound. In this case the assistance given would take the indirect form of the provision of certain "key" aerodromes and shed accommodation at home and on the Empire routes; and the collation and issue of information, including meteorological date, and the provision of communications.

The problem is how best to tide over the difficult transition period through which we are passing. Adhesion to the British principle of independent private enterprise will undoubtedly be right eventually, but if a limited industry is to be maintained—as it must be to meet the requirements of the Royal Air Force—it is for consideration whether it will not be necessary to adopt a combination of (2) and (3) above.

(*Signed*) F. H. Sykes,
Controller-General of Civil Aviation.

Air Ministry, *November 1st*, 1919.

It is interesting to learn that another Synopsis will be published six months hence. It will cover the worst part of the year, including the present months in which our fatuous Postmaster General has chosen to start a London-Paris postal service, apparently with the sole object of demonstrating the truth of his statement some months ago that an aerial post is only 60 per cent. efficient. Therefore the next Synopsis will probably be properly depressing, so as to act as a deterrent on those who are cheerfully preparing for an Aero Show at Olympia in July—very cleverly fixed at the very worst time of the year, so as to interfere with joy-riding, and so late as to preclude any possibilities of orders for exhibitors.

The view that Civil Aviation will be to the R.A.F. in the next war as the Mercantile Marine was to the Navy in this war is optimistic. It assumes that Civil Aviation is going to be a bigger thing than the R.A.F. and very much more efficient. One can only hope that the optimism may be justified.

For once the Postmaster-General is right in suggesting that postal air lines in England cannot pay. It will be noticed, however, that nothing is said about postal lines to Ireland, which would probably pay very well, if letters were charged at reasonable prices and not at that absurd 2s. 6d. per ounce.

A Grave Mis-statement.

There is one grave mis-statement in this section, namely that "hitherto all machines employed by civil aerial transport firms have been converted war machines." The compilers of the Synopsis have apparently forgotten that the Commercial Vickers "Vimy," the F.K. Bat, and the Westland Limousine are commercial machines designed *ad hoc*, and bear no resemblance to war machines.

It is fully consonant with the custom of this country that there should not have been sufficient official encouragement to justify either of these excellent machines being put into production for regular use on air lines. One hears, however, that the Westland Co. have very pluckily put their limousine into production as a speculation, in full faith that there will be a big demand for genuine civil aerial transport machines next year. Is it possible that the Civil Aviation Department is so supremely ignorant as to be unaware of these facts?



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Standing Alone.

The question as to whether Civil Aviation is unable to stand on its own feet and so must be supported in some way as essential to the Nation is one which may be debated *ad nauseam*. One's personal view is that it would be better to cut the Aircraft Industry loose and let it stand or fall on its merits. Hardships in youth give strength to the adult.

But if the Industry is to stand on its merits as an Industry it must be free from special rules and regulations and must only be controlled by the Common Law of the land. That is to say it must not steal, it must not kill, and it must not be a nuisance.

Nevertheless the suggested subsidies are of interest. One suspects Sir Frederick Sykes of having written this particular part of the Synopsis himself. One's own belief is that if subsidies are to be given at all they should be given in the form of direct subsidies to mail-carrying lines only, and that those lines should be left to please themselves whether they build or buy their machines.

Grants to manufacturers or operating firms, except as payment for work done, are unsound and help to keep alive those who are lacking in enterprise. But if the Government agree—as they have done with steamship lines—to hire enough cargo space daily (for mails) to pay for the running of the line, then the firms can carry passengers as well, and every passenger fare will then be pure profit.

One cordially agrees with Sir Frederick Sykes that "adhesion to the British principle of independent private enterprise will undoubtedly be right eventually." But if it is to be right, that private enterprise must be free from official interference.—C. G. G.

THE DOUGLAS-PENNANT CASE.

The Report of the Select Committee of the two Houses of Parliament inquiring into the Douglas-Pennant case was issued on Dec. 8th as a Parliamentary paper (No. 243). It contains a condemnation of Miss Douglas-Pennant's actions and statements in connection with the W.R.A.F. and her dismissal therefrom almost unrivalled in Parliamentary history. The mass of the public will be pleased to hear that the case is now concluded for ever, and that the Government action in the matter has been completely vindicated. A brief report of the case and the findings of the Committee will be published in the next issue of this news-sheet.

THE MINISTRY OF MUNITIONS AND THE EARL OF ROSEBERY.

The unconscious humours of the Ministry of Munitions do not fade. Recently that department has been advertising Turnhouse Aerodrome for sale by auction. The land on which this aerodrome is situated belongs to Lord Rosebery, who discovered the curious intentions of the Ministry of Munitions apparently by accident. He wrote a letter on Nov. 29th to "The Scotsman," of which the following is an extract :—

"I cannot help being surprised at this [the advertised sale] because I am under the impression that the farm belongs to me, and not to the Ministry. At first this might seem to be due to adoption of Irish methods by our Ministers, but I do not wish to exaggerate and I do not think it is due to lawlessness, but simply to gross carelessness from the fact that the Government, during the war, have so abridged the rights of individuals that its numberless departments have come to the conclusion that these no longer exist."

Apparently he received a reply, the sense of which is given in the following extract from a second letter to "The Scotsman" on Dec. 3rd :—

"I wish I could flatter myself that I understand the unsigned communication which you call the Government reply to my letter. So far as I can follow it, the department claims the right to purchase the land on which they have placed their unsightly buildings. However, from that right to the right to advertise it for sale without communicating with the person who, after all, is the owner, there is a very long step. I still think that for anyone, whether a Government department or not, to advertise the sale by auction of land which does not belong to them is a lawless proceeding and a dangerous precedent. If I were in arrear for rates and taxes I presume that the Government would take some such course. But even then they would be obliged to give me notice. In this case there is not, so far as I can see, a shadow of excuse for their procedure.

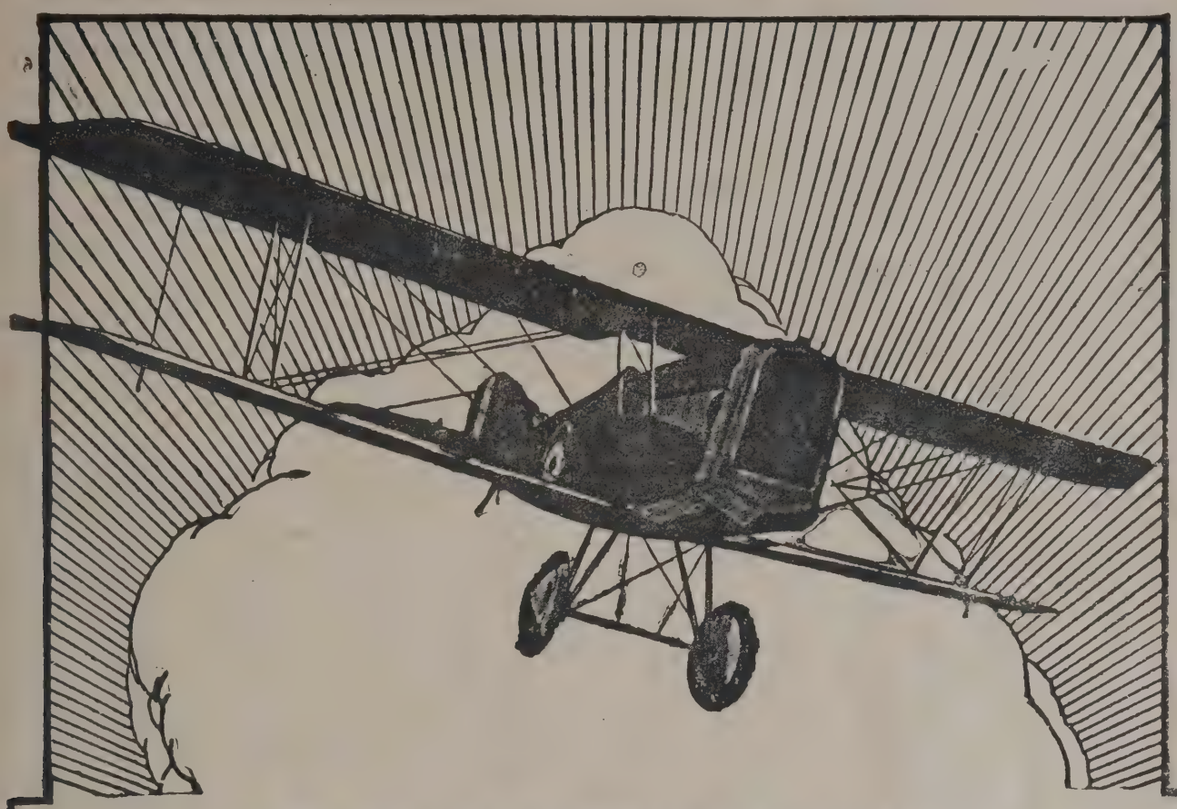
"'Oh, but,' says the department, 'we only offered it by auction to ascertain the value.' This is a privilege denied to individuals, who are supposed to act on their own judgment. But would it console me, if I found that my watch had been sold or pawned, to be answered by the pickpocket that this was only done to ascertain its value? The 'answer' only confirms me in the conclusion of my last letter : 'The Government during the war have so abridged the rights of individuals that its numberless departments have come to the conclusion that those no longer exist.'"

One waits expectantly for the next effort in departmental humour.

[Note.—Lord Rosebery has addressed a communication to Sir Howard Frank. This letter will be dealt with next week.]

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THE ROYAL AIR FORCE AND THE FUTURE.

On Nov. 15th the following letter, headed "Gen. Seely's Resignation," appeared in the "Times" newspaper :—

Sir,—General Seely's resignation of his post as Under-Secretary for Air raises two important questions :—First, is there the necessity for a separate Air Ministry? Secondly, is there the necessity for a separate Air Force? These two questions should not be confused. It may be necessary for the future development of aviation that the Air Ministry should retain its independence. Upon that point I do not feel qualified to give an opinion. But the necessity for the retention of the Royal Air Force on a basis of independence of War Office and Admiralty control seems to me to be very much open to question.

As a chaplain to the R.A.F. I have had considerable opportunity of estimating the efficiency of its organisation and administration. I have come to the following conclusions :—

(1) The discipline and administration of Air Force stations, being in the hands of (in the majority of instances) extremely youthful officers, who have risen to senior rank by skill and gallantry in the air during war service, could be much more efficiently and economically carried out if such stations were under purely military (as opposed to Air Force) control, and commanded by Regular military officers of senior rank.

(2) Military and naval officers, who have transferred to the R.A.F., can never work in harmony, their traditions and methods of discipline being diametrically opposed to one another. The same applies to all ranks.

(3) The training required for naval flying officers is entirely different from that required for military flying officers. A naval or military officer can be taught to fly in six months, whereas a pilot cannot be made an efficient naval or military officer in under six years.

(4) The higher control of the R.A.F. administration could easily be carried out by the War Office with but a comparatively slight increase of personnel, thus releasing a large majority of the staff at present employed at the Air Ministry. Under the existing arrangement every administrative branch is unnecessarily duplicated.

I therefore am strongly of the opinion that the best interests of the nation would be served if the Royal Air Force should cease to be a separate organisation, and that the naval and military branches of the Flying Service should once more be placed under control respectively of the Admiralty and the War Office.

I am, Sir, your obedient servant,

Salisbury, Nov. 13th. Ex-Chaplain, R.A.F.

"Ex-Chaplain, R.A.F.," summarises in his letter the views which are strongly held by a number of well-informed officers who have had experience of the flying services throughout their history. The Royal Air Force in its existing state pleases nobody save a few politicians whose love for publicity directs their daily action and a few officers whose best interests are served by the existence of a separate service in which they can hold positions of relative grandeur.

It has been a happy habit in public life to describe the War Office as a monument of inefficiency designed to spend the nation's money with careless disregard of economy and to win wars unwillingly by the aid of enthusiastic amateurs whose services are accepted ungraciously and rewarded with habitual meanness. In common with all public labels the description is meticulously inaccurate. The public, with a customary lack of precision in its observations, collects readily every scrap of scandal relating to the science of offence and each derogatory detail affecting any department which, having employees in uniform, can readily be confused with the War Office, and then, rendered happy by the mass of unpleasant matter, lays it all at the door of the Secretary of State for War.

The Genesis of the R.A.F.

In accordance with this pleasing principle the primary reason given by the politician agitators for the creation of the Royal Air Force was that the War Office, deeply embedded in the superstitions of past ages, was incapable of giving enlightened attention to the needs of the Royal Flying Corps, whose duties were based on the use of a far-reaching invention of modern times. The Admiralty, secure in the methods and traditions of Nelsonic days, was left undisturbed by abuse. Their lordships at that time had little interest in aviation, did not appreciate its importance in war, and were not unwilling to allow the Royal Naval Air Service to disappear.

Two other major reasons for the creation of a separate Air Force were (i) the alleged necessity for unity of control and (ii) the assumed inability of the War Office and Admiralty to develop and control the vast aerial arms of the future.

Disunited Control.

It is a little hard to understand in what manner unity of control has been gained by the creation of the Royal Air Force. Administration and supply are, it is true, centralised under one staff. Control in operations remains almost exactly as before save that the complication is greater and there are certain obvious disadvantages.

In the operations of war the Air Force detachments serving under the Army or the Navy are directly under the orders of the Military General Staff or of the Naval Higher Command. That is to say, a third service exists which in part of its existence is managed by its own officials and in the remaining part, that for which it was primarily created, is governed by the orders of two other services from which it has an entirely separate *vie intime*.

Administration in the Air Force need not necessarily differ from that common in the Army. The latter service has a well-tried system, the defects of which have been eliminated during the long history of the Army. Supply—though the articles required are different—can be maintained in the same manner as is the supply of guns, ammunition, motor-cars, etc., to the military forces. The aeroplane is rapidly reaching a stage of existence in which the attributes of the various types are similar. There is little to choose between the fighting machines made by any of half a dozen firms, and none can be said in justice to be of much higher efficiency than the remainder. Therefore the simplicity of ordering is greatly increased. The flying arm asks for the desired machines, and the Supply Department executes the order. But this procedure does not necessitate the existence of a separate Ministry. The duties of the War Office and Admiralty are diverse enough to admit of additional responsibilities without courting disaster.

Decayed Aviators.

There is an additional reason why it would be of advantage if the Royal Air Force were abolished and the Royal Flying Corps and Royal Naval Air Service were revived. There are many pilots who become unfitted to fly either from loss of nerve or because of physical disability. These pilots are not necessarily suited for staff or administrative work. In the Royal Air Force there is no other outlet for the energies of disabled pilots. If, on the other hand, the sea and land flying arms were part of the Navy and Army personnel to whom piloting had become distasteful might be transferred to other units or sections of the respective services, provided their mental and moral qualifications were suitable.

Flying arms of the two services would also have a ready source from which to draw personnel. Officers whose devotion to their regiments and the Army are the predominating interest in their lives would willingly be seconded to a flying unit which was an integral part of the Army, yet few of them would go to an independent service even temporarily. *Esprit de corps* is of vital importance in the fighting forces, and it should be fostered and preserved with every care.

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THE DESIRABLE C.O.

The first conclusion of "Ex-Chaplain" is that, in order to maintain discipline and all that is therein implied, senior Regular military officers should command stations. Supporters of the R.A.F. say that in many cases senior military officers have failed lamentably when in command of R.A.F. units. There are certainly cases of this kind on record, but I think it will be found on inquiry that these officers were not regarded as efficient when in the Army and only transferred to the R.A.F. because their career in their own service was not proceeding with the distinction they believed to be their due.

Promotion in the Royal Air Force has proceeded mainly on two lines. Those who have fought gallantly and have proved themselves daring leaders in action have become squadron leaders and wing commanders with automatic ease. Skill in the office, on the other hand, has also brought many to high rank. Neither of these classes are necessarily qualified to command any unit. The greatest test of the commander is a period of inaction. In war-time and on active service the defeat of the enemy is a sufficient inspiration to prevent demoralisation in personnel. But peace-time, with its deadly routine, its monotony, its painfully slow rate of promotion, makes difficult the preservation of efficiency and the observance of the amenities of life among men whose physical fitness makes apparent stagnation entirely unattractive. It is then that the commanding officer of long experience and inborn tact is necessary. Such people are hard to find in a new service where, until the present, the main habit has been the breaking of old traditions without the creation of new principles.

There is no need to discuss his second conclusion. Naval and military officers will never work in harmony. It is not the difference in the work so much as the dissimilarity in initial training which sends them along divergent roads.

His third conclusion is also obviously true. The necessary knowledge of the principles governing the operations of the Army differs totally from that of the Navy. Both are vast in extent and their acquisition to the instinctive degree takes years of experience.

His fourth and final conclusion is the most important of all. The staff at the War Office in peace-time, though it could not be reduced, is not fully occupied at all times and could with ease cope with the additional work of directing and administering that share of the R.A.F. which properly would come to the Army where it redivided. A few additional staff officers in each of the great departments of the War Office would be desirable and an additional member of the Army Council would be essential. In matters of Q.M.G. services the requirements of the aerial arm could be met without any additional help.

THE REPLY OFFENSIVE.

But such a letter as that of "Ex-Chaplain" is provocative of replies, and two at least have appeared in the "Times" during the past week. The first of these is signed "Ex-Flight Leader" and bears internal evidence of the truth of many of "Ex-Chaplain's" statements. Dealing with the question of discipline he says:—

". . . the individual flying officer is allowed to exert more initiative than his military brother. He is not so closely fettered by rusty chains of obsolete etiquette and hard and fast rules. Nor is it to be desired. In the career he has adopted he is never called upon to meet a situation which is exactly paralleled by a preceding one; and as a consequence has no need for manuals and regulations written in an age long since passed away. But he does require a leader; and in the very essence of things he prefers a comrade who has proved his worth in 'actualities' to a relic of ancient days, dug up, may be, from a Reserve battalion or an A.M.I.O.'s office, or to an ex-Brigadier whose only excuse for appointment would be, 'We must find him a job somewhere,' and whose interest in aviation began and ceased the night that the Hun bombed his chateau in France."

This passage is offensive without being in the least true. Of all branches of all the fighting services the aerial arm adheres most closely to routine in action. What difference is there between any number of aerial fights? The same acrobatics, the same system of endeavours to outmanœuvre, obtain. In flying each awkward incident is countered in a set manner laid down by experience.

A flying officer in the R.A.F. is concerned with flying alone. He is not responsible for the well-being of his men. He is never charged with their control in action. His life, except during his hours of fighting, is one of ease and comfort. Compare this with the existence of an infantry subaltern either behind the lines or in the trenches. In the first case he must give constant attention to the training, comfort, and amusement of his men. In the trenches he is never free from danger, and he has the responsibility of the lives of the personnel immediately under him.

The manuals and text-books at which "Ex-Flight Leader" jeers are those which, though not "written in an age which has passed away," convey the experience of warfare amassed throughout the centuries to the unfledged warriors produced in a national emergency. As to the "obsolete etiquette" which annoys "Ex-Flight Leader," one imagines it to be those conventions by which the life of the decently born is regulated. Inexperience in these matters often produces annoyance, but in time he himself would have found the social code to be of use.

Later he says:—

Before April, 1918, the R.N.A.S. had enjoyed the pick of machines and engines. With the coming of the Air Force a better and juster apportionment of the good things in aviation ensued, with strikingly successful results on the *moral* and efficiency of the new arm.

As the Royal Air Force only came into existence seven months before the Armistice, any credit for its good work overseas must be given to the Army and Navy from which it was drawn. Can anybody say with honesty that either the *moral* or the efficiency of the R.A.F. were higher than in the R.F.C. and R.N.A.S.?

In a very offensive passage on the War Office he says that "he would indeed be a bold man who dared to affirm that the War Office is competent to handle the Army with thorough efficiency." One must be grateful that courage is not lacking in England to-day, for there are many thousands of officers, all of whom are well qualified to judge, who believe fervently in the efficiency of the War Office and who regard it as having by far the most creditable record of all the Government offices.

The Higher Command of the Army realise that aviation is an essential element of war, and it is inconceivable that they would or will in any way fail to give adequate support to the new arm. Experiments never attracted the soldier, for it must not be forgotten that for each invention which has proved a success there are many thousands which have failed lamentably.

"A CRITIC IN PALL MALL."

The Lord Montagu of Beaulieu also wrote a reply to "Ex-Chaplain, R.A.F.," which appeared in the "Times" of Nov. 20th. The text is as follows:—

ONE ELEMENT: ONE SERVICE.

To the Editor of the "Times."

Sir,—The proposal of the Government to put the Royal Air Force again under the War Office should be resisted by every one who has the future of the Air Services at heart, or remembers the past history of the previous bad system now proposed to be revived.

First of all, I desire to allude to the past. When I was a member of the War Air Committee with Lord Derby and others, in the spring of 1916, my experience then of the difficulties in regard to supply and administration which arose from the dual control of the Air Force by the Navy and Army, and the impossibility of harmonious working, led me to resign as a protest against the waste of time, lives, and money under the old system, and in order to bring to public

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notice that the independence of the Air Service was essential for its progress and proper efficiency. The same reasons which led the Government to accept this view hold good to-day.

The Air Force should remain independent, free to work out its own salvation, to create and carry on its own traditions, and alone to be responsible for its own efficiency in offence and defence throughout the Empire.

Then, as now, some Cabinet Ministers and some exalted naval and military authorities were bitterly opposed to the independence of the new force, and some of these authorities had either actively hampered or passively resisted the progress of the Air Force since its early days. Later on three factors compelled the Government to grant the Air Force independence :—

(1) The pressure of both Houses of Parliament and public opinion.

(2) The need of an Air Force for war purposes larger than that which could be controlled by either the Admiralty or the War Office.

(3) The weighty and explosive arguments in London and elsewhere of the Zeppelins, which showed every one that war in the air was a very real and increasingly important part of the great European struggle.

Thus the first Air Ministry and independent Air Force was formed under Lord Cowdray in the autumn of 1917. [All this is history.]

Now what of the future? It would be madness to imagine that the need of an efficient Air Force will be less in future. It will be far, far greater. Both by sea and land, air power will become more and more important actually and relatively every year, both in peace and war. And the possibility of sudden, blinding, annihilating attacks by an enemy, without a declaration of war—an enemy panting for vengeance—will grow with every year. Has the War Office knowledge, time, or ability to think out the special problems of the air, or administer efficiently this novel, peculiar, and wonderful force, whose pilots must always be pilots before they are sailors or soldiers, brave beyond telling, and reckless in initiative to the verge of insubordination? Of the two I would rather put them under the Admiralty, where initiative is understood, and insubordination, if successful, winked at.

And, Sir, it should be enough for most people to know that General Seely has resigned on this most important question of principle. There has never been a more capable Chief of the Air Ministry, one with more vision, experience, practical knowledge, and belief in the future of the Air Force. He has been Secretary of State for War, still is a member of the Imperial Defence Committee, and has worked the Air Force under both systems, dependent on the War Office and independent of it.

And, finally, let us remember that while we are all war weary, war is still possible, even probable, in the future. Germany is crippled on the sea and on land. In the air she can build up—and is building now—a force for peaceful commerce which in 24 hours could be used for war with deadly effect. The first week's air warfare may decide the next war.

Any independent Air Ministry, though its estimates and personnel be small, is preferable to no Ministry at all, and to the overshadowing and deadening influence of another Department. Three years ago I wrote, "One element : one Service." That, Sir, is as true a motto to-day as then.

Yours faithfully,

House of Lords, Nov. 10th. MONTAGU.

It is written in the manner one would expect from Lord Montagu of Beaulieu, a nobleman who has played with the problems of the internal combustion engine and its application as his ancestors played with politics and literature in the centuries which now are dead. Gifted with mental activity above the average and possessed of talents which suggest the kindly intervention of fairies at his birth, he, like Philippe, Duc d'Orleans, Regent of France, lacks the one inborn gift which would enable him to put his powers to their finest public use.

He speaks of his membership of the War Air Committee in 1916 and his resignation because of the "impossibility of harmonious working." Has there ever been a Committee which succeeded in initiating direct and prompt action in time of war? Is it possible to find agreement in councils on which soldiers and sailors sit with equal powers? The answer is surely "No." One would suggest that the real failure indicated by Lord Montagu's letter was that of the Committee. Had the R.F.C. and the R.N.A.S. been less hampered by the interference of Committees and Boards manned by political and scientific theoreticians their work would have been simpler, the confusion would have been less.

Later in the letter he admits that exalted authorities were in bitter opposition to the formation of the Royal Air Force. Who is to say that these authorities thought with less wisdom than the heterogeneous band of minor politicians, Fleet Street journalists, and disgruntled aviators who brought about the formation of the Royal Air Force?

The Three Factors.

He gives three factors in the compelling of the Government in the matter of the birth of the Royal Air Force. His first matters little, as Parliamentary and public opinion are swayed easily by multitudinous extraneous passions uncontrolled by pure reason or logic, and both were ever ignorant of questions affecting military science.

His second is a matter of opinion. A War Office designed to direct and maintain an army of a million men satisfactorily produced and controlled forces seven times that number. Is it reasonable to assume that the relatively small addition of an aerial arm would bring about the disintegration of the War Department whose war experience had brought it the power to think easily in millions, an attribute rare in all other departments save the Treasury?

The third factor is curious. According to this the air raids over England assisted in the birth of the Air Force. The war is responsible for many strange midwives. It is odd in view of this argument that the anti-aircraft defences of this country were a part of the Army, commanded by a major-general, assisted by an exclusively military staff. It will be generally admitted, I think, that those defences were effective, and that the despised War Office has at least one considerable success to record in its annals.

The Seely Touch.

There is the true spirit of General Seely in a later passage of his lordship's letter :—"Has the War Office knowledge, time, or ability to think out the special problems of the air or administer efficiently this novel, peculiar, and wonderful force, whose pilots must always be pilots before they are sailors or soldiers, brave beyond telling, and reckless in initiative to the verge of insubordination? Of the two I would rather put them under the Admiralty, where initiative is understood, if successful, winked at."

That blind eye of Nelson is still doing its deadly work! It is consoling to note that Lord Montagu realises the connection between his form of initiative and insubordination. "Unity is strength," and insubordination (even in the "initiative" form) is destructive of "unity." There are a few cases of insubordination which have brought about great and effective results in action. We hear of these. They are well advertised. But nothing is said of the "initiative" which has brought about countless disasters because of its destruction of the unity essential in war. The use of intelligence is vastly more important in hostilities than is careless, self-satisfied "initiative." The soldier who understands the principles of his profession and is capable of applying them on all occasions shows initiative of the true order. He is the type of soldier to be encouraged, and the records of the war show that his class is large. On many occasions the tide of battle might have turned in our favour had pilots and observers in all cases carried out their orders strictly, before entering into little campaigns of their own, which, however attractive, were nevertheless useless to their country.

Lord Montagu ends his letter with the phrase, "Three years ago I wrote, 'One element : one Service.' That, Sir, is as true a motto to-day as then." It is surely

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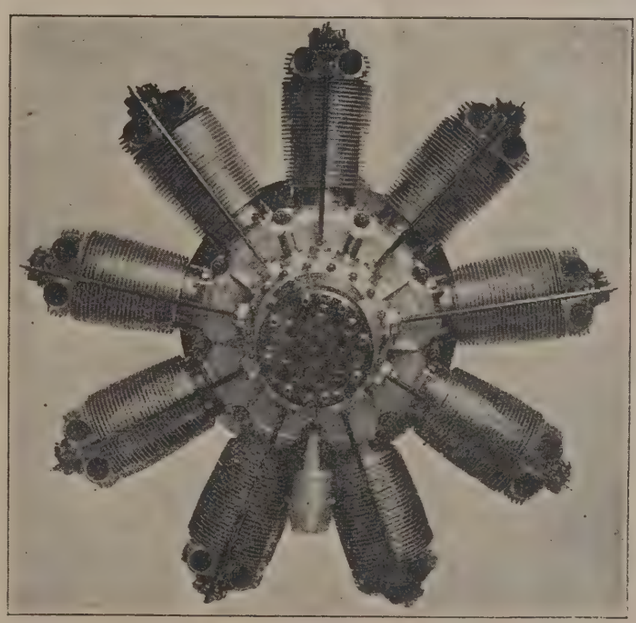
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a little unkind that his lordship in his disbelief in the qualities of the soldier and sailor should wish to deny them the right to breathe!

Other letters in this correspondence appeared on later dates. The Lord Sydenham, than whom there have been few greater administrators in the history of the Empire, wrote to the "Times" on November 29th and Dec. 5th, supporting the existence of a separate Air Force. In the first letter written to support Lord Montagu he says, in essence, that the Air Force "has a psychology of its own, and it will never reach the full measure of achievement unless it develops a distinct air policy and is trained in peace and directed in war by flying men." His second letter emphasises the importance—according to his school of thought—of the claims of the Royal Air Force to complete independence. "There is greater reason for independence in regard to the R.A.F. than in regard to the Army and Navy."

Admiral Sir Reginald Custance and Maj.-Gen. Sir John Davidson also wrote letters on this subject.

By far the clearest and most convincing contribution to this discussion is a letter from Maj.-Gen. Guy Dawnay which appeared in the "Times" on December 5th. The following extract will explain itself and the general trend of the whole letter:—

> Only by the very fullest measure of co-ordination will it be possible to fit the Air Force into its proper place in the complete military (which, of course, includes naval and aerial) machine. And further, to each arm or service its own tactics; but it is a main essential that air forces working with Navy or Army should be thoroughly familiar with, should have most detailed knowledge and understanding of, naval and military tactics respectively. Moreover, as strategy is all one, there must be no risk of an independent Air Service devising divergent or unrelated theories in the region of strategy, or even in the borderland of "grand tactics." But these desiderata cannot be ensured without either a combined Ministry of Defence or, as General Davidson urges, a Joint General Staff, or both; nor without a most comprehensive scheme of attachment of Air Force *personnel* for thorough training with the older Services.
>
> On the second point—the provision for the Navy and the Army of efficient organs of their own—what is the position? Of the Navy I shall not presume to speak, but the outlook, at least as regards the Army, is dubious. In the sense in which cavalry used to be called "the eyes of the Army," aircraft rather may now be so called. But if aircraft are the eyes of the Army, the Army has no eyes of its own. Yet in modern war eyes of its own are more than ever necessary; it is no longer mainly a matter of strategical or tactical reconnaissance, for modern artillery requires eyes of distant vision incessantly. In ten years' time, will the young Air Force officers know enough about warfare on sea and land, enough about naval and military tactics, to undertake reconnaissance efficiently for Navy or Army? In ten years' time, will they know enough of artillery on sea or land—highly complex subjects—to be able to co-operate with that arm afloat or ashore to fullest advantage? Ten years' complete independence without some exceedingly strong co-ordinating factor might easily produce a dangerous loss of efficiency in co-operation. No one who saw the working of the Dardanelles Expedition from within can disguise from himself that, in spite of the most loyal, admirable, and unbroken harmony between Navy and Army in that instance, considerable obstacles are placed in the way of perfect co-operation between two Services when mutual understanding of the tactical views and requirements of each other is not complete throughout, when the staff systems of the two are utterly different, and when the heads of either may report independently to independent Ministries at home.
>
> The creation of an independent Air Ministry after the early part of the war may have been the best means of coping with a very difficult situation at a time of great stress. But, as Admiral Custance indicates, the decision appears to have been taken mainly on grounds connected with administration, and such grounds are not the essential. As for the desirability or otherwise of its continued independence, the only body fully competent to advise would be the Joint Imperial General Staff, for which General Davidson asks, and which, as he truly says, could be established without delay. In the absence of a Defence Minister, it would report presumably to the Committee of Imperial Defence. Such a Staff would also consider, and would alone be fully competent to recommend, means for securing to the Navy and the Army necessary organs which the present divorce of the Air Force seems to withdraw from them; or, alternatively, means for promoting and maintaining full efficiency under the existing system if possible.

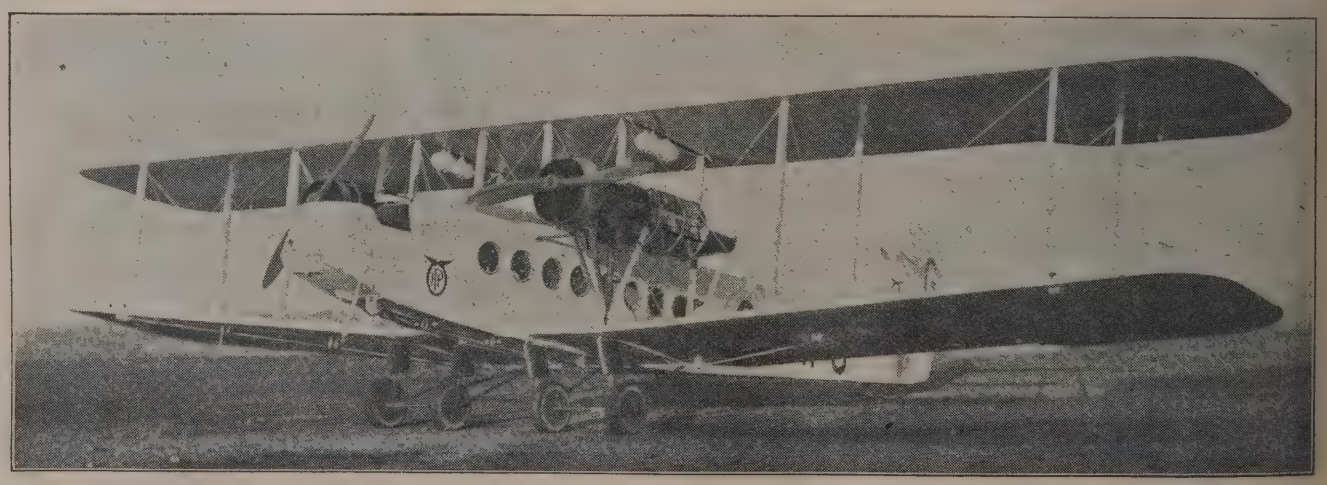
The Air Question is not settled yet. Like Home Rule, it may serve to wreck Governments, to make or break political reputations. The creation of new Ministries has during the war been regarded as the panacea for all ills, the ointment which cures all diseases.

We may perhaps hope that peace will lead to simpler decisions and that bureaucracy may be induced to depart from a country in which it has never been popular. A surer cure for political evils of the present day may perhaps be found in a reduction in the number of Ministries, and among the first to go—as a political redundancy—should be the Air Ministry.—W. E. de B. W.

THE PARIS AERO SHOW.

M. André Granet, Commissaire-General of the International Exposition of Aerial Locomotion in Paris, which opens on December 17th, intimates that by decree of the President of the Republic, dated November 8th, the location of the Exhibition in the Grand Palais has been constituted a entrepot reel for purposes of customs.

That is to say, for all intents and purposes the Grand Palais becomes a Bonded Warehouse, and all exhibits therein are free from customs duty so long as they remain there. Consequently machines sent from abroad to be exhibited at the Grand Palais can be despatched direct to the stands allocated to them under the ordinary International transit regulations by means of all offices open for such purposes.



The new "W.8" Type Handley Page Biplane (two 450 h.p. Napier "Lion" engines), which, on its maiden trip to Paris on Dec. 4th, completed the journey in 2 hr. 10 min.



Telephone : WILLESDEN 2455.

Telegrams : "NIEUSCOUT, CRICKLE, LONDON."

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

NAVAL & MILITARY AERONAUTICS

[The official "Gazettes" and Personal Notices will be found on page 1942.]

GREAT BRITAIN.

FROM THE "COURT CIRCULAR."

Buckingham Palace, Dec. 3rd.

The King held an Investiture in the Ball Room of the Palace at 11 o'clock this morning. The following were severally introduced into the presence of His Majesty, when the King invested them with the Insignia of the respective Divisions of the Orders into which they have been admitted :—

The Most Excellent Order of the British Empire (Military Division).—Dame Comdr.—Dame Helen Gwynne-Vaughan, W.R.A.F.

The Most Distinguished Order of Saint Michael and Saint George.—Companion.—Wing Comdr. Geoffrey Brierley, R.A.F.

The Most Excellent Order of the British Empire (Military Division).—Commanders.—Miss Josephine Fairfield, R.A.F.M.S.; Brig.-Gen. Robert More, R.A.F.; and Wing Comdr Douglas Powell, R.A.F.

Officer.—Lieut.-Col. Donald Cameron, R.A.F.

His Majesty then conferred decorations as follows :—

The Military Cross and the Distinguished Flying Cross.—Capt. Frederick Haney, R.A.F.

The Military Cross and the Air Force Cross.—Capt. Oliver Stewart, R.A.F., and Flying Officer Bernard Smith, R.A.F.

The Military Cross.—Capt. Charles Denning, R.A.F.; Lieut. Eric Varley, R.A.F.

The Distinguished Flying Cross and Bar.—Capt. Richard Hilton, R.A.F.

The Distinguished Flying Cross and the Air Force Cross.—Flying Officer John Stubbs, R.A.F.

The Distinguished Flying Cross.—Sqdn. Ldr. Maurice Le Blanc-Smith, R.A.F.; Capt Harold Hillier, R.A.F.; Flight Lt. Noel Keeble, R.A.F.; Capt. William Leete, R.A.F.; Flight Lt. Humphrey Leigh, R.A.F.; Lt. Edgar Harris, King's Royal Rifle Corps, attached R.A.F.; Lt. John Hodgson, R.A.F.; Flying Officer Thomas Horry, R.A.F.; Flying Officer Frederick Hunt, R.A.F.; Lt. William Hurrell, R.A.F.; Observer Officer John Kendrick, R.A.F.; Lt Ralph Keys, R.A.F.; Lt. John Latchford, R.A.F.; and Flying Officer George Lingham, R.A.F.

The Air Force Cross.—Wing Comdr. Reginald Rodwell, R.A.F.; Sqdn. Ldr. Charles Nicholas, R.A.F.; Maj. Maurice Noel, The King's (Liverpool Regiment), attached R.A.F.; Maj. Leslie Peter, R.A.F.; Maj. Sebastian Smith, R.A.F.; Flight Lt. Lionel Payne, R.A.F.; Capt. Lawrence Sloan, Cameron Highlanders, attached R.A.F.; Lt. Ralph Park, R.A.F.; Lt. Francis Silwood, R.A.F.; Lt. Harry Slingsby, R.A.F.; Lt. Edward Sullock, R.A.F.; and Sec. Lt. Eric Priest, R.A.F.

Buckingham Palace, Dec. 4th.

The King held an Investiture in the Ball Room of the Palace at 11 o'clock this morning.

The following were severally introduced into the presence of the King, when His Majesty invested them with the Insignia of the respective Divisions of the Orders into which they have been admitted :

The Most Distinguished Order of Saint Michael and Saint George and the Distinguished Service Order.—Companion.—Wing Comdr. Andrew Board, R.A.F.

The Most Distinguished Order of Saint Michael and Saint George.—Companion.—Group Capt. John Becke, R.A.F. (also received the Air Force Cross).

The Most Excellent Order of the British Empire.—Officer.—Military Division.—Lieut.-Col. Max Freeman, R.A.F.

His Majesty then conferred decorations as follows :—

The Military Cross and Bar.—Flight Lt. Arthur Jones-Williams, R.A.F.

The Military Cross and the Distinguished Flying Cross.—Flight Lt. Vivian Champion de Crespigny, R.A.F.

The Military Cross.—Capt. Stuart Cole, R.A.F.

The Distinguished Flying Cross.—Capt. John Middleton, R.A.F.; Capt. Horace Porter, R.A.F.; Flying Officer Edward Arnold, R.A.F.; Flying Officer Geoffrey Bailey, R.A.F.; Lt. Eric Furlong, R.A.F.; Flying Officer Malcolm MacEwan, R.A.F.; Flying Officer George Machin, R.A.F.; Flying Officer Ian McDonald, R.A.F.; Flying Officer John Milne, R.A.F.; Flying Officer George Moffoot, R.A.F.; Flying Officer Arthur Newman, R.A.F.; Flying Officer Jaffrey Nicholson, R.A.F.; Flying Officer George Pargeter, R.A.F.; Lt. Joshua Parke, R.A.F.; Lt. George Pitt, R.A.F.; Lt. Robert Reece, R.A.F.; Flying Officer Frederick Stevenson, R.A.F.; and Lt. Frank Stott, R.A.F.

The Air Force Cross.—Sqdn. Ldr. Albert Butler, R.A.F.; Sqdn. Ldr. Ernest Wilberforce, R.A.F.; Capt. Henry Kendall, R.A.F.; Flight Lt. Edward Pretyman, R.A.F.; Capt. Bernard Windeler, R.A.F.; Capt. Arthur Wright, R.A.F.; Capt. William Wright, R.A.F.; Flying Officer Frederick Hyde, R.A.F.; Lt. George Sewell, R.A.F.; Lt. Frank Taylor, R.A.F.; Lt. Leslie Taylor, R.A.F.; Lt. Richard Wainwright, R.A.F.; Lt. George Waugh, R.A.F.; Flying Officer Edward Westall, R.A.F.; Lt. Henry Whitby, R.A.F.; Flying Officer Archer White, R.A.F.; and Flying Officer Cecil Wigglesworth, R.A.F.

NAVAL.

Regression!

The Admiralty has approved the removal of the kite-balloon platform and the replacement of the main mast on all sloops proceeding on foreign service, or with the post-war fleets.

Aviation in the Baltic.

According to the correspondent of the "Morning Post," at the end of November the British air stations on the shores of the Gulf of Finland were dismantled and moved onto the warships. This fleet will, it is expected, remain in the Gulf during the winter, using Reval as a base.

MILITARY.

The War in Afghanistan.

The following is extracted from a telegram despatched from India on Dec. 1st. The telegram gives some particulars of the Afghan campaign, but it is uncertain whether the telegram is official :—

"Air operations against the Mahsuds continue. On Nov. 27th seven tons of bombs were dropped and 8,000 rounds of small arm ammunition fired. On Nov. 28th three and a half tons of bombs were dropped and 5,200 rounds fired. Good results were obtained."

Some sections of the Mahsuds have now definitely asked for peace owing to the air raids, but their request has been refused.

The Mahsuds' villages are still being bombed, and will probably be further intensified in the near future if no general submission is made. On Nov. 22nd Sarwakai and Kot Kai were bombed.

AIR FORCE.

H.R.H. the Prince Albert.

On Dec. 2nd Capt. H.R.H. the Prince Albert, K.G., R.A.F., was admitted to the Order of Freemasons at Princes Galleries, Piccadilly, in the presence of the Prince of Wales, many Grand Lodge officers, and a distinguished company of Freemasons generally. Surgeon Lieut.-Comdr. Louis Greig, R.N. (Wing Comdr., R.A.F.), was also initiated. An emergency meeting was held for the dual ceremony.

This was performed by the Pro Grand Master, Lord Ampthill (in the regrettable absence of the Grand Master, the Duke of Connaught), and the Master of the Lodge, Vice-Admiral John B. Eustace, R.N.; while the Deputy Grand Master (the Right Hon. T. F. Halsey) addressed the candidates.

Prince Albert was presented as "Lieutenant His Royal Highness Prince Albert Frederick Arthur George, K.G., R.N. (Flight Lieutenant, R.A.F.)," and his Equerry as "Surgeon-Lieutenant-Commander Louis Greig, M.V.O., R.N. (Wing Commander, R.A.F.)."

Owing to his connection with the Navy Prince Albert has joined the Navy Lodge, No. 2,612.

An Honour for Lord Londonderry.

St. James' Palace, Dec. 5th.

The King has been pleased to approve of the following appointment :—

The Most Hon. the Marquess of Londonderry to be a Knight of the Most Noble Order of the Garter.

The Demobilisation of the W.R.A.F.

The Women's Royal Air Force was finally demobilised on Dec. 4th. The W.R.A.F. are the first women's corps to have a Women's Comrades of the War Association, and it is intended that this shall be run on the most democratic lines and have branches practically everywhere that demobilised "Wrafs" are to be found. The committee consists of four officers and six other ranks, and the president is Dame Helen Gwynne-Vaughan. There are an officer secretary and a "ranker" secretary.

BELGIUM.

The Chevalier Lt. Willy Coppens, the Belgian aviator, has been appointed Air Attaché to the Belgian Embassy in London. He was awarded both the Cross of the Order of Leopold and the Cross of the Order of the Crown.

CZECHO-SLOVAKIA.

The Italian correspondent of The Aeroplane writes :—

Lieut. Lepar and a non-com. officer of the Bohemian nationality crashed inexplicably when flying an ex-Hun biplane near Milevek on Nov. 26th. Lieut. Lepar had been with Pégoud in France and had the distinction of having piloted that great man. On the same day another machine, with an army pilot, Provaznic by name, and also a mechanic on board, fell to earth at a place called Tabor, in Bohemia, both men being lost.—T. S. H.

HOLT LANDING LIGHT

NOTICE:—It has come to the notice of the Yorkshire Steel Co., Ltd., that the DISPOSAL BOARD is offering Holt Landing Light Equipment for sale. It is necessary, therefore, to point out that this apparatus is Patented in England and various foreign countries and can only be used under Licence from this Company. Further, the Landing Flares are only guaranteed by us for six months, while those offered for sale are much older and their use would entail very serious risks to Passengers and Machines.

THE YORKSHIRE STEEL COMPANY, LIMITED,
HEAD OFFICE: **30, HOLBORN, LONDON, E.C.1.**
Makers of Life-Saving Parachutes and Parachute Flares, etc., etc.

18 NEW RECORDS

On Nov. 22nd, Capt. Gathergood, piloting a 450 h.p Napier Engined Airco 9R machine, secured the following 18 Official British Records :—

Longest distances in ¼ hour, ½ hour, 1 hour and 2 hours.

Greatest speed over straight flight of 5 Kilometres.

Greatest speed in closed circuit for 5, 10, 20, 30, 40, 50, 100, 150, 200, 250, 350, and 400 Kilometres —without alighting.

in 1 day, on 1 machine, with THE ONE LUBRICANT

WAKEFIELD Castrol REGD. (R)

C. C. WAKEFIELD & CO., LTD.,
Wakefield House, Cheapside, London E.C.2.
and 21, Rue du Mont Thabor, Paris.

DENMARK.

The Danish correspondent of The Aeroplane writes :—

One of the Danish army pilots ordered to France for advanced training, Serjt. Johansen, has been killed at the Le Bourget Aerodrome, his Breguet biplane catching fire in mid-air.

A Gift.

As a token of appreciation of the kind reception received at the Copenhagen naval air station, the Danish-American millionaire, John Larsen, has presented the Navy with his new, large Curtiss flying-boat, with self-starter, said to be the only one of its type in Europe.—Hi.

FRANCE.

A Reorganisation of the Aerial Arm.

On Jan. 1st next the present Groups of Escadrilles will be formed into Aviation Regiments. All officers at present in the aerial arm who desire to be posted to the new regiments on the administrative staffs are requested to submit their names to the Director-General of Military Aeronautics, stating in order of preference the garrisons to which they wish to be attached.

A Medical Board.

The Directorate of Military Aeronautics has opened a temporary Medical Board at 5 Square du Trocadéro, Paris, for the examination of candidates for military aeronautics. This Board will at a later date be transferred to Le Bourget. Candidates who fail to pass the required tests will return to their original arms of the service.

The Resignation of Capt. Heurteaux.

Capt. Heurteaux, having been elected to the Chamber of Deputies, has been placed on the reserve cadre of the 9th Hussars, but remains also seconded for service in aeronautics.

Refresher Courses for Reserve Pilots.

It has been decided that retired and demobilised military aviators will be permitted to take refresher courses on military machines, and that during these courses their expenses will be paid. Premiums will also be given under stated conditions. On the other hand, it is not stated as yet whether or not these pilots will, in case of accident, be entitled to consider themselves as under orders, and so be eligible for pension or gratuity.

A Burglary.

According to a Reuter report of Dec. 5th 40 aeroplane magnetos and a large quantity of tools have been stolen from the French aviation camp at Villacoublay.

A Naval Flight.

Lieut. Lefranc, a French naval officer, who left St. Raphael recently with a squadron of seaplanes to fly to Dakar (West Africa), completed the journey between Valencia and Almeria, a distance of about 440 kilometres (273 miles), in four hours.

A Flight to Morocco.

Commandant Vuillemin and Lieut. Dagneau, who both acquired merit recently in a flight from Paris to Cairo and back (though the latter was prevented from completing the return journey by air), reached Algiers on Dec. 2nd, having flown from Alicante, a distance of 340 miles, in 2 hr. 40 min.

They are to be under the orders of General Nivelle, and will make reconnaissances over the Sahara with a view to arranging an aerial link between the French military posts in that area.

An Accident in Turkey.

Two French military aviators, Lieut. Quinquandar and Adjudant-chef Serge Iline, flying on the military aerial post between Bucharest and Constantinople, were lost in a fog on Dec. 5th, and flew into the Chirchiloul hill in the Burzen district. The pilot and passenger were killed instantly.

HOLLAND.

An order has been issued by the Commandant of the Dutch Aviation Department forbidding further flights in Rumpler aeroplanes. It is understood that there have been four fatal accidents on these machines recently.

A Proposed Flight.

Lieuts. W. C. Versteegh and A. K. Steup intend to fly from Holland to the Dutch Indies together in one machine. Probably before starting on the journey these officers will, together with Lieut. Kopper, pay a visit of a month or so to England in relation to this big flight. It is the intention of the Dutch Government to send the three officers to England at the nation's expense.—G. M.

ITALY.

The Italian correspondent of The Aeroplane writes :—

Bad Weather Flying.

A squadron of seaplanes flying from Milazzo *via* Taranto to Naples—probably some of the machines from the seaplane station at the former place which, as mentioned recently, are extending their postal services—came to grief owing to running into foul weather and a violent wind along the Calabrian coast. According to one report, an F.B.A., No. 3250, with Nav. Lt Panarello in command and Seaman Santina pilot, came down and was sunk by the waves near Siderno. The crew were saved by Serjt. Spoto, who was flying a relief machine. Only two of the five machines were able to continue the journey on to Naples in the teeth of the hurricane.—T. S. H.

ROUMANIA.

A Capture.

It is reported that Roumanian troops have captured a large aeroplane which made a forced landing at Hotin, in Bessarabia, owing to engine trouble. The crew of the machine consisted of two German officers and three mechanics, who had with them 360,000,000 roubles for the Bolshevik troops in Ukraine, a printing machine to print banknotes, and several thousands of jewels of all kinds.

There appears to be a regular air service of this sort running between Germany and Russia. One seems to remember a similar capture made some little time ago.

RUSSIA.

A Bolshevist Haul.

In an official Bolshevist communiqué, dated Dec. 1st, it is stated that in the occupation of Bolshoe-Konushkino four seaplanes were included among the captured war material.

SWITZERLAND.

The Dubendorf Military Station.

Some figures are now available which show clearly the amount of flying carried out by Swiss military aviators from day to day. As far as can be discovered, there are 53 military aeroplanes at Dubendorf and two Albatros biplanes of the Austrian army interned during the war. There are about 35 pilots posted to the station. In the week ending Nov. 2nd the military pilots made 251 flights, totalling in time 79 hr. 8 min. and in distance about 5,950 miles. In the following week, owing to the cessation of aerial posts, the 224 flights made by military aviators only amounted in all to 43 hr. 34 min. flying over a total distance of 3,500 miles. During the month of October, 32 pilots made 1,416 flights of a total duration of 428 hr. 46 min. and a distance of 34,600 miles.

U.S.A.

Prohibited Areas.

Instructions issued by the War Department on Oct. 10th prohibit civilian flying over the vicinity of fortified areas within the boundaries of the United States, including the Panama Canal Zone.

DURING THE PARIS AERO SHOW THE CURRENT ISSUES OF "THE AEROPLANE" WILL BE SENT TO PARIS BY AIR AND MAY BE OBTAINED ON THE DAY OF PUBLICATION FROM :—

Mm. Hachette's Kiosks ; W. H. Smith & Sons, Rue de Rivoli ; and from the Stand of "L'Air" in the Grand Palais.

AERONAUTICAL ENGINEERING

SUPPLEMENT TO "THE AEROPLANE"

INCORPORATING AIRCRAFT ENGINEERING, AERODYNAMICS, AIRCRAFT FINANCE AND COMMERCIAL AERONAUTICS AND MATTERS PERTAINING TO THE AERONAUTICAL ENGINEER AND THE AIRCRAFT TRADER.

THE WEEKLY COMMENTARY.

A further instalment of the article on the experimental work carried out at Grain Air Station during the war is printed below; and describes some of the difficulties encountered in connection with the problem of landing machines on the decks of aircraft carriers and the early work of developing emergency flotation gears for land machines for use over the sea.

A paper by Major T. Vincent Smith, R.A.F., which was read before the British Association at Bournemouth in September, is reproduced in this issue.

This paper outlines the history of the war development of wireless communication with aircraft, and gives a vivid idea both of the difficulties which had to be overcome and of the success with which these difficulties were attacked.

Some machines produced by the Kondor Flugzeugwerke during the war are illustrated in the third instalment of the series on "Recent German War Machines."

A memorandum issued by the Air Ministry, dealing with the supply of instruments for aerial navigation, is reproduced on page 1928.

THE WORK OF THE MARINE EXPERIMENTAL AIRCRAFT DEPOT, ISLE OF GRAIN.—(*continued.*)

By Capt. W. H. SAYERS, Late R.A.F.

Reference has already been made to the early experiments connected with the deck landing problem made at Grain. From the middle of 1917 onwards the experimental construction depot at Grain became the centre of experimental work connected with the use of aircraft from ships. Deck landing arrangements were a part only of the general problem attacked.

Arresting Gears.

In the earlier days of experiment it had been assumed that the problem of arresting the forward motion of the landing aeroplane in the limited space available was the crux of the problem. Were this really the case the problem had been fairly easily solved, and the original wire rope landing deck, which consisted really in the provision of an artificial hill of rapidly increasing slope formed by a series of longitudinal cables anchored near the stern and rising in a catenary curve to a bridge some 30 feet above the deck level and about 100 feet farther forward, would probably have sufficed for many purposes.

So, too, with the later retarding device wherein a number of transverse wires attached at each end to sandbags, which were picked up successively by some form of hook on the machine as it traversed the deck and thus applied a continuously increasing frictional retardation.

Tests were made with this system on a planked landing platform at Grain, and it was found to be quite possible to bring a Sopwith "Pup" to rest in 50 feet from touching with only quite light head winds to assist in the process.

The Real Difficulty.

Unfortunately, actual attempts at landing on the deck of aeroplane carriers demonstrated that the actual retardation on deck was but a small part of the problem, and that the lack of width on deck was a more important matter than the absence of length.

With reasonably high speed ships it was possible to land with very small differences in forward velocity between the ship and the aeroplane, but owing to the generally disturbed air flow near the deck itself—caused by the relative speed of the ship through the air—it was very difficult to keep the machine on the deck, and particularly to keep it straight on the deck after it had lost flying speed.

The result was that having successfully established contact with the deck, the machine would slew to one side and roll over the edge of the deck with far too low an air speed to give any chance of picking up before striking the water, and more than one valuable life was lost through this type of accident.

It is to be remembered that the conditions are entirely different from those of a normal landing. With a 10-knot wind, and a 30-knot seaplane carrier, it is quite possible for the aeroplane to be flying at a negative speed relatively to the ship, and it is obvious that a machine may be on the deck with no forward velocity relative to the ship, and yet have an air speed little less than that necessary to sustain it in the air.

Under these conditions the wheels are obviously not rolling on the deck, and if an oblique gust causes the machine to skew, there is some risk of tyres being rolled off the wheels, which usually results in the machine spinning round on the rolled-off tyre. This actually occurred on several occasions, and appears to have been the cause of at least one fatal accident.

Skid Undercarriages.

To overcome this trouble experiments were made at Grain with skids, and a Sopwith "Pup" was fitted with skids attached to the axle in place of wheels, these skids being supported at their fore ends by an extra strut added to the normal Vee undercarriage. The skids were thus sprung in exactly the same way as the usual wheels and the machine so fitted was unexpectedly satisfactory. On any reasonable aerodrome it was possible to get off just as easily as on wheels, and the run after landing was considerably reduced.

The skids were much easier to taxi in side winds, and the performance of the machine was slightly improved.



The First Sprung Skid Chassis on a Sopwith "Pup." Note the hook for picking up arresting cables.

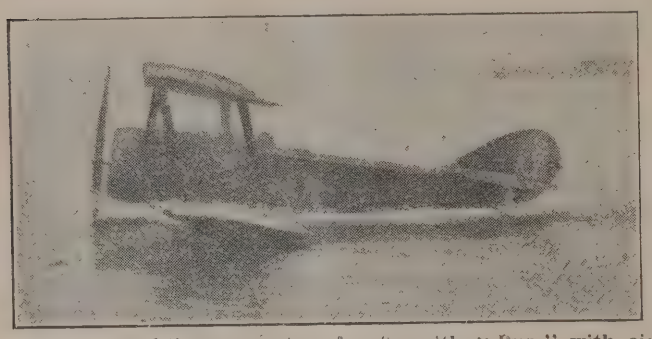
Later a rigid skid chassis was adopted instead of the sprung type—with some appreciable saving in weight and with no ill results.

By way of holding down such a machine to the deck when it had once established contact, tests were made of a series of longitudinal cables stretched fore and aft along the landing deck, and the skids were fitted with projecting catches—on the principle of the dog-lead catch—into which two or more of the stretched wires would enter on alighting, thus positively holding down the machine and limiting the possibility of sideways movement to that allowed by the give of the wires themselves.

Altogether many and various types of arresting mechanism were suggested, designed, and tried at Grain, but, at any rate up to the date of the Armistice, the problem was far from a satisfactory solution.

Flotation Gears.

In the absence of satisfactory arrangements for deck landing, and the lack of seaplanes with a performance approaching that of land scouts, it became a habit to fit ships with Sopwith "Pups" and such-like small machines which could be flown off a deck and attack hostile airships, but which had either to fly back to land when their operations were



The first alighting on water of a Sopwith "Pup" with air bags and a hydroplane.

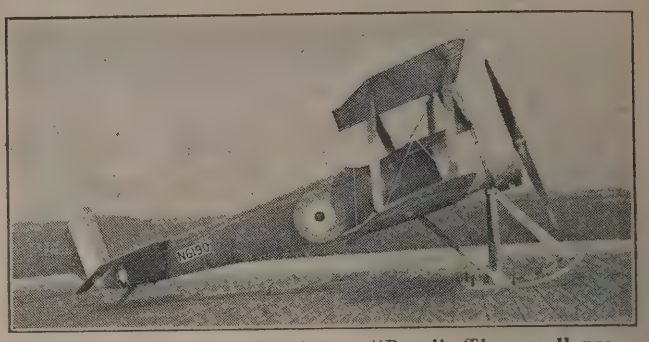
complete or else flop into the water close to a friendly ship in the hope that the pilot could be picked up. Putting an ordinary land machine into the water practically invariably meant losing the machine, and often the pilot as well, and machines used for this purpose were therefore usually fitted with air bags in the after part of the fuselage to keep them afloat.

Even so pilots found that a machine which floated tail upwards was an uncomfortable refuge in a wintry sea, and the engine generally benefited little by even a short submergence in salt water.

These facts led Squadron-Commander Busteed, while he was yet at Eastchurch, to consider the question of devising light flotation arrangements which could be attached to the normal land machine and would enable it to float right side uppermost, and eventually to produce the emergency flotation gear with which his name is associated.

In its original and simplest form this gear consisted of balloon fabric air bags, circular in section when inflated, attached to the lower wing of any ordinary type of biplane between the leading edge and the front spar. These bags were normally deflated and folded flat against the lower wing surface, to which they were held by a fabric flap permanently fastened along the leading edge of the wing and clipped to the front spar by eyelets which could be simultaneously released by pulling a string from the pilot's cockpit.

When thus folded the air bags merely slightly thickened up the front portion of the wing section, and produced no noticeable effect on the machine's performance.



The Rigid Skid Chassis fitted to a "Pup." The small projections on the skid in each side of the main Vee are horns designed to catch in longitudinal wires along the landing deck.

When it was desired to alight on water, the pilot first pulled the string releasing the flap, and then by turning on compressed air from a standard compressed air starting bottle into an air injector which communicated with the bags inflated the latter to their full capacity.

The inflated bags provided a large buoyancy ahead of the centre of gravity of the machine, and in conjunction with fuselage bags behind the C.G. kept the machine afloat in its normal attitude.

The First Trials.

The first machine on which the arrangement was tried out was a Sopwith "Pup" fitted with a dropping chassis released by the pilot before alighting. On touching the water the fabric on the underside of the fuselage ripped off, the water rushed in, and the machine nearly turned over onto its nose.

To remedy this trouble a stiff three-ply planing surface was fitted beneath the fuselage between the chassis strut attachments. A small plane of duralumin set at a negative angle was attached to the tail skid—in the hope that if it once got into the water the down load on it would hold the tail down.

With these additions the machine was again tried, and alighted successfully at the first trial, and at many subsequent ones.

A photograph showing this machine at the moment of touching is reproduced. The planing board beneath the fuselage and the air bags beneath the wings can plainly be seen Another photograph shows the same machine afloat after several hours' test immersion in the mouth of the Thames.



The first "Pup," successfully fitted with air bags and a hydroplane, afloat after several hours on the water.

This actual machine alighted on water on several occasions and in no case did any part of the machine suffer any structural damage. Naturally it was stripped for examination and recovered between each test. After the first two trials the engine was taken down and overhauled, but thereafter it was found sufficient to wash it out thoroughly with paraffin, inject copious castor oil, and then give it a short run.

THE EDGAR ALLEN NEWS.

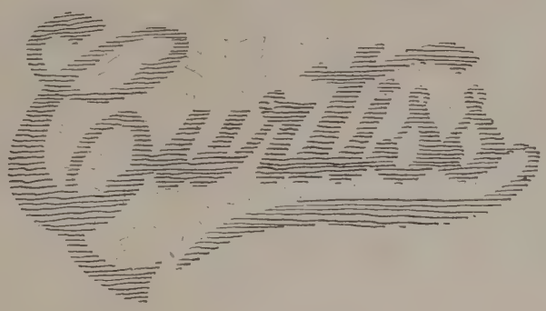
This interesting little periodical, published by Edgar Allen and Co., Ltd., for the dissemination of news of interest to the users of Edgar Allen's steel, has now reached its third number.

To those who habitually work with steel it will supply many useful hints, and even those who do not will find it provocative of thought.

All those who are seriously interested in the use of steel should apply to Edgar Allen and Co., Ltd., Imperial Steel Works, Sheffield, giving the name of the firm through which their interest arises, and copies will be forwarded to them as they appear.

A DEMENTI.

Rolls-Royce, Ltd., announce that there is no truth whatever in the rumour that they intend to place on the market during the year 1920 a Rolls-Royce chassis of 20 h.p.



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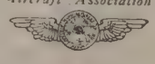
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WIRELESS IN THE ROYAL FLYING CORPS DURING THE WAR.

By Major T. Vincent Smith, M.C., R.A.F., M.I.E.E.

(A Paper read before the British Association.)

In the light of modern achievements, it is not easy to realise how profound was our ignorance on the subject of aircraft wireless in August, 1914

It is only by realising the insignificant amount of data existing at the outbreak of war that the details of the development of aircraft wireless assume a correct perspective.

It was obvious that observing for the artillery was one of the most important services that the Flying Corps could render, and for this purpose efficient communication was of primary importance. Only one machine of those which went with the original Expeditionary Force was fitted with wireless, and though a few had been added by the time I went to France in February, 1915, I found a rather cumbersome signalling lamp the most popular means of communication between air and ground.

Early Types of Apparatus.

The earliest form of spark transmitter we used was of the simplest possible kind, using an accumulator battery and closed oscillating circuit, the inductance of which was common to closed and radiating circuit in the form of the well-known auto transformer.

A wandering plug enabled the closed circuit to be tuned to the aerial, or the aerial could be brought into resonance with the closed circuit by lengthening or shortening.

There was another somewhat similar set made by Leslie Miller, but having an inductive coupling; another squadron was using a French engine-driven set, having the auto transformer coupling and a multiple rotary spark gap.

The power and weight of these three sets were, respectively, 40 watts, 50 lb.; 100 watts, 65 lb.; and 150 watts, 78 lb.

The ground receiving arrangements consisted of an 8-section 30-ft. tubular steel mast, a 150-ft. silicon bronze wire aerial, a rather unwieldy tuner, and two kinds of crystal detectors, also two pairs of Brown's high-resistance 'phones. Two copper gauze mats as counter-capacity completed the outfit. The tuner was eventually replaced by a good and efficient instrument.

A few days after my arrival I was appointed wireless officer to No. 3 Squadron of the 1st Wing, which comprised, in addition, Nos. 2 and 16 Squadrons. Each squadron consisted of 12 machines divided up into three flights of four machines, of which one flight was wireless, the remaining two flights worked with signal lamps.

The End of Lamp Signalling.

There was considerable rivalry between the lamp and wireless as a means of signalling, but the latter soon made the lamp method obsolete, when, owing to the success of the wireless flights, all machines in No. 3 Squadron were ordered to be fitted. The more the use of wireless extended, the greater were the difficulties that arose, but in spite of annoying failures it was justifying itself inasmuch as it would have been impossible to get through anything like the amount of work by other means.

One realised that the whole future of the application of wireless on a large scale in the Air Force in war depended upon the successful solution of the new problems which were constantly presenting themselves.

To do this demanded the fullest possible knowledge of the nature of the work, the conditions under which it had to be carried out, the personnel who did it, and finally investigation into the causes of failures with a view to their elimination.

These were done as far as possible, and by spending two days with each squadron, flying, keeping their machines in working order, and visiting the ground stations with the guns.

My front, which corresponded to that of the 1st Army, extended from Armentières to Mazingarbe, about 25 miles, and contained about 30-40 batteries. It was by far the most active piece of line and embraced the three most important operations of 1915, namely, the battles of Neuve Chapelle in March, Festubert in May, and Loos in September.

The first battle in which wireless became a serious factor was that of Festubert. Our preparations for this battle consisted of observing for the artillery whilst they registered their guns on the trenches and important points within the enemy's lines.

It is also memorable as being the first occasion upon which machines were specially detailed to observe the battle and to report progress by wireless. This work was done by No. 16 Squadron, under Major Holt, and four of their machines fitted with Leslie Miller transmitters kept watch successively all day over the battle.

As the attack did not develop, there was nothing much to report, but the wireless worked quite successfully and the machines remained in touch with their stations throughout the operations.

Foundations were thus laid which resulted in the development of that very important branch of aerial activity known as the close-contact patrol for the purpose of reporting infantry movements.

Another squadron, No. 10, had now been added to the Wing, and, apart from ordinary troubles, jamming or mutual interference steadily increased, but the experience gained by this time enabled one to begin reform and organisation in real earnest, and the first thing done was to standardise the apparatus.

Both for its light weight and simplicity, I chose the No. 1 transmitter and found immediate relief from jamming owing to the smaller power used by it. The effect of eliminating powerful signals was very marked and the simplification through having only one kind of transmitter materially added to reliability.

So much was this the case that all machines in the Wing, amounting to 48 in all, were ordered to be fitted.

Practical Difficulties Overcome.

I redistributed the wave lengths on the following plan:—The three flights of the most northerly squadron were given 100, 180, and 260 metres, the next squadron was given 140, 220, and 300 metres, and so on, alternately, down the line. The beneficial effect of this change was sufficient to meet the large increase in machines.

The transmitter was now taken in hand and a lot of useless connections removed, and the radiating circuit altered by disconnecting the aerial from the top of the inductance and attaching it to a wandering plug, thus enabling the aerial to be loosely or tightly coupled as required. The component parts were assembled in a neat gas-tight box and the inductance calibrated in wave lengths, thus reducing the weight of the whole set to 26 lb., including all fittings, and its bulk by one half. A further addition of 24 machines was made to our Wing. These naturally brought more trouble in their wake, as we now had 72 machines fitted.

To relieve the somewhat severe pressure I received permission to recommend four of my most suitable operators for commissions to take charge in their respective squadrons. This resulted in considerable diminution of failures, but the jamming trouble was again to the fore.

In reviewing the situation, and in the light of past experience, I determined to try the effect of reducing still more the power of the No. 1 transmitter, which was done with almost startling results.

The battery was cut down to three cells and the adjustment of the spark gap and primary make and break very carefully attended to, with the result that the rasping guttural splutter gave place to a pleasing flute-like note.

The effect was truly magical and gratifying, as not only were the operators delighted at the change, but jamming lost many of its terrors. In addition to which, owing to the power being reduced to 20 watts, the trembler and spark gap remained clean and in adjustment for a longer time and the weight of the battery was also reduced.

It was found that the trembler could be made to vary its note within small limits by careful adjustment. This was of great assistance to the operators and the soundness of these principles in the prevention of jamming was amply proved later on, when their development enabled the number of machines capable of working without mutual interference to be greatly increased.

A Sign of Enemy Inferiority.

Evidence of the success of our work was shown unmistakably by the attempt on the part of the enemy to jam us, a sure sign of their technical inferiority, more particularly as they entirely failed in their object.

About this time another very important detail was added to our organisation in the establishment of a squadron wireless control station situated between the guns and the squadron. It was connected to squadron and batteries by telephone and its prime duty was to listen to the machines working with their batteries and to take down as much as possible.

These records formed an invaluable means of locating causes of failure, as the assertion on the part of the pilot that he had sent a certain signal, or the operator at the battery that signals were weak and unreadable, received from the control station definite proof of their truth or otherwise. Another duty was to lay out a signal on the ground indicating to a machine on its way from the squadron to the lines the quality of its signals.

By this means a fruitless journey was saved to a machine whose apparatus was not functioning properly.

Owing to its situation, the control station was naturally freer from jamming than a battery station, consequently it was possible, owing to their being connected by telephone, to accept signals from a machine and phone them to a battery that was for some reason not getting its signals.

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The first of these stations was started at Vielle Chapelle in May, 1915, though its full uses were not developed until later on.

In July the first introduction of the thermionic valve took place and one was brought out to demonstrate its powers of amplification. It was a Round valve of the soft type, associated with the Round magnifying circuit, and was very delicate in action, requiring considerable training on the part of the operator; but it obviously possessed great possibilities, and I reported accordingly.

WIRELESS WORK AT LOOS.

Preparations for the Loos offensive in September were now in full swing, and registration of the guns was the order of the day.

Over 600 targets were registered by the machines of the 1st Wing during the week preceding the offensive.

The battle took place and was a great opportunity for proving the use of wireless on a large scale, and it emerged triumphant. In spite of there being about 20 machines always working in the salient to about 60 ground stations with the guns, no serious failure took place.

Lord French's dispatch on the battle said :—"The R.F.C. is becoming more and more an indispensable factor in combined operations. In co-operation with the artillery in particular there has been continuous improvement both in the methods and in the technical material employed. The ingenuity and technical skill displayed by the officers of the R.F.C. in effecting this improvement have been most marked."

The war now settled down again to trench warfare.

About this time another small but effective improvement was made. I found that large capacity accumulators were conducive to failures owing to the mechanics forgetting when they were last charged. By substituting accumulators of sufficient capacity for only one spell they had of necessity to be recharged after every flight. Not only did this eliminate failures due to exhausted accumulators, but the weight of the battery was reduced by 25 per cent. and the whole transmitting set, including all fittings, to 18¾ lb.

THE FIRE DANGER.

Another matter arose demanding earnest attention, and that was danger from fire. Obviously the close association of the electric spark and petrol required that every possible precaution should be taken. A machine may crash when landing or by engine failure when trying to get off. In either case the petrol tank invariably bursts to the imminent danger of the pilot and observer. As a switch might easily be moved in the case of a crash I decided that the only really certain remedy was a complete disconnection of the accumulators from the wireless apparatus by means of a plug. This fitting was made compulsory throughout the R.F.C. and orders issued that no machine was to leave the ground or land again with its battery connected.

So far as I am aware no fire caused by wireless occurred after this.

In February, 1916, I was ordered to organise the wireless repair section of No. 1 Aircraft Depôt at St. Omer.

One of the most important things undertaken by this section was the fitting of all the machines as they arrived from England in the safest and most efficient manner instead of leaving it to squadrons to carry out. When it is remembered that only 20 watts were being used by the transmitters, the greatest care had to be taken to avoid leakage by conduction and induction.

The transmitter and its battery were mounted on a tray which slid into a little cupboard in the fuselage.

In the early days, officers were taught to adjust and tune in the air, but experience showed that it was much safer and better to leave all that sort of thing to be done by the trained mechanics on the ground. The whole set was entirely overhauled after each flight, and they were responsible that everything was in perfect order before the machine left the ground.

These precautions practically insured the apparatus against breakdown, and it was only natural that the pilots came to have implicit trust in the reliability of their wireless.

The confidence of the pilots was a very important factor in the success of wireless, and to gain this one had had to participate in and appreciate as far as possible some of their difficulties and dangers.

This knowledge profoundly modifies the design of any apparatus that can be used in war successfully.

THE NEED FOR SIMPLICITY.

To call upon a pilot to make even one adjustment may easily add 20 per cent. to the failures, and it was found by experience to be far better to sacrifice a certain amount of electrical efficiency and to provide apparatus which was able to do the work required and could be used by as many thousands of pilots as operations in all theatres of war might demand.

I feel called upon to make these remarks in defence of the 1 transmitter and in answer to the criticism of wireless neers who had no opportunity of appreciating the con- s under which this work was carried out on the Western

Early in 1916 Major Prince brought out a valve transmitter with telephony attachment of his own design. This was successfully demonstrated to Lord Kitchener, who was visiting France at the time. He was able to hear every word from a machine flying 40 miles away, and was much impressed.

I mentioned at the beginning of my remarks the absence of data from which we suffered, and an interesting fact developed in ascertaining the correct length of aerial for a definite length of wave.

Whilst this relation is well known for different kinds of aerials on the ground, I found the ratio in the air differed with each type of machine and presumably depended upon their different electrical capacities.

The ratio of one foot of aerial for a wave of one metre was true only within small limits, and after about 150 ft. of aerial for a 150 metre wave, different makes of machines required anything from 240 to 320 ft. for a 250 metre wave.

Amongst the requirements for the following year the need for a 100-mile transmitter was felt. Major Whiddington's spark transmitter, having proved its capability, was adapted provisionally until valves were sufficiently developed for this work, which occurred the following year.

Although the continual increase of the R.F.C. showed that the general principles already in use in wireless were sound, it was clear that an extension of the range of notes as distinct from wave lengths was desirable.

Accordingly, the wireless repair section set to work and produced a simple but very effective little device which was easy to fit to the trembler of the primary of the transmitter.

By a simple adjustment the note could be varied over a range of about six whole tones, thus giving a very great variety.

Our little workshop made them, and a flight in every squadron on the whole front was fitted in a month, and proved a great success.

I was appointed Officer in charge of Wireless at R.F.C. Headquarters in March, 1916.

RECEIVING IN THE AIR.

It became necessary to turn our attention seriously to the reception of signals in aeroplanes. The instruments hitherto sent out for trial had not proved satisfactory, and a G.H.Q. Intelligence report that the enemy was using such a device put our little wireless section on its mettle. With the assistance of Lieut.-Col. Blandy, of Wireless H.Q. Signals, three days later we were able to give a demonstration of the reception of signals from a standard Army station, by an aeroplane at 20 miles' range.

We used three valves associated with fixed coupled circuits designed for one wave length only. This made for extreme simplicity as the apparatus only required to be switched on to function without further adjustment.

The whole front was by now standardised and organised on the lines which had been found so successful in the 1st Wing, and preparations for the Somme offensive were put in hand.

A school was started at St. Omer to train operators in the latest methods and codes. This included an important development of arrangements for a moving battle and methods for putting the guns on to fleeting targets.

A part of H.Q. moved to an advanced position and an enormous concentration of all forces took place. As the time for the attack approached, the role of air co-operation became more and more important in neutralising the enemy's artillery fire and hampering his movements generally, and in ensuring the barbed wire in front of his trenches was effectively cut. As the Somme operations took place during July, August, and September when the days were very long, the strain on the operators of listening in from dawn to dusk was immense, especially as there were over 600 ground stations in the battle area with only one operator at each.

The arrangements for putting the guns on to fleeting targets worked splendidly, and over 100 signals an hour of this kind were dealt with at Group Headquarters. Co-operation with the infantry also proved successful, and similar arrangements had been made to work with the cavalry had they got through.

GOOD WORK RECOGNISED.

The work of the officers was not less strenuous than that of the operators, but we felt amply rewarded when at the close of operations the following special order of the day was published.

"The General Officer Commanding wishes to express his great appreciation of the work done by the wireless personnel of the R.F.C. during the present operations. They have very responsible duties, and the way they have carried them out, in spite of long hours under fire, has contributed in no small measure to the success achieved by our artillery.

"Wireless Officers are requested to bring this Order to the notice of all operators."

At the end of 1916 I was appointed to the Air Ministry, and when I left France the total wireless personnel numbered 200 officers and 2,000 operators and mechanics, or more than the total personnel of the R.F.C. at the outbreak of war.

The serious work of organisation, of training, supply, research, and policy for all theatres of war was undertaken, also Home Defence, which became a necessity at this time.

It was probably in training that the greatest effect was made, and by adopting a policy of intensive culture by instructors drawn from the Front, the personnel were sent to France ready to take up their work on landing, which led to the closing of the School of Instruction at St. Omer.

Specialisation was carried to its extreme and with standardised apparatus and methods the system proved itself fully justified, and an ever-increasing stream of officers and men poured out to France, all highly trained in their own particular branch of wireless, whilst periodical visits were paid to the Front by us all in order to keep thoroughly up to date.

Extremely good wireless work was done at the battles of Arras and Vimy Ridge.

In the latter operation the following figures are eloquent, and were officially reported as the work of the 2nd Wing working with 38 H.A. groups, 55 Divisional Artillery, and 187 Heavy and Siege Battery Stations :

256 Hostile batteries destroyed.
86 Gun pits destroyed and 240 hit.
103 Explosions caused.
229 Destructive trench shoots.
117 Successful registration shoots.
2843 Fleeting target calls received at Battery Station.
406 Artillery observation flights.
Wireless failures nil, working with
30 Machines simultaneously on a 7-mile front.

During 1917 continuous wave transmission and wireless telephony were developed to the point of standardisation and use at the Front. In the latter case intercommunication between the fighting machines in the air was leading to important results and a range of five to ten miles was achieved.

The visual reception of signals in aeroplanes utilising valves to work a relay was developed and demonstrated successfully in France by Capt. Murphy, but was not employed.

By the end of this year (1917) the following apparatus had been evolved for and by the R.F.C. and was in use in the field.

Short and medium range air to ground spark transmitter.
Aircraft receiver for Morse and telephony.
Aircraft and ground telephony and C.W. transmitter.
Ground spark, Tonic train, and C.W. transmitters and C.W. and spark receivers, and Directional receiving for aircraft was in an advanced experimental stage.

The total wireless personnel now numbered 306 officers and 3,760 operators and mechanics.

The figures for the month of September, 1918, which represented the full development of our last great offensive which resulted in the final defeat of the enemy.

2,120 Shoots to destruction.
2,575 Flash patrols.
74,201 Fleeting target calls from the patrol machines.
11 Wireless failures.

At the signing of the Armistice complete ground wireless communications had been established between all units. Between 400 and 500 machines were fitted with wireless, and the guns were provided with nearly 2,000 wireless stations.

The whole personnel amounted to 520 officers and 6,200 other ranks.

It must, I think, be judged satisfactory that we were able to beat the enemy so thoroughly in a science in which at the outbreak of war they excelled so conspicuously.

Of the truth of this assertion he has given us ample corroboration in a document captured by us, and of which I will give a translation in conclusion.

Translation of a German Document.

XI. Army Corps Staff.
South of the Somme.

Ic/Wing Commander No. 12358/1466. Corps H.Q.
Relating to Salvage of Aeroplanes. 1-6-18.

"1. The salvage of aeroplanes must be pursued with still greater vigour. Valuable technical improvements, which have apparently been extensively applied by the enemy, have been lost to us hitherto. Labour and money spent at home on trials might have been saved by earlier information.

"2. The enemy has secured a distinct advantage in his successful use in aeroplanes of continuous wave wireless apparatus which possesses great superiority over the spark apparatus in use with us.

"It is of the greatest importance to us to salve further enemy wireless apparatus of this description. In this way millions of money will be saved, as we have not so far been successful in constructing a continuous wave wireless apparatus for aeroplanes, which can work without certain disadvantages.

"It is, therefore, the duty of all authorities to ensure the most indefatigable and careful salvage of wireless apparatus of enemy aeroplanes. Every particle is to be salved and collected, if it is in any way possible. The ordinary man cannot recognise what value and meaning a single piece can have to an expert. As, by unskilled removal, this very delicate apparatus can easily be destroyed, the work of salvage is to be entrusted to Flying Corps or wireless personnel.

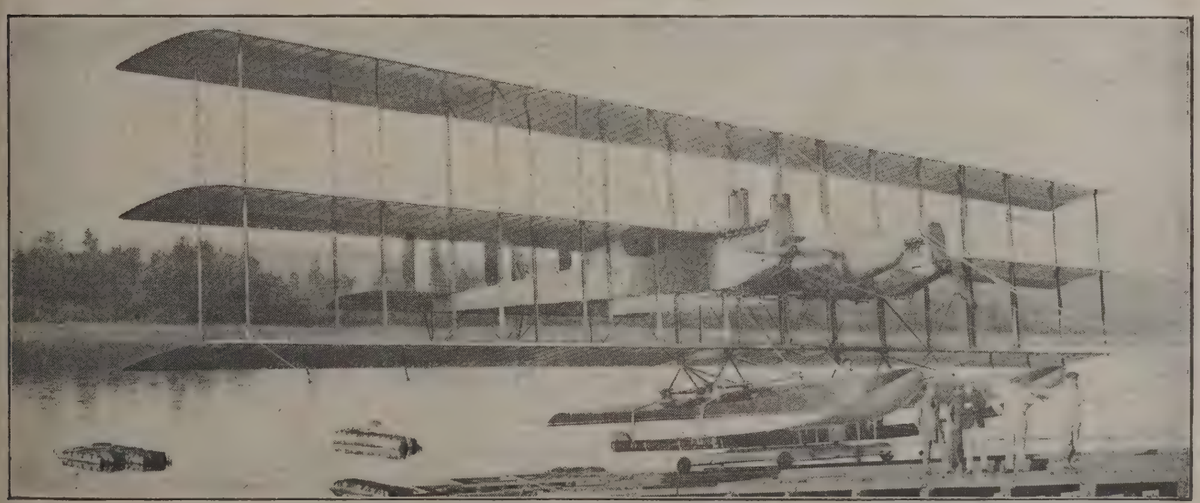
"Having regard to the great importance of the apparatus for our own wireless telegraphy, the recovery and salvage premiums are correspondingly high. They belong to the formation which, by informing the Flying Corps, permits of assistance and appropriate measures being taken for salving the object undamaged; therefore, such premiums will not belong to the Flying Corps unit."

This brief history of the wireless work done by the Military wing of the Royal Air Force is a recital of small details, each so insignificant that one would hesitate to mention them individually. Remembering the conditions obtaining in war, the difficulties of supply and training, and the enormous importance of time, the general results achieved must be accepted as justification for the policy adopted.

A NOVEL USE FOR SCRAPPED PARTS.

At a recent entertainment given by "The Whippets," the pierrot troupe of the Air Navigation and Enginnering Co. (Blériot's), at Addlestone, an entirely original "jazz" band was formed of members of the troupe playing upon "instruments" consisting of "scrapped" sheets of metal, motor-car parts, and aeroplane parts, and, according to reports, some weird and wonderful "music" was thus produced.

One would suggest that a rotary engine cowl would make a perfectly good gong, and doubtless the centre section of a wing having the fabric on it very taut, and tightly doped, would be useful as a drum, which could be beaten with the "joystick" or a centre section interplane strut with one end padded. In these days of economy, the concert parties of aircraft firms would do well to take the hint. But imagine the feelings of a pilot in the audience on seeing the component parts of his favourite 'bus thus used!—J. F. S.



A three-engine Caproni Sea-Triplane.

RECENT GERMAN WAR MACHINES.

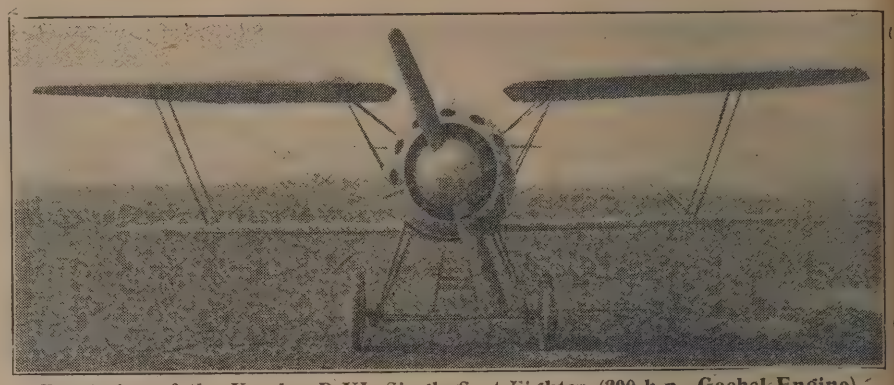
III.—Kondor Flugzeugwerke.

The Kondor Works at Gelsenkirchen-Rotthausen were founded by the pilot Joseph Suvelack before the war, and produced a number of experimental monoplanes and biplanes.

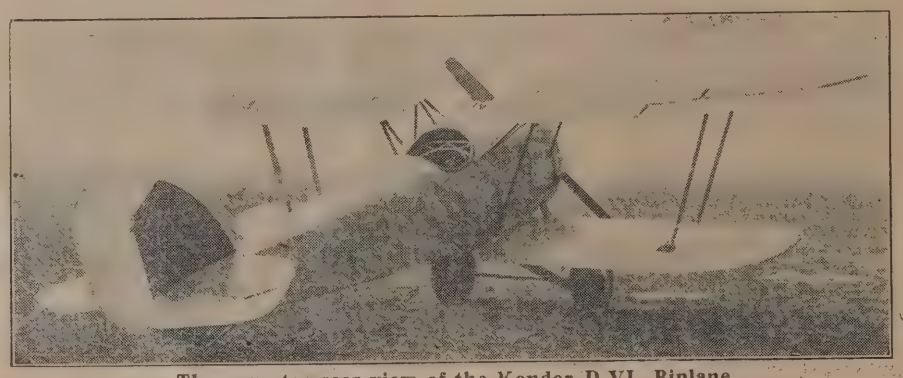
Suvelack himself was killed in aerial combat with a British opponent, but the concern has carried on in spite of the founder's death.

During the war the firm acquired the services of Herr Westphael as chief designer, under whose guidance they turned out a tractor biplane with a Mercédès engine which established a German altitude record with four passengers at Johannisthal.

More recently the Kondor works have turned out the machines illustrated here. The first, illustrated in the two upper photographs, the D.VI., is a single-seat fighter fitted with the 200 m.p. Goebel rotary engine—a German effort of very "Le Rhone"-ish aspect.



Front view of the Kondor D.VI. Single Seat Fighter (200 h.p. Goebel Engine).



Threequarter rear view of the Kondor D.VI. Biplane.

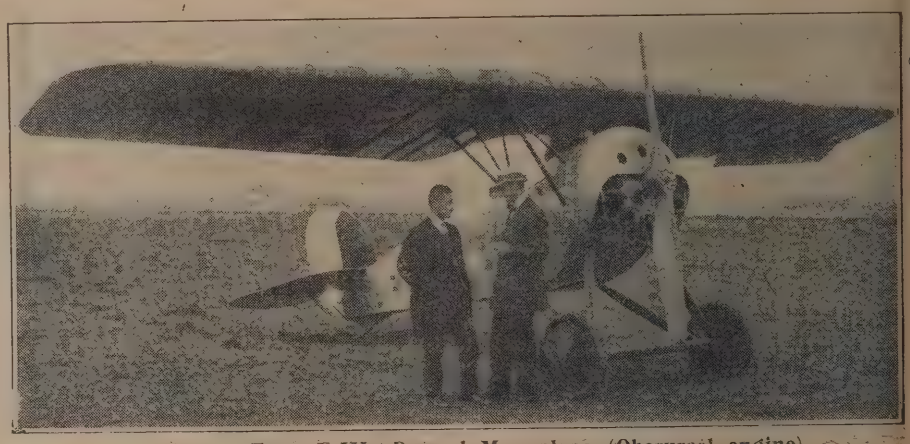
In this machine it would appear that the designer's wish to provide the pilot with the very best possible view has somewhat outrun his constructional discretion. At any rate, the angle of the struts between the fuselage and the upper planes does not inspire one with any great confidence as to their capacity to resist the compression loads usually carried by the centre section spars.

Apart from this extraordinary feature, the machine looks to be a very simple and straightforward example of its class, conforming in all respects to German standard practice.

The arrangement of cowling is curious; the row of air ducts fitted in the front are presumably intended to supply air to the cylinder heads for cooling purposes—which might as well have been affected by suitably shaping and proportioning the spinner attached to the air screw, and at a lower cost in head resistance.

The next two pictures represent machines which might as well have been built by any one of several of the German manufacturers.

They are of the Fokker inspired cantilever-wing parasol-monoplane type, which pictorial evidence suggests have been built to one design—with minor modifications—by most of the German constructors.



The Kondor Type E.III. Parasol Monoplane (Oberursel engine).



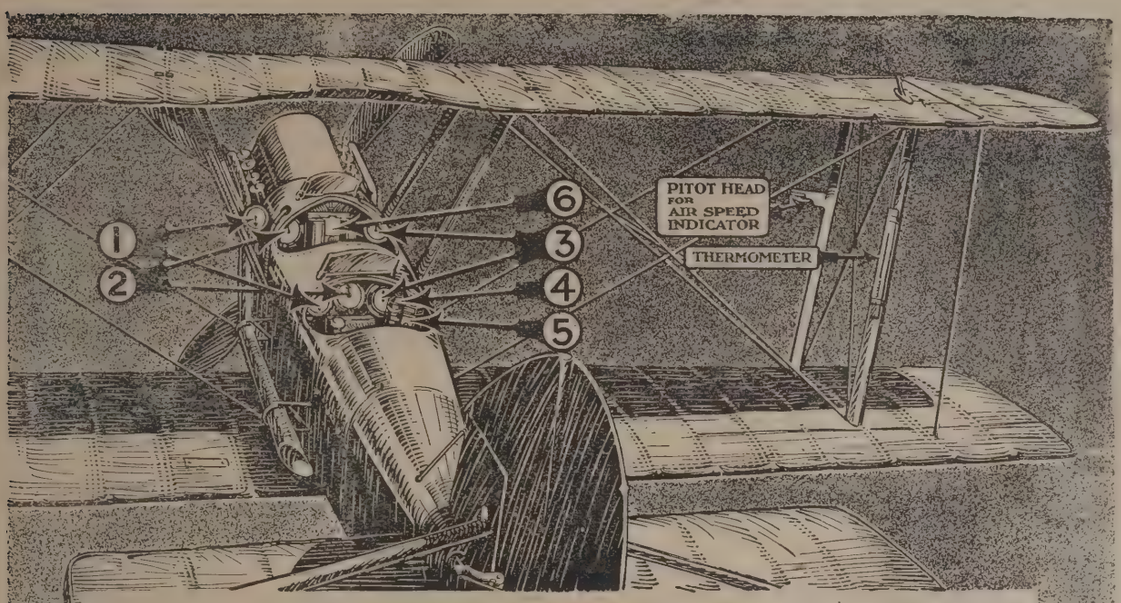
The Kondor Type E.IIIa. Parasol Monoplane (200 h.p. Goebel Engine).

The upper picture—the Kondor E.III., is fitted with the Oberursel rotary of 140 h.p. and differs very little indeed from the original "Fokker" parasol.

It is obviously fitted with metal wings of the same general structure as its prototype, and its general arrangement is exactly the same. The machine is said to have a speed of 195 k.m.p.h. (121 m.p.h.), and a climb to 5,000 metres (16,400 ft.) in 16 mins.

The type E.IIIa. below is a modification, fitted with the 200 h.p. Goebel engine.

The curious cowling used with the same engine on the D.VI biplane is here again employed, the gap between the wing and the top of the fuselage appears to have been reduced, but in all other respects there seems little difference. With the more powerful engine the speed is said to have increased slightly—to 200 k.p.h. (124 m.p.h.), and the climb to 5,000 metres occupied only 11 mins.



AIRCRAFT IN THE MAKING—No. 4

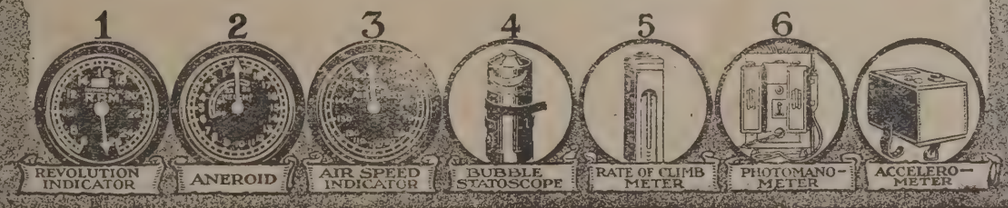
Being one of a series of announcements which describe and illustrate interesting Scientific Devices, Instruments and Machinery utilised in the designing and making of B. & P. Aircraft.

FULL SCALE TESTS

IN order that calculations based on model results may be verified and "scale-effect" experience co-ordinated, careful tests are made with complete aeroplanes. The illustration shows our P9 model fitted up for full scale experiments. Numerous special instruments are utilised to indicate and to record the desired information. For the majority of these instruments, some of which are illustrated, we are indebted to the work of the Royal Aircraft Establishment and the Martlesham Heath Testing Station.

Boulton & Paul Ltd.
NORWICH

Write for particulars of P9, the real Commercial Aeroplane.



NAVIGATION INSTRUMENTS.

The following memorandum has been issued by the Controller of Information, Dept. of Civil Aviation :—

Technical Memo. No. 5, Nov., 1919 :—From time to time various aviation firms have made inquiries at the Air Ministry as to the supply, for civil aviation purposes, of navigation instruments of the types which have been used by the Royal Air Force.

The following brief descriptions of some of the apparatus, together with the names of firms who have supplied the apparatus to the Air Ministry, are given so that intending users can apply direct to the manufacturers.—(Signed) E. D. SWINTON, Controller of Information.

Aero compasses of various types according to the designs of Capt. Creagh-Osborne, R.N., and Messrs. Hughes and Son, Ltd., can be supplied by Messrs. Hughes and Son, 59, Fenchurch Street, London, E.C.3, who now hold the sole patent rights. The types include airship compasses, seaplane compasses, and compasses for long-distance machines.

The Bigsworth Chart Board.—This consists of a board with a celluloid cover under which a chart can be placed. A double parallel-link arm is pivoted to a clamp which can be adjusted up and down the left-hand side of the board. The free-end of the arm carries a clamping device to which is pivoted a rectangular celluloid protractor and a bearing pointer working over a celluloid bearing disc fixed at the centre of the protractor. Both the pointer and the protractor can be clamped in any position in the clamping device. The latter can, by reason of the construction of the arm, be moved over the board by parallel movement to any position without rotation. A 17-in. board has been manufactured by Messrs. J. A. Sinclair and Co., Ltd., 54, Haymarket, S.W., and a 14-in. board by Messrs. Bleriot, Ltd., 57-9, Long Acre, W., and the General Instrument and Engineering Co., Adam Street, New Kent Road, S.E.

Campbell-Harrison Course and Distance Calculator, combined with the Appleyard Time and Distance Dials. This instrument was designed for solving problems involving the speed of the wind and the air-speed and ground-speed of the aircraft. It enables, for example, the steering-course to be found when the wind and the course to be made good are known. It consists of two celluloid discs of about 8 inches in diameter pivoted together and provided with two arms pivoted at their centre. The arms are marked with scales of speeds and have index slides adjustable along them. The upper disc is transparent and ruled into squares by parallel lines at the same intervals as the markings of the speed scales on the arms. The lower disc is marked with compass bearings and degrees, and the edges are marked with logarithm scales for finding the distance covered in a given time or the time required to cover a given distance. The Course and Distance Calculator has been manufactured by the following firms :—

Metal, 9-in.—The Endacott Scientific Instrument Co., Verulam Street, E.C.1, and The General Instrument and Engineering Co., Adam Street, New Kent Road, S.E.

Metal, 7-in.—Messrs. Elliott Bros., 1, Central Buildings, Westminster, S.W.1.

Celluloid, 7-in.—Messrs. Hughes Label Co., Ltd., Titchfield Works, Enfield, Middlesex, and The Celluloid Printers, Ltd., 17, Hanway Street, Oxford Street, W.

Six-inch Drift Bearing Plate.—This consists of a circular frame which can be fixed horizontally outside the fuselage. The bearing plate, marked with compass bearings and in degrees, is a ring which can be rotated in the frame. Another ring is arranged externally on the frame and can also be rotated on the frame. The latter ring carries two celluloid strips close together, arranged so that the joint between them is diametral to the rings, and a sight bar hinged at one end of the strips. When the inner ring is set according to the steering course and the outer ring turned so that objects on the ground appear to move parallel to the strips, the drift can be read by means of the graduations and index provided. With the sight bar in the vertical position, the instrument can be used for taking bearings and measuring the angle subtended by two distant objects. The sight bar has an altitude scale by means of which a back sight can be adjusted on it so that the line through it and a foresight fixed on the front of the outer ring meets the ground a known distance, say half a mile, in front of the aircraft. The instrument can thus be used with a stop watch for finding the ground speed. The instrument has been manufactured by Messrs. Heath and Co., Ltd., New Eltham, S.E., and Messrs. Casella and Co., 49-50, Parliament Street, S.W.1.

Appleyard Air-speed Computer for correcting indicated air-speed for altitude.—This consists of a circular disc marked at the edge with a logarithmic scale of air-speeds and rotatable on a card marked with a scale of heights. The latter scale has a red arrow. The true air-speed is read against this arrow when the indicated air-speed on the disc is put against the height on the card. The instrument has been manufactured by The London Name Plate Co., 127, Elthorne Road, Upper Holloway, N.19.

AIRCRAFT FINANCE.

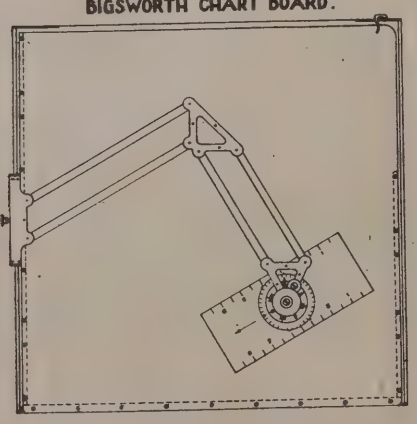
Sidelights on the efforts of one Robert Taylor some time ago to become a power in the Aircraft Industry were disclosed recently when two bankrupts—William Fredk. King, of 3, Vauxhall Bridge Road, S.E., and Edward Charles Gillott, of 38a, Bessborough Street, Pimlico, S.W.—applied for their discharge from bankruptcy.

Mr. King was a Director of William King and Son, Ltd., builders and contractors, and also of four aircraft companies, three of which went into liquidation, and to all of which he was introduced by Robert Taylor. He attributed his failure to liability as surety for money lent to Taylor and to one of the aircraft companies. Taylor had stated that he could picture contracts from the Air Board for aeroplane parts and could finance William King and Son, Ltd., to which the bankrupt and his brother had sold their business, and of which Taylor was appointed Managing Director. On behalf of Mr. King, who is 66 years of age, it was advanced that his was a very old business, and that he had no liabilities except those incurred through Taylor. He was granted his discharge on consenting to judgment for £100.

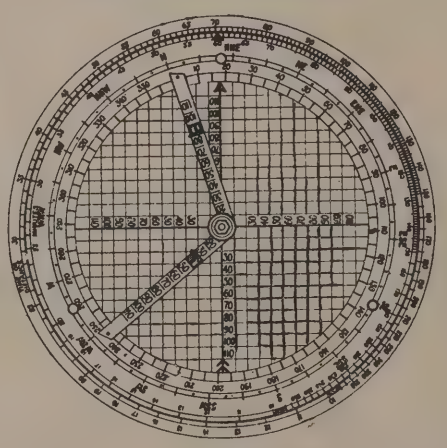
In the case of Mr. Gillott, he was the Manager of the Draycott Engineering Co., Ltd., who made aeroplane parts. In March, 1918, he bought the plant of the Draycott Company, and in June he retired from partnership in that concern. His bankruptcy was due to a promissory note which he had signed in September or October, 1918, together with Mr. Nathan, the Secretary of the Draycott Company and Mr. King. The cheque received from the lenders of the money was handed to Taylor, who started the company and was its Chairman. He understood that the money was to be used for the benefit of the company; but, as a matter of fact, the company received none. Mr. Gillott also received his discharge on consenting to judgment for £53.

It will be recalled that Taylor was also concerned in the Cowper-Coles aircraft affair.

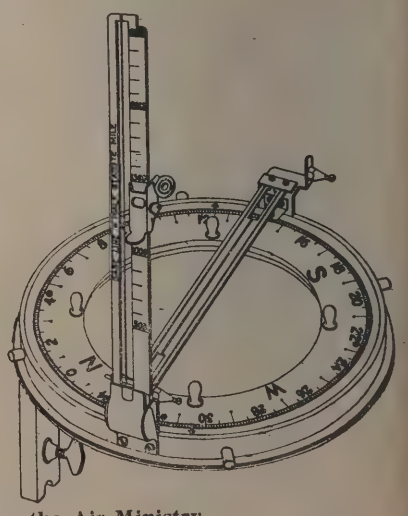
BIGSWORTH CHART BOARD.



CAMPBELL-HARRISON COURSE AND DISTANCE CALCULATOR.



6" BEARING PLATE.



Some of the Instruments referred to in the Memorandum issued by the Air Ministry.


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LONDON.

HOUNSLOW.—On Dec. 4th, an Airco D.H.9 biplane piloted by Lt. Powell left the aerodrome at 12,10 p.m. for Brussels, with one passenger (the Secretary of the Aero Club of America) and a pilot to be dropped at Lympne. After calling at Lympne the machine proceeded to Wimereux to deliver spare parts required for an Airco machine which had a forced landing there. Wimereux was reached at 1.30 p.m., and the journey to Brussels was completed 35 minutes later.

An Army officer chartered an Avro machine at the Lepaerial Travel Bureau to fly from Hounslow to Farnborough on Nov. 24th with a special supply of ammunition urgently required. On his arrival at the aerodrome the machine was awaiting him.

Before the Carpentier-Beckett fight took place it was arranged that as soon as the result was telephoned to Hounslow an Avro biplane should fly over London firing coloured lights to indicate the name of the victor—red for Beckett and green for Carpentier. This programme was successfully carried out. Luckily the night was clear, though the wind was strong.

The Avro, piloted by Major A. G. Taylor, A.F.C., the Avro London manager, had a hard fight against the wind on the journey back, but, despite these conditions, a perfect landing was made. The flight lasted about three-quarters of an hour, and practically the whole of London was covered. A representative of the "Evening News" had a seat in the machine.

CANADA.

"Automotive Industries" of Nov. 9th states that Handley Page, Ltd., have secured a Dominion charter to engage in a general aeroplane business in Canada. The capital stock will be $2,500,000. The head offices will be at Morrisburg, Ont. The directors are William Harold and Admiral Mark Kerr, London, England; Harry Clark, Montreal; Fred Chalmers and W. H. Gannon, Morrisburg.

INDIA.

An aerial mail service is to be started between Bombay and Karachi on Jan. 1st. When the service starts letters from Karachi to Great Britain will catch the mail boat at Bombay if posted twenty-four hours later than usual.

SOUTH AFRICA.

The South African correspondent of THE AEROPLANE writes:

"KING OF THE AIR."

The B.E.2e biplane which flew from Johannesburg to Banana Siding and back, piloted by Lieut. A. H. Gearing (ex-R.A.F.), has been flown to Pretoria for dismantling and subsequent storing in Cape Town. Lieut. Gearing is finished with flying for exhibition purposes, and henceforth will devote himself to his engineering business in Cape Town.

S.A.A.T. LTD.

South African Aerial Transports, Ltd., are the sole agents in South Africa for A. V. Roe and Co., Ltd.

The first passenger flight was made at Johannesburg by Capt. Ross, D.F.C., who took up the mayor of the town, Mr. T. A. Allen, after the machine (an Avro biplane, 110-h.p. Le Rhone engine) had been duly christened "The Rand Queen."

After the flight Capt. Ross made a pretty speech to the vast assemblage, assuring them of the joys of "flipping," etc., and the splendid prospects in front of the company in spite of the uphill work they would have to do at the start.

Col. Armes responded fittingly.

The comedy "Going Up" was produced at the theatre at the same time as the first flight was made, and the coincidence of production provided a grand opportunity for mutual back-scratching for the theatre management and the aviation company with mutual benefit.

One machine is now in commission under the pilotage of Capt. Ross. There is a steady stream of passengers of both sexes, who are charged a minimum of £5 for twenty minutes' flight. The public are in need of a great deal of aviation education, but they want it none too expensively.

Two three-seater Avros have been received at the aerodrome and are in course of construction. It is also on the "tapis" to bring out from England a Vickers all-steel "Vimy," possibly under its own power.

THE HANDLEY PAGE AGENT.

Capt. S. Wood is reported to have said that his firm will have machines in Johannesburg for the season, which begins normally on Nov. 1st.

ANOTHER FIRM.

Two men by the name of Robinson possess two aeroplanes, which they are going to use for passenger carrying.

MUIZENBERG.

One of the two latter concerns intends to give trips at Muizenberg during the months of Dec., Jan. and Feb., when the resort is crammed with the wealth and gout of the "Golden City."

The S.A.A.T., Ltd., are also considering the advisability of making a little money at Muizenberg during the season. Unfortunately for all, there do not appear to be any fields suitable for flying-grounds.—H. G.

SOUTH AFRICA.—THE FIRST LOOP.

Several passengers were taken up at the Baragwanath aerodrome (Johannesburg) on Nov. 2nd, although the weather was not good. Late in the afternoon Col. Armes, C.M.G., the managing director of Aerial Transports, Ltd., was taken for a flight by Capt. Rutherfoord on an Avro machine and was looped. The Johannesburg "Star" claims this to be the first loop to have been made in South Africa.

THE CAPE TO CAIRO FLIGHT.

Major Court-Treatt, surveying aerodromes for the Cape to Cairo flight, left Johannesburg some time ago on a Buick car to establish an aerodrome near Lake Tanganyika. Major Court-Treatt left the car at the aerodrome for their use and was expected back in Johannesburg in the last week of November.



LIEUT. A. H. GEARING.



CAPT. ROSS, D.F.C.

BRAZIL.

Congress has approved of the Handley Page mail contract for a service from Pernambuco to Buenos Aires, a distance of 2,500 miles, which is to be covered in 3½ days in a weekly service. At present the ordinary mail-boats take nine or ten days on the route. Other services approved are Rio Janeiro-Sao Paulo, and Sao Paulo-Santos.

According to the "Times" of Dec. 4th, the Handley Page Company have sent, or are sending, out to Brazil twenty-four machines, which, besides carrying the mails, will inaugurate passenger and freight services. The machines are of the two-engine type, with a carrying capacity of 2,500 lb.

DENMARK.

The Danish correspondent of THE AEROPLANE writes:—

THE FATE OF THE "GOLIATH."

The long-announced Lieut.-Col. Henderson has finally arrived at Copenhagen on an Armstrong-Whitworth biplane, after a forced intermediate landing owing to a prevailing snowstorm at Hamburg. There he met the Danish-French Lieut. Krause-Jensen, the pilot of the ill-fated Farman-Salmson-engined "Goliath," which, after a long involuntary stay in Denmark owing to engine breakdown on the return flight to France, had had to land in Holstein owing to fog, and was held up for lack of petrol till a French cruiser brought the precious fluid. The "Goliath" came to grief finally in a marsh near the Dutch frontier. The pilot, M. d'Ors, deceived by the snow, though he had a suitable landing-ground before him, but the landing was disastrous.

AN "ALBATROS" FOR BUSINESS USE.

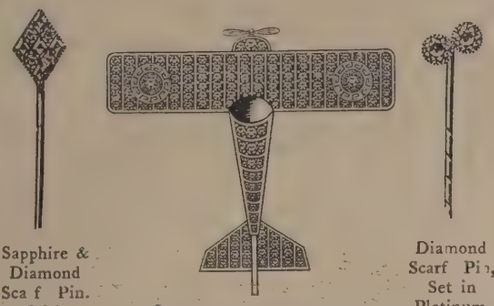
The Sleswig pilot Schmidt has sold his Albatros biplane for 10,000 kr. (£550) to a provincial automobile dealer, who has erected a shed in his native city, Herning, in Jylland, and has engaged another German aviator, Hecken, as pilot, as he intends to employ the aircraft for business trips to Copenhagen.

IS EXCHANGE ROBBERY?

The Grahame-White pilot, Capt. Chamberlain, has arrived at Copenhagen, with Mr. Hobday as passenger, in an Avro biplane. Mr. Hobday is a director of the Dominion Belting Co. He negotiated his first business after an intermediate landing at Brussels. The next stage ended at the Soesterberg Aerodrome, in Holland, the usual stopping-place en route to Scandinavia.

Finally, a forced landing was made by Bremen, where the reception by the inhabitants was none too kind till the stores and tobacco on board the machine were distributed, when they succeeded in acquiring a 260 h.p. Rumpler and set off for the Danish capital before the local authorities turned up to arrest them.

After local business with the branch in Copenhagen the pilot and passenger may continue to Stockholm or may return to England by air.—HI.



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Diamond Aeroplane, with Identity Circles of Sapphires. Ruby Centres. **£125 0s. 0d.**

Diamond Scarf Pin, Set in Platinum. **£21 10s.**



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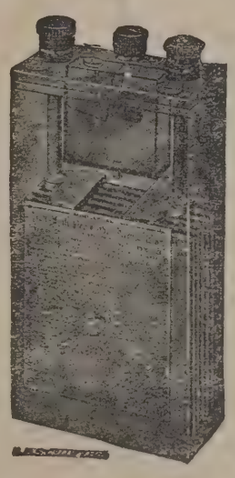
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FINLAND.

A Reuter message from Helsingfors, dated Dec. 4th, stated that M. Frenckel, the president of the Finnish Aero Club, had informed the "Ussi Suomi" that he intended to establish an aerial mail service between Stockholm and Helsingfors, and that he was also planning a regular service with Reval and Petrograd, and possibly Berlin and London.

FRANCE.

Landing Grounds.

At Perpignan there is a landing-ground without shed accommodation, and at Canet-plage a landing-ground with accommodation for aircraft.

The landing-grounds at Sarreguemines, Schlestadt, Neu-Brisach and Amiens have been abolished. That at Issoudun has been replaced by one at Romorantin, where there are buildings and fuel.

The Paris-Melbourne Flight.

M. Poulet, on his Caudron biplane (two 110-h.p. Le Rhone engines) reached Akyab on Nov. 28th, and arrived at Rangoon at 12.45 p.m. on Nov. 30th. He landed forty-five minutes after the Vickers "Vimy." M. Poulet arranged with Capt. Ross Smith that they would both leave Rangoon for Bangkok at 7.0 a.m. on Dec. 1st.

Apparently the arrangement was adhered to, as Reuter messages stated that he left Rangoon at that time, and arrived at Bangkok on the same day just before Capt. Ross Smith. There M. Poulet handed over to the Minister of War the documents which were entrusted him by the chief of the Siamese mission in Paris. He left Bangkok on Dec. 2nd for Singapore, intending to alight for supplies on the eastern coast of the Malay Peninsula, about 400 miles away.

A Reuter message states that if M. Poulet arrives at Melbourne he will give a series of exhibitions in Adelaide, Sydney and Melbourne, and then fly over Borneo and up the Chinese coast to Japan, whence he will return to India and to France by the original route.

Thus he may cover his expenses, and also aid the widow and children of Vedrines, who was killed on an Alpine flight.

The Salon de l'Aeronautique

The President of the French Republic received last week a delegation from the Executive Committee of the French Aero Show. The Committee was composed of MM. Leblanc, President; Louis Bréguet and Luquet de Saint-Germain, Vice-Presidents; and M. André Granet, Commissaire-General.

After having discussed for a considerable time with the delegation questions concerning the future of France and the aeronautical industries, M. Raymond Poincaré kindly consented to open the Exhibition on Friday, December 19th, at 10 a.m.

A Marseilles-Tunis Service.

A correspondent writes :—

The Aeronovale Company have nearly completed their machine for a service between Marseilles and Tunis, to begin in February, 1920. This machine has one Salmson and two 120-h.p. Le Rhone engines, but otherwise is of typical French design. It will carry ten passengers besides freight, in all nearly a ton.—J. S.

A New Prize.

At a general meeting of the Aero Club de France, M. Soreau stated a new prize of 100,000 francs (normally £4,000) has been offered, the details of which will shortly be announced.

A Removal of the Breguet Office.

The head office of the Breguet firm has been moved from 17 rue du Colonel-Moll to 115 rue de la Pompe, in Paris.

ITALY.

The Italian correspondent of The Aeroplane writes :—

Aviators' Trade Unions.

The Roman section of the Aviators' "Trade Union" was formed the other day and numbers 500 members, who are nearly all pilots. The director is Col. Piccio, and Col. La Polla is second in command. The Milan section was to be formed on the 7th inst.

The Italian Atlantic Flight.

Reports from Turin show great preparations for great things. The Italian crossing of the Atlantic is said to be awaiting D'Annunzio. One wonders which of the two biggest aeroplane firms will be ready first. It is curious that no one seems to have thought of quoting a real aquatic flying machine as the vehicle most adapted for the flight.

New Machines.

I am waiting news from Signor Ricci, at Naples, whose big seaplane designs are taking form and should soon get moving over the face of the waters. A very big machine is in the building at Bastianelli's works, so that the South is still alive. A 300 h.p. H.-Suisa-engined machine is reported to be preparing to take the air at Palermo. Built at the Ducrot shops, the biplane has a steel strut at the extreme ends of the cellule. Speed would seem its prime object.

Five different types of small aeroplanes, of about 30 to 40 h.p., are at present existing in this country.

For Avietes.

One Zoboli, of Bologna, invites investigations by the competent into his means of transmitting leg-force to airscrews, which he believes will render the aerial bicycle possible. The secret evidently lies in the light weight of the gearing-down mechanism in this case.—T. S. H.

SWITZERLAND.

The Italian correspondent of The Aeroplane writes :—

A French-Swiss Conference.

A French-Swiss conference, on the lines of the Anglo-Swiss one held a few days ago, took place last week at Berne, and an agreement was drawn up as to flights over each other's territory and permits to fly. Col. Borel, Maj. Issler, Prof. Pittard, and Col. Loriol represented the Confederation; Capitaine Roper and M. De Lens the French Republic. M. De Lens is a secretary to the French Embassy. Switzerland signed at once; France referred the matter to H.Q.

An Aero Trade Centre.

It seems that Locarno is going to become one of the great jumping-off grounds for the northern aero trade towards the Mediterranean countries.—T. S. H.

THE HANDLEY PAGE W.8.

After lengthy experiment the firm of Handley Page, Ltd., assisted by the experience gained in the production of bombing machines, have built a large commercial machine capable of carrying 15 to 20 passengers or heavy loads of cargo up to two tons.

The machine is designed so as to provide a single large saloon 22 ft. long, 4 ft. 6 in. wide and 6 ft. high. This is unique in the history of aeroplane construction. The space provided is entirely unobstructed by wires or cross struts, and when used for carrying cargo entirely, 470 cubic feet of space is available. The seats for the pilot and engineer are in a well protected cockpit immediately forward of the saloon.

Port hole windows, which can be opened or shut, are provided along each side of the passenger cabin, one for each occupant. In the floor, lenses are fitted in order to provide a direct view downwards.

The interior of the saloon is fitted with velvet cushioned arm-chairs with receptacles for maps, carpets, curtains, electric light, lamps, clocks, mirrors, wireless apparatus, a telephone, flower vases, books and papers. A lavatory is also provided.

When carrying large consignments of cargo, light racks, shelves and cupboards can be fitted on either side of the cabin, leaving a central gangway. Large doors are fitted in the side of the machine and there is a trapdoor in the floor to facilitate the entry and removal of freight. A door also communicates between the passenger saloon and the pilot's cockpit.

The engines are provided with effective silencers to enable conversation to be carried on amongst the passengers.

The large reserve of engine power possessed by the machine enables it to ascend with full loads out of very small fields, and this extra power can also be utilised when flying in strong head winds. The aeroplane can be flown entirely on one engine should the other fail.

The machine, with the exceptions of the steel undercarriage and the engine nacelles, is entirely painted white. In the air it has a very pleasing appearance, and flies very steadily. The striking feature when seen on the ground is the immense balanced rudder and the large fin. A monoplane tail plane is fitted.

After only one test flight of 20 minutes the machine was flown by Mr. Bager from Hounslow to Le Bourget in 2 hours 10 minutes on Dec. 4th for exhibition at the Salon de L'Aeronautique (Paris) whence it is to be transported by road.

Specification.

Type of machine	Twin-engine biplane.
Name and type No. of machine	Handley Page W.8.
Purpose for which intended	Commercial
Span	75 ft.
Overall length	60 ft.
Maximum height	17 ft.
Maximum width with wings folded	29 ft.
Engines, type and h.p.	Two 450-h.p. Napier "Lion."
Tank capacity	Petrol 250 galls.; oil, 37.5 galls.
Carrying capacity	15-20 passengers or 2 tons freight.
Performance—	
Speed (maximum)	112 m.p.h.
Normal cruising speed	90 m.p.h.
Landing speed	45 m.p.h.
Duration of flight	6½ hours

INTERNATIONAL AIRCRAFT EXHIBITION

PARIS.

December 19th, 1919—January 4th, 1920.

The "Bristol" Aeroplanes.

may be inspected on

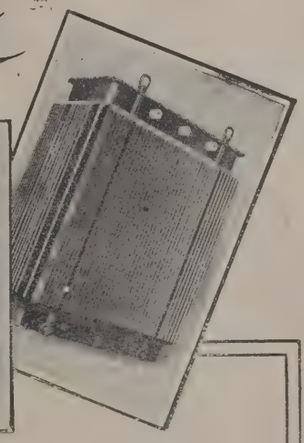
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AIRCRAFT IN PARLIAMENT

HOUSE OF COMMONS.

Dec. 1st.—The following oral answer was given :—

AIRCRAFT SUPPLIES.

Lieut.-Col. Sir F. HALL asked the President of the Board of Trade if he had had his attention drawn to the great efforts which are being made by American trading interests, with the United States Government's co-operation, to develop the South American markets for aircraft supplies and aircraft transport undertakings; and if he will state what is being done by the British Government in the same direction with a view to stimulating this important industry in this country.

Sir A. GEDDES: The answer to the first part of the question is in the affirmative; as regards the second part of the question, several important British aircraft firms already have their representatives in a number of the South American Republics, and His Majesty's diplomatic and commercial representatives in those countries are assisting, and will continue to assist, them as far as lies in their power. British firms in this country are being kept in touch with developments, information concerning which is unlikely to reach them through their local representatives.

The following written answer was given :—

ANTI-AIRCRAFT STATION, PUTNEY HEATH.

Mr. LORDEN asked the Secretary of State for War why the anti-aircraft station at Putney Heath on and adjoining the Metropolitan Water Board's reservoir is still continued, seeing that the urgent need has ceased to exist for over twelve months, in view of the danger to the health of the Metropolis caused by the very dirty and unsatisfactory state of the station.

Mr. FORSTER: It is proposed to maintain these headquarters, though not necessarily on the present site, as part of the permanent scheme of anti-aircraft training. Until a new permanent site has been acquired no other accommodation is available for the personnel, stores and equipment.

* * *

Dec 2nd.—The following oral answers were given :—

ROYAL AIR FORCE (BOULOGNE DEPOT).

Capt. GUEST (Joint Parliamentary Secretary to the Treasury), replying to Captain Terrell, said that the mechanical transport at the port depot of the R.A.F. at Boulogne consists of one touring car and one light tender. The staff consists of one officer and four airmen. The depot is being kept open to deal with the drafts of airmen arriving from England daily and with the evacuation of airmen from France.

CIVILIAN AIR SERVICE (PARIS-LONDON).

Lieut.-Col. GUINNESS asked the Secretary of State for War whether there are at present any facilities for the repair of British aeroplanes or the supply of spare parts in connection with the daily Paris-London air service at any aerodrome in France except the terminus at Le Bourget, and whether it is not a matter for the British authorities. Is the hon. gentleman aware that there are now three different British types of machine flying this route of 130 miles over French ground, and is it not obviously impossible for these companies to provide the necessary facilities for small adjustments before crossing the Channel.

Capt. GUEST: I have been asked to take this question, the reply to which is in the negative. Certain emergency landing-grounds exist between Gris Nez and Le Bourget. The importance of establishing a civil aerodrome with full facilities in the vicinity of Gris Nez is known to the French authorities, and it is understood that they intend to provide such an aerodrome. The question of whether it is a matter for the British authorities is complicated by the fact that we are dealing with a civilian service and not a military service, but the department is in communication with the French authorities on the subject.

ROYAL AIR FORCE.

Mr. CHURCHILL, replying to Major Steel and Earl Winterton, said that he proposed at an early date to lay before the House a Memorandum by the Chief of the Air Staff showing the proposed strength and composition of the R.A.F. for the next few years.

Replying to Mr. Pemberton-Billing, he said that opportunities for debate were fixed in the regular course of the Parliamentary Session and did not arise in consequence of any announcement of this kind.

WIRELESS COMMUNICATION (LONDON AND PARIS).

Lieut.-Col. GUINNESS asked the Secretary of State for War whether, owing to the interruptions caused by the Eiffel Tower wireless station last week, when messages sent in connection with the London-Paris air-mail service were regularly jammed by the Eiffel Tower, the air-mail messages can be received by the wireless station at Le Bourget; and whether any arrangement has been made with the Eiffel Tower Company.

Capt. GUEST: I have been asked to reply to this question. Routine times of transmission from London to Le Bourget have been arranged so as to avoid the interference referred to by my hon. and gallant friend. In cases when it is doubtful if the message has been received by Le Bourget, a second message is always sent; during the last week these messages have been received regularly, and no repetition has been required. Air route reports of the British and Channel weather conditions are sent from London to Le Bourget between 8 a.m. and 5 p.m. An arrangement for a special allowance of time has been made in regard to the Eiffel Tower station.

AIRSHIPS (BERLIN AND FRIEDRICHSHAVEN).

Col. NEWMAN asked the Secretary of State for War whether a service of dirigible airships is being maintained between Berlin and Friedrichshaven; how many airships are so employed; and will he say whether the establishment and maintenance of a fleet of airships in Germany, whether by the State or private individuals, was a matter laid down in the Peace Treaty.

Capt. GUEST: I have been asked to reply to this. The answer to the first part of my hon. and gallant friend's question is in the affirmative; to the second part, that, so far as is known, only one airship—the "Bodensee"—has been so employed. As regards the third part, I would suggest that the question should be addressed to my hon. friend the Under-Secretary of State for Foreign Affairs.

The following written answer was given :—

ROYAL AIR FORCE CIVILIANS (DISCHARGE).

Capt. GUEST, replying to Mr. A. Davies (Clitheroe), said: Telegraphic instructions to suspend the demobilisation of civilian subordinates until further orders were sent to Royal Air Force depots on Nov. 15th, and the receipt of these instructions has been acknowledged by Ascot and the other depots concerned.

* * *

Dec. 3rd.—The following oral answer was given :—

LONDON-PARIS AIR-MAIL SERVICE.

Lieut.-Col. GUINNESS asked the Postmaster-General whether instructions have been given at the post office in Parliament Street that letters for the London-Paris air-mail service are only to be accepted for posting in the morning; what is the reason for preventing the posting of such correspondence daily at the end of business hours; and whether he will now arrange for its acceptance at any time of the day at the eight post offices mentioned in the original announcement.

The ASSISTANT POSTMASTER-GENERAL (Mr. Pease): No instructions have been given for the refusal of aeroplane letters tendered at the Parliament Street branch office in the evening for dispatch by the air-mail service to Paris on the following day; and steps have been taken to prevent the refusal of such letters at any of the eight London offices at which correspondence may be posted for transmission by the air-mail service.

The following written answer was given :—

ROYAL AIR FORCE (KENLEY COMMON).

Sir ALBION RICHARDSON asked the Secretary of State for War whether the military authorities are still in possession of Kenley Common, which was taken over during the war for military purposes; if so, when is it proposed to vacate the common and to restore to the public their right to the full use of the same, and what is the reason for the delay in so doing.

Mr. CHURCHILL: The answer to the first part of this question is in the affirmative; and to the second and third parts, that, owing to the importance of this aerodrome both from a Service and civil point of view, it is desired to retain it as a permanent station. Negotiations are in progress with this end in view.

* * *

Dec. 4th.—The following written answers were given :—

AERIAL ROUTE, EGYPT AND THE EAST.

Lieut.-Col. MALONE asked the Secretary of State for War whether it is intended that the aerial route to Egypt and the East should pass *via* Malta.

Mr. CHURCHILL: No decision has yet been arrived at in regard to this.

AIR MINISTRY (STAFF).

Lieut.-Comdr. KENWORTHY asked the Secretary of State for War what is the present staff of the Air Ministry; and how many of these are employed in connection with civil, naval, and military aviation, respectively.

Mr. CHURCHILL: The staff of the Air Ministry at the end of November last numbered 2,539. This figure includes the staff recently taken over from other Departments in connection with the transfer of airship work and of the Meteorological Department to the Air Ministry—namely, 136 and 130 respectively. I am unable to supply the statement asked for by the hon. and gallant gentleman in the second part of his question, as it is impracticable to separate the staff into groups employed respectively in connection with civil, naval, and military aviation.

ROYAL AIR FORCE OFFICERS.

Sir BERTRAM FALLE asked the Secretary to the Admiralty what gratuity or pension is given to petty officers promoted warrant officers after eight years' service and automatically promoted to second lieutenants, Royal Air Force, on amalgamation of the Royal Naval Air Service and Royal Air Force; and if such officers, demobilised at their own request and in receipt of the permanent officer's gratuity, receive the difference between that gratuity and the gratuity given a temporary officer.

Mr. CHURCHILL: The whole question of the gratuities or pensions to be paid to Royal Air Force officers (temporary and permanent) who when commissioned in the Air Force were serving as warrant officers, Royal Navy, or Royal Naval Air Service, has been under consideration for some time, and it is anticipated that a final decision will be announced shortly.

THE FLIGHT TO AUSTRALIA COMPETITION.

The Air Ministry announced on Dec 3rd that the Netherlands authorities had provided new landing grounds in the Dutch East Indies which will be of great assistance

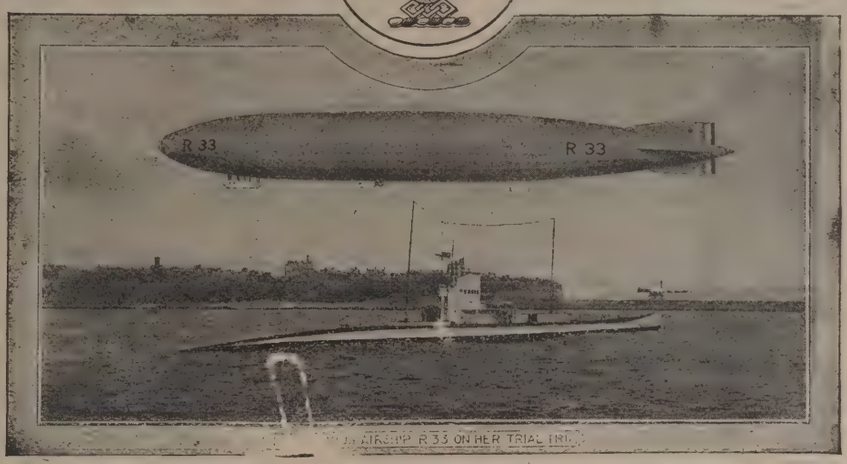
The location and distance of the aerodromes from Rangoon are as follows :—

Miles from Rangoon.	
427	Bangkok (Siam).
1,246	Singapore (Fed. Malay States).
1,529	Banka (Banka Island).
1,798	Batavia (Java).
1,863	Kalidjah (Kalidjati, Java).
2,054	Samarang (Java).
2,215	Surabaya (Java).
—	Bali (Bali Island).
—	Lombok (Lombok Island).
2,653	Bima (Soembawa).
2,775	Reo (Flores Island).
2,948	Larantuka (Flores Island).
3,098	Atamboea (Timor Island).
3,560	Port Darwin (Australia).

The Dutch authorities hoped to complete the arrangements in these islands by the end of November. The provision of these landing places will enable the flight from Java to Port Darwin to be made in easier stages than was originally contemplated.

A Dutch official is being sent to Singapore by the Government of the Dutch East Indies to give all detailed information.

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ENGINE:—Rolls-Royce Eagle VIII.

SPEED:—45-120 m.p.h.

CABIN:—Is clear of any transverse cross bracings or other obstruction, and measures 8 ft. by 3 ft. 3 ins. by 6 ft.—this in a machine of only 33 ft. overall length. Direct entry off ground through ordinary door.

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The Australian authorities have also intimated that they have organised a route from Port Darwin to Melbourne :—

Miles from Port Darwin.	
—	Port Darwin (N. Territory).
170	Katherine (N. Territory).
405	Newcastle Waters (N. Territory).
530	Anthony Lagoon (N. Territory).
730	Avon Downs (N. Territory).
915	Cloncurry (Queensland).
1,230	Longreach (Queensland).
1,473	Charleville (Queensland).
1,728	Bourke (New South Wales).
1,936	Narromine (New South Wales).
2,111	Cootamundra (New South Wales).
2,396	Melbourne (Victoria).

Full information regarding the facilities actually available at each station will be furnished by officials stationed at Port Darwin, Cloncurry, Charleville and Narromine

In order to minimise the risk to competitors while flying over the sea from the Island of Timor to Port Darwin, the Australian Defence Department has also arranged for the Royal Australian Navy, when warned by competitors, to maintain a patrol between these points

The Government of Australia has arranged for the competitors for the £10,000 prize and M. Poulet to receive daily weather forecasts after reaching Java.

The Commonwealth meteorologist will prepare the forecast, which will be wirelessed from Port Darwin to Timor, and cabled thence to Batavia, where the British Consul will transmit the message to the aviators.

THE VICKERS "VIMY" MACHINE.

The following telegram has been received from Basra dated Nov. 21st :—

Last cable Cairo 18th. Left next day 10.30. Dull weather. Crossed Canal Kantara, then over Romani, along coast under thick cloud to Gaza. Turned inland to Ramleh, then Haifa. Owing heavy rain flew low to Jordon over Sea Galilee, thence Damascus. Interesting seeing old places again recalling memories war. Landed Damascus three. Met many old R.A.F. friends.

Nineteenth delayed until eleven; first rain since March; ground getting sticky, oiled tyres to stop mud sticking and left. Flew low Tadmor. Turned east. Crossed desert Abu Kemal. Followed Euphrates. Met head wind, landed Ramadie battlefield at dusk. Pegged down machine. Heavy gale night. Turned out troops hold machine. Anxious time two hours, but Vimy weathered storm.

Twentieth, left Ramadie one fifteen. Good wind. First good flying day of journey. Passed Bagdad, Kut, Garden Eden. Landed Basra four forty.

Overhauling to-day. Bunder Abbas to-morrow. Yesterday weather cheered all considerably after ten days trying condition. Crew well. Engines behaving beautifully.—ROSS SMITH.

The following telegram, dated Nov. 30th, has been received from Milan :—

"Ross Smith left Bushire twenty-third instant."

The Vickers "Vimy" arrived at Calcutta at 1.30 p.m. on Nov. 28th and left for Akyab at 8.30 a.m. on the next day. Akyab was reached at 2 p.m. and Rangoon at noon on Nov. 30th. Forty-five minutes later M. Poulet landed with his Caudron biplane (two 110 h.p. Le Rhone engines).

Both pilots arranged to leave Rangoon for Bangkok at 7 a.m. on Dec. 1st.

The following cablegram, dated Dec. 4th, has been received from Singapore :—

We left Rangoon at 7 on Dec. 1st and arrived at Bangkok at 1. We passed through a heavy storm above the mountains. South-east of Moulmein a thick cloud delayed us. We climbed to 9,000 ft. and got over the worst of it. Then we followed the River Menam south. Every convenience was prepared for us by the Siamese Aviation Corps.

At Bangkok the greatest assistance and courtesy was shown by Prince Pitsanoluke and the aviation corps. We left Bangkok on Dec. 2nd. We were escorted to Singora for the first 50 miles by four Siamese machines. Course south along the east coast of Malay for the first two hours was good, but we then met a heavy monsoon.

The wind was strong and changeable, sometimes helping us and sometimes against us. It was necessary to fly at the height of 500 ft. for three hours, following the coast, almost blinded by the rain, but the country was impossible for landing and we had to continue, hoping for the best in the worst flying conditions ever encountered. The last hour was better.

The aerodrome at Singora is bad and stumpy. We had to land in a cross wind, on a small dry patch. We got safely down with luck, but later, in "taxi-ing" the machine, the tail-skid caught a root and broke a fitting. The damage is not serious. The local population showed great interest at the sight of the aeroplane.

I decided that, owing to the weather, I could not reach Singapore without more petrol, and wired to the Asiatic Petroleum Company at Penang to send some urgently. During the night there were heavy squalls, and the crew held the machine all night. Great assistance and kindly hospitality was given by Prince Yugala and the local officials.

Dec. 3rd.—Torrential rain with wind, and we repaired the skid and the crew were wet through with working at the machine all day. Petrol arrived in the evening, but it was raining too hard to put in.

Dec. 4th.—My birthday. Had decided to try for Singapore. We left Singora at 10 and arrived at Singapore at 5. The take-off at Singora was very rough, but convicts had cleared the stumps yesterday. The aerodrome was very wet in patches. We were lucky to get off in a cross wind. Rain all the way. We flew at a height of 2,000 ft. to 500 ft. all the way. A great reception here and a huge crowd. Hope to reach Java on the 6th and Darwin on the 10th. Vimy and crew all well.—ROSS SMITH.

A Reuter message from Batavia, dated Dec. 6th, stated that Capt. Ross Smith arrived at Kalidjatti, near Bandoeng, West Java, at 4.7 p.m. on that day.

THE BLACKBURN "KANGAROO."

The Air Ministry announced on Dec. 4th that the Blackburn "Kangaroo" (two 250-h.p. Rolls-Royce "Falcon" engines), which left Hounslow on Nov. 21st with Capt. Wilkins, M.C., and Lieuts. Rendle, Williams, and Potts arrived at Taranto at 2.0 p.m. on Dec. 3rd, and left for Suda Bay (Crete) on the next day.

THE SOPWITH MACHINE.

The only reason for the silence of Capt. Matthews and Serjt. Kay seems to be that they have been held up at Mayence by very bad weather. On Nov. 29th they decided to proceed on the way to Belgrade. They landed at Vienna in the evening owing to the weather and shortage of petrol.

THE MARTINSYDE MACHINE.

Capt. C. E. Howell, D.S.O., M.C., D.F.C., the pilot of the Martinsyde machine, holds a remarkable record of war service so far as Australian aviators are concerned. He was in the Australian Infantry until 1916, when he joined the Royal Flying Corps. He quickly qualified as a pilot, and the records show that he has 2,000 hours' flying time to his account.

Capt. Howell crashed 32 enemy aeroplanes, and in addition he is officially credited with bringing down eleven others out of control, and shooting down a number of balloons and kites. His D.S.O. was gained in a fight over the enemy lines, when in twenty minutes he accounted for seven enemy aeroplanes. On this occasion his own machine was so badly damaged that it was with great difficulty he returned to his own aerodrome. His assistant is Air-Mechanic Henry Fraser.

A correspondent writes : Before proceeding to Hounslow on Dec. 2nd the Martinsyde machine (275-h.p. Rolls-Royce "Falcon" engine) circled over the Martinsyde works at Woking for some time by way of farewell, and came down very low. The pilot, Capt. Howell, D.S.O., M.C., D.F.C., was reported to have been very pleased with the behaviour of the machine on its final test flights.

A description of the machine was given in the "Aeronautical Engineering" supplement on Nov. 5th. It will be remembered that the machine is to be fitted with floats at Calcutta, and will then fly to Australia as a seaplane.

The start was delayed for a week by adverse weather. Capt. Howell became determined not to delay further, and left Hounslow Aerodrome at 9.24 a.m. on Dec. 4th, during an interval between two heavy rain storms in weather which was not favourable. The machine rose from the ground very quickly in the face of a strong westerly wind. It climbed to a height of about 2,000 ft. before Capt. Howell waved a last farewell to his friends on the ground, when he turned towards the coast, and, flying down wind at a great speed, he was very soon lost to sight in the rain clouds that prevailed.

Messages expressing good wishes were received from Capt. H.R.H. the Prince Albert, K.G., R.A.F., Mr. Winston Churchill, M.P., and Major-Gen. Sir F. H. Sykes, C.B.E., K.C.B., C.M.G.

Martinsydes, Ltd,, received a cable on Dec. 6th, which stated that Capt. Howell landed at Pisa on Dec. 5th at 4.0 p.m.

The machine arrived at Capua on Dec. 6th. On the 7th she was held up by the weather. On the 8th she arrived at Taranto and was leaving on the 9th for Suda Bay.

There are at present five aeroplanes on the way to Australia, and the points they have reached, according to the latest information, are shown below :—

Date of Start.—Oct. 14th.—M. Poulet Caudron. Bangkok.
Oct. 22nd.—Capt. Matthews. Sopwith. Vienna.
Nov. 12th.—Capt. Ross Smith. Vickers Vimy. Java.
Nov. 21st.—Capt. Wilkins. Blackburn. Taranto.
Dec. 4th.—Capt. Howell. Martinsyde. Pisa.

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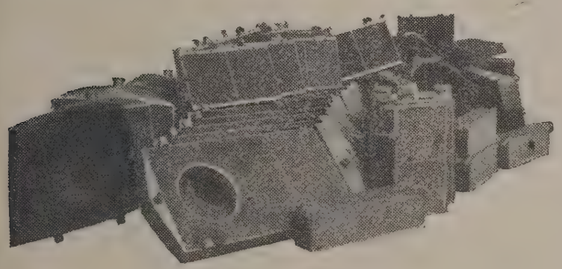
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EXTRACTS FROM "THE LONDON GAZETTE."

GREAT BRITAIN.

NAVAL.

ADMIRALTY, Nov. 22nd.

Surg. Lt.-Cmdr to be Surg. Cmdr.—L. L. Greig, M.V.O., M.B.

MILITARY.

WAR OFFICE, Dec. 1st.

TERRITORIAL FORCE.—Northern Cyc. Bn.—Lt. J. W. D. Leigh, M.C., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains the rank of Lt.

WAR OFFICE, Dec. 2nd.

REGULAR FORCES.—MEMORANDA.—Lt. F. Baker (attd. R.A.F.) retires, receiving a gratuity, Dec. 3rd.

Sec. Lt. A. E. Houghton (attd. R.A.F.) retires on ret. pay, Dec. 3rd.

TERRITORIAL FORCE.—INFANTRY.—6th Bn., Notts. and Derby R.—Lt. R. W. Cash to be Capt., and to remain secd., R.A.F., June 13th.

WAR OFFICE, Dec. 4th.

TERRITORIAL FORCE.—R.G.A.—Lt. J. F. Lawson, A.F.C., S. Mid. R.G.A., relinquishes his commn. in the T.F. on appt. to a permanent commn. in the R.A.F., Aug. 1st, and retains the rank of Lt.

WAR OFFICE, Dec. 8th

REGULAR FORCES.—ESTABLISHMENTS.—R.F.C.—MILITARY WING.—Flying Officers.—Temp. Sec. Lt. E. G. Boyle, Gen. List, March 13th, 1918; temp. Sec Lt H. P. Brumell, Gen. List, Mrach 25th, 1918.

AIR FORCE.

AIR MINISTRY, Dec. 2nd

R.A.F.—The following are granted permanent commns. in the ranks stated, with effect from Aug. 1st:—

Flt. Lts.—A. Gray, M.C. (A.), *A. P. Maurice, D.F.C. (A.), *O. C. Bryson, M.C., D.F.C., A.M. (A.), J. A. MacNab (O.), *D. S. Earp (O.).

Flying Officers.—*A. L. M. Van der Byl (A.), R. M. Trevethan, M.C. (A.), G. E. Randall, D.F.C. (A.), C. L. Wauchope (A.), A. Jerrard, V.C. (A.), J. M. Mason, D.S.C., D.F.C. (A.), L. C. Hootton, M.C. (A.), *H. C. E. Bockett-Pugh (A. and S.), *L. M. Hilton (A.), *A. F. Lang (O.), C. A. Bouchier, D.F.C. (A.), H. A. Haines, D.F.C. (A.).

The classification of Capt. A. A. B. Thomson is "(A.)," and not "(S.)," as stated in "Gazette," Aug. 1st.

The notification in "Gazette," Aug. 1st, appointing Maj. C. S. Danby, M.C. (A.), to a permanent commn is cancelled.

The notification in "Gazette," Aug. 1st, appointing Capt. T. Gran (T.) to a permanent commn. is cancelled

The following temp. appt. is made at the Air Ministry:—Staff Officer, 3rd Class.—(P.) Flt. Lt. A. H. Stradling, Nov. 18th.

FLYING BRANCH.—Capt. C. B. Dalison, A.F.C., is graded for purposes of pay and allowances as Maj. while empld. as Maj (A. and S.), from May 1st to Oct. 23rd (substituted for notification in "Gazette," Oct. 21st).

Flt. Lt. (actg. Sqdn. Ldr.) S. W. Dunckley relinquishes the actg. rank of Sqdn. Ldr. on ceasing to be empld. as Sqdn. Ldr. (A.), Nov. 11th.

Flying Officer (actg. Flt. Lt.) E. Burney, M.C., relinquishes the actg. rank of Flt. Lt. on ceasing to be empld. as Flt. Lt. (A.), Nov. 11th.

Sec. Lt. S. Soothill to be Lt., Nov. 13th, 1918

Pilot Officer N. Hickson to be Flying Officer, Sept. 9th.

Sec. Lt. W. C. Snowdon (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt. (O.), June 3rd, 1918.

The following relinquish their temp. R.A.F. commns. on return to Army duty:—Flying Officer K. M. Harris (Sec. Lt., Suff. R.), Nov. 1st; Flying Officer C. Joiner (Lt., E. Surr. R.), Nov 8th; Flight Lt. C. R. Richardson (Lt., E. Yorks. R.), Nov. 10th; Flying Officer E. G. Williams (Lt., Essex R.), Nov. 10th; Flying Officer P. Perfect (Lt., K.O.S.B.), Nov. 12th; Flight Lt. R. F. S. Manduit, M.C. (Lt., Dragn. Gds.), Nov. 17th; Flying Officer J. C. C. Piggott (Lt., Duke of Corn. L.I.), Nov. 18th.

The following relinquish their temp. R.A.F. commns. on return to Naval duty:—Sqdn. Ldr. R. S. Robinson, O.B.E. (Lt.-Comdr., R.N.), Oct. 14th; Pilot Officer D. P. Davidson (Sub. Lt., R.N.), Nov. 3rd; Flying Officer R. B. Gibb (actg. Lt., R.N.), Nov. 8th.

Flight Lt. G. E. Wildman-Lushington (Capt., R. Marines) relinquishes his temp. R.A.C. commn. on return to duty with R. Marines, Oct. 23rd.

Transferred to unempld. list:—Lt. G. Smith, Jan. 30th; Sec. Lt. (Hon. Lt.) A. C. McKinnon, Feb 1st; Sec. Lt. N. Howl, Feb. 4th; Sec. Lt. C. E. Fabian, March 10th; Sec. Lt. S. G. Amor, March 15th; Lt. F. E. Davy, March 19th, Sec. Lt. R. L. Ford, March 23rd; Lt. J. E. E. Fenton, March 25th; Lt. E. V. Holland, March 30th; Sec. Lt. L. H. Eyres, April 3rd; Sec. Lt. R. Wilkinson, April 13th; Sec. Lt. P. Rockley, April 15th; Lt. R. Kelly (substituted for notification in "Gazette" of Sept. 5th), Sec. Lt. W. A. McLeod, April 20th; Sec. Lt. F. K. Wilson, May 19th; Capt. H. L. Hitch, May 28th; Lt. G. E. Ransom, May 31st; Lt. T. F. Burrill, June 13th; Capt. B. A. Smart, D.S.O., June 29th (substituted for notification in "Gazette" of July 4th); Sec. Lt. A. B. Wilkinson, July 6th; Sec. Lt. F. Carroll, Lt. J. A. Chambers, July 12th; Maj. K. L. Caldwell, M.C., D.F.C., Sec. Lt. G. E. Cartwright, July 17th; Lt. C. J. Chabot, July 20th; Lt. E. Lindup, M.C., Aug. 1st; Sec. Lt. W. D. Wood, Aug. 7th; Sec. Lt. F. L. Chapin, Lt. E. P. C. Godsil, Aug. 22nd; Sec. Lt. A. R. Wylde, Aug. 27th; Sec. Lt. C. C. Chapman, Lt. F. M. Wood, Aug. 20th, Sec. Lt. E. H. Sansom, Sept. 6th; Sec. Lt. W. G. Harris, Sec. Lt. B. P. Hawkins, Sept. 10th; Lt. R. Lucovich, M.C., Sept. 18th; Lt. C. Jackson, Sept. 19th (substituted for notification in the "Gazette" of Nov. 21st); Sec. Lt. T. M. Harries, D.F.C., Sept 20th; Sec. Lt. I. Fender, Sept. 22nd; Capt. H. L. Wood, Sept 26th; Sec. Lt. W. C. Campain, Sec. Lt. A. P. Cannon, Lt. F. Carr, Sec. Lt. J. E. Charlebois, Sec. Lt. C. Hancock, Sec. Lt. A. J. Lacasse, Sec. Lt. B. C. Longmire (substituted for notification in the "Gazette" of July 22nd), Sept. 28th; Sec. Lt. H. W. P. Carew, Lt. W. J. Carroll, Capt. B. N. Harrop, Sec. Lt. W. Haviland, Sec. Lt. J. T. J. McA. Nulty, Sec. Lt. E. P. McCarville, Lt. E. C. MacDonnell, Sec. Lt. J. MacDonell, Sec. Lt. J. MacFarlane, Sec. Lt. W. H. Young, Sept. 20th; Sec. Lt. J. L. Merrington, Sept 30th; Lt. J. J. A. Thompson, Oct. 6th; Sec. Lt. (Hon. Lt.) A. Dunton, Lt. K. Y. Gliddon, Oct. 9th; Sec. Lt. T. Atkinson, Oct. 10th; Sec. Lt. C. F. Lawson, Oct 11th; Maj. H. F. Champion, A.F.C., Oct 12th; Lt. E. J. A. Burke, Oct. 13th (substituted for notification in the "Gazette" of Nov. 4th); Sec. Lt. J. W. Davies, Oct 16th; Sec. Lt. G. B. Allen, Sec. Lt. R. N. Bullock, Sec. Lt. F. Laughton, Oct. 20th; Sec. Lt. R. B. Stock, Oct. 28th (substituted for the notification in the "Gazette" of Oct. 24th); Sec. Lt. T. V. Callard, Oct 29th (substituted for notification in the "Gazette" of Oct. 24th). Lt. R. Locke, Oct 30th (substituted for notification in the "Gazette" of Nov 14th, wherein this officer was shown under Technical Branch); Sec. Lt. C. F. Robinson, Nov. 1st; Sec. Lt. H. P. Lawson, Sec. Lt. R. D. B. Wood, Nov. 2nd; Sec. Lt. J. D. Bush, Lt. J. B. Purefoy, Sec. Lt. J. Withers, Nov 3rd; Sec. Lt. (Hon. Lt.) G. G. Ross-Smith (R.G.A.), Nov 4th (substituted for notification in "Gazette," Nov. 14th); Sec. Lt. J. O. E. Carrington, Nov. 7th; Sec. Lt. F. M. Seabourne, Nov. 10th; Lt. C. H. Cameron, Lt. H. F. Lea, Lt. R. F. McKae, Nov. 13th; Lt. P. Phillips, Nov. 22nd; Sec. Lt. S. S. George, Lt. I. A. Romyn, Nov. 23rd; Sec. Lt. (Hon. Lt.) E. H. Colman, Sec. Lt. J. H. Gibbons, Nov. 29th; Lt. K. H. Carr, Nov. 30th.

The following Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—D. MacGregor (K.O.S.B.) (caused by wounds), Nov. 13th; C. A. Bradnam (contracted on active service), Nov. 22nd; N. W. R. Mawle, D.F.C. (Lond. R., T.F.) (caused by wounds), Nov. 24th; D. G. H. Meade (contracted on active service), Nov. 20th.

The following Sec. Lts. relinquish their commns. on account of ill-health (caused by wounds), and are permitted to retain their rank:—C. Houlgrave, E. J. Norris, Nov. 25th; Sec. Lt. R. J. Barnes resigns his commn., Aug. 26th, 1918.

The surname of Lt. A. H. Ashton is as now described, and not "Ashtch," as stated in "Gazette," Nov. 14th.

The Christian names of Sec. Lt. Henry Dan Lewis are as now described, and not "Henry Van," as stated in "Gazette," Nov. 4th.

The initials of Lt. J. O. Barclay are as now described, and not "J. B.," as stated in "Gazette," Jan. 21st.

The surname of Lt. F. M. McLellan, D.F.C., is as now described, and not "McLennan," as stated in "Gazette," July 22nd.

The notification in "Gazette," Oct. 21st, concerning Sec. Lt. L. T. Lawrence is cancelled. "Gazette," April 18th, to stand.

The notification in "Gazette," April 1st, concerning Sec. Lt. N. H. Howe is cancelled

ADMINISTRATIVE BRANCH.—Flying Officer F. V. Goode to be Flying Officer from (S.O.), Nov. 10th.

Flying Officer (actg. Flight Lt.) W. H. Hoile relinquishes the actg. rank of Flight Lt. on ceasing to be empld. as Flight Lt., Nov. 13th.

Sec. Lt. E. Staples (since demobilised) to be Lt., Nov. 13th, 1918.

Sec. Lt. T. Mumford to be actg. Lt. whilst empld. as Lt., from Aug. 8th, 1918, to April 30th

The following Flying Officers relinquish their temp. R.A.F. commns. on return to Army duty:—G. W. Panter, M.B.E. (Lt., R.I. Rif.), Oct. 15th; G. W. Nelson (Lt., Gord. Highrs.), Nov. 6th; T. H. Holmes (Lt., R.F.A.), Nov. 15th; (Hon. Flight Lt.) C. H. Markham (Capt., North'd Fus.), Nov. 19th.

Transferred to the unempld. list:—Sec. Lt. A. J. P. Evans, March 21st; Lt. W. Wallace, M.C., April 15th; Sec. Lt. F. Harris, July 18th; Sec. Lt. C. C. Lotter, Aug. 7th; Sec. Lt. A. Gibson, Aug. 27th; Lt. F. R. C. Davidson, Sept. 7th; Lt. S. L. Empson, Capt. L. F. Lambert, Sept. 8th; Lt. E. H. A. Lockwood, Sept. 11th; Capt. F. Steel, O.B.E., Sept. 23rd; Lt. B. F. MacDonald, Sept. 26th; Sec. Lt. G. F. Carefoot, Sept. 28th; Sec. Lt. J. D. Grant, Sept. 29th; Lt. J. W. Mennie, Oct. 18th; Sec. Lt. T. Caine, Oct. 20th; Capt. T. L. Williams, M.C., Nov. 13th; Lt. C. S. Chamberlain, Nov. 24th; Lt. A. E. Houghton (Sec. Lt., Extra Regimentally Empld. List) resigns his commn., Dec. 3rd.

The following Sec. Lts. relinquish their comms. on account of ill-health, and are permitted to retain their rank:—B. W. A. Ordish, G. R. Smith (contracted on active service), Nov. 26th; G. N. Wood, Dec. 7th, 1918 (substituted for notification in the "Gazette" of Aug. 6th, 1918).

The notification in the "Gazette" of March 11th concerning Lt. N. H. Kemp is cancelled.

The notifications in the "Gazettes" of July 9th, 1918, and Dec. 24th, 1918, concerning Sec. Lt. (Hon. Capt.) F. Grave are cancelled.

TECHNICAL BRANCH.—F. Grave (Capt. and Qrmr., Ldn. R., T.F.) is granted a temp. commn. as Capt., Grade (B), April 1st, 1918, without the pay and allowances of that rank prior to May 22nd, 1918

Flying Officer J. L. Denman to be Flying Officer from (S.O.), Oct. 18th (substituted for notification in the "Gazette" of Nov. 21st).

Lt. W. L. Head to be Lt., Grade (B), from ("A. and S."), Aug. 9th (substituted for notification in the "Gazette" of Aug. 30th, 1918).

Sec. Lts. to be Lts.:—S. A. Alder, April 2nd, 1918, without the pay and allowances of that rank prior to Aug. 28th, 1918; V. P. Pereth, June 3rd; E. Downer, June 6th.

Pilot Officers to be Flying Officers:—A. D. Edwards, Aug 5th; E. W. Dawson, A. E. Faver, J. H. J. Footman, L. J. Lester, R. Smith, Oct. 1st.

Pilot Officer (actg. Flight Lt.) A. Jukes relinquishes the actg. rank of Flight Lt. on ceasing to be empld. as Flight Lt., from (S.O.), Oct. 18th.

Flying Officer G. P. N. Hardy (Lt., R.G.A.) relinquishes his temp. R.A.F. commn. on return to Army duty, Nov. 17th.

Transferred to the unempld. list:—Sec. Lt. B. Jones, Feb. 4th; Sec. Lt. H. B. George, July 24th (substituted for notification in the "Gazette" of Sept. 12th); Sec. Lt. (Hon. Capt.) T. R. Duff, July 29th; Lt. (Hon. Maj.) A. H. W. Saunders-Knox-Gore, Aug. 9th; Lt. J. W. Cairns, Sept. 12th; Sec. Lt. (Hon. Lt.) J. L. Bicknell, Oct. 6th; Lt. N. D. Bryce, Oct. 9th; Capt. A. M. Low, Oct. 14th; Sec. Lt. W. Parkinson, Oct. 28th (substituted for notification in the "Gazette" of Nov. 7th); Sec. Lt. C. M. Byham, Oct. 29th (substituted for notification in the "Gazette" of Oct. 28th); Lt. K. E. Beswick, Nov. 4th (substituted for notification in the "Gazette" of Nov. 18th); Sec. Lt. H. J. Wadkin, Nov. 5th; Sec. Lt. J. W. Tattersall, Nov. 6th; Maj. J. O. James, Nov. 13th; Capt. S. McClure, O.B.E., Nov. 20th; Capt. H. W. Bamber, Capt. A. W. Davie, Nov. 22nd

Lt. H. J. Murphy relinquishes his commn. on account of ill-health contracted on active service, and is granted the rank of Capt., Nov. 26th.

The initial of Sec. Lt. H. Jacques is as now described, and not "U.," as stated in the "Gazette" of Nov. 18th.

The notifications in the "Gazettes" of Feb. 11th, March 18th, May 20th, concerning Lt. (Hon. Capt.) F. Grave are cancelled.

MEDICAL BRANCH.—Transferred to the unempld. list:—Capt. A. P. Woollright, April 18th; Capt. V. T. Ellwood, Nov. 25th.

Capt. H. N. Wright relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank. Nov. 25th.

The initials of Capt. A. Moir-Gray are as now described, and not "Q.," as stated in the "Gazette" of Nov. 14th.

MEMORANDA.—Pilot Officers to be Flying Officers:—G. H. Brown, W. J. Ryder, Oct. 1st.

The following overseas Cadet is granted a temp. commn. as Sec. Lt., with effect from Feb. 15th, and relinquishes his commn. with permission to retain his rank from the day following demobilisation:—316124 D. A. Aberdeen.

The following overseas Cadet is granted an hon. commn. as Sec. Lt.:—154907 R. Ingram, Jan. 1st

The following Probationary Flight Officers are granted hon. commns. as Sec. Lts.:—B. C. Oades, Nov. 16th, 1918; E. F. Northey, Dec. 17th, 1918; C. W. D. Outred, Jan. 23rd; R. E. Haswell, Jan. 24th; R. H. Hardman, Feb. 12th; J. G. Heriot, Feb. 13th; C. L. Harrison, Feb. 19th; C. Norris, March 5th; C. L. Marn, March 7th; H. E. Mock, March 9th; H. W. Merrill, March 18th; H. S. McLeod, March 10th; L. J. Hartnett, April 2nd; D. B. Mincard, April 6th; R. S. Harrison, April 8th; T. E. Hall, April 12th; S. B. McBain, April 14th; H. H. Mullens, April 28th; C. Moody, May 2nd; L. G. Hicks, July 24th; D. H. O. Oakley, Sept. 26th.

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The following Cadets are granted hon. commns. as Sec. Lts.:—179188 H. B. T. Curtis, Jan. 13th; 182487 F. Jeffery, Jan. 15th; 299061 E. L. Walsh, March 2nd; 11205 H. D. Hoskins, March 20th; 110418 R. G. Veryard, April 22nd (substituted for notification in the "Gazette" of July 25th, wherein this Cadet was described as "110410 Richard Joe Veryard"); M2/204666 C. F. Keate, May 3rd; 152337 G. McNeill, May 6th; 33292 A. R. Quaife, May 29th; M2/102920 A. G. Brayshaw, June 2cth; 261591 J. H. R. Nixon, Nov. 8th.

Wing Comdr. M. G. Christie, C.M.G., D.S.O., M.C., is placed on the half-pay list, Dec. 3rd.

Lt.-Col. (actg. Col.) B. H. O. Armstrong, C.M.G. (Maj. (Bt. Lt.-Col.) R.E.), relinquishes his commn. on ceasing to be empld., Nov. 15th.

The following temp. Hon. Lts. relinquish their commns. on ceasing to be empld.:—R. Richardson, H. J. Wilkins, Sept. 16th.

Transferred to the unempld. list:—Capt. J. H. Tyler, M.B.E., from (S.O.), May 2nd (substituted for notification in "Gazette," July 15th, wherein this officer was shown under Flying Branch); Capt. G. S. Lardner, from (S.O.), Oct. 10th.

The notification in "Gazette," July 25th, concerning 177148 Cadet W. McK. Auld is cancelled.

The notification in "Gazette," May 2nd, concerning 27941 Cadet D. Avlam is cancelled.

CENTRAL CHANCERY OF THE ORDERS OF KNIGHTHOOD.

ST. JAMES'S PALACE, S.W.1, Dec. 5th.

The three Warrants set forth below are concerned with the establishment of the Distinguished Flying Cross, the Air Force Cross, the Distinguished Flying Medal and the Air Force Medal, the institution of which was announced in the "London Gazette" of June 3rd, 1918 (No. 30723, page 6533):—

ROYAL WARRANT INSTITUTING DECORATIONS AND MEDALS FOR THE ROYAL AIR FORCE.

GEORGE R.I.

GEORGE THE FIFTH, by the Grace of God of the United Kingdom of Great Britain and Ireland and of the British Dominions beyond the Seas King, Defender of the Faith, Emperor of India: To all to whom these presents shall come. Greeting!

Whereas We are desirous of signifying Our appreciation of acts of valour, courage, and devotion to duty performed by Officers and Men in Our Air Force and in the Air Forces of Our Self-governing Dominions beyond the Seas, We do hereby, for Us, Our heirs and successors, institute and create two decorations to be designated the Distinguished Flying Cross and the Air Force Cross, and two Medals, to be designated the Distinguished Flying Medal and the Air Force Medal, and We do hereby direct that the following regulations shall be made governing the said Decorations and Medals:—

Firstly. It is ordained that the Distinguished Flying Cross shall be granted only to such Officers and Warrant Officers of Our said Forces as shall be recommended to Us for an act or acts of valour, courage, or devotion to duty performed whilst flying in active operations against the enemy.

Secondly. It is ordained that the Distinguished Flying Cross shall be silver and shall consist of a Cross flory terminated in the horizontal and base bars with bombs, the upper bar terminating with a rose, surmounted by another cross composed of aeroplane propellers charged in the centre with a roundel within a wreath of laurels a rose winged ensigned by an Imperial Crown thereon the letters R.A.F. On the reverse the Royal Cypher above the date 1918. The whole attached to the clasp and ribbon by two sprigs of laurel.

Thirdly. It is ordained that the Distinguished Flying Cross shall be worn on the left breast pendant from a ribbon one inch and a quarter in width, which shall be in colour violet and white in alternate horizontal stripes of one-eighth of an inch in depth.

Fourthly. It is ordained that the award of the Distinguished Flying Cross shall entitle the recipient to have the initials D.F.C. appended to his name.

Fifthly. It is ordained that the Air Force Cross shall be granted only to such Officers and Warrant Officers of Our said Forces as shall be recommended to us for an act or acts of valour, courage, or devotion to duty whilst flying though not in active operations against the enemy.

Sixthly. It is ordained that the Air Force Cross shall be silver and shall consist of a thunderbolt in the form of a cross, the arms conjoined by wings, the base bar terminating with a bomb surmounted by another cross composed of aeroplane propellers, the four ends enscribed with the letters G.V.R.I. In the centre a roundel thereon, a representation of Hermes mounted on a hawk in flight bestowing a wreath. On the reverse the Royal Cypher above the date 1918. The whole ensigned by an Imperial Crown and attached to the clasp and ribbon by two sprigs of laurel.

Seventhly. It is ordained that the Air Force Cross shall be worn on the left breast pendant from a ribbon one inch and a quarter in width, which shall be in colour red and white in alternate horizontal stripes of one-eighth of an inch in depth.

Eighthly. It is ordained that the award of the Air Force Cross shall entitle the recipient to have the initials A.F.C. appended to his name.

Ninthly. It is ordained that the Distinguished Flying Medal shall be granted only to such Non-commissioned Officers and Men of Our said Forces as shall be recommended to Us for an act or acts of valour, courage, or devotion to duty performed whilst flying in active operations against the enemy.

Tenthly. It is ordained that the Distinguished Flying Medal shall be silver and oval-shaped, bearing Our Effigy on the obverse and on the reverse within a wreath of laurel a representation of Athena Nike seated on an aeroplane, a hawk rising from her right arm above the words "for Courage." The whole ensigned by a bomb attached to the clasp and ribbon by two wings.

Eleventhly. It is ordained that the Distinguished Flying Medal shall be worn on the left breast pendant from a ribbon of one inch and a quarter in width, which shall be in colour violet and white in alternate horizontal stripes of one-sixteenth of an inch in depth.

Twelfthly. It is ordained that the award of the Distinguished Flying Medal shall entitle the recipient to have the initials D.F.M. appended to his name.

Thirteenthly. It is ordained that the Air Force Medal shall be granted only to such Non-commissioned Officers and Men of Our said Forces as shall be recommended to Us for an act or acts of valour, courage, or devotion to duty performed whilst flying, though not in active operations against the enemy.

Fourteenthly. It is ordained that the Air Force Medal shall be silver and oval-shaped, bearing Our Effigy on the obverse and on the reverse within a wreath of laurel a representation of Hermes mounted on a hawk in flight bestowing a wreath. The whole ensigned by a bomb attached to the clasp and ribbon by two wings.

Fifteenthly. It is ordained that the Air Force Medal shall be worn on the left breast pendant from a ribbon one inch and a quarter in width, which shall be in colour red and white in alternate horizontal stripes of one-sixteenth of an inch in depth.

Sixteenthly. It is ordained that the award of the Air Force Medal shall entitle the recipient to have the initials A.F.M. appended to his name.

Seventeenthly. It is ordained that Foreign Officers and gradings of an equivalent rank to those above mentioned who have been associated in Military operations with Our Army or Our Indian, Dominion, or Colonial Military Forces, shall be eligible for the award of the Distinguished Flying Cross, the Air Force Cross, the Distinguished Flying Medal, and the Air Force Medal.

Eighteenthly. It is ordained that in cases where Officers, Warrant Officers, and Men who have been awarded one of the above decorations or medals shall be recommended for a further act of valour, courage, or devotion to duty, he shall be awarded a bar to be attached to the ribbon by which the decoration or medal is suspended, and for every additional such Act an additional bar may be awarded.

Nineteenthly. It is ordained that the names of those upon whom We may be pleased to confer the above decorations and medals shall be published in the "London Gazette," and that a Register thereof shall be kept in the Office of Our Secretary of State for the Royal Air Force.

Twentiethly. It is ordained that any person whom by an especial Warrant under Our Royal Sign Manual We declare to have forfeited the above decorations, medals, and bars shall return the same to the Office of Our Secretary of State for the Royal Air Force, and that his name shall be erased from the Register of those upon whom the said decorations, medals, and bars shall have been conferred.

Lastly. We reserve to Ourself, Our heirs and successors, full power of annulling, altering, abrogating, augmenting, interpreting, or dispensing with these regulations, or any part thereof, by a notification under Our Royal Sign Manual.

Given at Our Court at St. James's under Our Sign Manual this 3rd day of June, in the ninth year of Our Reign and in the year of Our Lord One thousand nine hundred and eighteen.

By the Sovereign's Command, WILLIAM WEIR.

ROYAL WARRANT AMENDING THE THIRD, SEVENTH, ELEVENTH, AND FIFTEENTH CLAUSES OF THE ROYAL WARRANT INSTITUTING DECORATIONS AND MEDALS FOR THE ROYAL AIR FORCE.

GEORGE R.I.

GEORGE THE FIFTH, by the Grace of God of the United Kingdom of Great Britain and Ireland and of the British Dominions beyond the Seas King, Defender of the Faith, Emperor of India: To all to whom these presents shall come. Greeting!

Whereas We did, by Royal Warrant under Our Sign Manual dated June 3rd, 1918, institute and create two decorations designated the Distinguished Flying Cross and the Air Force Cross and two Medals designated the Distinguished Flying Medal and the Air Force Medal to be awarded to Officers and Men in Our Air Force and in the Air Forces of Our Self-governing Dominions beyond the Seas in recognition of acts of valour, courage, and devotion to duty.

And whereas We are desirous that certain alterations should be made in the regulations governing the said decorations and medals.

Now, therefore, We do by these Presents for Us, Our Heirs and Successors, ordain that the following Ordinances shall be substituted for the corresponding Ordinances in the said Royal Warrant, and shall henceforth be construed and have the same effect as if they formed part of the said Royal Warrant:—

Thirdly. It is ordained that the Distinguished Flying Cross shall be worn on the left breast pendant from a ribbon one inch and a quarter in width which shall be in colour violet and white in alternate diagonal stripes of one-eighth of an inch in width running at an angle of 45 degrees from left to right.

Seventhly. It is ordained that the Air Force Medal shall be worn on the left breast pendant from a ribbon one inch and a quarter in width which shall be in colour red and white in alternate diagonal stripes of one-eighth of an inch in width running at an angle of 45 degrees from left to right.

Eleventhly. It is ordained that the Distinguished Flying Medal shall be worn on the left breast pendant from a ribbon of one inch and a quarter in width which shall be in colour violet and white in alternate diagonal stripes of one-sixteenth of an inch in width, running at an angle of 45 degrees from left to right.

Fifteenthly. It is ordained that the Air Force Medal shall be worn on the left breast pendant from a ribbon one inch and a quarter in width which shall be in colour red and white in alternate diagonal stripes of one-sixteenth of an inch in width running at an angle of 45 degrees from left to right.

Given at Our Court at St. James's this 24th day of July, in the tenth year of Our Reign and in the year of Our Lord One thousand nine hundred and nineteen.

W. S. CHURCHILL, by His Majesty's Command.

ROYAL WARRANT ENABLING THE AIR FORCE CROSS AND AIR FORCE MEDAL TO BE CONFERRED UPON CIVILIANS.

GEORGE R.I.

GEORGE THE FIFTH, by the Grace of God of the United Kingdom of Great Britain and Ireland and of the British Dominions beyond the Seas King, Defender of the Faith, Emperor of India: To all to whom these presents shall come. Greeting!

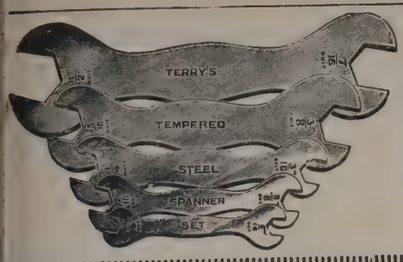
Whereas We did, by Royal Warrant under Our Sign Manual dated June 3rd, 1918, institute and create two decorations designated the Distinguished Flying Cross and the Air Force Cross and two Medals designated the Distinguished Flying Medal and the Air Force Medal to be awarded to Officers and Men in Our Air Force and in the Air Forces of Our Self-governing Dominions beyond the Seas in recognition of acts of valour, courage, and devotion to duty.

And whereas We are desirous that certain alterations should be made in the regulations governing the said decorations and medals.

Now, therefore, We do by these Presents for Us, Our Heirs and Successors, ordain that the following Ordinances shall be substituted for the corresponding Ordinances in the said Royal Warrant, and shall henceforth be construed and have the same effect as if they formed part of the said Royal Warrant:—

Fifthly. It is ordained that the Air Force Cross shall be granted to such Officers and Warrant Officers of Our said Forces as shall be recommended to Us for an act or acts of valour, courage, or devotion to duty whilst flying though not in active operations against the enemy, and may also be granted to individuals not belonging to Our Air Force (whether Naval, Military, or Civil) who render distinguished service to Aviation in actual flying.

Thirteenthly. It is ordained that the Air Force Medal shall be granted to such Non-commissioned Officers and Men of Our said Forces as shall be recommended to Us for an act or acts of valour



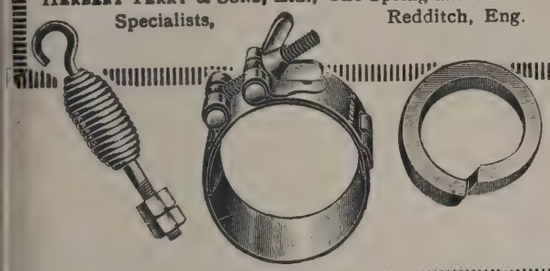
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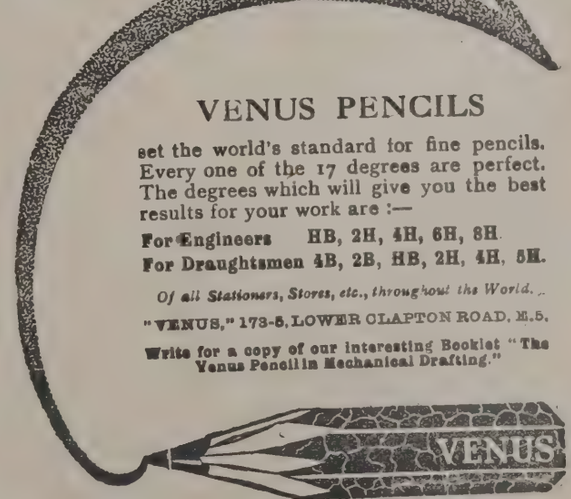
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W. S. Churchill, by His Majesty's Command.

PERSONAL NOTICES.

NAVAL.

Death.

EASTY.—Sub-Flt. Lieut. Walter Harry Easty, R.N.A.S., who was reported missing on April 22nd, 1918, while on an offensive patrol in the neighbourhood of Aveluy Wood, is now presumed dead. He was the only son of Walter and Lucy Sutton Easty, of 74, Kempe Road, London, N.W.6., and was 26 years of age.

Engagement.

PARRY—BUCKLEY.—The engagement is announced between Engineer Lieut.-Cmdr. Rey Griffith Parry, D.S.O., Royal Navy, acting Major, R.A.F., son of the late W. Griffith Parry, formerly of Grosvenor Lodge, Beckenham, and Belgrano, Buenos Aires, and Joan Brunner Buckley, younger daughter of Major T. W. Buckley, R.A.M.C., Clopton Manor, Thrapston, and of Mrs. Buckley, The Ridge House, St. George's Hill, Weybridge.

Marriage.

COMPSTON—BARCLAY.—On Nov. 25th, at St. Simon's Church, Chelsea, Flt. Lieut. Robert John Orton Compston, D.S.C., D.F.C., R.A.F., was married to Nina Mabel, only child of the late Capt. A. H. Barclay and adopted daughter of Lieut.-Col. H. F. Barclay, 34, Lennox Gardens, by the Rev. H. F. B. Compston, Vicar, Bredwardine, Hereford, Fellow of King's College, London (father of the bridegroom), assisted by the Rev. W. M. Selwyn, Vicar.

MILITARY.

Engagements.

CLARK—COATS.—The engagement has been announced between Capt. C. C. Clark, R.F.A. and R.A.F., youngest son of Mr. Henry Clark and the late Mrs. Clark, of 25, Adelaide Crescent, Brighton, and Katherine, eldest daughter of Mr. and Mrs. P. Herbert Coats, of Corsebar, Paisley.

NOEL—GAIRDNER.—The engagement is announced between Major M. W. Noel, A.F.C., the King's Regiment, attd. R.A.F., son of Colonel Noel, Stardens, Newent, Gloucestershire, and Edith, daughter of Mrs. Charles Gairdner, 88, Westbourne Terrace, Hyde Park.

Marriages.

BIRKETT—WELLS.—On Nov. 25th, at St. Stephen's Church, Ealing, Norman Wreford Birkett, late 6th Bn., The Buffs, and R.A.F., son of Mr. and Mrs. Louis Birkett, of Chislehurst, was married to Kathleen Wells, late W.R.A.F., daughter of Mr. C. W. Wells, of Ealing, by the Rev. H. M. Larner, Rector of Busbridge.

JENKINS—ROBERTSON.—On Nov. 26th, at St. Olaf's Church, Kirkwall, Lieut.-Col. F. Howard Jenkins, O.B.E., M.C. (late R.F.C. and R.A.F.), second son of the late J. H. Jenkins, M.R.C.S., L.R.C.P., of Lytham, Lancashire, was married to Harriet Fernelith, second daughter of Duncan J. Robertson, O.B.E., County Clerk of Orkney, by the Venerable Archdeacon Craven, D.D.

WEBB-BOWEN—HADLEY.—On Nov. 27th, at Christ Church, Chelsea, Air Commodore T. I. Webb-Bowen, R.A.F., late R.F.C., was married to Violet Louise Hadley, elder daughter of Mr. and Mrs. C. A. Hadley, of Johannesburg, S. Africa.

WILSON—ORR-EWING.—Capt. C. B. Wilson, late Xth Royal Hussars, and R.F.C., and Mrs. Hugh Orr-Ewing were married on Saturday, Nov. 22nd, and have left for the Continent.

Births.

GARROD.—On Nov. 13th, at 13, Gainsborough Gardens, Hampstead, to Evelyn, the wife of Squadron Leader A. G. R. Garrod, M.C., D.F.C., R.A.F.—a daughter.

HAWKINS.—On Nov. 24th, at Manor Farm, Sundridge, Kent, the wife of Gordon Hawkins, M.C., late Lieut., Border Regt. and R.A.F., of a son.

HUNTER.—On Nov. 14th, at Birnam, Castle Bromwich, the wife of Capt. A. Hunter, O.B.E., R.A.F. (late R.F.C.), of a son.

MOODY.—On Nov. 21st, at Simla, the wife of Major Francis Hyde Moody, M.C., R.A.F., of a daughter.

AIR FORCE.

Deaths.

BOURNE.—On Nov. 6th, Flying Officer Richard Balfour Bourne, R.A.F., died at Baldonnell Aerodrome, Co. Dublin, as the result of an aeroplane accident. He was 22 years of age, and was the elder son of Mr. and Mrs. Harry H. Bourne, of 82, Addison Way, N.W.4. Mr. Bourne had seen three years' service.

GIBB.—Mrs. J. P. Gibb, wife of Lieut. J. P. Gibb, late R.A.F., died on Nov. 10th at the Cottage Hospital, St. Andrew's.

KEYMER.—Capt. Basil Graham Homfray Keymer, D.F.C., Italian Croce di Guerra, R.A.F., who was killed on Oct. 24th in South Russia, was the eldest son of Rev. Basil N. Keymer, C.T.F., and Mrs. Keymer, of 1, Belvedere Road, Scarborough. He was 20 years of age.

Marriages.

HAMILTON—MITCHELL.—At St. Andrew's Church, Bath, on Dec. 2nd, Lieut. Wallace Ferrier Hamilton, R.A.F., youngest son of Mr. and Mrs. Claude Hamilton, Macedon, Australia, was married to Elsie, daughter of Mr. and Mrs. Ernest Mitchell, of 5, Park Street, Bath, by the Rev. Cecil Wilson, rector of Walcot.

LONG—TARRANT.—On Nov. 29th, at St. Stephen's Church, Gloucester Road, S.W., Flt. Lieut. Alexander James Long, R.A.F., only son of Mr. and Mrs. W. Alexander Long, of 140, Herne Hill, S.E.24, was married to Christine Amy, younger daughter of Mr. S. G. Tarrant, of Great Marlow, Bucks, and the late Mrs. Tarrant, of Tulse Hill, S.W., by the Vicar Lord Victor A. Seymour.

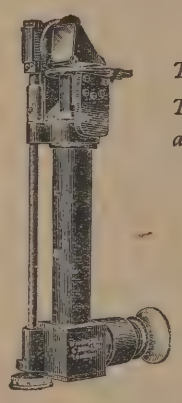
Births.

BLOUNT.—On Nov. 24th, at 28, Cheniston Gardens, W., the wife of Squadron Leader C. H. B. Blount, R.A.F., of a son.

LAIN.—On Nov. 18th, at 5, Cambridge Park, Bristol, to Dorothy, wife of Lieut. F. J. Lain, D.F.C., late R.A.F.—a son.

RICKCORD.—On Nov. 28th, at The Mount, Warlingham, Surrey, the wife of Wing-Commander Percival S. Rickcord, R.A.F., of a son.

The marriage arranged between the Rev. H. McCalman, M.C., R.A.F., and Miss Mildred Rosalie Neale will not take place.



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DEC. 17, 1919.

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ON THE BRITISH AIRCRAFT INDUSTRY OF TO-DAY.

AU SUJET DE L'INDUSTRIE DE L'AVIATION BRITANNIQUE.

With typically Gallic energy and initiative the French Aircraft Industry has organised a great Exposition of Aeronautic Matériel at the Grand Palais in Paris. This opens on December 19th, almost exactly eleven years since the first French Aero Show was held in the same magnificent building. The Exposition will remain open till the first week in January, and during the period of the Show naturally the aeronautical interest of the World will be centred on Paris.

One compliments our gallant Allies on their enterprise and, on behalf of all concerned with British Aeronautics, wishes them all the success which they deserve. France led the world in the construction and use of aeroplanes and airships from the beginning of aerial navigation until the outbreak of war. It is right and proper that she should lead in being the first nation to hold a great exhibition at the beginning of the era of Commercial Aeronautics.

British Aircraft Constructors are represented at the Exposition by some of the most famous firms in the Aircraft Industry, to wit the Aircraft Manufacturing Co., Ltd., Boulton and Paul, Ltd., the British and Colonial Aeroplane Co., Ltd. (more familiarly known as the Bristol Co.), Handley Page, Ltd., the Westland Aircraft Works, and Vickers, Ltd.: and on the machines shown by those firms are to be seen the products of some of our leading British manufacturers of engines, such as the Napier, Sunbeam, Rolls-Royce, Siddeley-B.H.P., and Cosmos, and of our leading makers of parts, accessories, and material. But there are very many more members of the British Aircraft Industry who are not represented.

It was the intention of the Society of British Aircraft Constructors to have had a big stand at the Exposition which would represent the British Aircraft Industry as a whole. Unfortunately, as the Society is not itself a manufacturer of aircraft, it was impossible, under the rules of the Exposition, for it to obtain a stand on the ground floor, which is reserved for actual manufacturers. And, as a stand in the Accessory Section would obviously not be consonant with the dignity and importance of the Society, the S.B.A.C. will not appear among the exhibitors.

Why the S.B.A.C. Issues.

Therefore it appears to the management of this paper to be a matter of duty to publish during the period of the Paris Aero Show as complete a review as possible of the British Aircraft Industry and its products, so that manufacturers of British aircraft, aero-engines, parts, accessories, and material may have an opportunity of placing before buyers of aircraft all over the world their claims to consideration.

Avec une énergie et une initiative bien gauloise, l'industrie d'Aviation française a organisé une grande exposition aéronautique au Grand Palais de Paris. Cette exposition s'ouvre le 19 décembre, a peu près exactement onze ans aprés l'ouverture du premier Salon d'aviation dans ce même grandiose batiment. L'Exposition restera ouverte jusqu'à la premiere semaine de Janvier, et naturellement pendant la durée de ce Salon, les intérêts aéronautiques du monde entier seront concentrés sur Paris.

Nous félicitons nos valiants Alliés de leur entreprise, et au nom de tous ceux que concerne l'Aviation britannique, nous leur souhaitons tout le succès qu'ils méritent.

La France a guidé le monde dans la construction et l'emploi d'avions depuis le commencement de l'ère aérienne jusqu'a la déclaration de la guerre. Il est juste qu'elle soit la première nation á ouvrir une exposition au commencement de l'ère aéronautique commerciale.

Les constructeurs d'avions britanniques sont représentés à l'exposition par certaines des plus fameuses firmes de l'industrie d'aviation, telles que—The Aircraft Manufacturing Co., Ltd., Boulton and Paul, Ltd., The British and Colonial Aeroplane Co., Ltd. (plus généralement connue sous le nom de The Bristol Co.), Handley Page, Ltd., The Westland Aircraft Works, et Vickers, Ltd., et les machines exposées par ces firmes représentent les produits de certains de nos fabricants britanniques de Moteurs, tels que Rolls-Royce, Napier, B.H.P., Sunbeam, et Cosmos, ainsi que de nos principaux fabricants d'accessoirs et de matériel. Mais il y a un grand nombre de Membres de l'Industrie d'Aviation Britannique qui ne sont pas représentés.

La "Society of British Aircraft Constructors" avait l'intention d'ouvrir dans l'exposition un département qui représenterait l'industrie d'aviation britannique en bloc. Malheureusement la dite Société n'étant pas elle même constructeurs d'avions, il lui a été impossible, vu les règlements de l'exposition, d'obtenir un département au rez-de-chaussée, qui est réserve aux fabricants mêmes. Et, comme il est évident qu'un comptoir dans la Section des Accessoirs n'eut pas été en rapport avec la dignité et l'importance de la Société, la S.B.A.C. ne prendra pas place parmi les exposants.

La Raison d'etre des editions S.B.A.C.

Pour cette raison la direction de ce journal le considère un devoir de publier pendant la durée du Salon d'Aéronautique, une revue aussi complète que possible de l'Industrie d'Aviation britannique et de ses produits, de façon que les Constructeurs d'avions britanniques, aéromoteurs, parties, accessoirs et matériel aient l'occasion de soumettre leurs produits aux acheteurs d'avions du monde entier.

The Paris Show will provide a great advertisement for the French Industry. It is the endeavour of THE AEROPLANE to provide as great an advertisement as possible for the British Industry, so that in the friendly rivalry of Commerce the British Aircraft Constructor may compete with his French competitor.

Foreign Buyers.

There is no doubt that many hundreds of thousands of visitors will enter the Grand Palais during the next three weeks. Many thousands of them will be passengers in aircraft during the next year or so. But only a few will be buyers of aircraft actually during the Show.

The real buyers of aircraft are the Military, Naval, and Postal authorities of various foreign nations, a certain number of business houses, and a certain number of new firms formed for the purpose of carrying passengers in aircraft, either for pleasure or for transport from place to place. Arrangements have been made that these Special British Aircraft Constructors' Issues of THE AEROPLANE shall reach such buyers in their own countries. Moreover, the attention of the Military, Naval, and Commercial attachés at the various embassies and legations in Paris and London will be similarly attracted to British aircraft by these issues. And those who wish to buy THE AEROPLANE in Paris will be able to do so.

Thus it is hoped to provide British Aircraft Constructors with an effective substitute for representation at the Paris Show.

The Industry's Opportunity.

All Members of the Society of British Aircraft Constructors and all Associate Members have been asked to supply information concerning their products for publication in these issues. And in order to be perfectly fair, firms who are not members of the S.B.A.C. have had the opportunity of supplying similar information, though, be it said, all aeroplane and engine firms of importance are in fact members of the S.B.A.C.

The information published in this and the two following issues is, therefore, what has been supplied by the firms themselves, merely edited or rewritten to make it uniform in style with the rest. If the information concerning some firms is meagre, it is because little information has been received. If the information concerning others is particularly comprehensive, it is because those firms have grasped the opportunity offered to them.

The amount of information thus obtained was too great to put into one issue of THE AEROPLANE, and so it has been divided among three issues. Moreover, it has been considered advisable to sustain the interest in the British Aircraft Industry throughout the duration of the Paris Show, rather than to cause one big splash and then let the interest subside. The information concerning the various firms has, therefore, been published in the order in which it has been received.

Deserters from the Industry.

Though it was to be expected that many firms who built aircraft or aircraft parts during the war would cease to do so when war ended, and though many small firms formed solely to make aircraft parts have naturally dissolved now that there is no more work for them to do, one confesses to a feeling of disappointment that so many big manufacturing concerns who made hundreds of thousands of pounds out of building aircraft during the war—in some cases one suspects millions of pounds—should now state that they have entirely lost interest in aircraft.

Le Salon de Paris constituera une grande réclame pour l'industrie française. THE AEROPLANE veut s'efforcer de produire une aussi grande réclame que possible pour l'industrie britannique, de sorte que dans la rivalité amicale du Commerce, le Constructeur d'avions britannique puisse rivaliser avec son concurrent français.

Acheteurs Etrangers.

Il est évident que des centaines de milliers de visiteurs se rendront au Grand Palais pendant les trois prochaines semaines. Des milliers d'entre-eux seront passagers en avions dans le courant de l'année. Mais un petit nombre seulement seront réellement acheteurs d'avions pendant la durée du Salon.

Les véritables acheteurs d'avions sont les autorités militaires, navales et postales de différentes nations étrangères, un certain nombre de maisons de commerce, et un certain nombre de nouvelles firmes formées dans le but de transporter les passagers par service aérien, soit pour leur plaisir soit comme moyen de communication Des arrangements spéciaux ont été pris pour que ces èditions spéciales de THE AEROPLANE parviennent aux dits acheteurs dans leur propre pays. De plus, l'attention des Attachés militaires, navals et commerciaux aux différentes ambassades et légations de Paris et de Londres, sera attirée de la même manière sur l'aviation britannique par ces éditions. THE AEROPLANE sera en vente a Paris pour tout ceux qui désirent se le procurer.

Ainsi, on espére donner de la sorte aux constructeurs d'avions britanniques un substituant efficace pour la représentation au Salon de Paris.

Une Occasion pour l'Industrie.

Tous les membres de la "Society of British Aircraft Constructors" et tous les Membres Associés ont été requis de fournir des informations concerant leurs produits, dans le but de les publier dans ces éditions. Et afin d'agir avec justice, les firmes qui ne sont pas membres de la S.B.A.C. ont eu l'occasion de fournir des informations similaires, bien que nous ferons remarquer que toutes les firmes importantes d'avions et de moteurs sont en fait membres de la S.B.A.C.

Les informations que nous publions dans cette édition et dans les deux suivantes sont celles qui nous ont été données par les firmes elles-mêmes, editées ou ré-écrites uniquement pour leur donner un style uniforme et en rapport avec le reste. Si les informations concernant certaines firmes paraissent moindres, c'est que peu d'informations nous ont été fournies. Si d'autre part les détails concernant certaines firmes sont plus étendus, c'est que ces firmes ont fait bon usage de l'occasion qui leur est offerte.

Le total des informations ainsi obtenues étant trop considérable pour paraitre dans une seule édition de THE AEROPLANE, il a été divisé en trois editions. De plus, il a été considéré plus avantageux de maintenir un intérêt dans l'industrie d'aviation britannique pendant toute la durée du Salon, que de produire un article sensationel et de laisser ensuite s'éteindre l'intérêt. En vue de cet arrangement les informations sont publiées dans l'ordre dans lequel elles ont été recues.

Deserteurs de l'Industrie.

On devait s'attendre a ce que bien des firmes constructeurs d'avions et de parties d'avions pendant la guerre cesserait de travailler après la guerre, et que des firmes moins importantes formées uniquement pour fabriquer des parties d'avions seraient naturellement forcées a dissolution. Cependant on ne peut s'empêcher d'exprimer un sentiment de désappointment lorsqu'on se rend compte que tant de fabriques qui ont réalisé des milliers de livres sterling par la construction d'avions pendant la guerre—dans certains cas il s'agit de millions—déclarent maintenant avoir perdu tout intérêt dans le sujet aviation.

Such firms made their money easily out of designs provided for them by the pioneers of aviation, who paid in blood and tears for the knowledge which produced those designs. Such firms spent their war profits, for which the lives of our aviators paid, in laying down elaborate machinery and setting up luxurious buildings for their staffs and workpeople who stayed away from the war, whereby they hope to make further huge profits in the future.

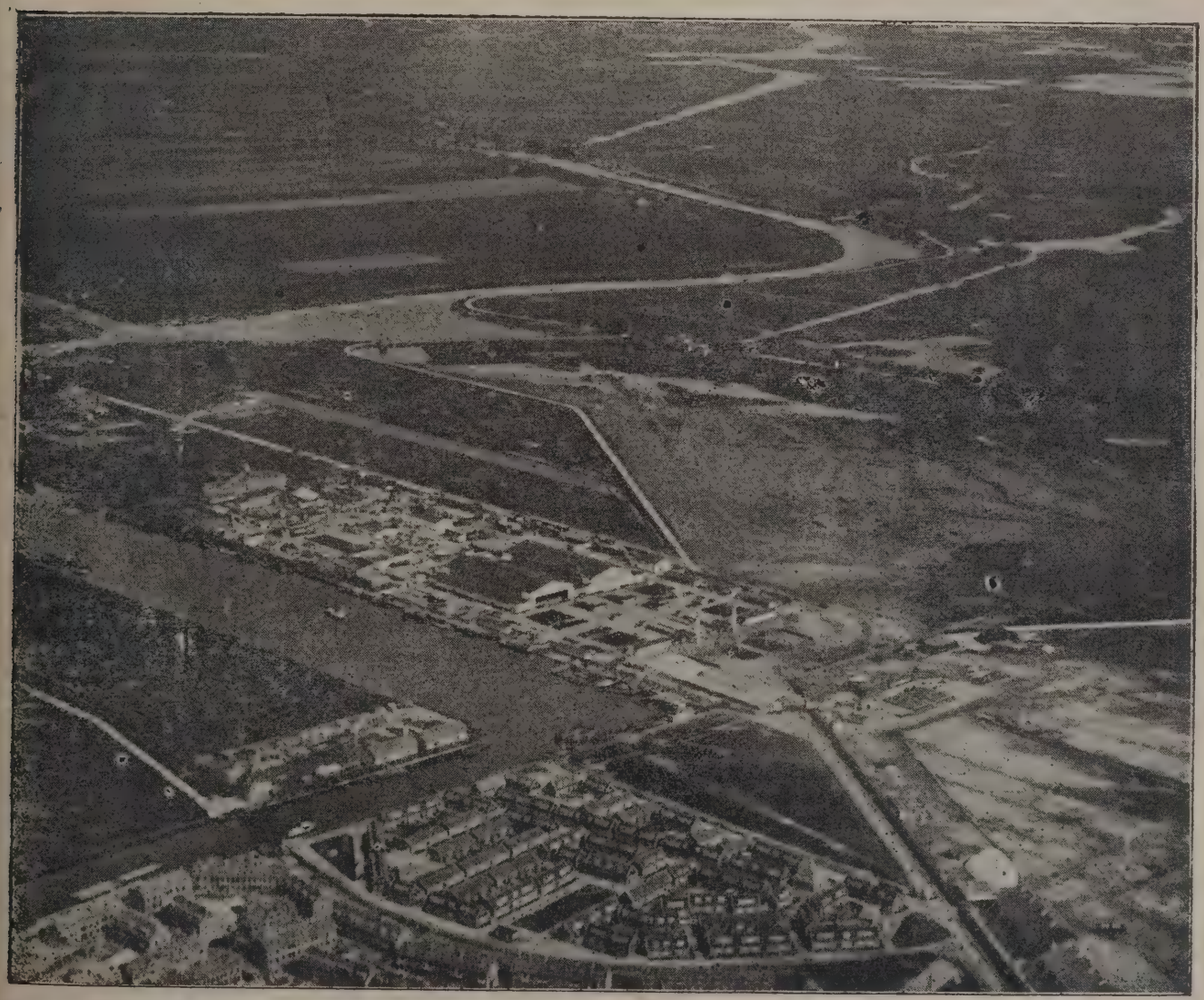
One would rather have expected that as a matter of honour such firms would have set aside a small part of their works and would have retained a small and efficient staff for experimental work on aircraft, so that they might thus help to improve the breed of British aircraft and so help to maintain the Command of the Air on which they, in common with the rest of the British Empire, must depend for their existence in the future.

Their desertion of the British Aircraft Industry is "not cricket." Indeed it is not even commercial common sense, for when, as will inevitably occur in due course, they want to get back into aircraft work when the next boom in aviation occurs, they will find their path beset with thorns. They will have lost their reputation as Aircraft Constructors, which they have acquired at some cost. They will have lost their experienced staffs. And they will have lost the good will of those who can do most to cause them to be accepted as aircraft producers worthy of consideration.

De telles firmes ont fait leur fortune avec facilité en employant les dessins que leur ont fournis les pioniers de l'aviation, dessins que ces derniers ont obtenus au prix de leur sang bien souvent. Ces mêmes firmes ont employé leurs profits de guerre, que nos aviateurs ont payés de leur vie, à ériger des machines perfectionnées et à construire des bâtiments luxueux pour leurs employés et leurs ouvriers qui n'ont pas pris part à la guerre, ces firmes espérant ainsi réaliser encore de grands bénéfices à l'avenir.

On se serait attendu à ce que de telles firmes le considèrent un point d'honneur de maintenir une petite partie de leurs installations et quelques employés efficaces pour faire des travaux d'expérimentation en aviation, aidant ainsi a maintenir la suprématie de l'air dont elles, comme le reste de l'Empire Britannique, dépendent pour leur existence future.

Leur désertion n'est pas honorable. Au fait elle ne prouve même pas un bon-sens commercial, car lorsqu'elles voudront reprendre leur place dans les travaux d'aviation ce qui se produira inévitablement, lors du prochain grand mouvement dans les forces de l'air, elles se trouveront face à face avec de grandes difficultés. Elles auront perdu leur réputation comme constructeurs d'avions qui doit leur avoir couté un certain capital. Elles auront perdu leur employés capables. Elles se seront aliéné le bon vouloir de ceux qui sont le mieux placés pour user de leur influence à les faire admettre comme constructeurs d'avions dignes de considération.



THE FIRST POST-BELLUM EXPOSITION.—The E.L.T.A. at Amsterdam as seen from above. The end of the aerodrome, with sheds, is seen in the right-hand bottom corner, and the Exhibition buildings are in the centre of the picture. The top of the picture gives a good idea of the country over which one has to fly to Holland.

The Constructors of British Aircraft.

The pre-war aeroplane firms courageously remain in the Aircraft Industry to a man. The Aircraft, Avro, Bristol, Blackburn, Caudron, Eastbourne, Grahame-White, Martinsyde, Handley Page, Short, Sopwith, Supermarine, and Vickers Companies are all keeping their works employed on aeroplanes, though all of them are taking up other work so as to make their factories pay their way till aviation again becomes a business proposition.

In addition to them the war has added other important firms to the aeroplane side of the Aircraft Industry. There are the Austin, Alliance, Beardmore, Boulton and Paul, British Aerial Transport, Central Aircraft, Fairey, Gosport Aircraft, Mann and Egerton, Nieuport and General, S. E. Saunders, and Westland Companies, all of whom took up aeroplane making during the war and intend to keep on making aeroplanes, either to order or purely experimentally, unless compelled to desist by force of circumstances. It is encouraging to find that there is faith in the future of aviation among so many firms of good standing.

Equally encouraging is the accession to the Aircraft Industry since the war of the new firm of George Parnall and Co., recently formed by Mr. George Parnall to carry on the aeroplane department of Parnall and Sons. Such practical demonstration of a belief in aviation deserves special recognition.

The Position of the British Aircraft Industry.

When the demand for commercial aircraft does arise, as it will do in due time, the British Aircraft Industry is probably better equipped to meet it than is any other.

The American Industry, though plentifully provided with men and machinery, is lamentably lacking in competent or experienced designers, and it will take years of experience before American aeroplanes can touch their British competitors for safety or efficiency.

The French Industry has certain designers of high genius, and its factories are well equipped. Also its workmen are clever and enthusiastic. But, if one judges by the aeroplanes produced in France during the war, the British Industry can provide several successful designs for every one of approximately equal performance in France. Moreover, for a good all-round level in reliability of construction and quality of workmanship the average British machine can beat the average French machine.

The German Industry is a dangerous competitor, for the German can produce cheaply and quickly. Also his aerodynamic designs are particularly good and his machines fly well. But his detail construction is frequently poor, and many of his machines are lacking in strength. Nevertheless, the German is very painstaking, and removes defects when he discovers them. Therefore the British Industry must guard carefully against German competition.

The Italian Industry is notable for the beauty of its design and its highly finished workmanship. But for the comparatively small number of constructors in Italy that country would be a very dangerous competitor. Even as it is, Italy will sell many aeroplanes and engines to other countries.

In spite of all this competition British workmanship and design is well able to bear comparison with that of any other country, and so the British Aircraft Industry should still hold the first place in the estimation of the world, provided that British Aircraft Constructors pursue a bold and active commercial policy.—C. G. G.

Les Constructeurs d'Avions Britanniques.

Les constructeurs d'avions d'avant guerre se maintiennent courageusement, sans exception, dans l'industrie de l'aviation. The Aircraft, Avro, Bristol, Blackburn, Caudron, Eastbourne, Grahame-White, Martinsyde, Handley Page, Short, Sopwith, Supermarine et Vickers toutes ces compagnies continuent à s'occuper de la fabrication d'aéroplanes, tout en entreprenant d'autres travaux pour continuer leur commerce en attendant que l'aviation devienne une fois de plus une affaire commerciale.

En plus des firmes citées ci-dessus, la guerre a donné d'autres firmes importantes a l'industrie de l'Air. Les Austin, Alliance, Beardmore, Boulton and Paul, British Aerial Transport, Central Aircraft, Fairey, Gosport Aircraft, Mann Egerton, Nieuport and General, S. E. Saunders, et Westland, toutes ces compagnies ont entrepris la construction d'avions pendant la guerre et se proposent de continuer à construire des avions, soit sur commande, soit comme expérimentation, à moins qu'elles ne soient forcées d'y renoncer par suite de circomstances imprévues. Il est encouragement de trouver une foi sincère dans l'avenir de l'aviation parmi tant de firmes si respectables.

Egalement encourageante est l'entrés dans l'industrie de l'aviation depuis la guerre, de la nouvelle firme George Parnall & Co. récemment formée par Mr. George Parnall pour continuer le département d'aéroplanes de Parnall & Sons. Une telle démonstration de foi dans l'aviation mérite une mention spéciale.

La Position de l'Industrie Britannique d'Aviation.

Lorsque se présentera la grande demande pour avions commerciaux, ce qui se fera en temps opportun, l'industrie d'aviation britannique sera probablement mieux équippée pour y répondre que ne l'est tout autre.

L'industrie américaine, bien que largement pourvue d'hommes et de machines, manquent lamentablement de dessinateurs compétents et expérimentés. Il faudra des années d'expérience à l'Amerique avant que ses avions puissent se comparer avec leurs concurrents anglais dans le domaine de la sureté et de l'efficacité.

L'industrie française possède certains dessinateurs de grand génie. Ses usines sont bien équippées. Ses ouvriers sont capables et enthusiastes. Mais, à en juger par les avions construits en France pendant la guerre, l'industrie britannique peut produire plusieurs dessins satisfaisants pour chaque dessin correspondant français. De plus une appareil anglaise moyenne le remporte en stabilité de construction et en qualité de main d'oeuvre sur une appareil française moyenne.

L'industrie allemande est un concurrent dangereux, car les allemands produisent facilement et à bon marché. De plus leurs dessins aérodynamiques sont spécialement bons et leurs machines volent bien. Mais le détail de leur construction est souvent faible et un grand nombre de leur machines manquent de résistance. Néanmoins l'Allemand est un travailleur acharné et corrige ses défauts lorsqu'il les découvre. Il est donc nécessaire que l'industrie britannique se pare prudemment contre la concurrence allemande.

L'industrie italienne est remarquable pour la beauté de ses dessins et le fini de sa main d'oeuvre. Sauf le nombre comparativement réduit de ses constructeurs, l'Italie serait un concurrent très dangereux. Tel que, l'Italie vendra bon nombre d'aéroplanes et de moteurs à d'autres pays.

En dépit de toute cette concurrence, la main d'oeuvre et le dessin britannique peut se mesurer avec ces mêmes facteurs dans d'autres pays, et l'industrie britannique de l'aviation peut maintenir le premier rang dans l'estime du monde entier, à condition que les constructeurs britanniques poursuivent une politique commerciale à la fois hardie et active.—C. G. G.

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THE FUTURE OF THE ROYAL AIR FORCE.

On December 13th, which may well be regarded as a lucky day by Service aviators of the future, there was issued a Memorandum by Air Marshal Sir Hugh Trenchard, Chief of the Air Staff, outlining the permanent organisation of the Royal Air Force. To the Memorandum is prefixed a note by Mr. Winston Churchill, Secretary of State for Air, stating that the scheme was prepared under his directions, and has been approved in principle by the Cabinet.

Neither the Memorandum nor the Note call for any particular comment. Both Mr. Churchill and Sir Hugh Trenchard have the welfare of the R.A.F. sincerely at heart, and there are no others so competent to lay down on sound foundations the organisation of our Flying Services. Nor are there any others in whom the officers and men of the R.A.F. have so much confidence. Consequently there will be a very general feeling throughout the Air Force that what is to be done is the best that can possibly be done with the money allowed for the purpose.

The proposal which will be of the greatest interest is that according to which the main portion of the Air Service will consist of an Independent Force, while a small part of the personnel will be specially trained for work with the Navy and a small part specially trained to work with the Army, "these two small portions probably becoming in the future an arm of the older Services."

Prophecies of the Past.

It will be remembered by all regular readers of The Aeroplane that this arrangement is precisely that which was advocated by this paper—and by this paper alone among the whole of the Press—when the single Air Force was first proposed during the agitations of 1916.

One has argued persistently that a Naval aviator is properly a Naval officer who flies and that an Army aviator is properly a soldier who flies, but that there are various uses for aeroplanes in war apart from the strategy of the Navy and Army, and so there is use for an Independent Air Force. Naturally, therefore, one feels gratified to find that the same view is held by Mr. Churchill and Sir Hugh Trenchard.

There is a solid satisfaction in seeing the official action of the two men who truly understand air war in its proper relation to war on sea and land putting into concrete form theories for which one has been abused and derided for the last four years by all the politicians and writers who fancy themselves as authorities on aviation, and by a number of R.A.F. officers who thought that they saw for themselves opportunities for advancement in a separate Air Service which were obviously not open to them in the Senior Services. Perhaps one may be forgiven once more for saying, not for the first time, "I told you so."

The Benefits of Separation.

The segregation of the Naval branch of the Air Service is wholly excellent. One hopes that ultimately it will remove from the Air Force some of those Naval officers who, having been proved useless to the Navy, managed to foist themselves onto the R.N.A.S. and so came into the R.A.F. automatically. There is now an unexpected opportunity of returning them with thanks to the Navy, where they will doubtless again find themselves, in the expressive Naval phrase, "on the beach."

When once they have gone, the R.A.F. will be able to organise its administration and its staff-work on proper lines, and may become an efficient service like the Army. The purely Army side of the Air Service will be the better for being an integral part of the Army, and in friendly competition with this new R.F.C. (one hopes to see the old honourable name and badges revived) the Royal Air Force will develop into a worthy part of the King's Armed Forces.—C. G. G.

THE MEMORANDUM.

Sir Hugh Trenchard's Memorandum reads as follows :—

AN OUTLINE OF THE SCHEME FOR THE PERMANENT ORGANISATION OF THE ROYAL AIR FORCE.

Note by the Secretary of State for Air.

The scheme outlined in the following memorandum on the permanent organisation of the Royal Air Force has been prepared during the course of the present year under my directions by the Chief of the Air Staff, and has in principle received the approval of the Cabinet.

The many complications of the Air Service and its intricate technical organisation are not perhaps fully appreciated, even by those who take a general interest in the subject. It therefore appears desirable to lay this memorandum in both Houses of Parliament, in order that they may understand the character of the problem and the complications that are being faced.

It should be added that the financial provision which the Cabinet have approved as governing the scale of the Royal Air Force during the next few years is approximately 15 million pounds per annum. It is upon this basis that this scheme has been prepared, and it is upon this basis that it is hoped the Estimates of next year will, apart from any extraordinary expenditure which the military situation may render necessary, be framed. Winston S. Churchill.

Dec. 11th, 1919.

MEMORANDUM BY THE CHIEF OF THE AIR STAFF.

1. **The Problem confronting Us.**—The problem of forming the Royal Air Force on a peace basis differs in many essentials from that which confronts the older services. The Royal Air Force was formed by the amalgamation of the Royal Flying Corps and the Royal Naval Air Service, and one may say, broadly speaking, that the whole Service was practically a war creation on a temporary basis, without any possibility of taking into account that it was going to remain on a permanent basis. The personnel with few exceptions was enlisted for the duration of the war, and put through an intensive but necessarily hurried course of training. Material was created in vast quantities, but rapid development often rendered it obsolete almost before it had reached the stage of bulk production. The accommodation provided had perforce to be of an entirely temporary character. The force may in fact be compared to the prophet Jonah's gourd. The necessities of war created it in a night, but the economies of peace have to a large extent caused it to wither in a day, and we are now faced with the necessity of replacing it with a plant of deeper root. As in nature, however, decay fosters growth, and the new plant has a fruitful soil from which to spring.

The principle to be kept in mind in forming the framework of the Air Service is that in the future the main portion of it will consist of an Independent Force, together with Service personnel required in carrying out Aeronautical Research.

In addition there will be a small part of it specially trained for work with the Navy, and a small part specially trained for work with the Army, these two small portions probably becoming, in the future, an arm of the older services.

It may be that the main portion, the Independent Air Force, will grow larger and larger, and become more and more the predominating factor in all types of warfare.

2. **Governing Principles.**—In planning the formation of the peace Royal Air Force it has been assumed that no need will arise for some years at least for anything in the nature of general mobilisation. It has been possible therefore to concentrate attention on providing for the needs of the moment as far as they can be foreseen and on laying the foundations of a highly-trained and efficient force which, though not capable of expansion in its present form, can be made so without any drastic alteration should necessity arise in years to come. Broadly speaking, the principle has been to reduce service squadrons to the minimum considered essential for our garrisons overseas, with a very small number in the United Kingdom as a reserve, and to concentrate the whole of the remainder of our resources on perfecting the training of officers and men.

It is intended to preserve the numbers of some of the great squadrons who have made names for themselves during the war, in permanent service units with definite identity, which will be the homes of the officers belonging to them, and will have the traditions of the war to look back upon.



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There will be found in the Appendix a statement showing detailed particulars of squadrons, stations, schools, depots, &c., which it is hoped to provide in the next three years at home and abroad. It will be understood that this programme is to be regarded as provisional only.

3. **Service Units.**—It is proposed to provide 8 squadrons for India and 3 for Mesopotamia, with the necessary facilities for repair. As regards India this is in accordance with a proposal put forward from India and now under consideration by the Government of India. The cost of the units in India will fall on the Government of India on exactly the same basis as in the case of the military garrison. Recent events have shown the value of aircraft in dealing with frontier troubles, and it is not perhaps too much to hope that before long it may prove possible to regard the Royal Air Force units not as an addition to the military garrison but as a substitute for part of it. One great advantage of aircraft in the class of warfare approximating to police work is their power of acting at once. Aircraft can visit the scene of incipient unrest within a comparatively few hours of the receipt of news. To organise a military expedition even on a small scale takes time, and delay may result in the trouble spreading. The cost is also much greater, and very many more lives are involved.

In Egypt it is proposed to station 7 service squadrons. Under existing conditions in that country aircraft are a most valuable means of communication. Distances are long and ground communication confined to a few main routes. On the other hand the country and the climate are both ideal for flying. From a wider aspect Egypt is the Clapham Junction of the air between east and west, and is situated within comparatively easy reach of the most probable centres of unrest, and this added to its natural advantages for aviation, makes it the obvious locality for a small Royal Air Force reserve.

As regards our Naval bases and important coaling stations overseas, future developments will almost certainly lead to the necessity of providing aircraft as part of their garrisons, but in the majority of cases the need of this is not urgent under existing conditions, and for the present it is only proposed to station a small seaplane unit at Malta, and a similar unit in the Eastern Mediterranean, probably at Alexandria.

The Service squadrons quartered in the United Kingdom apart from those for co-operation with the Army and Navy will eventually number four, but not more than two of these squadrons will be formed in the next financial year. These squadrons will be employed on communication and similar duties in peace and will form a small reserve in case of need. For co-operation with the Army it is proposed to provide eventually squadrons on the basis of a flight per division for work with the troops at all stages of their training, and in addition one or more squadrons for co-operation with the artillery both during their winter training and their annual gun practice. During the next financial year it is proposed to form two squadrons in all, one at Farnborough for co-operation with the troops at Aldershot and Salisbury, and the second at Stonehenge for work with the artillery. Small units will, if necessary, be provided in addition for co-operation with the Garrison Artillery School at Golden Hill, and the Anti-aircraft School when formed.

There remain the Service squadrons for co-operation with the Fleet. It is proposed eventually to provide at home three Aeroplane squadrons and two Seaplane squadrons. To secure economy and to give the units a corporate existence and ample facilities for practice it has been decided that aeroplanes will no longer be carried normally in capital ships as was done during the war, but will only be embarked when required to take part in Fleet exercises. The Aeroplane squadrons will consist of one reconnaissance and spotting squadron, one squadron of fighter machines and one of torpedo-carrying machines. The two former will be based on the Firth of Forth where ample facilities exist for practice and for the embarkation and disembarkation of machines, a most important point. The torpedo-carrying squadron will be located at Gosport, the most suitable station for torpedo work, and it is proposed to provide a small experimental unit at the same station in order to develop fully this form of co-operation with the Navy, which is of primary importance. Of these three squadrons it is only proposed to provide one, the reconnaissance squadron, at full strength in the ensuing financial year. This is necessary in order to study and perfect the system of observation of artillery fire which from various causes was not so highly developed on the naval side as on the land side during the war. The torpedo squadron will be maintained at sufficient strength to carry on the essential research work while the fighting squadron will be formed in the first instance at a strength of one flight only. In addition, the Admiralty propose to keep two aircraft carriers in commission. One of these will be equipped with seaplanes for service abroad, while the other will remain at home and be used primarily for training and experimental purposes and ready if necessary to embark a flight of torpedo or other machines.

The provision of these two carriers is of the first importance since we must look forward to the time, as suitable machines develop, when fleets will so to speak take their aerodromes with them in the shape of a carrier, and the carriage of aircraft on capital ships with its attendant disadvantages and dangers will be a thing of the past.

Of the two seaplane squadrons, it is only proposed at present to form one flight only. The seaplane has obvious advantages over the aeroplane for long distance work over water, and a time may probably come when all work in co-operation with the Navy will be done by this class of machine. For this reason, if for no other, it is essential to have a few such units.

The lighter-than-air service is a difficult problem. The cost of providing such a service on a large scale in peace is prohibitive, and the use of airships in war may be said to be still in the experimental stage. It is proposed therefore to keep one airship station only, namely Howden, where sufficient accommodation exists for two rigid and a few smaller ships, and to retain as a commencement one rigid and two non-rigids only. This will allow research work and development to continue, and the use of airships in peace and war to be further studied.

4. **Reserves.**—Although modilisation on a large scale is not taken into account, it is very necessary to provide a small reserve to meet any sudden call in the case of a small war anywhere in the Empire. For the next year or two there will, doubtless, be no difficulty in enrolling as many ex-officers and men as are likely to be required, and all that will be necessary will be to provide facilities for their training and practice flying.

It is intended, however, if possible, in addition to lay the foundation of a future Air Force on a territorial basis. No detailed scheme has yet been worked out, but it is probable that the eventual organisation will provide for training both on a unit and on an individual basis. It is hoped that the manufacturing and commercial firms will assist by forming units of their employees. In addition there will doubtless be many individuals who will be glad to train themselves voluntarily with a certain amount of State assistance, and to undertake to serve, either overseas or at home, if called upon to do so. It is not intended to embark on the formation of any units during the next financial year, but it is proposed to commence with the training of individuals in the populous centres. This training will be carried out at the flying training wings whose functions will be described below.

5. **Extreme Importance of Training.**—We now come to that on which the whole future of the Royal Air Force depends, namely, the training of its officers and men. The present need is not, under existing conditions, the creation of the full number of squadrons we may eventually require to meet strategical needs, but it is first and foremost the making of a sound framework on which to build a service, which while giving us now the few essential service squadrons, adequately trained and equipped, will be capable of producing whatever time may show to be necessary in future.

Before explaining our proposals in details it is necessary to lay down certain postulates.

Firstly, to make an Air Force worthy of the name, we must create an Air Force spirit, or rather foster this spirit which undoubtedly existed in a high degree during the war, by every means in our power. Suggestions have been made that we should rely on the older services to train our cadets and Staff officers. To do so would make the creation of an Air Force spirit an impossibility apart from the practical objection, among others, that the existing naval and military cadet and staff colleges are not provided with aerodromes or situated in localities in any way suited for flying training.

Secondly, we must use every endeavour to eliminate flying accidents, both during training and subsequently. This end can only be secured by ensuring that the training of our mechanics in the multiplicity of trades necessitated by a highly technical service, is as thorough as it can be made. The best way to do this is to enlist the bulk of our skilled ranks as boys and train them ourselves This has the added advantage that it will undoubtedly foster the Air Force spirit on which so much depends.

Thirdly, it is not sufficient to make the Air Force officer a chauffeur and nothing more.

Technical experts are required for the development of the science of aeronautics, still in its infancy. Navigation, meteorology, photography and wireless are primary necessities if the Air Force is to be more than a means of conveyance, and the first two are requisite for safety, even on the chauffeur basis.

6. **Training of Officers.**—It is now necessary to sketch very briefly the training proposed for both officers and men.

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Owing to the necessity for a large number of officers in the junior ranks, and to the comparative paucity of higher appointments, it is not possible to offer a career to all. Consequently some 50 per cent. only of the officers have been granted permanent commissions, the remainder being obtained on short service commissions or by the seconding of officers from the Army and Navy. Great importance attaches to the last class since an interchange of officers is bound to make for closer and more intelligent co-operation between the services.

The channels of entry for permanently commissioned officers will be through the Cadet College, from the Universities and from the ranks. The cadet college will be the main channel. The course will last two years, during which the cadets will be given a thorough grounding in the theoretical and practical sides of their profession, and will in addition learn to fly the approved training machine, at present the Avro. The college is to open at Cranwell in Lincolnshire early next year, an ideal place for the purpose, with a large and excellent aerodrome and perfect flying surroundings. It will be necessary to accommodate the college temporarily in huts erected during the war, but every endeavour has been made to render these as suitable as possible, and it is proposed to erect a permanent college in the near future. On leaving the college, cadets will be commissioned, and will undergo a short course in air pilotage and practical cross-country flying at Andover. This school will probably not be required before early in 1921. As soon as the cadets have passed this course they will be posted to a service squadron, as it is most important that they should join a unit which they will regard as their home, as the sailor does his ship, or the soldier his regiment, as early as possible. Subsequently they can undergo a course of gunnery, without which no flying officer can be regarded as a service pilot. The gunnery school will be established at Eastchurch, but as the bulk of our present pilots have war experience, will not be required in the next financial year. After 5 years' service, officers will be required to select the particular technical subject they will make their special study during their subsequent career, e.g., navigation, engines, wireless. Short and long courses will be provided in these subjects in order to cater both for the officer who wishes to continue primarily as a flying officer with a working knowledge of one or more technical subjects, and for those who wish to become really expert in a particular branch. Technical knowledge will, inter alia, qualify an officer for selection for high command.

The career of officers commissioned from the Universities or from the ranks—except in the case of boy mechanics receiving commissions, whose case will be dealt with later—will be identical with that of those from the cadet college, except that they will be taught to fly at a flying training wing before joining their squadrons. Short service and seconded officers will be taught to fly at training wings and will attend a course of aerial gunnery and probably one of air pilotage. In view of their short service, it is not proposed, save in special cases, to send them through the advanced technical courses. These officers will be eligible for promotion during their service in exactly the same way as the permanent officers. The technical schools required at once are those dealing with navigation, wireless, photography and engineering. Aerial navigation is practically a new science. An attempt has been made during the current year to work out the theoretical principles in practice at Andover, and considerable progress has been made, but it is obvious that the chief need of aerial navigation will arise when flying over the sea, where the map is of no service, and it is consequently proposed to reopen this school at Calshot in the spring of next year.

Schools of wireless and photography are now in existence at Flowerdown, near Winchester, and at Farnborough respectively, while it is proposed to commence an engineering course, at a suitable station, shortly after Christmas.

For the training of University candidates, short service and seconded officers and officers of the reserve or Territorial Force, it is estimated that seven training wings would eventually be required.

In view, however, of the fact that the short service list has been filled by officers who have already been trained as pilots during the war, it is only proposed to form two of these on a reduced basis during the next financial year to deal with the training of University candidates, a small number of reserve officers and of certain officers granted permanent commissions, with the proviso that they must learn to fly within 12 months. In view of the exceptional facilities for training in Egypt, it is proposed to locate, at least, one of the training wings, together with branch schools of gunnery and air pilotage in that country, but whether it will be convenient to do so next year cannot yet be definitely foreseen.

One other most important school in connection with the training of the officer is essential, and it will probably be necessary to start it on a small scale in 1920. This is a school for flying instructors. The first school of this kind was started during the war at Gosport, and it is hardly too much to say that it revolutionised the art of flying. The science of flight was carefully analysed and the analysis practically applied to the problem of tuition with remarkable results. It is essential in future that all instructors in training wings and all officers of or above the rank of flight commander in service squadrons should have passed through this course. A liberal amount of dual control with a qualified instructor is one of the chief safeguards against the faulty flying which is the cause of the majority of accidents.

Although it is not proposed to open it during the next financial year, an Air Force Staff College must be formed as soon as possible. It is intended to establish this at Halton in the house of the late Mr. Alfred Rothschild, purchased by the Government at his death with the whole estate. The house and its surroundings are eminently suited for the purpose, and there is an aerodrome within a quarter of a mile.

7. **Training of Men.**—The most difficult problem of all in the formation of this force is the training of the men. Demobilisation has removed most of our best mechanics, and the efficiency of the squadrons to be formed depends on the most thorough instruction of those who are to take their place. It has, therefore, been decided to enlist the bulk of those belonging to long apprenticeship trades as boys, who will undergo a course of three years' training before being passed into the ranks. With a preliminary training of the nature contemplated and the practice of their trade during their subsequent service, it is confidently anticipated that these mechanics on passing to civil life will have no difficulty in securing recognition as skilled tradesmen. This is an important consideration since any tendency for the Air Force to be regarded as a blind alley occupation, would be fatal. The training of all these boys will eventually be carried out at Halton Park, where ample and well-equipped technical shops are already in existence. Pending the erection of permanent barracks to replace wooden war-time huts, use will also be made of Cranwell, in Lincolnshire. It has been necessary to speed up the training of some 5,000 boys enlisted during, and shortly after the war, and the residue of these, some 3,000, will complete their training, at Halton. A scheme has been drawn out for the future enlistment of boys by means of a competitive examination, and local education authorities have been circularised with a view to their nominating suitable boys to sit for the examination. By this means it is hoped to secure a really high standard. The first entry under this scheme will take place early in 1920, and the boys will commence their training at Cranwell and will be moved to Halton as soon as the permanent accommodation is ready.

The boys, on successfully passing their final examination, will be graded as leading aircraftsmen, and a certain number will be specially selected for a further course of training, at the end of which they will either be granted commissions, or promoted to corporal. Those granted commissions will join the cadet college.

It is intended to enlist the remainder of the mechanics, of whom more than half will belong to short apprenticeship trades as men, and these will undergo 12 months' training at Cranwell as soon as the boys have moved to Halton. Pending the move, it is proposed to carry out the training of these men at Eastchurch, which, as has already been said, will not be required in its eventual capacity as a gunnery school for another 12 months at least.

Non-technical men will be given a short course of recruit training at the depot at Uxbridge.

8. **Higher Organisation at Home.**—As regards higher organisation in the United Kingdom, all units working with the Navy have lately been formed into one command known as the Coastal Area Royal Air Force. The two remaining commands, now known as the Southern and Northern Areas, will, early in 1920, be amalgamated into one command to be known as the Inland Area. This cannot be done earlier owing to the very large amount of work entailed in closing up surplus stations, demobilising surplus personnel and generally clearing up the after effects of the war.

9. **Depots.**—Each of the two Areas in the United Kingdom will have its repair depot, at Henlow for the Inland Area, and at Donnibristle, near Rosyth, for the Coastal Area. During the next financial year it will be necessary to retain three of the existing stores depots, but it may prove possible at a later date to reduce the number to two, though this is by no means certain. It is hoped that eventually arrangements will be made for all Royal Air Force mechanical transport to be repaired at Slough, but in view of the arrears of work it will be necessary to retain for the present our own repair depot at Shrewsbury. Each overseas theatre will have a combined repair and store depot of a size suitable to the number of squadrons based upon it.

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A selection can be sent for approval if desired, post paid, or a Catalogue of Christmas Gifts will be posted free to any address upon application.

WARNING.
The Goldsmiths and Silversmiths Company have no branch establishment in Regent Street, Oxford Street, or elsewhere in London—only one address, 112, Regent Street, London, W.1.


Diamond and Pearl Fancy Cluster Ring
£27 10 0


Diamond and Pearl Drop Earrings.
£18 10 0
per pair,


Diamond double Cluster Ring.
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15-ct. Gold Palladium and Enamel Scarf Pin, Coldstream Guards.
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Royal Naval Cap Badge, Diamonds set in Palladium, 15-ct. Gold and Enamel.
£60 0 0


Diamond and Sapphire Scarf Pin.
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Diamond Brooch, with Platinum Faced Setting, any initial.
£22 10 0


Sapphire and Diamond Bow Brooch, Platinum Front. £20 0 0


Christian Science Badge, Palladium Cross and Diamond Crown.
£5 0 0


Emerald Onyx and Diamond Links.
£220 0 0
pe pair.
Studs.
£35 0 0 set of 2.
Scarf Pin.
£27 10 0


Diamond and Emerald Double Cluster Ring.
£80 0 0


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£35 0 0


Mother-o'-Pearl Sleeve Links, with Palladium Border and Diamond Thread Centre.
£14 0 0 per pair.


Jade Links with Diamond Centres.
£14 0 0 per pair.


Lapis Lazuli and Diamond Brooch.
£62 10 0

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GOLDSMITHS & SILVERSMITHS COMPANY LTD.
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10. **Necessity for Large Capital Outlay on Accommodation.**—From the above outline of our proposals it will be seen that every endeavour is being made to reduce expenditure on personnel during 1920-1921 to the minimum absolutely essential to create the framework of our future Air Force. This is necessary, if for no other reason, owing to the peculiar position in which the Royal Air Force is placed as regards permanent accommodation. Though some of the wartime buildings can be made to serve for a year or two in their present state, the Air Force does not possess one single permanent barracks, and a large capital outlay on the provision of new buildings and the adaptation of the most suitable of the temporary buildings is inevitable during the first few years. This will be balanced to a certain extent during the next two years by the small requirements in technical equipments due to the large stock remaining over from the war. The principle followed has therefore been to excise rigid economy at the outset over personnel and technical equipment in order to free as large a part as possible of the total sum provided towards the provision of barracks. As time goes on, the building services will absorb less, while the cost of technical equipment, and, to a lesser extent, of personnel, will increase, until eventually the works vote will be little in excess of the cost of maintenance.

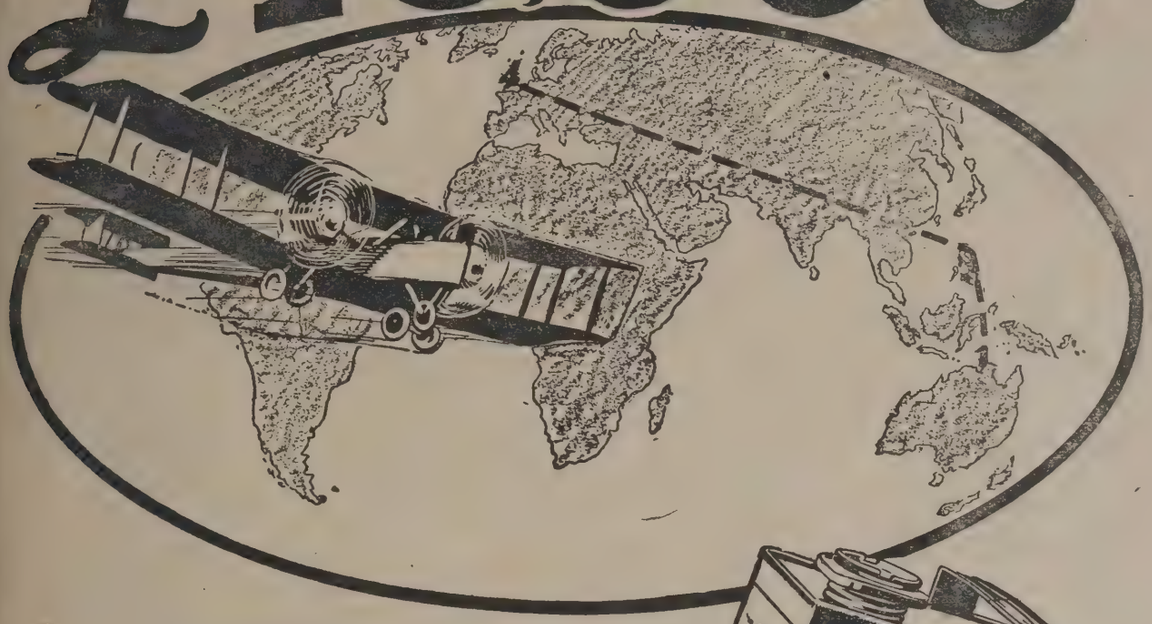
It must be recognised, however, that the total cost of building will be large. The boys' barracks at Halton, for instance, with the necessary accessory buildings and the cadet college will no doubt be a heavy item. These are undoubtedly the two most expensive services, but the accommodation for personnel at the majority of our stations will have to be rebuilt or adapted at considerable cost. The outlay must, however, be faced, and it is undoubtedly wise to undertake the bulk of the work in the first few years, while the expense of other services can be kept down.

APPENDIX.

	Existing or to be formed in 1920-21.	Increase during 1921-22 to.	Increase during 1922-23 to.
I.—UNITED KINGDOM.			
Striking Force	2 Squadrons.	4 Squadrons.	No increase.
Training Wings	2 Wings each of 3 Squadrons.	5 Wings.	6 Wings.
Co-operation with Army Divisions.	1 Squadron.	2 Squadrons.	No increase.
Co-operation with Fleet (Home Waters).	1 Squadron Reconnaissance and Artillery machines.	No increase.	No increase
	1 Flight Ships' fighters.	1 Squadron Ships' fighters.	No increase.
	½ Squadron Torpedo machines.	1 Squadron Torpedo machines.	No increase
	1 Flight Flying Boats	1 Squadron Flying Boats.	2 Squadrons Flying Boats.
	1 Flight Float Seaplanes.	No increase.	No increase.
Communication Squadron	1 Squadron.	No increase.	No increase.
Experimental Stations	4 Stations for Aeroplanes, Seaplanes, Torpedo machines and Wireless respectively.	4 Stations as before and trial ground for bombs and machine guns in addition.	No increase
Schools and Training Centres..	Cadet College.	As for 1920-21, and in addition.	As for 1921-22, substituting Staff College for Administrative and Technical School for Officers, and in addition
	Navigation School.	School of Air Pilotage.	Flying Officers' Training College (for the preliminary training of direct entry Officers).
	Flying Instructors' School.	School of Gunnery.	
	Administrative and Technical School for Officers.	(N.B.—The majority of the Schools will be on a reduced basis in 1920-21, and will gradually increase to full strength in the two succeeding years.)	
	Wireless and Electrical Training School.		
	School of Photography.		
	School of Co-operation with Navy.		
	School of Co-operation with Army.		
	Balloon Training.		
	Airship Training.		
	Boys' Training Centre.	No increase.	No increase.
	Technical Men's Training Centre.		
	R.A.F. Depot and Non-Technical Men's Training Centre.		
Depots	2 Aeroplane Repair Depots.	As for 1920-21 except that the M.T. Repair Depot will drop out as soon as the repair work for R.A.F. vehicles can be undertaken at Slough.	As for 1921-22.
	1 M.T. Repair Depot.		
	3 Stores Depots.		
Airships	1 Station.	No increase.	No increase.
II.—OVERSEAS.			
India	8 Squadrons	No increase.	No increase.
	1 Depot.		
Egypt	7 Squadrons.	7 Squadrons.	7 Squadrons.
	1 Depot.	1 Depot.	1 Depot.
		1 Training Wing.	1 Training Wing.
			1 School of Air Pilotage.
			1 School of Gunnery.
Mesopotamia	3 Squadrons	No increase	No increase.
	1 Depot.		
Malta	1 Flight Seaplanes.	1 Squadron Seaplanes.	No increase.
Alexandria	1 Flight Seaplanes.	1 Squadron Seaplanes.	No increase.
Mediterranean	1 Flight Float Seaplanes on Carrier.	No increase.	No increase.

£10,000

AUSTRALIAN FLIGHT



The Winner

Capt. Ross Smith

M.C., D.F.C. A.F.C.,

on a

VICKERS - VIMY BIPLANE

lubricated his

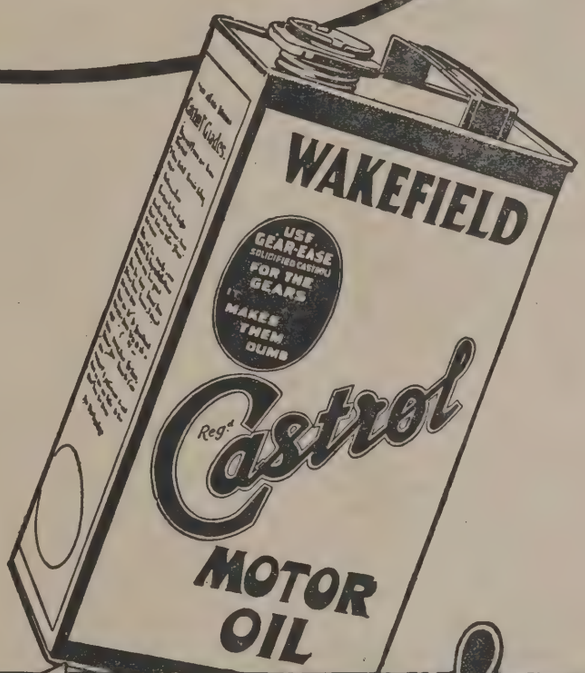
ROLLS - ROYCE ENGINES

with

WAKEFIELD

CASTROL "R"

In this wonderful achievement Castrol "R" withstood the most severe and variable climatic conditions throughout the entire flight.



WAKEFIELD.

Castrol R

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11. **Research.**—One matter of supreme importance has not yet been mentioned, namely, the provision to be made for research. The departments of Supply and Research are now being transferred from the Ministry of Munitions to the Air Ministry, and a portion of the experimental establishments are a charge on the Air Force votes. Steady and uninterrupted progress in research is vital to the efficiency of the Air Force, and to the development of aviation generally, and on it depends both the elimination of accidents and the retention of the leading position we have established at such heavy cost during the war. The existing establishments must therefore be retained during the ensuing financial year at a sufficient strength to ensure that urgent work shall continue. Some of the work which was urgent under war conditions can, however, now be postponed until progress with the building programme liberates more money for other purposes. The principal aeroplane research establishments are at Farnborough, Biggin Hill, Martlesham Heath, and Grain, while airships' research will be undertaken at Cardington and Howden.

12. **Civil Aviation.**—No allusion has been made to civil aviation in this paper, which has been confined to the Service aspect of the question.

H. M. TRENCHARD,
Chief of the Air Staff.

Air Ministry, Nov. 25th, 1919.

THE DEATH OF MR. JOSE WEISS.

It is with very deep regret that one announces the death of Mr. José Weiss, one of the pioneers of British Aviation. The news comes too late for an adequate account of Mr. Weiss's work to be given in this paper to-day, but one hopes to deal with his achievements more fully next week.

Mr. Weiss was one of the first exponents of inherent stability, and his experiments of 1908-9 were of great value to those who at a later date produced satisfactory aeroplanes. For the past twelve months Mr. Weiss has suffered from ill-health, and he passed over on Thursday last, December 11th.

A McCUDDEN MEMORIAL.

Some months ago a few friends of the late Major J. T. B. McCudden, V.C., and of his two brothers, William McCudden and Anthony McCudden, who were also killed while flying in the King's service, decided to get together a small fund with which to erect a memorial to the three brothers. It is the wish of their father and mother that this memorial shall be set up at Chatham, where all three were born.

The following subscriptions have already been received :—

Lord Weir of Eastwood, £10 10s.; Air Marshal Sir H. M. Trenchard, Bart., K.C.B., D.S.O., £2 2s.; Major-Gen. Sir F. M. Sykes, G.B.E., K.C.B., C.M.G., £2 2s.; Air Commodore H. R. M. Brooke-Popham, C.B., C.M.G., D.S.O., A.F.C., £5; Air Commodore P. W. Game, C.B., D.S.O., £1 1s.; Air Commodore C. A. H. Longcroft, C.M.G., D.S.O., A.F.C., £1 1s.; Wing Comdr. R. G. Blomfield, D.S.O., £4 4s.; Wing Comdr. L. W. Rees, V.C., O.B.E., M.C., A.F.C., £2 2s; "Five Years in the R.F.C.," £3 3s.; the Sopwith Aviation Co., Ltd., £2 2s.; Martinsyde, Ltd., £2 2s.; C. G. Grey, £2 2s.; Major C. C. Turner, £2 2s.; Stanley Spooner, £2 2s.; Capt. P. D. Acland, £2 2s.; Major E. L. Gilchrist, M.C., D.F.C., £2 2s.; Mrs. Rhys Davids, £2 2s.; Capt. G. J. C. Maxwell, M.C., D.F.C., A.F.C., £2 2s.; Capt. T. B. Marson, £2 2s.; Capt. Doyle, D.F.C., £2 2s.; Capt. Leighton, M.C., £2 2s.; Capt. G. W. Robarts, M.C., £1 1s. Total, £57 4s.

This amount is in itself sufficient for the proposed memorial at Chatham, but it is thought by those responsible for the fund that many more friends of the McCudden family would like to subscribe, and that very probably a number of admirers of the work of these young men who died for King and country would like to add to the amount, though they did not know them personally.

Also, as far as is known, there is no other instance of three brothers being killed as pilots, and so there is good reason why all those who are concerned with flying should contribute to a memorial to a family which has made a greater sacrifice than any other in winning for this country the Command of the Air.

If the response to this appeal is as great as it should be, it is proposed that, after erecting the memorial at Chatham, the Balance of the fund shall be devoted to endowing another form of memorial which will be of direct use to those who fly in years to come. This might take the form of a McCudden Memorial Bed at the R.A.F. Hospital, or a McCudden Memorial Scholarship in Aeronautics at one of the Universities, according to the wishes of the majority of the subscribers.

It is hoped that a large number of the officers who served with either of the three McCudden brothers, and a still larger number of those who know them only by reason of their deeds, will subscribe to the fund. Subscriptions, which are limited to a maximum of £2 2s., should be sent to Capt. Gerald C. Maxwell, M.C., D.F.C., at Room 663, Air Ministry, Kingsway, W.C.2.

THE SERVICE ESTIMATES.

The Navy, Army, and Air Force Estimates, each of which has been presented to the House of Commons during the past week, will be dealt with in detail in the next issue of THE AEROPLANE.

TOUCHÉ.

One is always pleased to acknowledge a hit by those whom one has criticised, or, perhaps, one should rather say, by those whose legs one has pulled. Last week one remarked that, despite the official statement that technical reports were being issued by the Air Ministry, no "technical information" had been received from the Air Ministry's Department of Information. In the "Aeronautical Engineering" Supplement of the same issue of this paper there appeared an illustrated article on navigating instruments, which article, illustrations and all, had been issued by the Department of Information.

"A hit. A palpable hit!" undoubtedly. But—the statement that no technical information had been received appeared in the third instalment of a long article which was written three weeks before, and the article on instruments was received from the Air Ministry a week before it appeared in print, so that the statement was strictly true when it was written. Also, the highly scientific technician who edits "Aeronautical Engineering," informs one that the article on navigating instruments, though very interesting, was, in fact, of a commercial nature, and not at all technical, and as one is oneself "a child in these matters" one is forced to accept his diagnosis.

THE ROYAL AERO CLUB AND FLYING COMPETITIONS.

Apropos the letter which appeared in THE AEROPLANE recently, suggesting that the Committee of the Royal Aero Club might at least turn over in its sleep and take a momentary interest in the sport of aviation by deciding upon some form of flying competition for next year, a correspondent writes: "A series of flying competitions next year would in all probability assist commercial aviation a little more than a golf tournament among the members, although, of course, in that case the club does get a good deal of publicity through the 'Daily Mirror.'"

One is entirely in sympathy with this remark. If the committee of the club would think a little less about golf and bridge and a little more about the sport of aviation (for the regulation of which the Royal Aero Club is supposed to exist) it might be of actual value to the development of civil aviation.

A NEW SPEED RECORD CLAIM.

At Villacoublay, on Dec. 15th, M. Sadi Lecointe, on a Spad biplane (Hispano-Suiza engine), flew over a measured kilometre under official observation at a speed of 307 kilo. 225 metres an hour (approximately 191 miles an hour). No further details are at present available It is not stated whether or not this speed is the mean of two flights made in opposite directions, as is necessary in the case of a claim for a record.

THE FLIGHT TO AUSTRALIA

AND

"K.L.G." SPARKING PLUGS

Another Milestone in Flying History.

Capt. Ross Smith on the Vickers-Vimy-Rolls machine which has accomplished this Epic flight, infinitely the most remarkable sustained effort in the history of Aviation, used **"K.L.G." SPARKING PLUGS.**

The reason for his choice was, doubtless, that the plugs which were used by Sir John Alcock for his Trans-Atlantic flight (Vickers-Vimy-Rolls machine), by Mr. H. Hawker in his glorious failure over the same course (Sopwith-Rolls), and by the R.34 for her double trip to America and back (Sunbeam Coatalen), inspired him with absolute confidence.

"All were available. K.L.G. were chosen."

In every case where absolute reliability is essential the greatest judges entrust their lives to "K.L.G." Sparking Plugs.

Sole Manufacturers :—

THE ROBINHOOD ENGINEERING WORKS, LIMITED.

PUTNEY VALE - - - - - - - - - - - - - - - LONDON, S.W.15.

THE AUSTRALIAN FLIGHT.

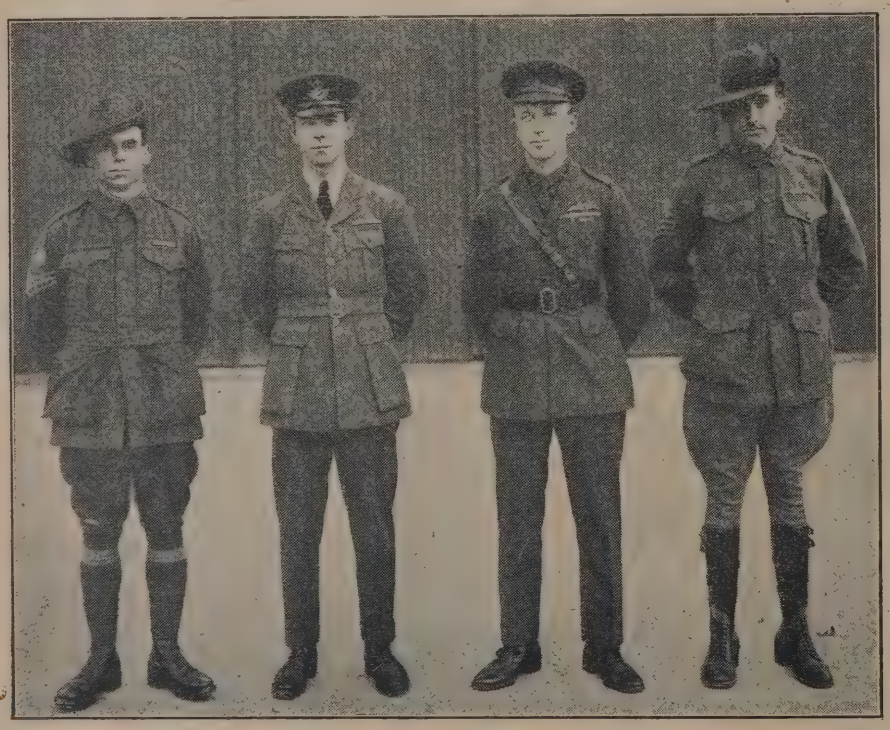
Everyone concerned with the successful flight to Australia by the Vickers "Vimy" biplane and its Rolls-Royce engines deserves the heartiest congratulations. The enterprise in itself was sufficiently difficult, but it has been made considerably more so by the fact that the Department of Civil Aviation and the Royal Aero Club in collusion postponed the start of the competition until a date after which none could reasonably expect fair weather. On the other hand, it may perhaps be argued that if an earlier date for the start had been fixed no aeroplanes would have been ready to start.

One knows of at least one machine—a Sopwith "Pup" with an 80-h.p. Le Rhone engine—which was to have been piloted by Lieut. Bert Hinkler, late R.N.A.S., which could have started several weeks before the authorised date, and judging by the success attending the efforts of the gallant M. Poulet with two 80-h.p. Le Rhone engines, it is reasonable to suppose that Mr. Hinkler would have accomplished his journey, though perhaps not within the statutory 30 days.

Here one would like to place again on record the opinion that the Department of Civil Aviation and the Royal Aero Club were both acting outside of their rights and also outside the spirit of sportsmanship in fixing a date and imposing regulations as they did, for it will be remembered that Mr. Hughes, on behalf of the Australian Government, offered a prize of £10,000 to "the first Australian aviator to reach Australia by air." By imposing a time-limit, regulations of various sorts, and a date before which none was allowed to start, the authorities acted in a manner contrary to the spirit of the Australian offer and to a considerable extent spoiled the competition.

None the less, as is customary in time of stress, the British spirit triumphed over, or because of, obstacles, and the greater credit is therefore due to Capt. Ross Smith, his brother Lieut. Keith Smith and Sergts. Bennett and Shiers. One knows that Capt. Ross Smith himself would be the first to disclaim any more credit for himself than is due to his companions.

There are others also who are entitled to a goodly share of the honour. For example, there is Mr R. K. Pierson, the designer of the machine. Also, there are Mr. Maxwell Muller and Mr. Archibald Knight, who run the Vickers Weybridge works so ably and have been responsible for the construction of all the Vimy machines, not to mention many hundreds of other machines which have won the firm a high reputation for good workmanship during the war. Also, there is Capt. Acland, now chief of the Vickers Aviation Department, who made the arrangements for the flight. And it is well to remember the late Major Herbert Wood, to whose foresight was due the adoption of the Vimy design, and the late Capt. Gordon Bell, to whose great skill and experience as a pilot were largely due the final modifications of the type.



Sjt. W. H. Shiers, A.F.M., Lieut. Keith Smith, Capt. Ross Smith, M.C., D.F.C., A.F.C., Sjt. J. M. Bennett, M.S.M., A.F.M.

Strange Comments.

The success of the flight has produced a number of strange comments thereon in the shape of pronouncements from people in public positions, some of which are given verbatim in the report of the flight which appears hereafter.

Perhaps the most amusing of all is that from Mr. D. Lloyd George, presently Prime Minister of Great Britain, whose remark that the flight "shows how inventions of war can advance the progress of peace" is typical of the man who, in his desire to be in the front of public opinion, neglects entirely to learn what has been done in the past. The achievement of the "Vimy" machine shows perhaps how the experiences of war can be adapted to the work of peace, but nobody concerned with the machine or its engines would claim that it contains any actual inventions of war. The "Vimy" and its engines are rather the development of knowledge gained long before the war by the pioneers of aviation.

Mr. Churchill's remark that the flight shows that "the new element has been conquered for the use of man," though perhaps badly expressed, does at any rate convey the idea which Mr. Churchill intended to convey, namely, that this great flight from one extreme of the British Empire to the other shows that our aircraft have conquered the air for commercial purposes as they conquered it in war. Mr. Churchill's enthusiasm probably prevented him from realising for the moment that air is certainly not a new element but is at least as old as any form of life.

The Air Council is itself to be congratulated on the moderation and sound common sense of its message. The flight is in fact an outstanding example of skill and endurance. Nothing could exceed the pluck and determination shown by the crew in facing the appalling weather conditions under which they flew, nor their skill in nursing their engines and in keeping their correct course.

The Real Mail Service.

Quite one of the silliest comments on the performance is that alleged to have been made by Lord Inchcape, presiding at the meeting of the P. and O. Steam Navigation Co., on Dec. 11th. He is reported as having said that he read in a morning journal that an aeroplane had reached Calcutta in 16 days from London. That was just the time that their mail took when it went by way of Brindisi through the Suez Canal, down the Red Sea, across to Bombay and over to Calcutta by rail.

Apparently Lord Inchcape, like many other commentators on the performance, entirely omitted to note that the "Vimy's" performance in no way resembles the work of a regular mail service. The "Vimy's" performance may, in fact, be compared with the late Col. Burnaby's ride to Khiva, or with one of those famous cavalry rides popular before the war, such as that from Berlin to Vienna, in which the same horse and man had to complete the full journey.

A mail service, on the other hand, would be run by relays of machines and pilots, each pilot and machine covering a stage of not more than 500 or 600 miles, and then handing the mails and passengers to a fresh pilot and crew. In this way the mails would travel at least 1,000 miles a day, even during the short days of winter, and in the summer they would probably travel 1,500 miles a day. Thus Calcutta would be reached (a distance of nearly 7,000 miles) in four to seven days, and Australia would be reached in a matter of 10 to 15 days, so that the air mail time to Australia would be in fact something less than Lord Inchcape's record time to Calcutta.

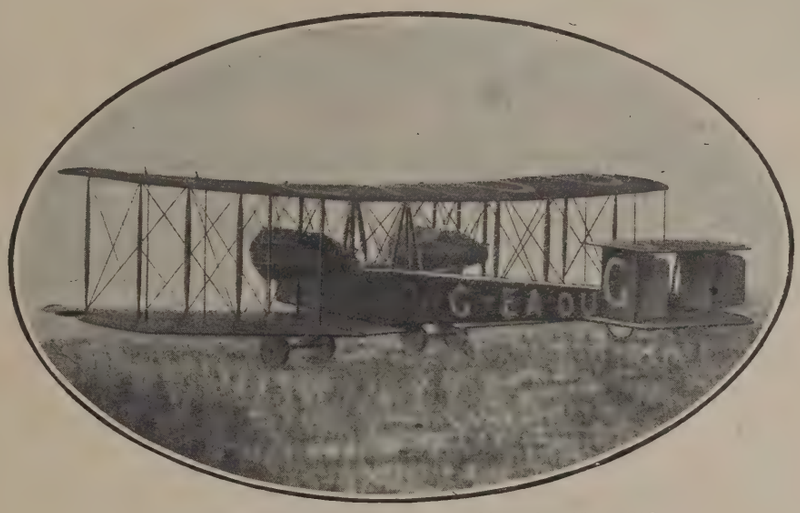
An Unfortunate Comparison.

That usually well-informed journal, the "Morning Post," in common with the various other papers, makes a very stupid mistake over the flight. It says: "A couple of years ago the feat would have been regarded as a very doubtful enterprise, and three or four years ago it was in fact impossible." This, of course, is sheer nonsense.

VICKERS

LIMITED.

"VICKERS - VIMY - ROLLS."



The Start from Hounslow. 9.10 a.m. November 12th, 1919.

The FIRST FLIGHT from ENGLAND to AUSTRALIA

Nov. 12th to Dec. 10th, 1919.

TIME—27 days, 20 hrs. 20 mins. DISTANCE—Approx. 11,500 miles.

THE WORLD'S LONGEST FLIGHT.

The FIRST DIRECT TRANS-ATLANTIC FLIGHT

June 14th—15th, 1919.

TIME—15 hrs 57 mins. DISTANCE—1,890 miles.

THE WORLD'S LONGEST NON-STOP AEROPLANE FLIGHT.

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THE GRAHAME-WHITE—ROLLS-ROYCE AERO LIMOUSINE.

THIS machine, which can be seen in flight at the London Aerodrome, Hendon, has been designed specially for pleasure and commerce. It is not an adapted War machine, but is a specially constructed Limousine, fitted with two Rolls-Royce engines, luxuriously upholstered, and containing an electrically heated carpet. There is ample accommodation for 4 passengers. The pilot, with whom communication is maintained by speaking-tube, sits in a separate compartment above, and at the rear of, the passengers' quarters.

There is also the Grahame-White—Rolls-Royce Aero Limousine (9 seater), which is of the same construction as the 5-seater, with slight variations. The front cabin has been enlarged to take 6 passengers and the pilot. Moved farther back, between the pilot and planes, a special cabin has been placed to afford comfortable accommodation for 2 additional passengers or luggage.

For those requiring a sporting machine there is the Grahame-White Bantam Single-seater, fitted with 80 h.p. Le Rhone Engine. Speed 100 miles per hour.

Illustrated catalogues and further information regarding the above and other types of machines may be obtained upon application to:

THE GRAHAME-WHITE COMPANY LTD.

HEAD OFFICE & WORKS:
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'Phone—Kingsbury 120 (8 lines).

LONDON OFFICE:
12, Regent Street, Pall Mall, S.W.1.
'Phone—Regent 2084 829.

TRADE MARK

SPEED WITH SAFETY

In 1913 the late M. Brindejonc des Moulinais, on a Morane with an 80-h.p. Le Rhone engine, flew from Paris to Warsaw, about 900 miles, in a day, continuing on following days to Petersburg and thence via Königsberg, Copenhagen, Bremen, and Amsterdam, to Brussels and London, after which he flew back to Paris, in all a total distance of 3,210 miles. This tour was, in fact, but little inferior in distance to a flight from London halfway to Calcutta. And so far as aerodromes were concerned, Europe in those days was less well equipped than is the route to India to-day.

Also in 1914 Herr Rudolf Böhm flew for 24 hours and 12 minutes without alighting, a feat which has never been achieved since then, though two other German pilots had previously come very near it. The only other aviator to approach the time was that same brave M. Poulet who so nearly achieved the distinction of being the first aviator to fly to Australia from Europe. M. Poulet's duration record was 18 hours.

Furthermore, just before the war Herr Suvelack flew from Berlin to the Turkish frontier at Eggri Palanka with a passenger in a non-stop flight of 1,000 miles—a longer non-stop flight than any accomplished in the course of the voyage to Australia. Thus one sees that had there been adequate organisation the voyage to Australia might very possibly have been achieved before the war— and by a German at that.

Knowing the Course.

Apropos organisation,—it has been pointed out that Capt. Ross Smith had a considerable advantage over his competitors in that he was the only one who had been over the course before starting. It will be recalled that Capt. Ross Smith accompanied Brig.-Gen. Borton in his survey of the course. As, in fact, he reached the more difficult portion of the course before any of his competitors, this advantage would appear not to have been as great as it might have been if any of his competitors had reached that section before him and had crashed en route through ignorance of the course

On the other hand, there is also the equal possibility that if Capt. Ross Smith also had been ignorant of the course he might have crashed his machine in landing anywhere between Calcutta and Australia, and so might have been overtaken. In either case his previous knowledge of the course was an important factor in his success.

Yet one may equally argue that the fact of his having covered the course beforehand is the greater evidence of his courage in that he knew the difficulties with which he would be faced and so did not enter upon the last stages in that ignorance which is bliss.

It is also of interest to note that as the result of the study of the course by Gen. Borton and Capt. Ross Smith, competitors were advised by the Air Ministry to fit their machines with floats at Calcutta and cover the rest of the course as seaplanes. Despite this, Capt. Ross Smith himself preferred to take the risk of covering the whole distance with his machine fitted with a land undercarriage.

The Great Deed.

However, the great point is that after all the flight has been done and that British aviators have done it. The fact that it might have been done months before is merely consonant with the British way of doing everything. And we have largely to thank our national luck for the fact that owing to the illness in India of his faithful friend and mechanic, M. Benoist, M. Poulet did not get there first.

Though, as one has already pointed out, the voyage could have been done some months earlier, and might in point of fact have been done five years ago, none the less we have now definite proof that given careful piloting and skilful mechanical attention, a British aeroplane with British engines can maintain truly remarkable regularity over an extraordinary distance.—C. G. G.

THE END OF THE JOURNEY.

The Vickers "Vimy" Machine.

The first flight from Great Britain to Australia was accomplished on Dec. 10th, when Capt. Ross Smith, M.C., D.F.C., A.F.C., Lieut. Keith Macpherson Smith, Serjt. J. W. Bennett, A.F.M., M.S.M., and Serjt. W H. Shiers, A.F.M., in their Vickers-Vimy machine, arrived at Port Darwin at 5.30 a.m. Greenwich mean time, or 3.30 p.m. Australian time.

The last reports published in this paper carried Capt. Ross Smith's messages up to his arrival at Singapore. These messages continue as follows :—

The Pilot's Dispatches.

"After a day's rest we left Singapore for Kalidtjatti, near Batavia, in Java. This was a distance of nearly 700 miles, and the worst stage of the journey as regards landing-grounds. On arrival at the Dutch military flying school we were greeted by the Governor-General of the Dutch East Indies and various other people. We had expected that the last stage of the journey from Singapore to Port Darwin would be the most difficult, but as soon as the Governor-General heard that aeroplanes were flying from England to Australia in this £10,000 competition he ordered aerodromes to be constructed at different points through the Dutch islands.

"Next day we went from Kalidtjatti to Sourabaya in an uneventful trip. The aerodrome had been constructed on reclaimed land which was apparently hard and quite fit to land on, but was in reality very soft underneath. We landed successfully, but soon after, when taxi-ing, the machine sunk to the axles. It was necessary to obtain the assistance of a local engineer and 200 coolies to get the machine out again. We decided that the only possible way to get the machine off again would be to make a road of bamboo mats for the wheels.

"By dark we had constructed a thin road sufficient to get the machine to the end of the ground. It was very slow work as we had not sufficient mats for the whole distance, and had to use them in relays. It had taken us seven hours to move the machine 400 yards, during which time the machine stood a lot of pulling about by the coolies. We were all thoroughly tired out after our labours and had intended to go to bed early, but the British residents of Sourabaya had arranged a dinner in the evening. We were at the aerodrome again at daylight. During the night the engineer had collected as many bamboo mats as possible from the whole district—in fact, he had pulled down numerous native houses to get a sufficient quantity

"By 9 o'clock in the morning we had built a road for our wheels, about 300 yards in length, and attempted to start off after running about 500 yards. Some of the mats flew up and caught in the tail and swerved the machine round off the track, with the result that we were once more very badly bogged. Again we dug her out, with the aid of the coolies, and got back to the starting place. We then decided to widen the track and lace the mats together. We succeeded in getting more mats, and eventually at twelve o'clock had constructed a road of laced mats 350 yards in length and 20 yards wide, and we then started up again and succeeded in getting off with bamboo flying in all directions from our propellers.

"We were thankful to leave Sourabaya and much relieved to be in the air once more. We then flew due east along the islands and landed at Bima, in Sumbawa, where there is an excellent Dutch aerodrome. Here we were entertained by the local Sultan and Dutch Controller, both of whom did everything possible for our comfort. Next morning we started for Atamboca, in Timor Island, where there is a Dutch military station. We were entertained by the commandant, who told us that the natives regarded us as dead spirits who could come back to the world, and as they could not rest spent their time in flying from place to place. We were very glad to be safely on the ground in Timor, as it meant only 350 miles from there to Port Darwin. The country is very similar to parts of Australia, and is covered with gum trees, which reminded us very much of home.

"On Wednesday, Dec. 10th, we were up at dawn and rode from the military camp to the aerodrome, a distance of three miles, on Timor ponies. Just as we were ready to start a thick fog came on which delayed us for about two hours. However, about 8.30 a.m. the fog lifted and we started off and headed for Darwin, flying by compass.

"After being out of sight of land for about two hours we sighted the cruiser "Sydney" in exactly the position we had asked her to be in in case of need. We were very relieved to see her, as we felt that if anything did go wrong over the water we would have friends to rescue us. We had no wireless on board, so we dropped messages in a bottle attached to a small parachute made by ourselves, stating that all was going well. That message was picked up.

"Two hours after leaving the "Sydney" we sighted Bathurst Island, our first glimpse of Australia, and about three-quarters of an hour later arrived at Port Darwin."

Some Facts and Figures.

As the machine left Hounslow at 9.10 a.m. on Nov. 12th, the journey was completed in 668 hours 2 min. Thirty days, or 720 consecutive hours, was the time allowed by the rules of the Australian Government's Competition, and so the voyage was completed well within the time limit.

A telegram has been sent in the following terms by the High Commissioner of Australia to Mr. Hughes, the Prime Minister :—

"Have been requested by Royal Aero Club to transmit the following to you :—'Subject to verification of machine, Captain Ross Smith has fulfilled the conditions laid down by Australian Government for £10,000 prize for flight from Great Britain to Australia. The Royal Aero Club, under whose competition rules and auspices the flight was made, will award prize to Captain Ross Smith. Royal Aero Club tenders its heartiest congratulations to the Prime Minister and all Australians on the successful accomplishment of this epoch-making flight.'—(Signed) FISHER."

Congratulations.

Messages of congratulations have been sent to Capt. Ross Smith. In fact, a telegram from Port Darwin dated Dec. 11th stated that Capt. Ross Smith was inundated with telegrams.

The Air Ministry announced the text of the most important messages as follows :—

From H.M. The King :—

"Delighted at your safe arrival. Your success will bring Australia nearer to the Mother Country, and I warmly congratulate you and your crew.—GEORGE R.I."

From the Prime Minister :—

"Heartiest congratulations. Your flight shows how inventions of war can advance progress of peace.—D. LLOYD GEORGE."

From the Secretary of State for Air :—

"Well done. Your great flight shows conclusively that the new element has been conquered for the use of man.—W. S. CHURCHILL."

From the Air Council :—

"Air Council congratulate you and crew on great skill and endurance shown in your achievement.—W. A. ROBERTSON, Secretary Air Council."

From the Comptroller-General of Civil Aviation :—

"Most sincere congratulations on successful termination of great flight. Your progress has been watched by all here with keenest interest.—F. H. SYKES."

Comment upon the excellent performance of the machine and the two 350 h.p. Rolls-Royce "Eagle" engines is unnecessary, as their merit is so obvious, and in his diary Capt. Ross Smith continually pays them tribute.

The voyage to Australia has been made in quicker time, for in June, 1893, mail was carried from London to Adelaide in 23 days 11½ hours, going overland to Brindisi and thence by the P. and O. liner "Himalaya."

The always entertaining American Press—to wit, the New York "Tribune"—says :—"He has done a wonderful thing for the prestige of the British Empire and the fame of the Smiths. Australia owes him £10,000, and he has earned the money." The Convention of Smiths, who hold an annual meeting, will make Capt. Ross Smith "an honorary member of America's biggest and not least illustrious family."

The actual flying time, according to a "Times" correspondent, was 124 hours and the average speed 75 m.p.h. Capt. Ross Smith did not carry food, except tinned bully. His engines went well, but he had to work practically every night tinkering at the machine. He always arose at dawn. The hospitality of the Netherland Indies officials was overwhelming.

Mr. Hughes sent a congratulatory message to Port Darwin for presentation to the aviators on arrival, and has offered to purchase the machine for the War Museum. A message from Melbourne states that the military authorities are ascertaining the suitability of Flemington racecourse as a landing place there, so that there will be accommodation for the large crowd expected to witness the arrival of the machine.

The following table shows Capt. Ross Smith's progress from the time he left Hounslow on Nov. 12th :—

Miles.	Place.	Date of Arrival.
605	Lyons	Nov. 12th
1,050	Pisa	Nov. 13th
1,225	Rome	Nov. 15th
1,562	Taranto	Nov. 16th
—	Suda Bay	Nov 17th
2,845	Cairo	Nov 18th
3,259	Damascus	Nov. 19th
—	Ramadie	Nov. 20th
4,047	Basra	Nov. 21st
4,660	Bunder-Abbas (Persia)	Nov. 23rd
5,401	Karachi	Nov. 24th
6,093	Delhi	Nov. 25th
6,443	Allahabad (with a stop at Muttra)	Nov. 27th
6,895	Calcutta	Nov. 28th
7,342	Akyab	Nov. 29th
7,688	Rangoon	Nov. 30th
8,038	Bangkok	Dec. 1st
—	Singora	Dec. 2nd
8,900	Singapore	Dec. 4th
9,549	Kalidtjatti (West Java)	Dec. 6th
10,341	Bima (Sumbawa)	Dec. 8th
11,294	Port Darwin	Dec. 10th



THE MARTINSYDE CREW.

Henry Fraser, Mechanic. Capt. C. E. Howell, D.S.O., M.C., D.F.C., Pilot.

THE BLACKBURN KANGAROO.

Captain Wilkins, M.C., arrived at Suda Bay on Dec. 5th and left for Egypt on Dec. 8th. When forty miles from land the main return oil pipe of the port engine broke and the pilot had to return to Suda Bay. This flight was successfully accomplished on the starboard engine alone, and a safe landing was made. The engine itself was undamaged.

THE MARTINSYDE DISASTER.

The Air Ministry has announced that Capt. C. E. Howell, D.S.O., M.C., D.F.C., left Taranto at midday on Dec. 9th for Athens.

Lloyd's agent at Corfu telegraphed on Dec. 13th :—

"Information just received, British aircraft wrecked off St. George's Bay, Corfu, Dec. 10th; no hope of survivors; log washed ashore; certificate number 332; identification mark G U M R, Captain C. E. Howell, Melbourne; number of licence 412; Hounslow for Melbourne Leaving to investigate."

Such precautions had been taken that floats were awaiting the machine at Calcutta for its voyage over the sea in the last part of the journey. Unfortunately when the accident occurred the machine was still fitted for landing.

This fatality and the mishap which occurred to the Blackburn "Kangaroo" point to the safety of a twin-engined machines on such long-distance flights.

Captain Howell had sent his wife to Australia on board the "Orsova," and had hoped to overtake the steamer near Naples. Before starting he intimated that he would greet his wife by circling round the vessel and dropping a message.

THE VICKERS-ROLLS PRESENTATION TO THE NATION.

The presentation to the nation of the Vickers-Vimy Rolls-Royce aeroplane which, piloted by Capt. John Alcock and Lieut. Arthur Whitten Brown, made the first non-stop trans-Atlantic flight last June, was performed at the New Science Museum building, South Kensington, on Dec. 15th.

The chair was occupied by Dr. Ogilvie, director of the Science Museum, and among those present were Air-Marshal Sir H. M. Trenchard, Lieut.-Col. J. T. C. Moore-Brabazon, M.P., Capt. Sir John Alcock, Mr. Claude Johnson (of Rolls-Royce, Ltd.), and the High Commissioners for Australia, New Zealand, Canada, and Newfoundland.

Mr. Douglas Vickers said that all would agree with him that the aeroplane would constitute an historical landmark. It was not in any way a machine specially made for the occasion upon which it had been used; it was to have been a Berlin "bomber." He considered the flight from London to Australia as perhaps greater than the Atlantic effort, for its difficulties had included a new route hardly surveyed, and many variations of climate. The effort had demonstrated that it would be good to arrange a relay service, and then letters might be sent to Australia within a week.

On behalf of Sir Alfred Mond, Dr. Ogilvie accepted and acknowledged the gift.

Mr. Claude Johnson asked the chairman to accept that portion of the aeroplane for which Rolls-Royce were responsible.

A lunch followed at the Hyde Park Hotel. Mr. Douglas Vickers, who presided, first proposed "The Guests," to which Sir Alfred Mond responded with his wonted eloquence. Mr. Vickers then proposed, "The closer reunion of the old Mother Country and Australia."

Mr. Fisher (High Commissioner for Australia), in responding, said that the machine on which Capt. Ross Smith made his famous flight would never return to this country. Australia would keep that machine. In an enterprise of that kind it was only to be expected that there would be losses, and they bowed their head to those daring and brave men who tried to carry their machines through but failed.

AERONAUTICAL ENGINEERING

SUPPLEMENT TO "THE AEROPLANE"

INCORPORATING AIRCRAFT ENGINEERING, AERODYNAMICS, AIRCRAFT FINANCE AND COMMERCIAL AERONAUTICS AND MATTERS PERTAINING TO THE AERONAUTICAL ENGINEER AND THE AIRCRAFT TRADER.

THE PRODUCTS OF THE BRITISH AIRCRAFT INDUSTRY.

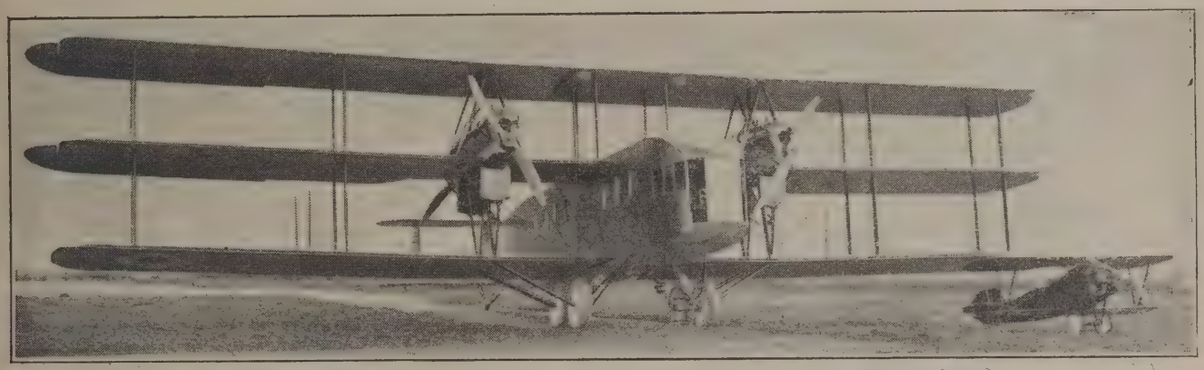
In this and the two following issues of THE AEROPLANE there will be found a description of a number of aircraft, aero-engines, and aeronautical accessories which represent what is being produced by those British firms which are maintaining their interest in the Aircraft Industry.

The information relating to these various products has been supplied by the firms themselves, and it may be assumed that the amount of information supplied is a measure of the extent to which each firm believes its own work to be of interest.

Also, the order in which the matter is arranged corresponds roughly to that in which the various concerns have responded to a request for information as to their work.

The great majority of these firms are members of the Society of British Aircraft Constructors, an organisation which has done more for British Aviation than any other.

THE BRITISH AND COLONIAL AEROPLANE CO., LTD.



The Bristol "Pullman" Triplane, and the Bristol "Babe." A study in contrasts.

Founded in 1910 by the late Sir George White, the British and Colonial Aeroplane Co., Ltd., usually known as the Bristol Company, have since their earliest days taken a prominent part in the development of British aviation. During the war they did much to secure the necessary supplies of aircraft for the Allied Armies, and the Bristol "Fighter" probably did more than any other single type of aeroplane to secure that superiority in the air which so helped towards the final victory.

With the coming of peace they naturally have set their house in an order appropriate to the changed conditions, and the following details of their more recent machines—some of which will be on show at Paris—will give an idea of their preparedness for the demands of to-morrow.

THE "BRISTOL" PULLMAN TRIPLANE.

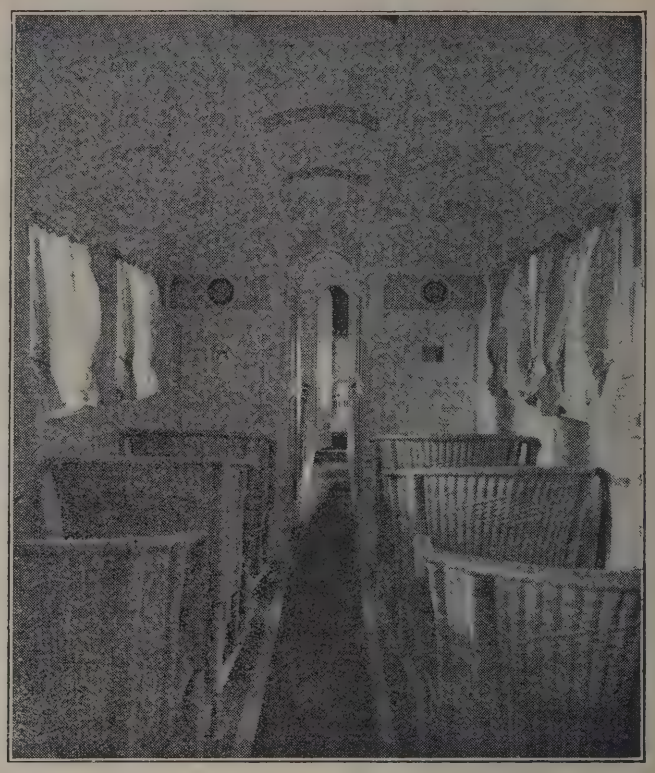
Amongst the large aeroplanes constructed to provide a high-speed machine capable of carrying a considerable load of passengers and cargo in addition to fuel for a lengthy flight, the "Bristol" Pullman Triplane occupies a position apart. The four 410-h.p. Liberty engines with which it is fitted ensure absolute reliability and safety, whilst the tasteful and luxurious appointments of the roomy Pullman ensure the highest comfort a traveller may desire.

The car in which the 14 passengers, carried in addition to the pilot and engineer, are accommodated is seven feet in height and wholly enclosed. A central gangway affords access to the comfortable fauteuils which, though removable, are normally placed on either side of the car. Large Triplex glass



The Fuselage of the Bristol "Pullman" in course of construction.





Two Interior Views of the Bristol "Pullman"—on the left looking aft and on the right looking forward.

windows are provided for the convenience of each passenger, and an adequate system of heating and lighting by means of electricity is installed. The question of ventilation has also been carefully studied.

Any or all of the seats may be removed for the conveyance of mails or cargo, and a total space of 570 cubic ft. can thus be made available. In addition to the two pilots the machine is capable of lifting a load of 2,700 lb. and fuel for 5 hours' flight, or alternatively 4,000 lb. with fuel for 2½ hours' flight. These figures are based on an economical speed of from 100 to 103 m.p.h., i.e., at three-quarter throttle, giving a sufficient reserve of power to reach a maximum speed of 125 m.p.h. if necessary.

The following examples give an idea of the manner in which the accommodation can be arranged, but these figures may be varied to suit requirements :—

	Passengers.		Cargo.
(1)	14	and	280 lb.
(2)	9	,,	1,180 lb.
(3)	4	,,	2,080 lb.
(4)	0	,,	2,800 lb.

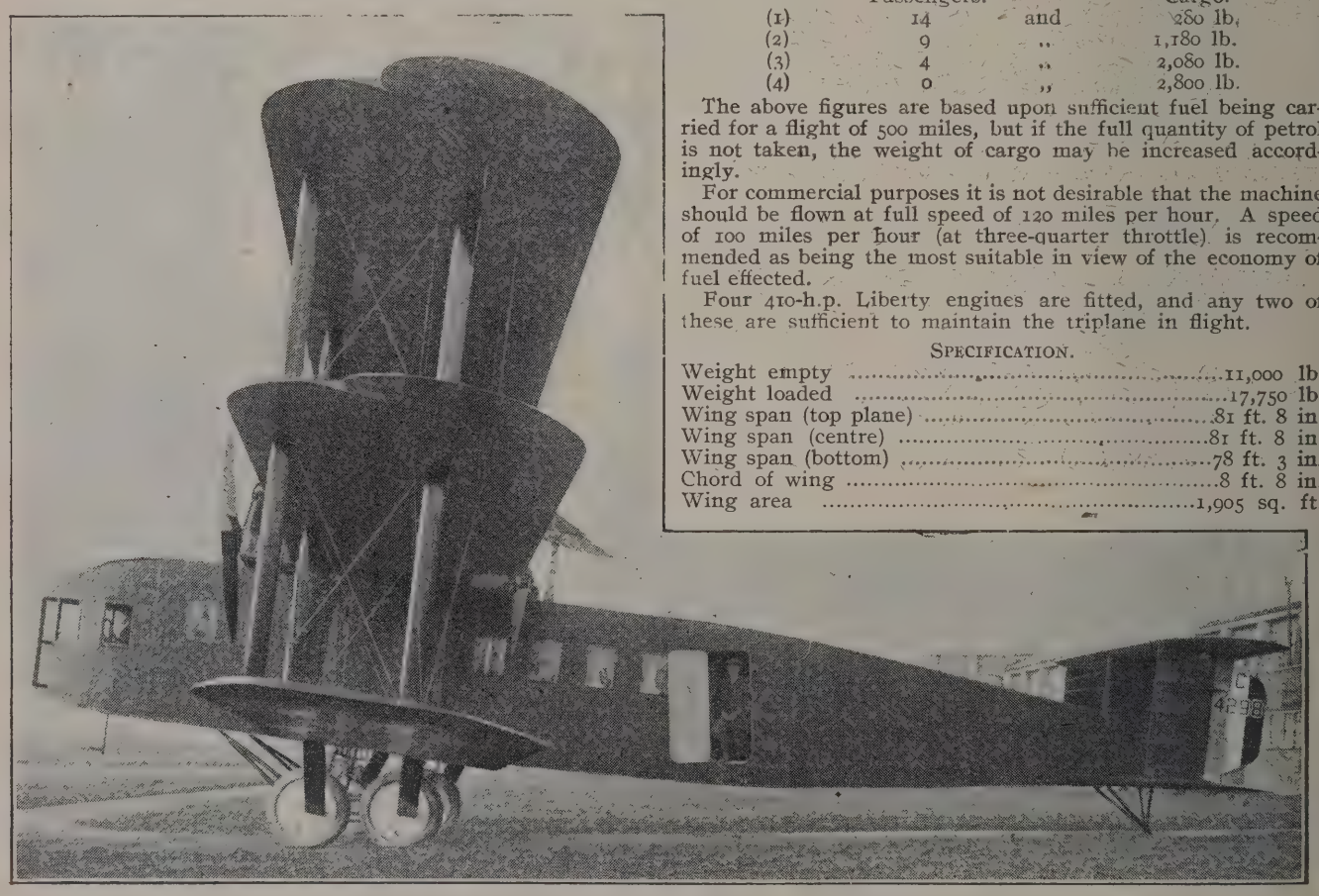
The above figures are based upon sufficient fuel being carried for a flight of 500 miles, but if the full quantity of petrol is not taken, the weight of cargo may be increased accordingly.

For commercial purposes it is not desirable that the machine should be flown at full speed of 120 miles per hour. A speed of 100 miles per hour (at three-quarter throttle) is recommended as being the most suitable in view of the economy of fuel effected.

Four 410-h.p. Liberty engines are fitted, and any two of these are sufficient to maintain the triplane in flight.

Specification.

Weight empty	11,000 lb.
Weight loaded	17,750 lb.
Wing span (top plane)	81 ft. 8 in.
Wing span (centre)	81 ft. 8 in.
Wing span (bottom)	78 ft. 3 in.
Chord of wing	8 ft. 8 in.
Wing area	1,905 sq. ft.

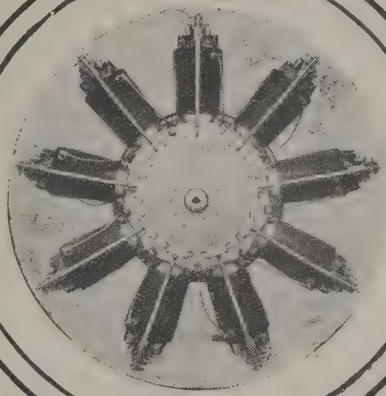


Side View of the Bristol "Pullman" (four 410-h.p. Liberty engines).

POWER

—an outstanding point in "the most efficient Aero Engine in the world"

ABC

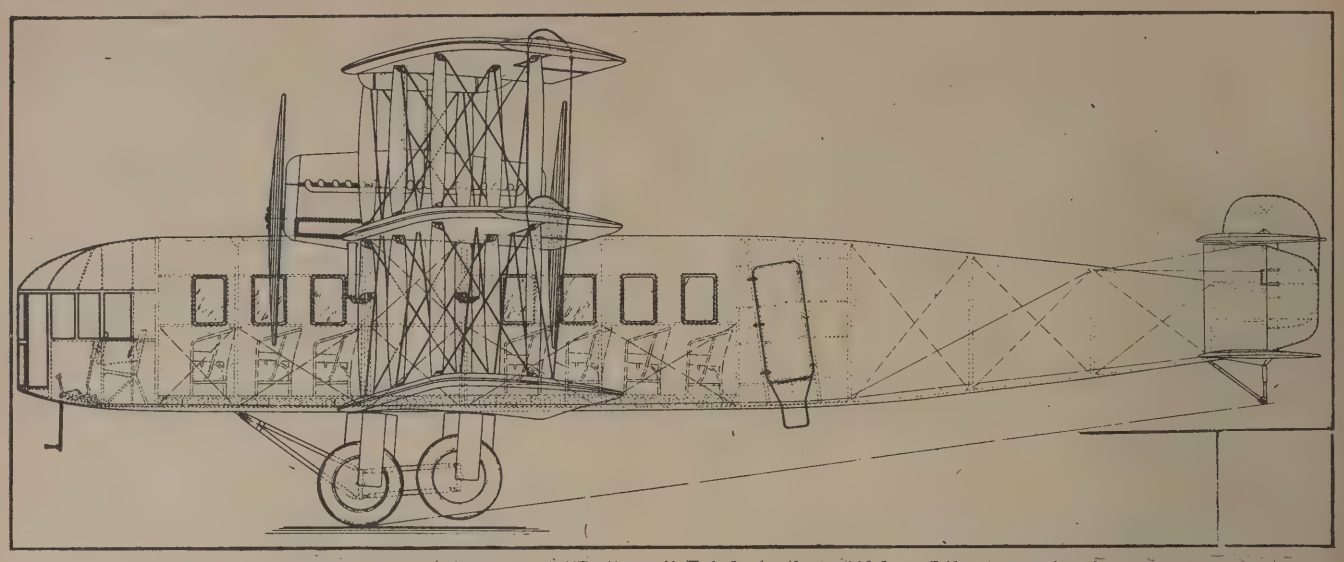


The Engine illustrated is the DRAGONFLY—340 h.p —9 cyl. (Static Radial).

WALTON MOTORS, Ltd.
Walton-on-Thames.

Telephone:
ESHER 306 and 307.

Telegrams:
"MOTORS, WALTON-ON-THAMES."



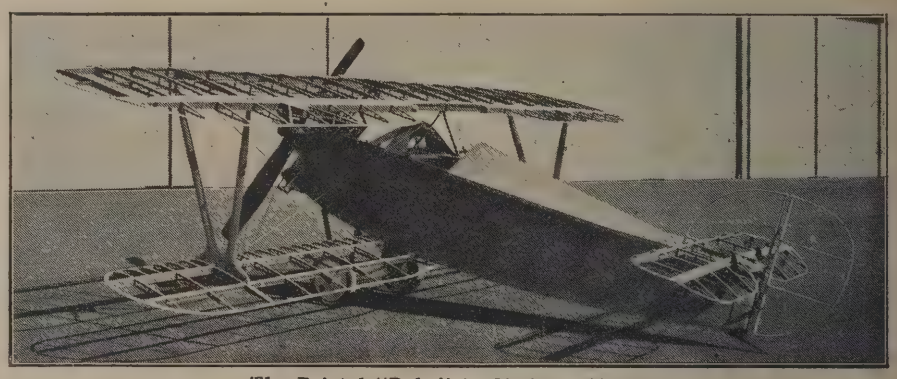
A Side Elevation of the Bristol "Pullman" Triplane (four 410-h.p. Liberty engines).

Wing loading	9.3 lb. per sq. ft.
Overall length	52 ft.
Maximum height	20 ft.
Petrol capacity	430 galls
Maximum speed	125 m.p.h.
Cruising speed	100 m.p.h.
Landing speed	55 m.p.h.
Climb to 10,000 ft.	12 min.
Ceiling	15,000 ft.

THE BRISTOL "BABE."

The Bristol "Babe" has been constructed to meet the demand for a small single-seated aeroplane in which the costs of upkeep and the actual running costs are reduced to the absolute minimum.

The fuselage is constructed throughout of 3-ply wood without any bracing wires, and the tail is on the cantilever principle and also without bracing wires. The main planes are braced with duplicate cables.



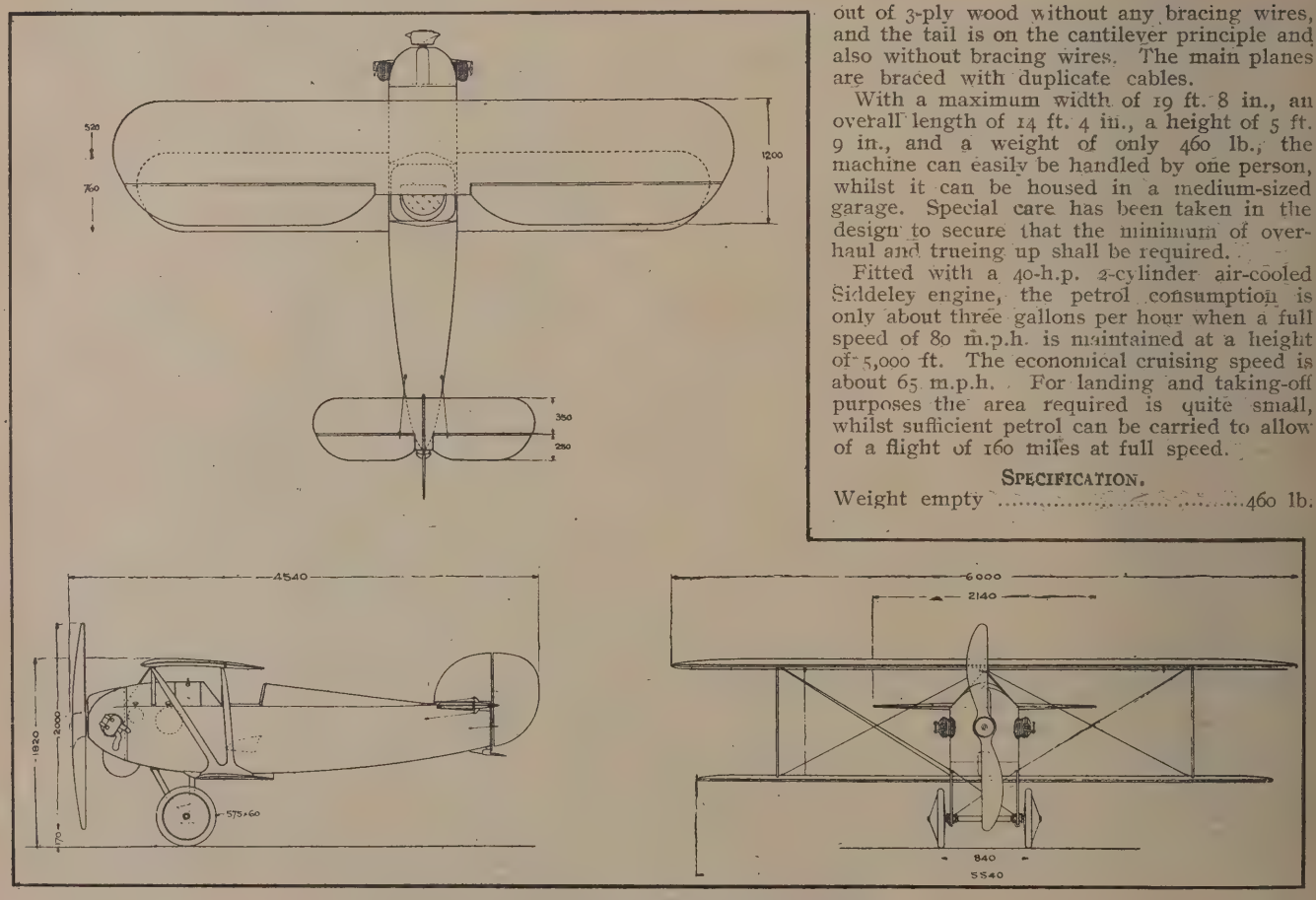
The Bristol "Babe" in Skeleton Form.

With a maximum width of 19 ft. 8 in., an overall length of 14 ft. 4 in., a height of 5 ft. 9 in., and a weight of only 460 lb., the machine can easily be handled by one person, whilst it can be housed in a medium-sized garage. Special care has been taken in the design to secure that the minimum of overhaul and trueing up shall be required.

Fitted with a 40-h.p. 2-cylinder air-cooled Siddeley engine, the petrol consumption is only about three gallons per hour when a full speed of 80 m.p.h. is maintained at a height of 5,000 ft. The economical cruising speed is about 65 m.p.h. For landing and taking-off purposes the area required is quite small, whilst sufficient petrol can be carried to allow of a flight of 160 miles at full speed.

Specification.

Weight empty	460 lb.



The Bristol " Babe " (40-h.p. Siddeley engine)

PUBLICATIONS.

The following books may be obtained *post free* by application to—

THE AEROPLANE & GENERAL PUBLISHING CO., LTD.,

61, CAREY STREET, W.C.2 :—

McCudden's **"Five Years in the R.F.C.,"** 8s.

Gill's **The Aerial Arm: Its Functions and Development.** 7s.

Butler's **"Plain Impressions,"** 2s. 9d.

Sylvester's **"The Design and Construction of Aero Engines,"** 6s. 4d.

Loening's **"Military Aeroplanes,"** 26s.

Richthofen's **"The Red Air Fighter"** (2nd Edition), 3s. 9d.

Mortane's **Special Missions of the Air** (Dropping Spies Behind the German Lines), 3s. 3d.

Hume's **Nursairy Rimes,** 2s. 9d.

Blakeney's **"How an Aeroplane is Built"** (2nd Edition), 5s. 4d.

Dixie's **"Air Navigation for Flight Officers,"** 11s.

Saundby's **"Flying Colours"** (Popular Edition), 15s. 6d. Edition de Luxe, £2 2s.

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Songs of the Submarine, 2s. 3d.

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"The Aeroplane," Vols. XIII, XIV, XIV, 25s. net each

"The Aeroplane," Vols. IX, X, XI, XII, 21s. net each.

XMAS PRESENTS.

THE most acceptable present is a good book. Ever increasing costs of production have compelled publishers to advance all book prices.

The *Aeroplane* for the current week proposes to reverse the process.

Copies of any of the following books will be sent at two-thirds the published price:—

	Published Price.	Terms till Dec. 24th.
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Capt. Saundby's FLYING COLOURS	£ s. d.	£ s. d.
Edition de luxe	2 2 0	1 8 0
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THE MOST HUMAN OF FLYING RECORDS—		
Major McCudden's "FIVE YEARS IN THE R.F.C."	7 6	5 0
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Major Hume's "NURSAIRY RIMES"	2 6	1 10
THE MOST THRILLING OF AEROPLANE RECORDS— (Dropping spies behind the German lines).		
Mortane's "SPECIAL MISSIONS OF THE AIR"	3 0	2 0
THE STORY OF GERMANY'S GREATEST AIR FIGHTER—		
Richthofen's "RED AIR FIGHTER"	3 6	2 4
THE SIMPLEST AUTHORITATIVE ACCOUNT OF AIRCRAFT DEVELOPMENT AND POLICY		
Col. Gill's "THE AERIAL ARM"...	6 6	4 4

Thus for HALF-A-GUINEA readers of the *Aeroplane* may secure—

NURSAIRY RIMES ... ... (2/6)
SPECIAL MISSIONS OF THE AIR (3/-)
THE RED AIR FIGHTER ... (3/6)
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or for £1 5s. 6d., those four books and
FIVE YEARS IN THE R.F.C. ... (7/6)
FLYING COLOURS ... ... (15/-)

or 11/- half-a-dozen copies of NURSAIRY RIMES.

or for £1 four copies of FIVE YEARS IN THE R.F.C.

or for 7/- three copies of THE RED AIR FIGHTER.

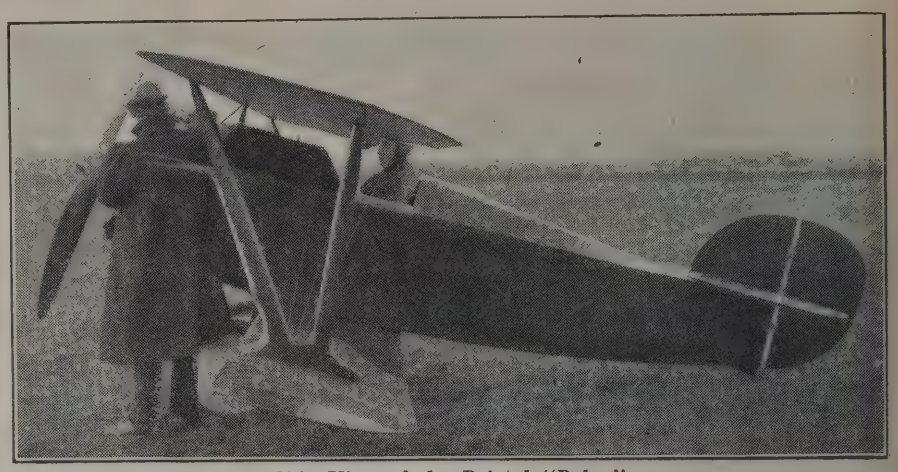
This is the best way to get a supply of books for Christmas presents on the most favourable terms.

Orders should reach us if possible before Wednesday next to ensure delivery by Christmas Day.

THE AEROPLANE, 61, CAREY STREET, W.C.2.

Weight loaded .....683 lb.
Wing span (top wing) .....19 ft. 8 in.
Wing span (bottom) .....18 ft. 8 in.
Chord of wing (top wing) ....3 ft. 11¼ in.
Chord of wing (bottom wing)...2 ft. 6 in.
Wing area .....107.8 sq. ft.
Wing loading .....6.34 lb. per sq. ft.
Overall length .....21 ft. 11 in.
Maximum height .....5 ft. 9 in.
Tankage (petrol) .....6.5 gallons.
Speeds—
Best speed at 5,000 ft. .....80 m.p.h.
Cruising speed at 5,000 ft. 65 m.p.h
Landing speed .....40 m.p.h.
Ceiling .....10,000 ft.

Shipping Measurements.—This machine can be shipped complete in one case measuring 6 ft. by 6 ft. by 21 ft.



Side View of the Bristol "Babe."

THE BRISTOL "BULLET."

This single-seater machine is designed primarily for racing purposes and is fitted with a 450-h.p. Cosmos "Jupiter" air-cooled radial engine. Exceptional strength is the outstanding feature in the design, and to attain this object double spars are fitted throughout, even in the wings and tail. As a result any evolution can be carried out with perfect safety at the maximum speed of 160 miles per hour.



Three-quarter Rear View, the Bristol "Babe."

Specification.

Weight empty .....1,700 lb.
Weight loaded .....2,300 lb.
Wing span (top wing) .....31 ft. 2⅝ in.
Wing span (bottom) .....29 ft. 2½ in.
Chord of wing (top wing).....5 ft. 11 in.
Chord of wing (bottom) .....4 ft. 11 in.
Wing area .....294.6 sq. ft.
Wing loading.....7.82 lb. per sq. ft.
Overall length .....24 ft. 1 in.
Maximum height .....9 ft. 8 in.
Petrol capacity .....50 gallons.
Performance :—
Best speed .....160 m.ph.
Landing speed .....50 m.p.h.

THE BRISTOL "TOURER."

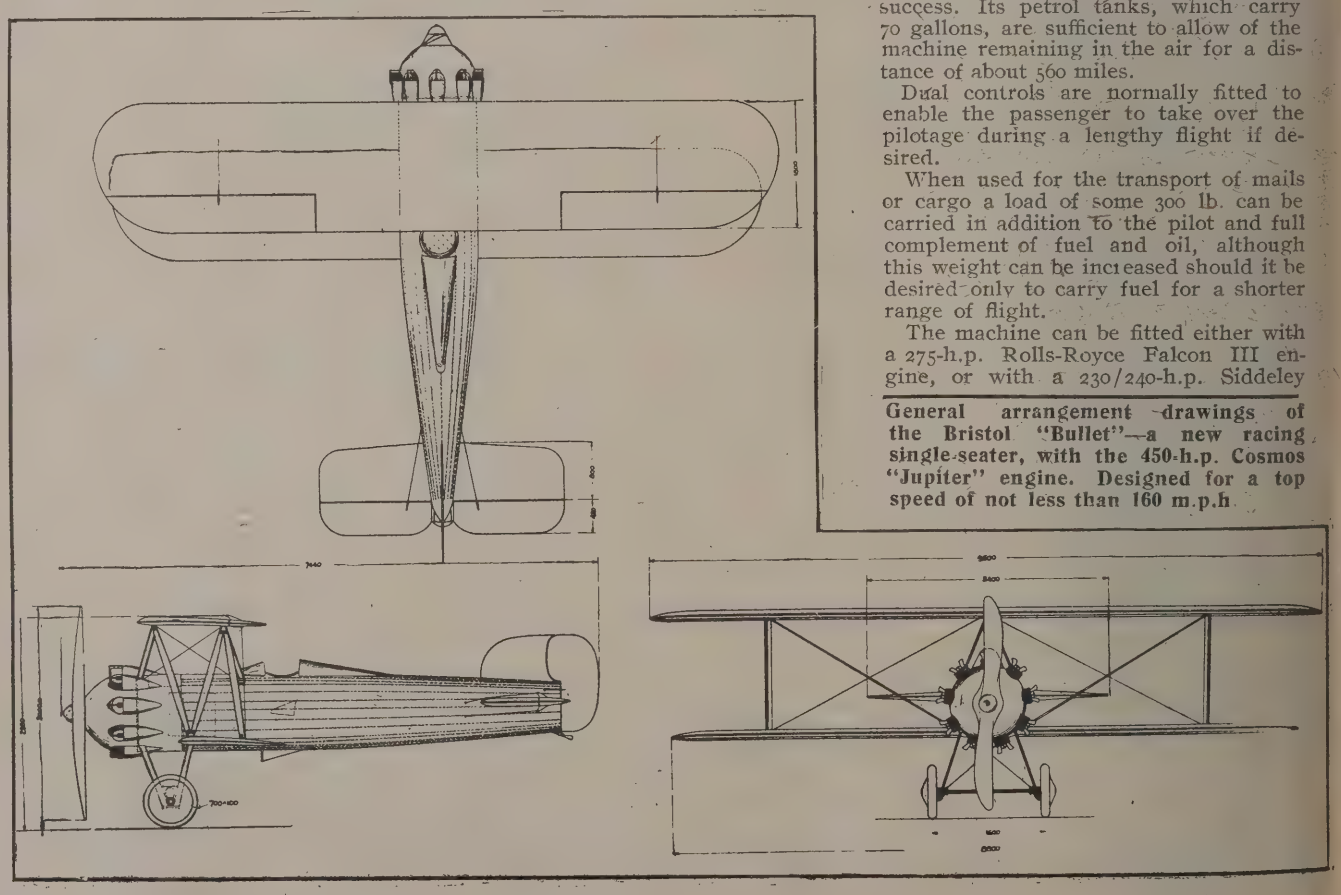
Amongst the post-war products of the British and Colonial Aeroplane Co. is the two-seater machine hereafter described.

Designed primarily to provide a machine of great dependability and capable of maintaining a fairly high speed for a considerable period of time, the "Bristol" Tourer has proved a great success. Its petrol tanks, which carry 70 gallons, are sufficient to allow of the machine remaining in the air for a distance of about 560 miles.

Dual controls are normally fitted to enable the passenger to take over the pilotage during a lengthy flight if desired.

When used for the transport of mails or cargo a load of some 300 lb. can be carried in addition to the pilot and full complement of fuel and oil, although this weight can be increased should it be desired only to carry fuel for a shorter range of flight.

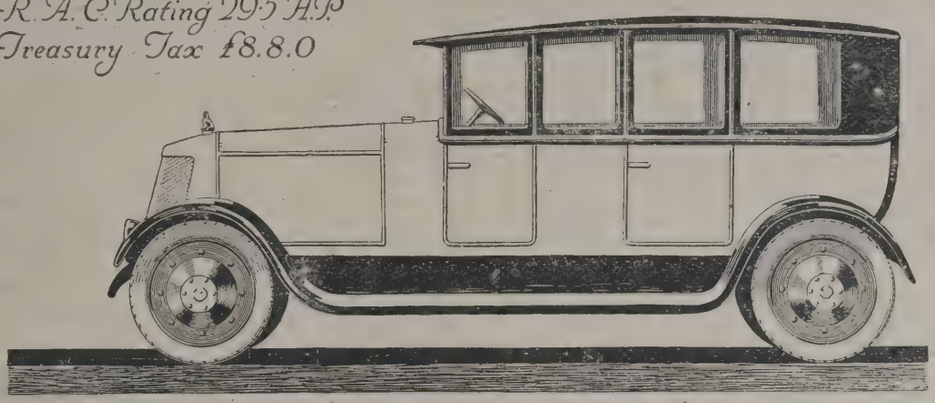
The machine can be fitted either with a 275-h.p. Rolls-Royce Falcon III engine, or with a 230/240-h.p. Siddeley



General arrangement drawings of the Bristol "Bullet"—a new racing single-seater, with the 450-h.p. Cosmos "Jupiter" engine. Designed for a top speed of not less than 160 m.p.h.

The ARMSTRONG SIDDELEY Six Cylinder Car

R.A.C. Rating 29·5 H.P.
Treasury Tax £8.8.0



Saloon Double Phaeton (as illustrated) £1,000.

A Famous Motorist's Opinion.

"FROM one end to the other of the chassis, everything is made as well as it can be. . . . . To sum up, this 29·5 h.p. six-cylindered Armstrong Siddeley is a true after-war car, selling at prices (according to the coach work fitted) about one-half those quoted for many other chassis of equivalent engine power, which may or may not be as good jobs. They cannot be better. The price of £720 for the chassis, with a full complement of fittings, is the best evidence I have yet seen of a really courageous effort by a great firm, showing real confidence in their ability to make profits at this price in the future, when they have justified a really gigantic British output.

This car is right."

S. F. EDGE,
From the "Auto" Nov. 28th 1919.

PUBLIC opinion at the Olympia Show unanimously endorsed our statement that you cannot buy a better car than the new Armstrong Siddeley 6-cylinder. It is a motor carriage of high efficiency, stately appearance, and ample power—constructed of the best materials. ¶ It is light. It is comfortable. It is dependable. It runs smoothly, silently and easily managed. Maintenance costs are small. ¶ Three years' free inspection. ¶ You cannot buy a better car.

PRICE of CHASSIS EQUIPPED WITH Disc Wheels and one Spare Rim; four 820 × 135 Rubber Studded Tyres; Specially Designed Wings, Scuttle Dash with instrument board; Lucas Engine Starter and Electric Lighting, complete with 5 lamps, Mechanical Tyre Pump, Kit of Tools, etc. **£720**

ARMSTRONG SIDDELEY MOTORS LIMITED, COVENTRY.
Formerly the Siddeley-Deasy Motor Car Co., Ltd.
(Allied with Sir W. G. Armstrong Whitworth & Co., Ltd.)

London: 10, Old Bond Street, W.1.
Telephone—Gerrard 6439. Wires—"Armsidco, Piccy, London."

You cannot buy a better Car.

Godbold's

"Puma" engine. Fitted with the former, the machine can attain a speed of about 125 m.p.h., with a normal cruising speed of about 90 m.p.h. When the latter engine is fitted the maximum speed is 120 m.p.h., and the cruising speed 85 m.p.h.

With either engine the petrol consumption for the distance traversed is the same although the consumption with the Rolls-Royce engine is 15½ gallons per hour, and with the Siddeley "Puma" 15 gallons per hour.



The Bristol "Tourer" (230-h.p. Siddeley "Puma" engine).

In the construction of this machine the Bristol Co. have arranged to make use of a large stock of materials and parts which were left on their hands by the cancellation of war contracts. The machine has been designed to utilize many components which are also part of the famous Bristol "Fighter," and it is thus possible to put the machine on the market at the extremely low price of £1,200, and to undertake to give rapid deliveries.

SPECIFICATION.

Weight (empty)	1,750 lb.
Weight (loaded)	2,800 lb.
Wing span	39 ft. 3 in.
Wing area	405 sq. ft.
Wing loading	6.92 lb. per sq. ft.
Chord of wing	5 ft. 6 in.
Overall length	25 ft. 9 in.
Maximum height	10 ft. 1 in.
Tankage (petrol)	70 gall.
Ceiling	20,000 ft.

THE WESTLAND AIRCRAFT WORKS.

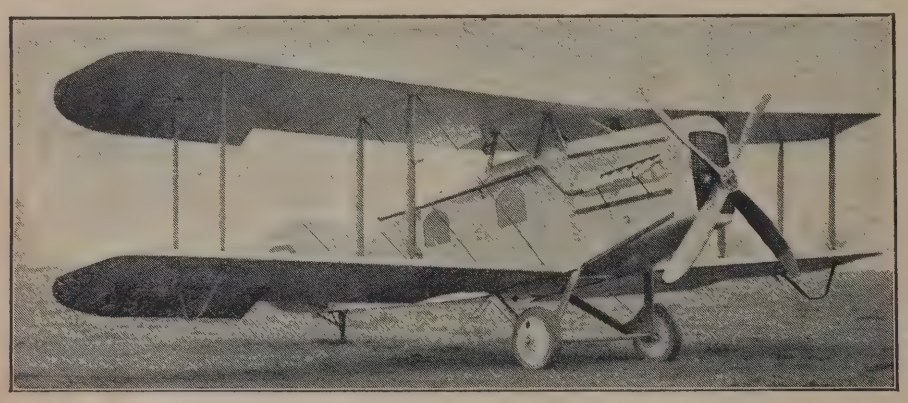
The Westland "Limousine," described in its first edition in THE AEROPLANE of Aug. 13th, 1919, has been in continuous service in the firm's own interest since July and has flown many thousands of miles, giving extremely satisfactory results. Experience therewith has suggested only a few minor modifications for later editions of the machine, and the sample which the firm are exhibiting on their stand at the Paris Aero Show differs in no important way from the original. The Paris Show machine is to be fitted up for passenger travel, and like its predecessor will be most comfortably, and even luxuriously, appointed. The upholstering of the cabin will be in grey Bedford cord, and the colour scheme throughout is grey and aluminium.

The adjustable ventilators fitted to the cabin admit air through a diffuser box and gauge inlets, thus securing fresh air without draughtiness.

Hot-water pipes, supplied from the cooling-water system of the engine, are arranged to warm the cabin, and valves, accessible to the passengers, permit of temperature regulation by more or less "byepassing" the heater pipes. In addition to this machine the Westland Co. are to show a scale model of the "Limousine" fitted for mail-carrying, and a section of the "Limousine" cabin showing the method of construction.

During the Show the original "Limousine" will be stationed at Le Bourget aerodrome, and will serve to show how well this type of machine stands up to hard work.

Both the Westlands are to fly from Yeovil to Paris, and the firm hope to carry the whole of their exhibition material on the two machines themselves, without the aid of any other form of transport.



Three-quarter Front View of the Westland "Limousine."



Side View of the Westland "Limousine" (Rolls-Royce "Falcon" engine).

WM. BEARDMORE AND CO., LTD.

Those who are past the first bloom of youth may remember the Eastern King of musical comedy fame who claimed he "could do almost anything." His claim was doubtless exaggerated, but even if it be allowed *in toto*, more westerly concerns need not unduly humble themselves before him.

William Beardmore and Co., Ltd., judging from the record of their war products, not only can do, but appear to actually have done, almost everything—at any rate, everything that comes within the realms of engineering.

The major portion of their activities concerns this journal little, but amongst the offshoots of their activities the aeroplane and airship sections have a very direct importance.

In war time Beardmore's built B.E.2cs, Wight seaplanes, Nieuport two-seaters, Beardmore folding ships' scouts, Sopwith "Camels" and Handley Pages of the V/1500 type.

In addition they have designed a number of highly satisfactory machines of their own types.

BATH AIRCRAFT, LTD.

With the transition from war to peace it is extremely fortunate that many of the smaller aircraft firms who have been principally engaged in the manufacture of components and parts of aircraft, such as wings, struts, floats, propellers, etc., are sufficiently far-seeing not to banish aeroplanes from their future programme of production.

One of these firms is the Bath Aircraft, Ltd., of Lower Bristol Road, Bath, who, during the war were compelled to concentrate on components to meet the demand, with the result that they were unable to carry out their original intention of turning out complete machines.

With the completion of Government contracts, they are keeping their staff together by turning their attention to the manufacture of all kinds of woodwork, such as joinery, furniture, fancy goods, etc., for which their shops and machinery are eminently suited, and thereby maintaining themselves in readiness to re-enter the aircraft market at the earliest possible date.

Round the world by Air

—is mainly a question of organization and choice of flying stock.

As to the second factor, the B.A.T. Company can be of unusual assistance. For instance, we are the first people out with a purely commercial model (not a modified war type)—the B.A.T., F.K. 26—the machine with the largest cargo space and load capacity for its overall size and power yet produced.

Here are some interesting points concerning F.K. 26 :—

Engine — *Rolls-Royce Eagle VIII.*

Speed—*45-120 m.p.h.*

Cabin—*Is clear of any transverse cross-bracings or other obstructions and measures 8 ft. by 3 ft. 3 in. by 6 ft.—this in a machine of only 33 ft. overall length. Direct entry off ground through ordinary door.*

Load—*With 600 miles range of fuel—2,000 lbs.*

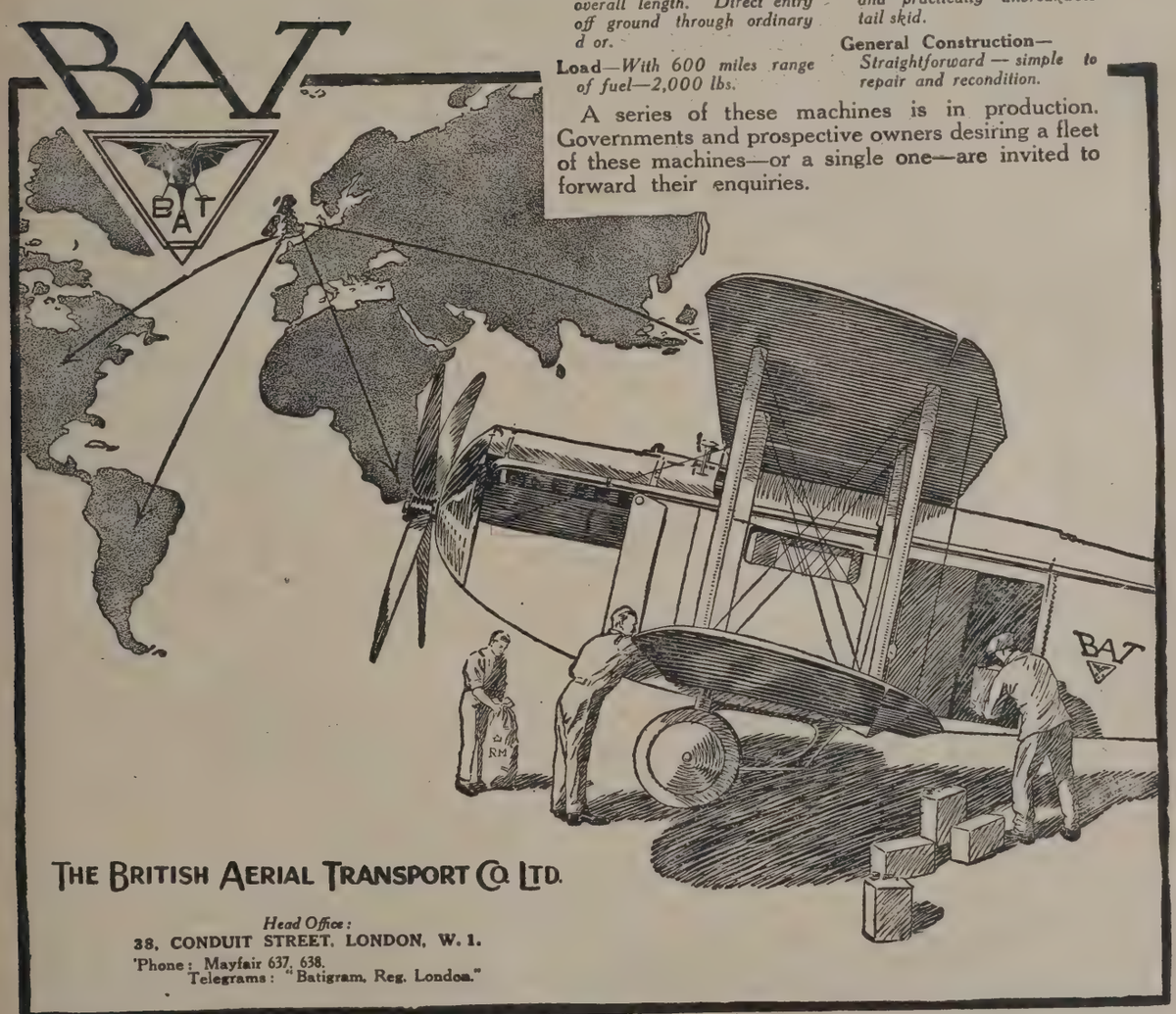
Fuel Cost at full load—*7·2 pence per mile.*

Chassis—*A sturdy job, sprung by an unique combination of oleo and rubber shock absorbers.*

Tail—*Can be trimmed in flight from pilot's seat — steerable and practically unbreakable tail skid.*

General Construction—*Straightforward — simple to repair and recondition.*

A series of these machines is in production. Governments and prospective owners desiring a fleet of these machines—or a single one—are invited to forward their enquiries.



THE BRITISH AERIAL TRANSPORT CO. LTD.

Head Office:
38, CONDUIT STREET, LONDON, W. 1.
'Phone: Mayfair 637, 638.
Telegrams: "Batigram, Reg. London."

THE AUSTIN MOTOR CAR CO., LTD.

As is fairly well known, during the war the Austin Motor Car Co., Ltd., of Birmingham, devoted their whole energies to the quantity production of munitions of war of various kinds, with conspicuous success.

Amongst their products aeroplanes and aeroplane engines figured to no small extent, and their output of standardised aeroplanes of various types was extremely large.

In addition the firm were responsible for the design of quite a number of machines which gave uniformly excellent results on trial.

Amongst war machines their latest product—the "Greyhound," fitted with the A.B.C. "Dragonfly" engine—is now under official test, and is understood to be giving an extraordinarily fine performance.



The Austin "Greyhound" (A.B.C. 320-h.p. "Dragonfly" engine).



Front View of the Austin "Whippet" (45-h.p. Anzani engine).

Austins do not, however, propose to limit their aircraft activities to the military needs of the future, but have produced in the "Whippet" a machine which should appeal strongly to the sporting pilot as a private mount.

The "Whippet" is a small single-seater of 21 ft. 6 in. span, 16 ft. 3 in. long overall, and 7 ft. 6 in. height, weighing 580 lb. empty and 810 lb. fully loaded. Fitted with a 5-cylinder "Anzani" engine of 50 h.p., the machine has a speed range of from 35 to 85 miles per hour and climbs to 5,000 ft. in 10 min. It is easy to fly and sufficiently strong for all "stunting" purposes.

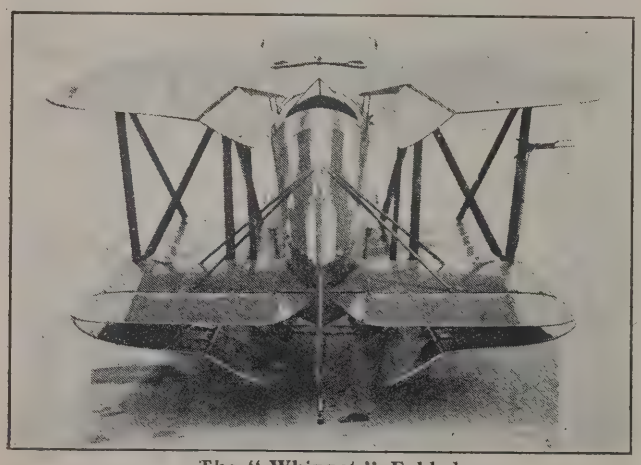
The fuselage is entirely built of steel tubes, without welded joints.

The wings are designed to a factor of safety of seven and follow nomal practice. They are arranged to fold back along the fuselage, where they are clipped automatically by appropriate catches. Interplane struts are of steel tube in N form, and, instead of bracing wires, diagonal steel tubes which act as tension members in flight and struts when on the ground are employed. There are thus no wing bracing wires to stretch and there is no "trueing up" required.

Compartments for tools and luggage are fitted beneath the pilot's seat, which is excellently upholstered and



The "Whippet" packed for transport.



The "Whippet" Folded.

The Long and the Short of it—the Austin "Whippet" alongside an Austin-built Handley Page O/400.



This wonderful view of the Admiralty Arch and Trafalgar Square was taken by one of the Firm's photographers, from an Airco 9B. Ma hine. All Airco Pictures are works of Art shewing the beauty of the earth from above.

Write for full particulars—

Dept. A7a, AIRCRAFT MANUFACTURING CO., LTD., HENDON, N.W.9.

Designers and Manufacturers of the famous de Havilland or Airco Aeroplanes, also Flying Boats and Seaplanes.

Aerial Photography

"THE BIRD'S EYE VIEW."

THE Aircraft Manufacturing Co., Ltd., is creating another record. Its Aerial Photographic Department has only been in existence for three months and has already sold over a *Quarter of a Million* pictures.

Airco Aerials are the best in the world, because only the best Pilots, Machines, Photographers and Cameras are employed.

¶ **Have your factory photographed from the air.** The **Airco** will shew your Works to advantage.

¶ **See that an Aerial of the Municipality is hanging on the walls of the Council Chamber.** It will shew the Town *en masse*, in all its grandeur.

¶ **Your country house would make a wonderful enlargement.** An Airco Aerial will shew not only the building but the whole Estate.

¶ **Real photographic postcards** of all the **beauty spots in England as seen** from an **Airco** Machine.

On Sale in every Town.

Photographic Aeroplanes sent to all parts.

adequately wind screened. The design of the machine has been submitted to the Air Ministry and a certificate of airworthiness has been issued in respect of the machine.

Throughout the design strength and permanence has been given the premier place, and no undue sacrifice has been made at the altar of cheapness, but in spite of this fact the price of the machine complete is only £500.

MARTINSYDE, LTD.



The Type "A" Martinsyde in its Australian guise.

The firm of Martinsyde, Ltd., needs little introduction to regular readers of this paper. Since the earliest days of British aviation they have occupied a foremost place amongst the ranks of British aircraft constructors.

During 1910, '11, '12, and '13 Martinsyde monoplanes held their place as the most graceful and most beautifully constructed of British aircraft, and their flying qualities were on a level with their construction.

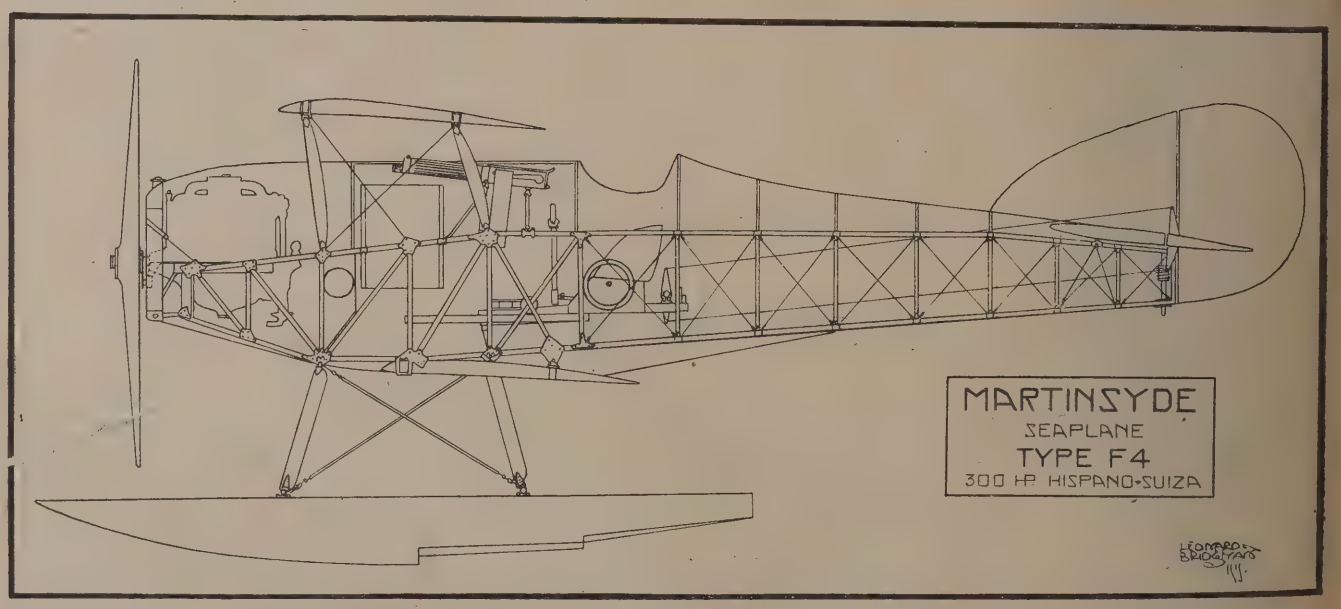
During the war the Martinsyde "Scout," "Elephant," F.3, and the F.4—designed for war purposes, though the latter was not available till after the Armistice, thanks to engine supply difficulties—added to the firm's reputation.

Since the war the firm have produced the type A, designed for commercial transport work in various forms, and more recently the F.6.

The first machine of the F.6 type has but recently been completed. This machine is very similar to the F.4 in general design and appearance, except for one or two minor details in the arrangement of interplane and undercarriage struts. The machine is a two-seater and is fitted with a 300-h.p. Hispano-Suiza engine. Whereas in the F.4 the centre section struts slope outwards from the fuselage to the top centre section with the front pair of struts vertical, as viewed from the side, and the rear pair sloping down from the centre section towards the tail, in the F.6 all four struts are staggered in line with the other two pairs of interplane struts, and regarded from the front are vertical and parallel. Similarly, in the F.6, the interplane struts do not slope outwards but are parallel with the centre section struts.

In the undercarriage, instead of the struts forming the "Vees" being set at equal angles to the vertical, as in the F.4, the front pair of struts are vertical, while the rear pair are set back from the axle at an angle of 15 deg. There is no dihedral angle to the top plane, and a very slight one to the bottom plane. Many of the F.4s are being converted to two-seaters, extra room in the fuselage being provided by the removal of ammunition chutes, machine guns and fittings, and other "gadgets" extraneous to peace-time aeroplanes.

The attached table gives full particulars of the present-day products of the firm.



The Pioneers of British Aircraft Construction

invite you to inspect the latest types of "BRISTOL" Aircraft on **STAND 65** at the Paris International Aircraft Exhibition. Details of their exhibits will be given in these pages during this and succeeding weeks.



The "BRISTOL" Tourer follows very largely the lines of the renowned "BRISTOL" Fighter. Fitted with a 230/240 h.p. Siddeley "Puma" engine the Tourer has a speed of 120 miles per hour, and a range of 560 miles.

This machine is now being offered at the exceedingly low price of
TWELVE HUNDRED POUNDS.

£1,200

The "Bristol" Aeroplanes.

THE
BRITISH & COLONIAL AEROPLANE CO., LTD.
FILTON — BRISTOL.

Telegrams: "Aviation, Bristol." Telephone: 3906 Bristol.

PARTICULARS OF MARTINSYDE MACHINES.

	Type "A" (Passenger).	Type "A" (Freight).	Type "A" (Freight). 1,000 miles range.	Type F.4.	Type F.6.
Span of Wings { Top	43ft. 4in.	43ft. 4in.	43ft. 4in.	32ft. 9⅜in.	31ft. 11¼in.
Span of Wings { Bottom	43ft. 4in.	43ft. 4in.	43ft. 4in.	31ft. 2⅜in.	29ft. 4in.
Length Overall	29ft. 1½in.	29ft. 1¼in.	29ft. 1¼in.	25ft. 5⅝in.	24ft. 6in.
Height without Airscrew	10ft. 6in.	10ft. 6in.	10ft. 6in.	8ft 10in.	9ft. 1½in.
Chord of Wing { Top	6ft. 6in.	6ft. 6in.	6ft. 6in.	6ft. 0½in.	6ft. 0½in.
Chord of Wing { Bottom	6ft. 6in.	6ft. 6in.	6ft. 6in.	5ft. 6¼in.	5ft. 6¼in.
No. of Seats (passenger)	4	—	—	—	1
Engine	STANDARD. 275 H.P. Rolls-Royce Falcon. ALTERNATIVE. 450 H.P. Napier Lion	STANDARD. 275 H.P. Rolls-Royce Falcon. ALTERNATIVE. 450 H.P. Napier.	STANDARD. 275 H.P. Rolls-Royce Falcon. ALTERNATIVE. 450 H.P. Napier Lion.	300 H.P. Hispano-Suiza	275 H.P. Rolls-Royce Falcon or 300 H.P. HispanoSuiza
Freight capacity	500 lbs. plus 4 passengers	1,300 lbs.	800 lbs.	{ 2 Vickers' guns, ammunition and bombs	—
Water	6 gallons	6 gallons	6 gallons	3½ gallons	3½ gallons
Fuel	80 gallons	104 gallons	164 gallons	38 gallons	52 gallons
Oil	8 gallons	8 gallons	10 gallons	4 gallons	6¾ gallons
Crew { Military M/c.	Pilot	Pilot and Passenger	Pilot and Passenger	Pilot	Pilot and Passenger
Crew { Commercial	Pilot	Pilot	Pilot	—	Pilot
Loading in lbs. per square feet	7¾ lbs.	7¾lbs.	7¼lbs.	7 lbs.	7¼ lbs.
Ditto in lbs. per B.H.P.	With "Falcon" engine. 14½ lbs. With "Lion" engine. 9 lbs.	"Falcon." 14½ lbs. "Lion." 9 lbs.	"Falcon." 14½ lbs. "Lion." 9 lbs.	7½ lbs.	"Rolls-Royce" 8¼ lbs. "Hispano Suiza" 7½ lbs.
Speed at Ground level	125	—	—	145 m.p.h.	
Speed at 6,500 feet	123	—	—	144 m.p.h.	
Speed at 10,000 ,,	118	—	—	142½ m.p.h.	As single seater approx. same as F.4.
Speed at 13,000 ,,	No data	—	—	139½ m.p.h.	
Speed at 15,000 ,,	—	—	—	136½ m.p.h.	
Speed at 16,500 ,,	—	—	—	134 m.p.h.	
Speed at 19,500 ,,	—	—	—	127½ m.p.h.	
Climb to 6,500 feet	—	—	—	Full war load. 4 mins. gross weight 2,289 lbs.	do. do.
Climb to 10,000 ,,	—	—	—	6 mins. 40 secs.	do. do.
Climb to 13,000 ,,	—	—	—	9 mins. 30 secs.	do. do.
Climb to 15,000 ,,	—	—	—	11 mins. 45 secs.	do. do.
Climb to 16,500 ,,	—	—	—	13 mins. 40 secs.	do. do.
Climb to 19,500 ,,	—	—	—	18 mins. 30 secs.	do. do.
	(With "Falcon" engine)	("Falcon")	("Falcon")		
Commercial speed at 6,500 feet	100 m.p.h.	100 m.p.h.	100 m.p.h.	—	—
Landing speed	40 m.p.h.	40 m.p.h.	40 m.p.h.	40 m.p.h.	40 m.p.h.
Endurance in hours	5½ hours	7 hours	11 hours	3½ hours	4½ hours
Range in miles	500 miles	750 miles	1,200 miles	350 miles max.	450 miles
Service ceiling	Approx. 16,000 feet	—	—	25,000 feet	—
Maximum ceiling	No data	—	—	27,000 feet	—

NOTE.—F.6 can be produced either as a two-seater passenger or reconnaisance machine or as a single-seater fighter. When fitted as a single-seater the performance is similar to the F.4.
Both F.4 and F.6 as single-seaters can carry an additional load of 400 lbs., and bomb racks to take this can be supplied.

GEORGE PARNALL AND CO., LTD.

During the war the firm of Parnall and Sons of Bristol acquired an excellent reputation as manufacturers of aircraft to official specification, and so favourably impressed the powers that were with their workmanship that Mr. Harold Bolas of the Admiralty Air Department was released to them as a designer, and the firm was asked to undertake original design work.

At least one of their designs, the "Panther," reached the production stage—which, considering the late date at which they entered the designing field, and the difficulties attendant upon the production of a shipboard aeroplane, redounds distinctly to their credit.

The firm of Parnall and Sons has since then come under the proprietorship of W. and T. Avery, Ltd., and has definitely abandoned the production of aircraft.

Mr. Geo. G. Parnall has, however, organised the firm of Geo. Parnall and Co., and with the assistance of a personnel largely composed of those who conducted the aircraft department of Parnall and Sons, will carry on the business of aircraft designers and constructors.

At the moment the firm is occupied entirely with work on designs which have received the approval of the Air Ministry for military purposes, particulars whereof they are not at liberty to publish.

Mr. Harold Bolas is acting as the firm's designer, and Mr. Parnall is to be congratulated upon his courage and enterprise in initiating such a business at this time, and upon the success with which his efforts have so far been attended.

A RESULT OF PEACE.

An application was made to Mr. Justice Astbury in the Chancery Division on Dec. 2nd by the Sopwith Aviation and Engineering Co., Ltd., for sanction to alter the objects of the company in order to enable them to manufacture motor vehicles, all kinds of furniture, and other articles.

"CELLON"

BEFORE

DURING  AFTER

THE WAR

has maintained its reputation of being

"The Dope of Proved Efficiency"

for Naval, Military and Commercial Purposes.

Full particulars and Quotations on application to

CELLON (Richmond) Ltd.,

22, CORK STREET,

Telegrams—"Ajawb, Reg. London." **LONDON, W.1.** **Telephones—Gerrard 440 (2 lines).**

THE AIRCRAFT MANUFACTURING CO., LTD.



WITHOUT doubt, one of the most interesting exhibits at the Paris Salon, from an international standpoint, is that of the Aircraft Manufacturing Co., Ltd., Hendon, N.W.9. This firm is the producer of all the de Havilland machines that operated throughout the war.

Capt. de Havilland, O.B.E., A.F.C., R.A.F., the chief of the design staff, stands unique inasmuch as every type of machine built, for which he was responsible, has been a success. No other firm can boast of so many different successful machines. The de H.1, 1A, 2, 3, 4, 5, 6, 9, 9A, and 10 have all proved themselves formidable offensive weapons.

The reader might be tempted to ask what became of the de H.7 and 8. These machines were never built. Not that they would not have been a success if they had materialised, but because the urgent demand at that period of the war was for another type, and the de Havilland 9 had to be pushed ahead of them.

In the case of the Airco 16 machine, exhibited at the Paris Show, this is really a de Havilland 16 machine. Merely the name Airco (an abbreviation of Aircraft Manufacturing Co.) has been substituted, it being considered a better commercial nomenclature.

The public have an opportunity for the first time of inspecting the Airco 16 on this stand in its new form. In many respects it is like the well-known machine which flies daily between Paris and London. But a Napier "Lion" engine has been installed, and with the increase in horse-power one finds a corresponding and highly gratifying increase in its performance.

By reason of its somewhat unconventional shape the installation of the Napier engine has caused a modification in the general appearance of the nose of the machine.

An ingenious method of shielding the radiator (which is placed under the engine) has been embodied, the shutters following the line of the body so that, when closed, an uninterrupted flow of air is the result, save for a small projecting area deemed advisable for effective cooling even at great altitudes.

The success of the Airco 16 is only what should have been expected of it, because it is the outcome of the famous de Havilland 9A which distinguished itself to such a marked degree in the war. The 9A was not only used for reconnaissance and fighting, but as a long-distance, self-defending, daylight bomber, and this type carried thousands of tons of bombs over the Hun lines and dumped them on the Rhine towns. The 9A surely went a long way towards the downfall of the Boche.

As a machine possessing such high qualities as the 9A, but redesigned and turned to commercial use, the Airco 16 is daily proving its value by its constant journeyings to and fro on the London-Paris route in all weathers.

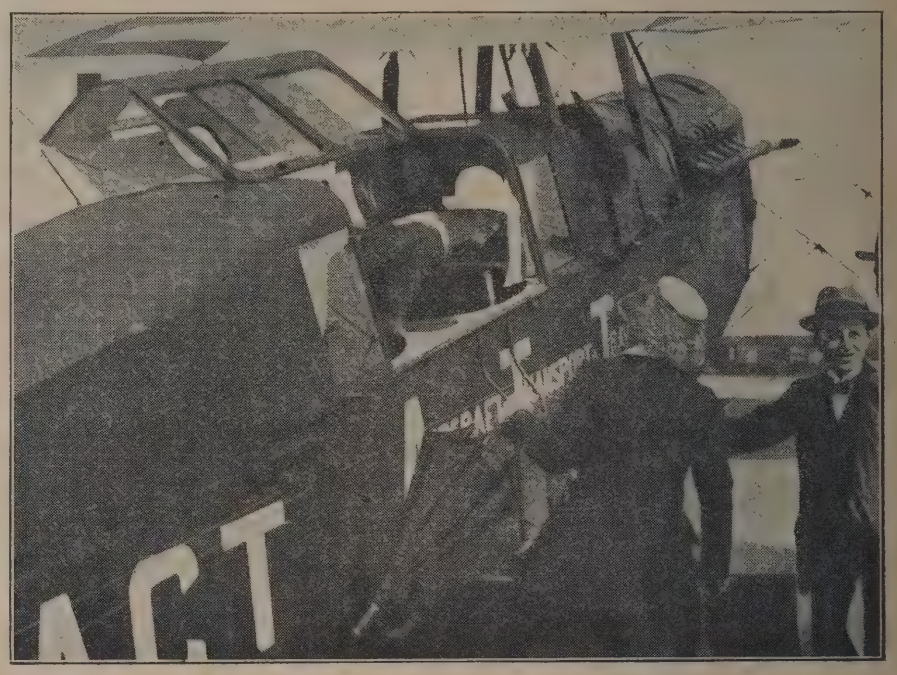
One has but to look up the Flying Intelligence Records of the Aircraft Transport and Travel, Ltd. (who have so far found nothing better for the work in hand than Airco machines) to realise its immense value as a peace-time air transport.

THE AIRCO 16 AT THE PARIS SHOW.

The fuselage, including the outside of the cabin, is enamelled white and is very highly finished. The cowling is polished aluminium. The usual V-type undercarriage is fitted and is painted black. The cellule and empennage are cream colour.

Almost all the fittings, including the long exhaust extension pipes, are nickel-plated. The remainded are black to match the undercarriage and tail-skid.

The cabin has almost a "boudoir" effect and is quite "futuristic" in its colour scheme—but at the same time it is quite practical and is furnished with durable material. Briefly stated, the top half of the cabin, which is hinged so that it will slide over for access and egress, is upholstered very similarly to a coach-built autocar, and is equipped with lighting set and a small circular trap-door for communicating with the pilot. Ventilation is afforded through holes in the roof, but the windows, too, are arranged to slide over one another so that they may be opened or shut from the inside.



Embarcation on an Airco 16.

So far as the cabin is concerned, comfort has been the



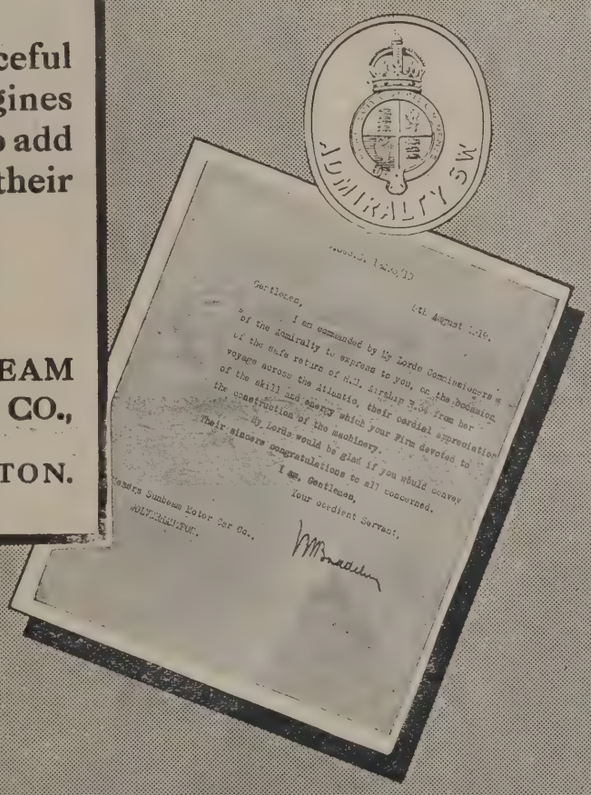
Side View of a Rolls-engined Airco 16.

SUNBEAM-COATALEN AIRCRAFT ENGINES

contributed in no small measure to the aerial supremacy which was largely responsible for the Victory which crowned the Allied arms.

And in peaceful times, these Engines will continue to add to the fame of their name.

THE SUNBEAM MOTOR CAR CO., LTD.,
WOLVERHAMPTON.



chief object in the mind of the designers. Black rugs and seats covered with a black material are provided, and bright peacock-green pillows. The lower sides of the machine are covered in a highly coloured ultra-modern scheme which, coupled with the pillows, gives just that touch of richness that befits a machine finished for exhibition purposes.

The cabin holds four persons, two looking forward and two towards the tail. By staggering the seats ample arm and leg room is provided; in fact, it can be safely asserted that so far as comfort is concerned it is ahead of the average automobile.

The machine is fitted with a two-way wireless telephony outfit by the Marconi's Wireless Telegraph Co., Ltd. With it the pilot can talk over a range of 100 miles and can receive audible messages up to the same distance. The weight of the outfit complete is only 60 lb.

The apparatus consists of:

(a) Generator.
(b) Aerial and winch.
(c) Remote control and transmitter.
(d) Receiver.

The generator is fitted conveniently on the port side of the machine, and is operated by means of a small windscrew.

From a geared winch, suitably mounted in the pilot's cockpit to facilitate winding, is fitted the trailing aerial. This can be let out at will, whilst receiving and speaking.

A control panel is fixed on the dashboard by means of which the pilot can tell that his set is radiating and also close the field of his air-driven generator supplying the high-tension circuit.

As a freight or mail carrier this aeroplane has still further advantages. Baskets have been designed and constructed which strap over in place of the movable top half of the cabin. The seats are easily removed and the "hold" so formed becomes a storage place for freight.

In addition to the white 16, the Airco displays a large model of the Hendon Aerodrome, showing their works.



View downwards into the cockpit of an Airco 16 Passenger-carrier.

A small section of the stand is devoted to aerial photography, a new branch of the firm's interests.

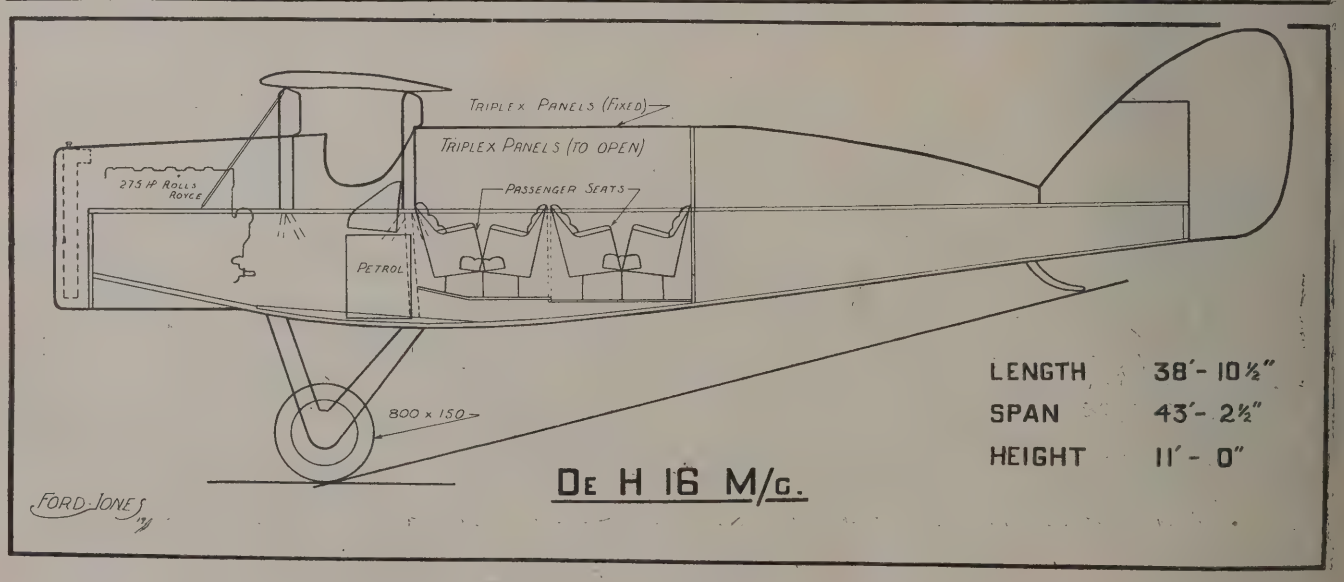
Here one not only sees many of the machines flying—as they were caught by the photographer in another Airco machine—but a few of the many views of places of historic interest and beauty are also exhibited.

The Airco photographic department is specialising in the photographing of factories from the air, and by so doing are enabling firms to get a more artistic and also more accurate representation of their works than the old conventional method of a very uninteresting sketch.

Owing to its vast resources, it is understood that the Airco have facilities for the manufacture of parts of any type of foreign machine, either experimental or in quantities, by special arrangement.

PERFORMANCE OF THE AIRCO 16.

Duty.	Engine.	H.P. at 2,200 Revs. at	Speed at 5,000 ft.	Climb to 10,000 ft.	Ceiling Absolute.	Endurance Full Speed at 5,000 ft.	Crew.	No. of Passengers.	Freight. Cubic Contents.	Freight. Lbs.	Weight Empty.	Weight Fully Loaded.
Passenger Machine	Napier	500	127	12 mins.	20,000 ft.	400 miles	1 pilot	4	—	—	With water 3,077 lbs.	4,645 lbs.
Freight or Mail	Napier	500	127	12 mins.	20,000 ft.	400 miles	1 pilot	—	84½ cub. ft.	990	3,077 lbs.	4,645 lbs.



SHORT BROTHERS, LTD.

There was a time in the history of aviation in England when the terms "Short" and "seaplane" were almost interchangeable. The war impetus to the production of sea-going aircraft eventually led to the existence in fair quantity of seaplanes of other makes, but Short Bros. can always claim a very large share in the pioneer work of seaplane development, and their vast experience in this respect places them in a position to meet the needs of present day conditions.

For commercial work and civilian flying the seaplane stands at a considerable advantage as compared to the land machine at the present time.

In the first place there is no question of the preparation of chains of landing grounds, since the seaplane flying across water is itself an appliance equipped specially for alighting on that which is beneath it.

Secondly, war seaplanes have been developed with characteristics much more akin to those directly needed for commercial work than are those of the war aeroplane. Seaplane design has advanced further in the direction of providing machines capable of carrying large useful loads at reasonably high speeds over long distances with reasonable safety and reliability, and have not been afflicted by the necessity of an immense speed of climb and a high ceiling, and thus the war seaplane is more nearly a ready-made commercial machine than is its land-going equivalent.

Then, too, the seaplane has only to compete with shipping with a maximum speed of about 20 miles per hour, instead of with railway transport at a much higher speed, and can therefore save time at quite moderate flying speeds, and consequently at a low cost.

It is therefore not surprising that Short Bros are still devoting their attention to seaplane construction, and the "Cromarty" boat and the "Sporting" seaplane hereafter described may be considered as typical examples of practical commercial aircraft.

THE CROMARTY FLYING BOAT.

The Cromarty Flying Boat was originally designed for operating with the Fast Cruiser Squadron. This service necessitated its staying away from its base for long periods, consequently it possesses the following :—(a) Long range, i.e., big load capacity; and (b) great strength in order to be able to alight and rest in mid ocean.

These features make the machine specially suitable for commercial work, the former allowing for great variation in the load—range factor.

The latter feature is most important from the commercial point of view. The machine can not only take off and alight in rough water, but can safely be moored out in slightly protected harbours, thus economising greatly in shed accommodation, and particularly in labour for handling.

It will be noticed that this machine is extraordinary for its large load capacity, which is shown in the following table :—

Range.	Duration.	Fuel per hour.	Economical speed.	Maximum commercial load.
270 mls.	3 hrs.	60 galls.	90 m.p.h.	*5,632 lbs.
540 mls.	6 hrs.	60 galls.	90 m.p.h.	3,796 lbs.
990 mls.	11 hrs.	60 galls.	90 m.p.h.	1,280 lbs.

*Crew of 3 only.

As a war machine it carries long-distance wireless, a big anti-submarine gun, and bombs.

In its commercial aspect the machine can be fitted to take passengers or freight. Arrangements have been made by which the passenger seating can be quickly removed, thus giving additional space for the carriage of goods.

The engines fitted are of the most reliable type, and the risk of engine failure is very small, provided proper care is taken of the engines.

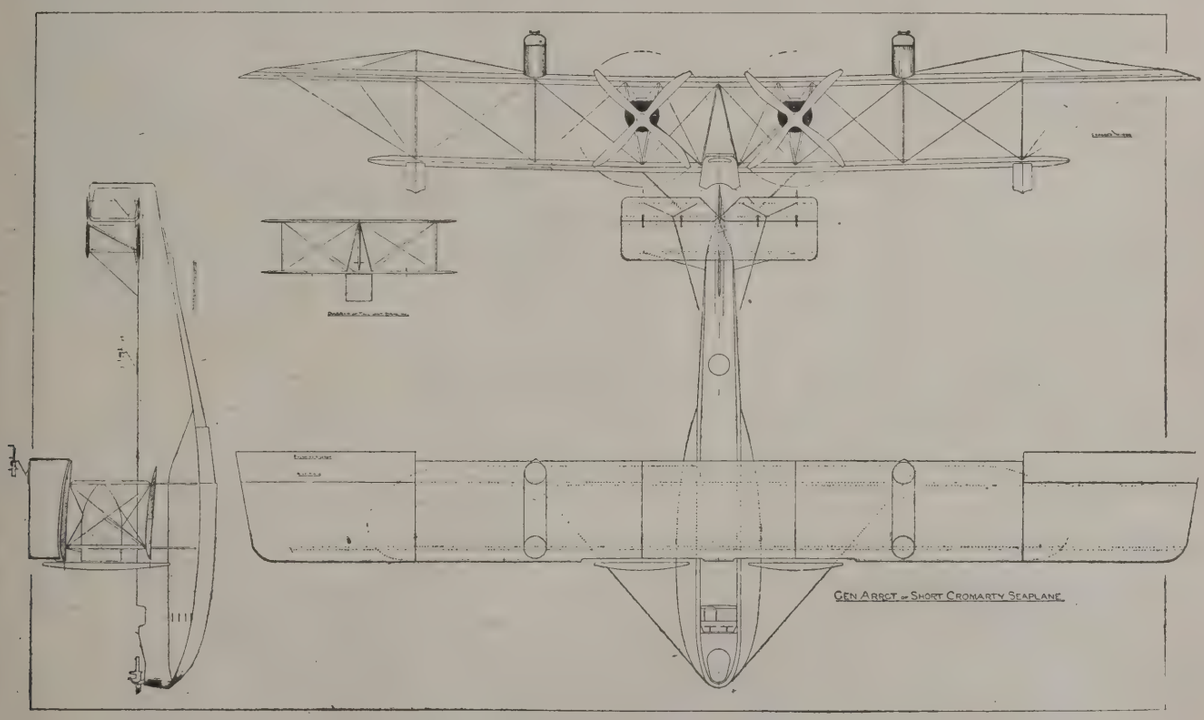
Great attention is also being paid to the comfort of passengers; the passengers' compartment will be heated, the engines will be silenced as much as possible, and a good view will be provided.

SPECIFICATION.

Type, "Cromarty" large twin-engined flying boat.
Engines, 2 Rolls-Royce of 600 h.p. each.
Span, 112 ft.
Length overall, 60 ft.
Height overall, 23 ft.
Crew, 5.
Probable full speed, 96 miles per hour.
Probable economical speed, 90 miles per hour.
Fuel Consumption :—
At full speed—Petrol, 77 galls. per hour
Oil, 8 galls. per hour.
At economical speed—Petrol, 60 galls. per hour.
Oil, 6 galls. per hour.
Load capacity, 7,708 lbs.
Fuel for 6 hours' flight at economical speed, 90 m.p.h. :—

Petrol (360 galls.)	2,592 lbs.
Oil (40 galls.)	360 lbs.
Reserve water (6 galls)	60 lbs.
Crew of 5	900 lbs.—3,912 lbs.
Available weight for passengers, etc.	3,796 lbs.
18 passengers at 160 lbs. each	2,880 lbs.
Luggage at 50 lbs each	900 lbs.—3,780 lbs.

Range under above conditions, 540 miles.



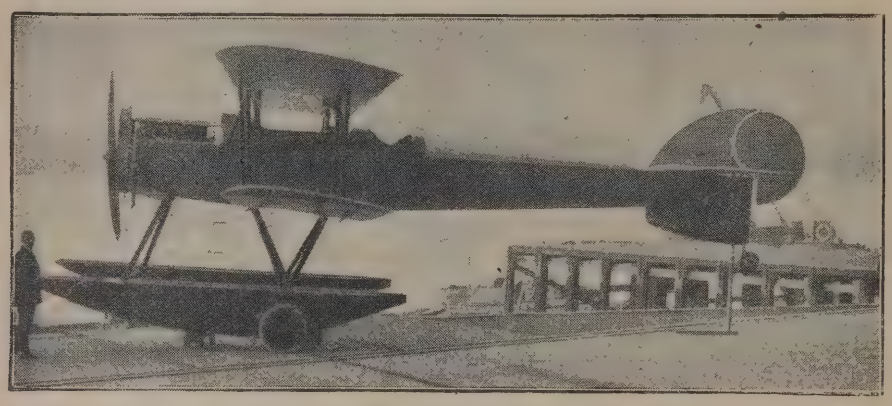
The Short "Cromarty" Flying Boat.

THE SPORTING TYPE SEAPLANE.

The Short Sporting Type Seaplane is designed as a general utility machine. The functions it will fill are numerous, and for convenience can be described under two headings—Military and Commercial.

MILITARY.—As will be seen from the specification, accommodation is provided for pilot and three passengers. The seating arrangements are: The two front seats are tandem fashion and are provided with dual control, the rear seats being side by side. Thus it will be possible to carry out tuition work not only in flying, but in gunnery, wireless, photography and bombing. For these latter, pilot, instructor and pupil can be accommodated, plenty of room being provided in the rear seats for wireless, guns or cameras. The view from the rear seat is excellent, and good arcs of fire are obtained. For the above work the machine is fitted with a 160 h.p. "Beardmore" engine, as a high performance is not required and economy in fuel is very necessary.

For war work, or where a high performance is desired, the Siddeley Puma engine of 240 h.p. is installed. This engine fits the machine without any alteration, this being one of the features of the design.



Side View of the Sporting Type Short.

The enormous advantage of having one machine and only one type of spare for tuition and war work is obvious.

By a neat arrangement of fittings, the seaplane chassis can be quickly taken off and a land chassis fitted in a few minutes.

COMMERCIAL.—The commercial values of the Sporting Type do not need explanation. For tuition, passenger work, or the transport of small quantities of freight the machine is most suitable.

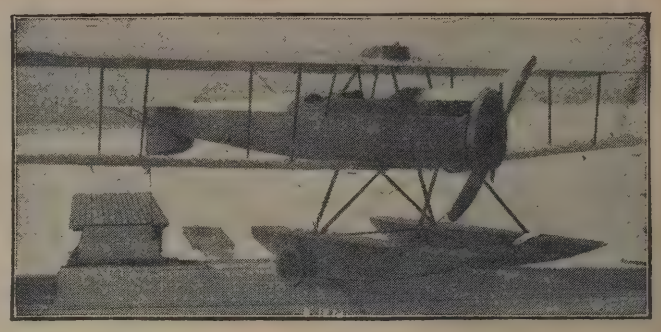
The machine is designed on the standard lines of the world-famous Short seaplanes, and therefore embodies all those important details of construction which have been evolved during seven years of hard experience.

The machine is made to fold into small compass by means of the Short Patent Folding Wing System, which permits the machine being housed in a shed of very small dimensions.

To beach the machine an axle is passed through prepared holes in the floats, wheels are attached each end, and the machine can then be handled by two or three men with great ease.

SPECIFICATION.

Type of machine: Short Sporting Type Seaplane.
Engine, 160 h.p. "Beardmore."
Maximum power, 200 h.p.
Fuel capacity: Petrol, 35 galls. (3 hrs. flight).



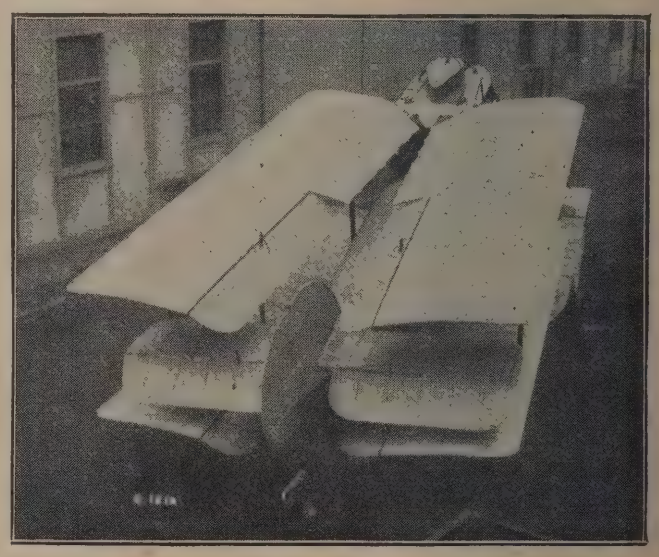
The Sporting Type Short (160-h.p. Beardmore engine).

Oil, 3 galls
Dimensions: Span, 44 ft.; span, folded, 15 ft.; length, 33 ft.; height 12 ft. Total surface, 500 sq. ft.
Loading: 6.2 lb. per sq. ft.—15.5 lb. per h.p.
Passengers and crew: 1 pilot and 3 passengers.
Range: 270 miles.
Weights: Total weight, 3,100 lb.

Weight, empty	2,095 lb.
Petrol	255 lb.
Oil	30 lb.
Water	80 lb.
Pilot	160 lb.
Passengers and freight	480 lb.
	3,100 lb.

Performance: Speed, 83 m.p.h.; climb, 10,000 ft. in 35 min.

Short Bros., in addition to their seaplane productions, have now taken over the patent rights for Lt.-Colonel Busteed's emergency flotation gear.



The Sporting Type Short, with Wings folding.

THE B.S.A. AND DAIMLER COS.

It is, of course, never safe to suggest that "everyone knows" anything—however much a matter of widespread notoriety that thing may be—and doubtless there are those who do not know that it is in the main to the B.S.A. concern, and to their enterprise in taking up the manufacture of the Lewis gun, that the British Air Services owe this very useful weapon.

Even were this their only claim to have assisted in the development of British aeronautics, it would still entitle them to fame in that sphere, but a detailed account of the work of this and the associated concern of Daimler, Ltd., reveals that their faculty of organising the efficient manufacture of intricate parts in large quantities had a much more direct influence on the growth of British Air Power during the war.

One startling performance—due to the Daimler Co.—occurred at the very beginning of hostilities. On Aug. 7th, 1914, the Daimler Co. agreed with the Gnôme Engine Co. to undertake the manufacture in England of the 80-h.p. Gnôme engines. There were no drawings or specifications—merely a sample engine sent by road from Hendon to Coventry, to be dismantled, measured, drawn down and the components analysed.

Within eight weeks—on September 31st—the first engine was running on the test bench.

Later the R.A.F.1a, R.A.F.4, the 110 Le Rhone, and the 230 b.h.p. engines were in turn tackled by the Daimler Co. and the B.S.A. Co., and the difficulties of production overcome with the same whole-hearted zeal.

Aeroplanes of numerous types were similarly put in hand, of types ranging from the B.E.2c to the De.H.10, and with equally successful results.

During the same period the output of service rifles, ammunition, shells, automobiles, tractors, tank power plants, and many other war-time essentials were manufactured in huge and ever-growing quantities, and the work of these two associated companies affords irrefutable evidence that this country is capable of the organisation and management of works on the largest scale.

The great Australian Flight was started and finished on "SHELL" AVIATION Motor Spirit

Captain Ross Smith's magnificent and epoch-marking flight of 10,925 miles in 27 days, 20 hrs., 20 mins., which, in the words of the King, "will bring Australia nearer," was accomplished on a Vickers - Vimy Rolls-Royce Eagle-mark VIII —the identical type of machine used by Captain Sir John Alcock in his historic flight across the Atlantic, "SHELL" AVIATION Motor Spirit having been used by both aviators.

The Australian Government's prize of £10,000 thus won by Captain Ross Smith makes the fourth prize of £10,000 to be won on "Shell," the preceding three being:—

"Daily Mail" £10,000 Prize, London-to-Manchester Flight, Won by Paulhan in 1910, on "SHELL" Spirit.

"Daily Mail" £10,000 Prize, Circuit-of-Britain Flight, Won by Beaumont in 1911, on "SHELL" Spirit.

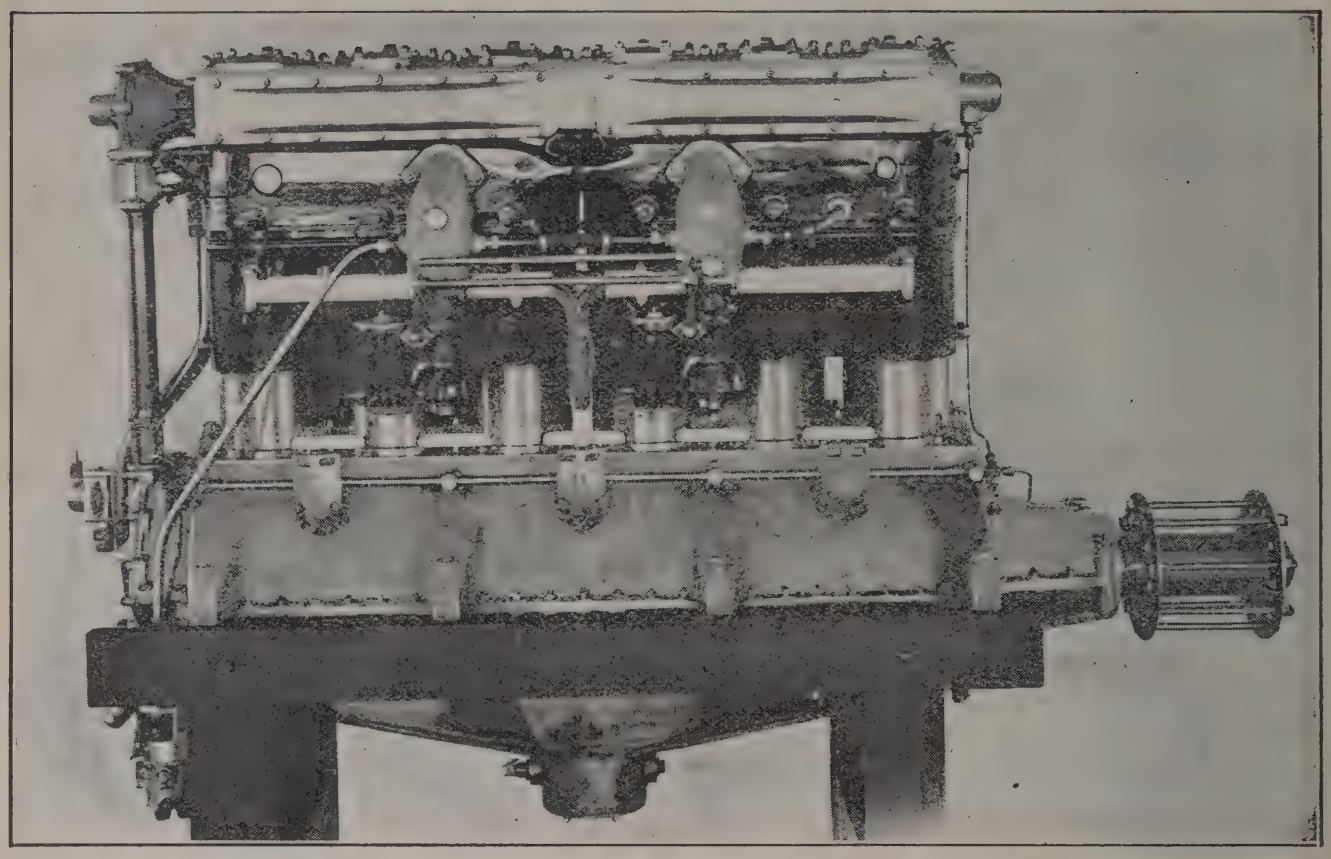
"Daily Mail" £10,000 Prize, America-to-Europe-direct Flight, Won by Capt. Alcock in 1919, on "SHELL" AVIATION Spirit.

ALL Prizes in the 1919 Aerial Derby were won on "SHELL" AVIATION Motor Spirit.

A limited quantity of "SHELL" AVIATION, the Motor Spirit de Luxe, is now available for private motorists. It is sold *only* in the ALL-GOLD CANS. The supremacy of "SHELL" AVIATION Spirit on the world's Aerial Highways establishes beyond all question that "SHELL" AVIATION is the most powerful and dependable motor spirit in existence.

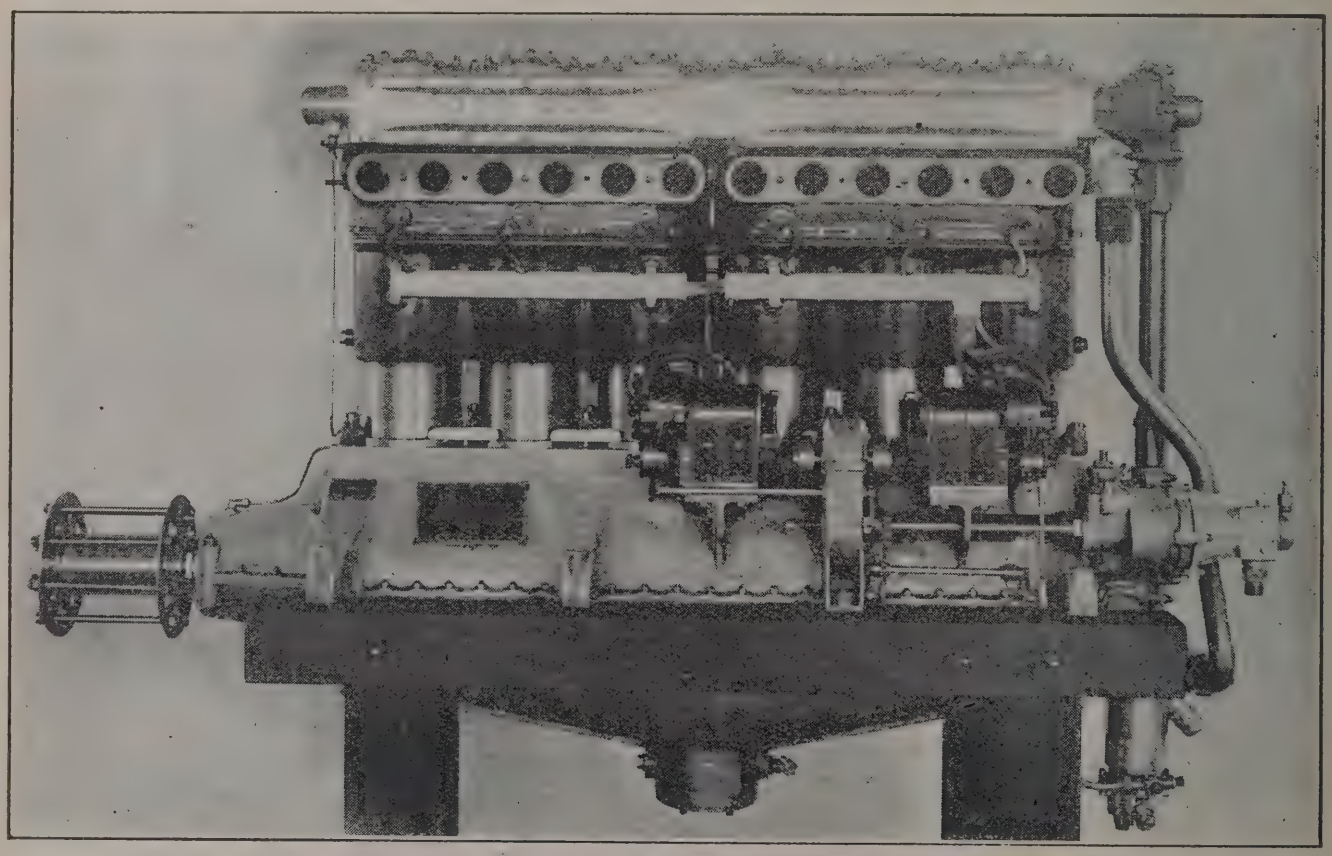
"SHELL" MARKETING CO., LTD.
39-41 Parker Street, Kingsway, London, W.C.

B.H.P. ENGINES.



The original 230-h.p. B.H.P. "Adriatic" Aero Engine. (Inlet Side).

The original design of 6-cylinder water-cooled B.H.P. engine was produced by Major (then Captain) F. B. Halford, in collaboration with Sir William Beardmore, Bart., and Mr. T. C. Pullinger (managing director of Arrol-Johnston and Co., Ltd.). The work was started in the Spring of 1916, when the situation on the Western Front made it vital that the Royal Flying Corps should have machines with engines of considerably higher power than had been used to that date. Although the



Exhaust and Magneto Side of the B.H.P. "Adriatic" engine of 230 h.p.

PARIS AERO EXHIBITION.

THE COSMOS ENGINEERING CO.'S 450 H.P. "JUPITER" ENGINE will be shown in a "Bristol Bullet" Machine exhibited by the British & Colonial Aeroplane Co., Ltd.

STAND 65.

THE COSMOS ENGINEERING CO.'S 100 H.P. "LUCIFER" ENGINE will be shown in a Boulton & Paul Machine. :: :: ::

STAND 44.

:: **THE ENGINES THAT ARE** ::
"SUPREME IN POWER FOR WEIGHT."

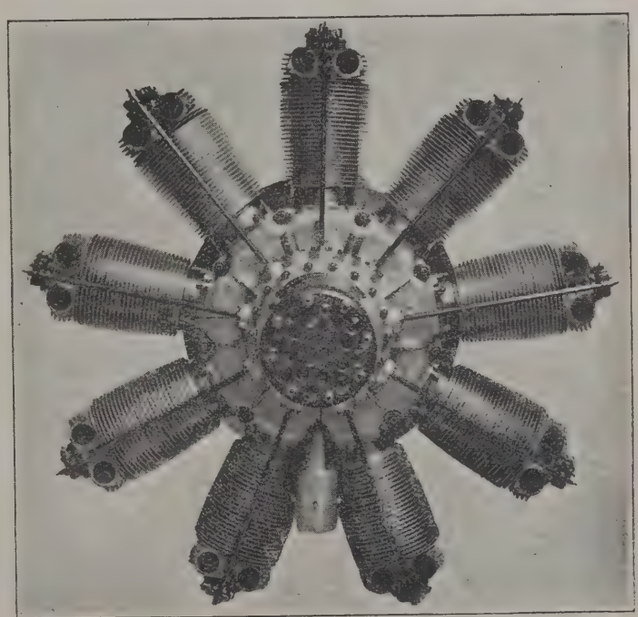
THE
COSMOS
ENGINEERING COMPANY, LTD.
Contractors to the Air Ministry.

SALES DEPT.:
16 & 17, PALL MALL, S.W.1.

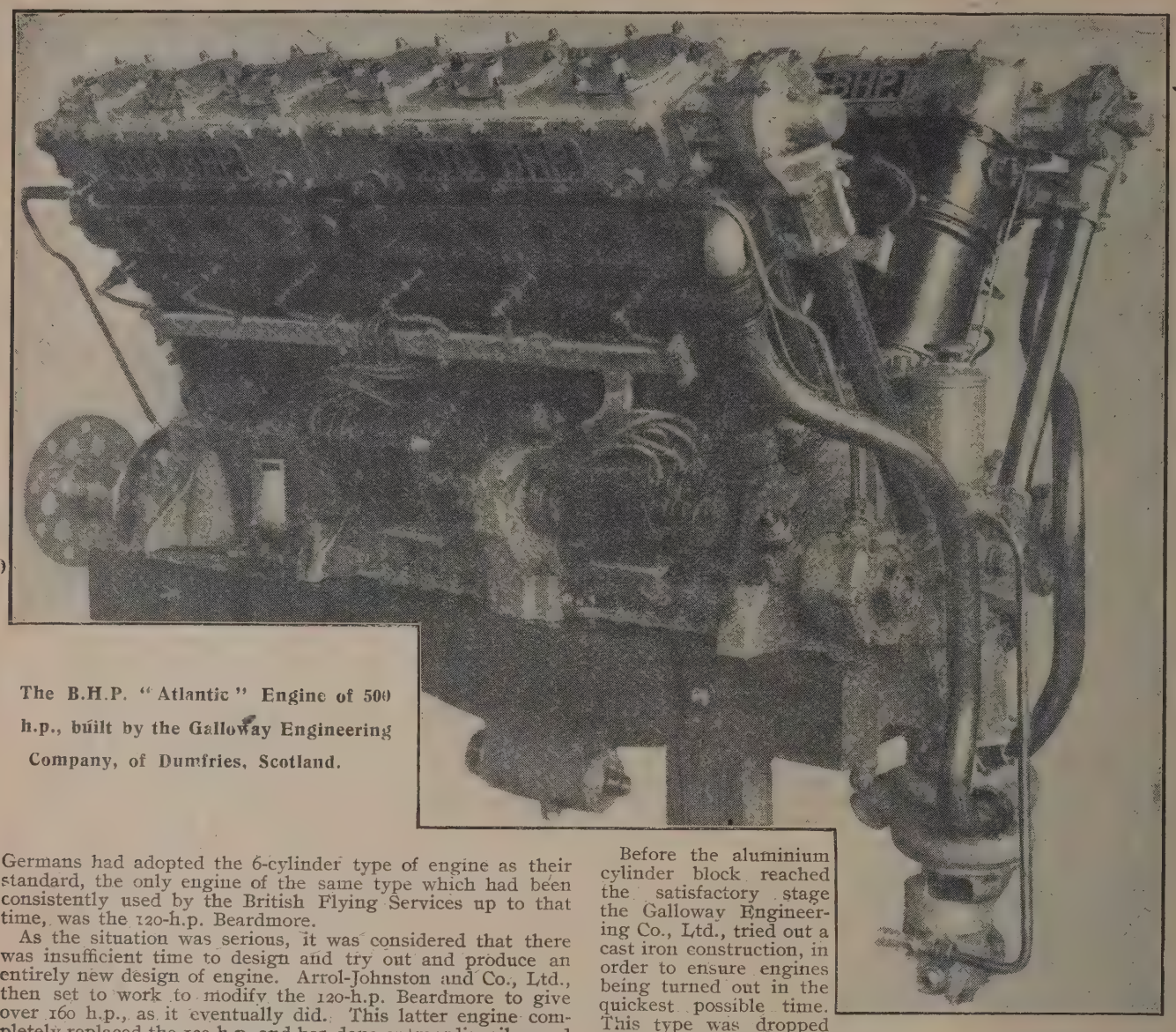
Telegrams: Radiary, Charles, London.
Telephone: 1476 Regent.

Works: Fishponds, Bristol.
Head Office: Orient House, New Broad Street, London, E.C 2.

TRADE MARK



"Supreme in Power for Weight."



The B.H.P. "Atlantic" Engine of 500 h.p., built by the Galloway Engineering Company, of Dumfries, Scotland.

Germans had adopted the 6-cylinder type of engine as their standard, the only engine of the same type which had been consistently used by the British Flying Services up to that time, was the 120-h.p. Beardmore.

As the situation was serious, it was considered that there was insufficient time to design and try out and produce an entirely new design of engine. Arrol-Johnston and Co., Ltd., then set to work to modify the 120-h.p. Beardmore to give over 160 h.p., as it eventually did. This latter engine completely replaced the 120-h.p. and has done extraordinarily good work on long-distance bombing and reconnaissance machines.

A new company, the Galloway Engineering Co., Ltd., was formed to exploit the new B.H.P. engine, and a new factory was built to assist its production. The size of the cylinder proposed, i.e., 145 mm. bore, was considered by many to be too large to embody in a 6-cylinder engine, but, as has been happily proved, the critics proved wrong.

The first engine was running in June, 1916, and after satisfactory non-stop endurance tests on the bench, was fitted into a D.H.4 aeroplane, which had been specially designed for the engine by Capt. Geoffrey de Havilland, of the Aircraft Manufacturing Co.

The results in the air with this combination proved extremely satisfactory, in that although the best performance of this type of machine had been approximately 95 m.p.h. the D.H.4 resulted in 115 m.p.h. at 1,000 ft.

The machine was officially tested by the Central Flying School and decision made by the authorities to order the engine in larger numbers than had been proposed before with any other type.

Realising the facilities that would be required to produce 100 engines per week and spares, which was the figure suggested, and in view of the important part played by the Beardmore engine (which occupied the whole production of Arrol-Johnston and Co., Ltd.), Siddeley-Deasy, of Coventry, were asked to take over the production of the B.H.P. and to take such steps as would ensure the maximum output per week.

Although this firm was only then producing some 25 to 30 engines per week, the results of their efforts are best realised when it is stated that at the time of the Armistice the production of Siddeley-Deasy's works of the B.H.P. engine, better known as the "Puma," was equivalent, including spares, to 200 engines per week.

The engine was made the standard 6-cylinder water-cooled used by the Royal Air Force, and has been consistently used by the Independent Air Force in the bombing of Rhine towns.

Before the aluminium cylinder block reached the satisfactory stage the Galloway Engineering Co., Ltd., tried out a cast iron construction, in order to ensure engines being turned out in the quickest possible time. This type was dropped when the Siddeley engines reached the production stage.

Realising again the necessity for considerably higher powered engines, the Galloway Engineering Co., Ltd., set to work to design and produce a 12-cylinder b.h.p. engine.

To eliminate as many experimental features as possible a double B.H.P. was made, incorporating two pairs of cylinder blocks with cast iron construction. This engine was known as the "Atlantic" B.H.P. and gave 500 h.p. at 1,500 r.p.m.

As in the case of the 6-cylinder B.H.P. no gear reduction was fitted, and the fact that the weight per h.p. of 2¼ lb. was obtained with an engine running at only 1,400-1,500 r.p.m. was very creditable. This engine, the "Atlantic," was tested out on the bench, and also flown in another of the Aircraft Manufacturing Company's machines, the D.H. 9A, which was designed for the "Liberty."

A short time before the Armistice when it became imperative that a high power engine should be standardised for bombing machines, one of the engines chosen for mass production was the "Atlantic"; but for production purposes as the "Puma" cylinder blocks were then on a satisfactory production basis and being turned out in very large numbers, it was decided to pool the resources of several of our largest firms in the mass production of the engine, which was then rechristened the "Siddeley Pacific." Some thousands were ordered, and but for the Armistice no doubt would have been produced. It is thus interesting to see the order in which the four engines came forward.

THE 230-h.p. SIDDELEY "PUMA."

ENGINE DATA.

Type : 6-cylinder water-cooled vertical. Aluminium, with steel liners.
Bore : 145 mm.
Stroke : 190 mm.
Horse-power : 230 at 1,400 r.p.m.
Weight (dry) : 680 lb. (including airscrew boss, carburetters, magnetos, etc.).
Fuel consumption : 0.55 pints per b.h.p. hour.
Oil consumption : 0.025 pints per b.h.p. hour.

Beardmore

MANUFACTURERS!

If you wish to see Aeroplanes multiply like Cars, consider the BEARDMORE AERO ENGINE.

Consider the opinions of men whose lives have depended on BEARDMORE RELIABILITY.

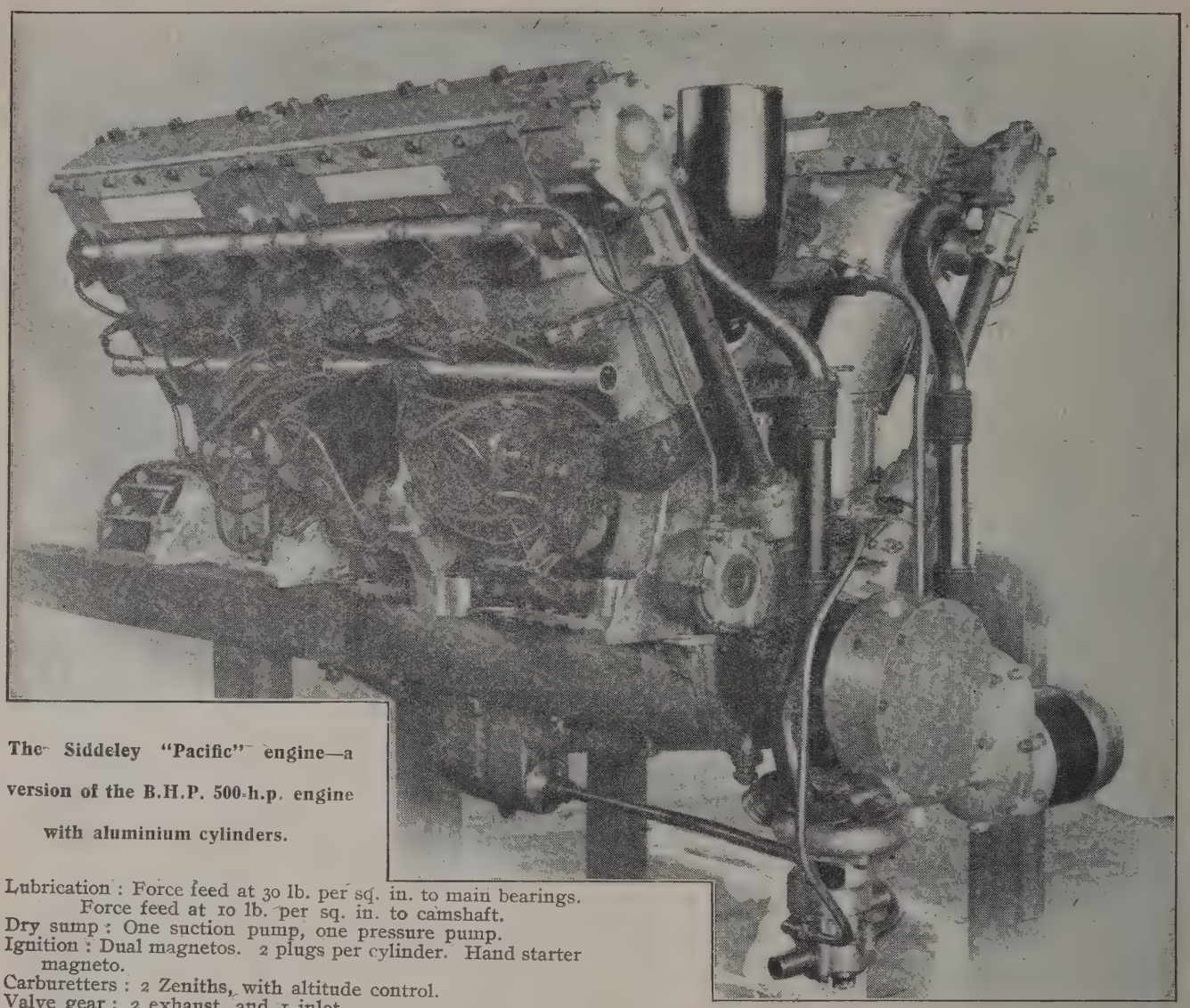
Extract from letter from Sydney, N.S.W.

"Whilst on Active Service and also whilst instructing in the Royal Air Force, I came in contact with your Aero Engines constantly, and after 2,000 hours I have never once had trouble with a Beardmore Engine."

Many leading Aircraft Manufacturers are already adopting the BEARDMORE as STANDARD POST-WAR POWER UNIT.

BEARDMORE AERO ENGINES, Ltd.
112, Great Portland Street, London, W.1
Telephone: Gerrard 238.
:: **Works: Parkhead Steel Works, Glasgow.** ::

AeroEngines



The Siddeley "Pacific" engine—a version of the B.H.P. 500-h.p. engine with aluminium cylinders.

Lubrication : Force feed at 30 lb. per sq. in. to main bearings.
Force feed at 10 lb. per sq. in. to camshaft.
Dry sump : One suction pump, one pressure pump.
Ignition : Dual magnetos. 2 plugs per cylinder. Hand starter magneto.
Carburetters : 2 Zeniths, with altitude control.
Valve gear : 2 exhaust, and 1 inlet.

Camshaft set *désaxé*, operating direct on exhaust valves and by overhead rockers to inlet valves.

THE 500 H.P. B.H.P. "ATLANTIC" AERO ENGINE.

SPECIFICATION.

Bore	145 mm.
Stroke	190 mm.
Normal b.h.p.	500
Direction	Right hand tractor.
Petrol consumption per b.h.p hour	0.588 pints
Oil consumption per b.h.p. hour	0.060 pints
Weight (dry)	1,210 lb.
Weight per b.h.p. (dry)	2.42 lb.
Weight in running order with 6 hours fuel and oil	3,508 lb.
Weight per b.h.p. ditto	7.02 lb.
Compression ratio	4.9 :1.
Maximum lift of exhaust valve	12 mm.
Clearance of inlet tappet	0.25 mm.

ROLLS-ROYCE, LTD.

Rolls-Royce aero engines need little introduction to the readers of this paper. Their work during the war, when they proved themselves unequalled amongst all the high-power engines produced either by the Allies or the enemy, and their achievements since the conclusion of hostilities, from flying the Atlantic to carrying on the London-Paris air service, provide conclusive testimony to their merits.

The Australian flight of Capt. Ross Smith adds further testimony to the capacity of these engines to stand up to hard work.

At the present time Rolls-Royce, Ltd., state that they are only manufacturing their "Eagle" type of engine for sale commercially. Whether this is to be taken as meaning that the "Falcon" is to be abandoned is not quite clear, but it is to be hoped that it merely indicates that manufacturing facilities are not yet equal to the demand for this type.

The Rolls-Royce "Eagle" engine is the type so largely employed on the Handley Page and Vickers "Vimy" bombers and upon the famous "F" boats during the war. Up to the date of the Armistice of 122 Handley Page bombers which had been built, 113 were equipped with Rolls-Royce engines.

The "Eagle" engine has been fairly fully described in past issues of THE AEROPLANE, but some recapitulation of its characteristics may well be indulged in.

The engine is of the 12-cylinder Vee type, with a bore of 4½ in. and a stroke of 6½ in., giving a normal output of 330 h.p. at 1,650 r.p.m. and a maximum output of 360 h.p. at 1,800 r.p.m. The cylinders are of steel, fitted with overhead valves set in two rows of six with an intervening angle of 60 degrees upon a crankcase of cast aluminium.

The valves are operated through rocker arms by one overhead camshaft to each row of cylinders. Each cylinder forms a separate unit, and is fitted with an independent welded on sheet steel water jacket.

The connecting rods are of the articulated type, and there is therefore only one big end on each throw of the six-throw crankshaft.

The airscrew end of the crankshaft carries a gear ring with external teeth, which drives the airscrew shaft through an epicyclic reduction gear with a ratio of 1 to 0.6.

Forced lubrication is naturally employed throughout, and arranged on the dry-sump principle, wherein two oil pumps are employed. One of these pumps, of somewhat greater capacity than the other, removes the used oil from the crankcase sump and returns it to the oil tank to cool, the second pump forcing oil from the tank to all the bearings.

Four 6-cylinder magnetos supply current to two plugs in each cylinder, and the ignition system is thus completely duplicated.

Very great attention has been paid to securing economy of both fuel and oil, and the petrol consumption at 330-h.p. is only 0.21 gallons per hour.

The engine complete with airscrew hub, hand-starting gear, magnetos, reduction gear, but without exhaust manifolds, radiator oil or water is 900 lb.



Telephone :
WILLESDEN 2455.

Telegrams :
"NIEUSCOUT, CRICKLE, LONDON."

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE COSMOS ENGINEERING CO., LTD.

The Cosmos "Mercury" engine of 315 h.p. and the "Jupiter" of 450 h.p. are already fairly well known in the world of aviation, and have been fully described in the pages of THE AEROPLANE.

The Cosmos "Lucifer"—an engine designed specially for use in commercial and pleasure aircraft of moderate power—will make a public appearance at the Paris "Salon Aeronautique," which opens on Dec. 19th.

This engine is designed to meet the requirements of the low power, low cost, aeroplane power unit.

In considering the design, careful attention has been given to reliability and long life, combined with low cost and ease of production.

The "Lucifer" engine is a 3-cylinder inverted "Y" type radial engine, of moderate performance. There has been no attempt to cut weight or obtain the maximum performance from the engine, and the number of parts has been reduced to the minimum and to the simplest design possible embodied compatible with sound mechanical principles.

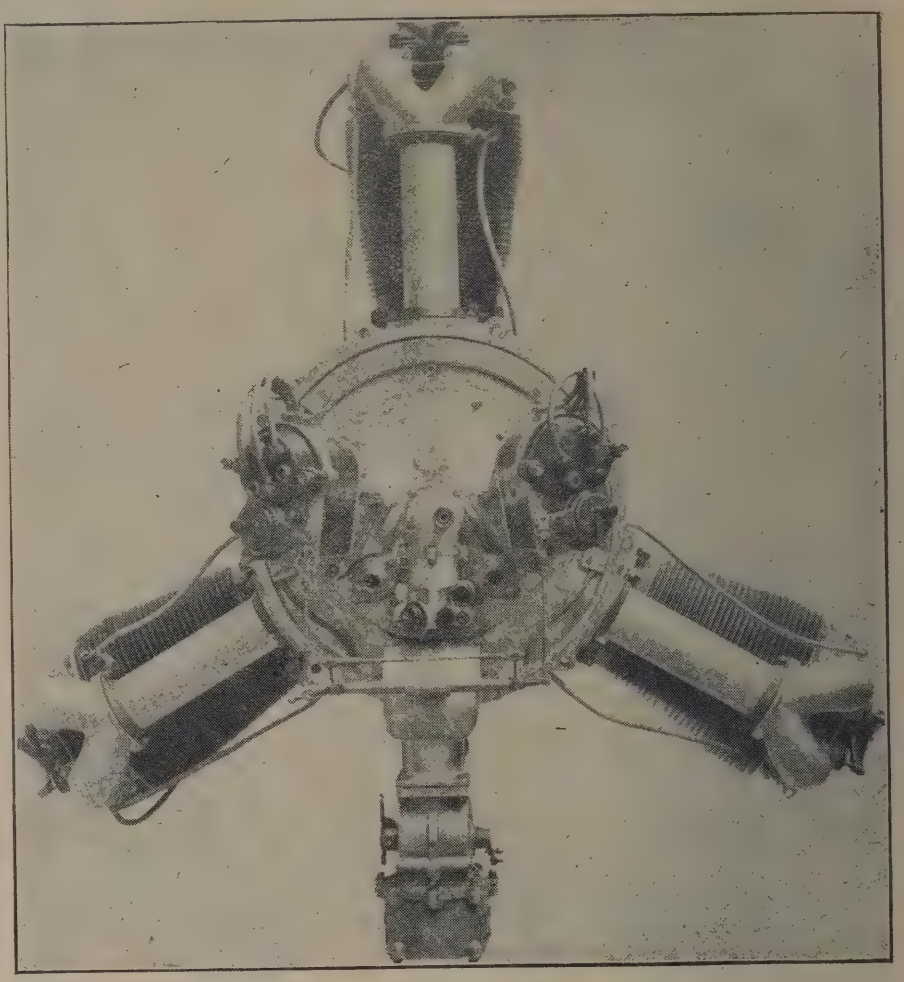
The engine may be relied upon to run for long periods without overhauling or dismantling from the aeroplane, and the general all-round performance and reliability are comparable with the modern motor-car engine.

The engine is rated at 80 h.p. : 100 h.p. at 1,600 r.p.m. is guaranteed with a moderate m.e.p.

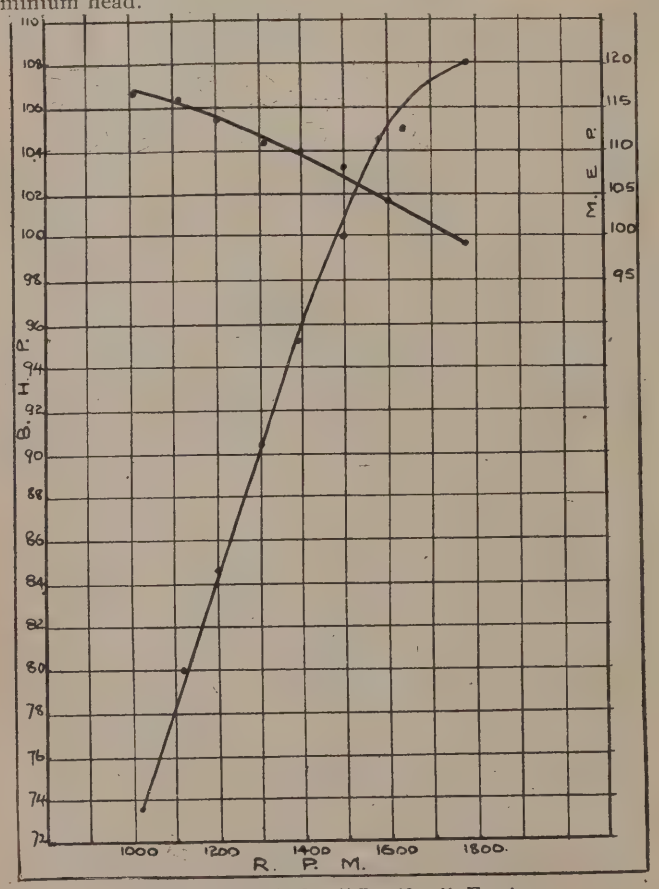
The main features of the engine are as follows :—

CYLINDERS.—Three cylinders, bore [illegible] in., stroke 6¼ in., radially disposed, arranged as an inverted "Y."

The cylinders are air-cooled, being a combination of aluminium and steel, and embodying the Cosmos patent aluminium head.



The Cosmos "Lucifer" Engine of 80 h.p.



Power Curve of the "Lucifer" Engine.

VALVES AND TAPPET GEAR.—Overhead valves are employed, operated by push-rods arranged on the front side of the cylinders.

CRANKCASE.—The crankcase is a simple circular aluminium casting, and the engine is attached to the fuselage of the aeroplane by a circular flange situated at the back of the case.

AIRSCREW SHAFT AND HUB.—The airscrew runs at engine speed of 1,600 r.p.m. The airscrew shaft is integral with the crankshaft. The airscrew hub is standard Air Board design, and is attached to the airscrew shaft by means of serrations and a taper.

CRANKSHAFT AND CONNECTING-ROD ASSEMBLY.—The crankshaft is a one-piece solid forging. The connecting-rods are of "H" section, and the big-end bearings are lined with white metal, run direct into the big end of the rod.

IGNITION.—Dual ignition is fitted, the generator and distributors being driven off the back-end of the engine. The distributors are in an accessible position.

PISTONS.—The pistons are of the modified slipper type, with three rings at the top and a scraper ring at the bottom

LUBRICATION.—Two oil-pumps are provided, one scavenging and one suction, oil being fed, under pressure, from the crankshaft. The filters are so arranged that they may be withdrawn for cleaning purposes from the front-end of the engine, and an adjustable oil relief valve is provided

INDUCTION SYSTEM AND CARBURETTER.—A circular induction system is fitted to the three cylinders at the back of the engine. One carburetter feeds the three cylinders, the branch pipe from the carburetter to the circular ring being provided with an exhaust-heater.

STARTER GEAR.—The engine will be provided with a starting-handle, which may be operated from the pilot's cockpit.

WEIGHT AND PERFORMANCE.—The normal rating is 80 h.p., with a maximum b.h.p. of 100 at 1,600 r.p.m. The total weight of engine, all on, is 280 lbs.



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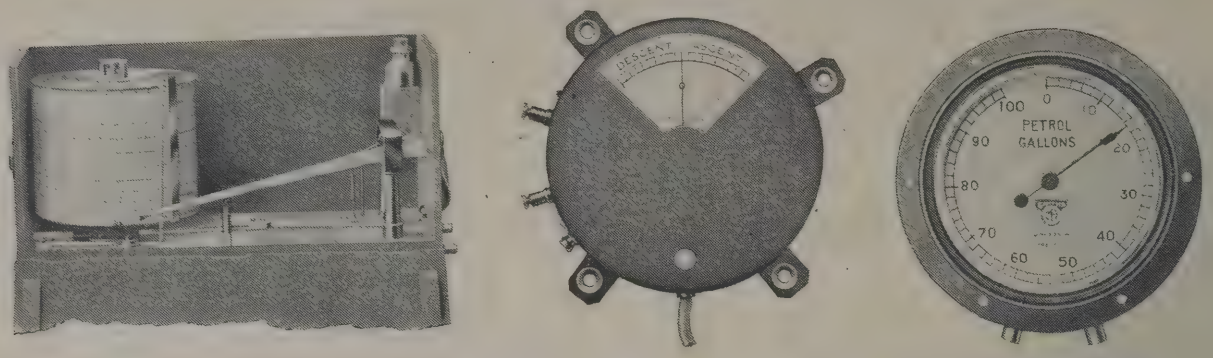
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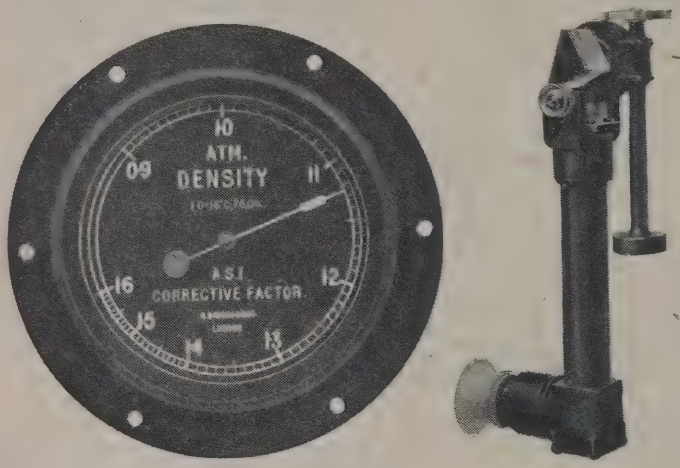
S. SMITH AND SONS (M.A.), LTD.



From Left to Right.—The Smith Recording Altimeter, the Smith Statoscope, and the Smith Petrol Gauge.

S. Smith and Sons (M.A.), Ltd., were established in 1899, and their first speedometer was manufactured and assembled for the late King Edward. With the resultant demand for this fitment, S. Smith and Sons, Ltd., built up their business and expanded their premises, until at the present day they stand as one of the largest manufacturers of instruments for use in the motoring and aviation industries.

During the late war their whole output was earmarked for the production of instruments and fittings of precision for the British and Allied Services. They claim that they supplied more aviation instruments for the British and Allied Governments than any other maker. In addition they produced upwards of eight million fuses, besides a vast number of their standard speedometers and carburetters, together with gun mechanisms and other sundries.



The Smith Atmospheric Density Gauge and the Baker Air Sextant.

It is only natural then, with their wide and successful use in the war, that their instruments will be and are being used by mose of the largest aircraft firms, as well as by the Services at the present time. It is interesting to note that both the Sopwith and the Vickers "Vimy" machines used in the first unsuccessful and successful direct flights across the Atlantic, respectively, as well as on the Alliance machine that flew from London to Madrid non-stop used Smith instruments, and the Hughes sextants (for which S. Smith and Sons, Ltd., are sole agents) were used on the R.34 on its American voyage.

The range of aviation instruments they make include the Smith revolution indicator (flush fitting model, bracket fitting model, both of which can be fitted with a counter to give the number of revolutions up to a hundred million revolutions), all types of revolution indicator drive and gear-boxes, the Smith air speed indicator (Clift's patents), the Smith recording air speed indicator, the Smith atmospheric density gauge, the Smith altitude recorder, the Smith wristlet and pocket altimeters, the Smith maximum registering aneroid (also in a pocket edition), the Smith recording altimeter, the Smith statoscope, the Smith anemometer, Smith aviation clocks and watches, the Smith manometer (Clift's patent), the Smith petrol gauge (Clift's patents), the Smith kite balloon winch indicator, the Smith tankometer, the Smith chronoscope or "time of flight" instrument, Smith clinometers (lateral and longitudinal), gradometers, chronometers, thermometers, all types of aviation compasses, the Baker air sextant, signalling lamps, safety-belts, etc., etc.

The Smith petrol gauge (Clift's patent) is an accurate and reliable gauge for recording the amount of fuel in the tanks of aeroplanes and airships. The advantage of this gauge is that it can be fitted with a dial at any distance from the tank, so that it is particularly adaptable for both airships and large aeroplanes where the tanks are a considerable distance from the cockpit. Two pipes, one leading from the bottom of the tank and one from the top are connected to the instrument. By ejecting the petrol from the bottom pipe, by a small rubber bulb, the difference in the pressure in the two pipes will give a reading on the dial indicating the number of gallons in the tank.

The Smith atmospheric density gauge is the first instrument of its kind ever put on the market and used in conjunction with the air-speed indicator gives the corrective factor for the various heights whilst in flight. The instrument is calibrated in numbers, which when multiplied by the m.p.h. shown on the ordinary air-speed indicator, give the actual air speed.

The Smith statoscope is simply a very sensitive form of atmospheric gauge indicating a rise or descent of ten feet or even less. It consists of a chamber with a short length of rubber tubing attached. The end of the tube is open to the air, and, therefore, the air contained in the chamber will remain at atmospheric pressure. If, however, the rubber tubing is squeezed, while the machine is climbing, the ascent will be indicated on the dial. This is due to the fact that while the air-pressure in the chamber will remain constant, the pressure of the surrounding atmosphere will have decreased if the machine is climbing, and will exert less pressure on the outside of the diaphragm, which constitutes one side of the air chamber. The air imprisoned in the chamber will, therefore, tend to expand the diaphragm, which is attached to the pointer by suitable recording mechanism.

The Baker air sextant (for which S. Smith and Sons (M.A.), Ltd., are sole agents) has been specially designed for air recording work. The altitudes are taken in the usual way by means of a prism fitted with an adjustable sunshade attached to a centre plate, or worm, which is adjusted by means of a knurled screw with a micrometer head. The back and front horizons are reflected in the same field as the celestial object, and a very rapid and accurate observation can be made. The focussing of the instrument is carried out by simply rotating the knurled band on the lens mounting.



The Smith wristlet and pocket altimeters are both extremely well-made and compact little instruments, and can be obtained to register either to 15,000 or 30,000 feet in the wristlet pattern, and 10,000, 15,000 or 30,000 feet in the pocket pattern, which also has a weather indicator on the dial, as illustrated.



Above: The Smith Pocket Altimeter. Below: The Wristlet Edition of a similar instrument.

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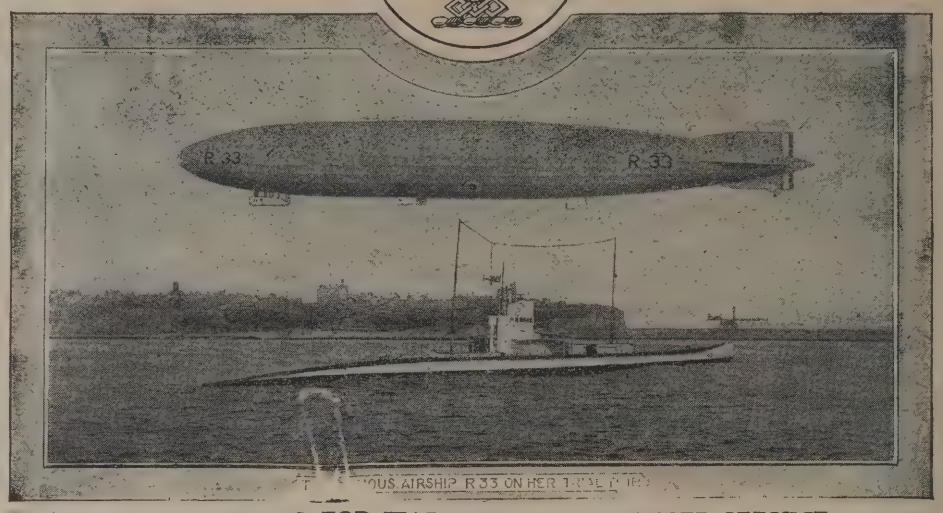


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KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

THE WORK OF THE MARINE EXPERIMENTAL AIRCRAFT DEPOT, ISLE OF GRAIN.—(*continued.*)

BY CAPT. W. H. SAYERS, LATE R.A.F.

The successful "ditching" tests on the "Pup" led to the consideration of similar arrangements for two-seater machines, and it was decided to experiment with a Sopwith "one-and-a-half strutter."

The design of flotation gear developed for this machine, although based on the same principles as that for the "Pup," was very considerably modified.

In the first place the dropping chassis was regarded with distrust. A chassis which fell off on pulling a string might conceivably drop off on occasions when it was not required to do so. On the other hand it was fairly well known that the ordinary landing gear set up a very great upsetting moment when it struck water, and that the actual water resistance of the wheels provided a considerable portion of this upsetting moment.

It was decided, therefore, to add to the chassis a forward member, carrying at about the normal axle level a planing surface which on touching water would give a supporting moment ahead of the C.G.

It was also decided to discard the landing wheels before touching the water.

At the same time it was decided to take advantage of the considerably greater forward protrusion of the fuselage and engine mounting in the two-seater machine by using the fore end of the machine to support longitudinal air bags at each side of the fuselage instead of the wing bags used on the "Pup." To the top of the forward strut of the chassis Vee on each side was affixed a wide plank strut projecting forward and down to the level of the wheel axle, and carrying at its lower extremity a miniature biplane, built of wing section duralumin plates of 6 in.-chord, and having an overall span of about 5 ft.

The lower wing of the biplane was given a marked dihedral angle to give gradual entry into the water.

Steel tube struts running back to the bottom of the Vees took the water undercarriage drag loads, and the biplane arrangement adequately tied the two struts laterally.

The end of the wheel axles were cut off short outside the shock-absorber fittings, and the wheels were mounted on stub axles, pressed into the tube axle against coiled springs and locked in place by a tapered steel pin, which could be pulled out from the pilot's seat by a cable attached to a lever in the cockpit.

Along the lower edge of the fuselage on each side a pair of angle boards, clipped to the chassis struts forward and supported beneath the wings, were attached.



Emergency Flotation Gear fitted to a DeH.4. Note the biplane Hydrovane.

The air bags, cylindrical amidships with a pointed fore end and a hemispherical stern, were stowed into the corner of the angle boards, to which they were firmly attached by fabric flaps cemented to the bags, and clamped to the boards by screwed-on laths.

When uninflated the bags were rolled up and clipped into a fabric flap and buttoned to the angle boards, and the total end on area of the structure was only about 4 sq. in. of bag, and the edges of the boards—each about 10 in. by ½ in.

This arrangement of bag had the advantage of not interfering in the least with the controllability of the machine—as even with the bag on one side inflated, or partly inflated, and that on the other stowed, there was no appreciable effect on the controllability of the machine in the air.

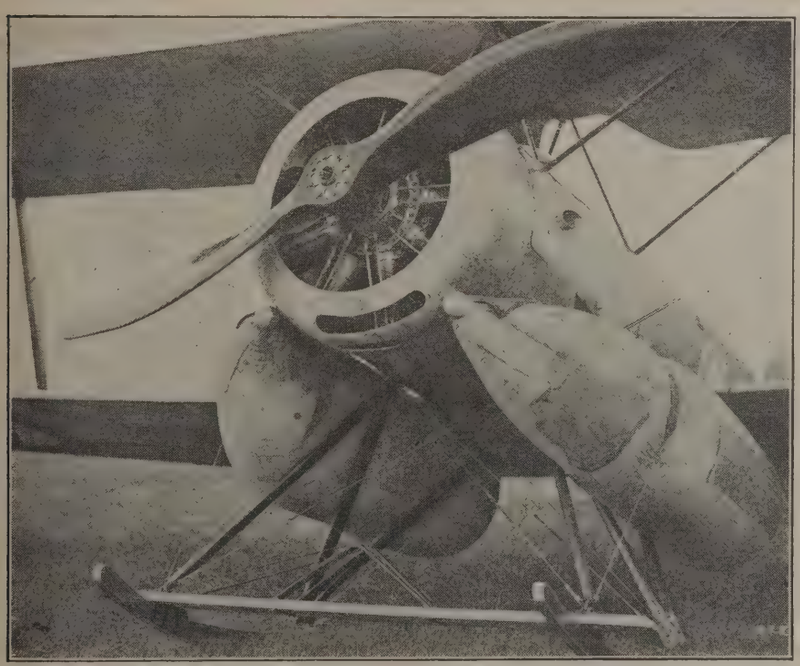
With the earlier arrangement of bags under the leading edge of the wing, failure of one bag to inflate owing to a blocked pipe, or to the sticking of the retaining flap, would have put the machine completely out of control.

This first one-and-a-half strutter flotation gear was in general arrangement similar to that shown attached to a DeH.4 in the photograph above.

Tests made on the 1½-strutter were very successful. The bags inflated or otherwise made no noticeable difference to the handling of the machine. It was therefore possible for the pilot, having decided to land in the water, to inflate his bags, release his wheels, and so forth, at leisure and at a reasonable height, and to fly while he assured himself that all was ready.

On one early test a pilot discovered that the wheel ejecting gear had failed on one side, and flew round for some minutes at 1,000 ft. with bags fully inflated while he sideslipped at intervals till he had removed the offending wheel.

At the request of the French authorities a standard Voisin bomber was fitted by Port Victoria with an emergency flotation gear, and for this



"One-and-a-half Strutter," with flotation bags inflated. This machine is fitted with skid chassis and a single wooden hydrovane.

machine air bags along the lower wings were used.

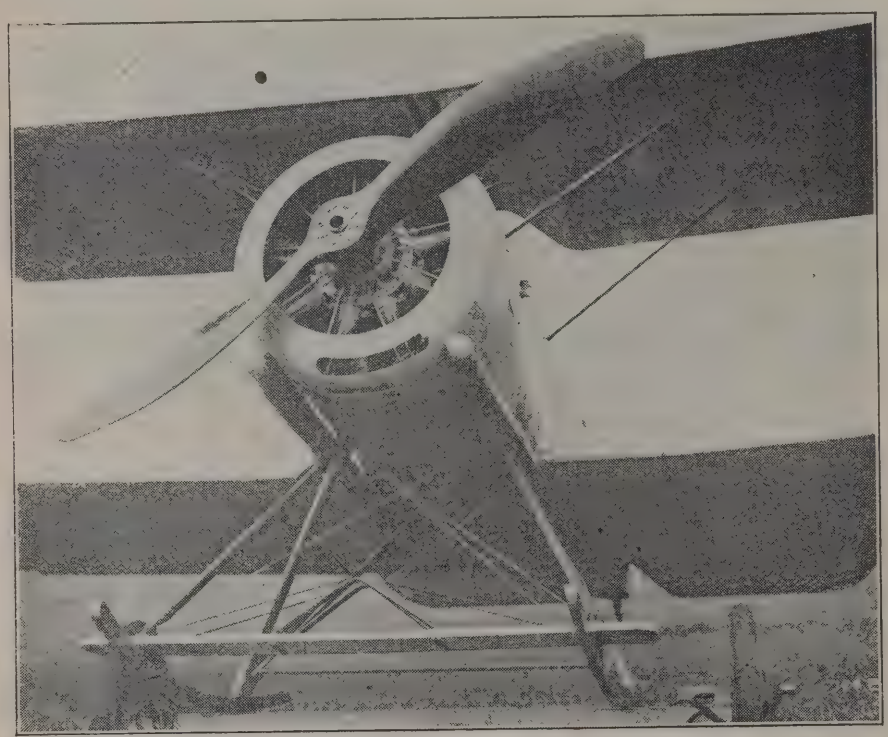
In the first installation these bags were made to extend over only about half the wing span. This led to too high a loading on the front spar when afloat, and resulted in severe buckling of the steel tube spar on landing. Bags of smaller diameter extended to the outer row of interplane struts were therefore fitted, with satisfactory results.

Hydrovane surfaces for alighting were provided first by covering in both axles with a three-ply casing of wing section, but eventually only the front axle was so fitted.

The Voisin, piloted by M. Bonnet-Labranche, made a colossal splash on striking the water, but was successfully induced to float right side up and undamaged.



A "One-and-a-half Strutter," with Flotation Gear, after alighting.



"One-and-a-half Strutter" Flotation Gear, bags stowed on side rods.

A later development was the continuation of a skid chassis with the emergency landing gear. This was fitted first to a Curtiss J N.4 for experimental purposes and later to 1½-strutters.

Difficulties in the supply of the profiled duralumin for hydrovanes led to the substitution of wooden hydrovanes, which were found to operate equally well, and the original biplane arrangement was abandoned in favour of a single plane fitted with a king-post bracing.

On the D.H.4 whose flotation gear is illustrated a compressed air device was used to blow the landing wheels off before alighting, this being operated automatically by the act of turning air onto the air bags.

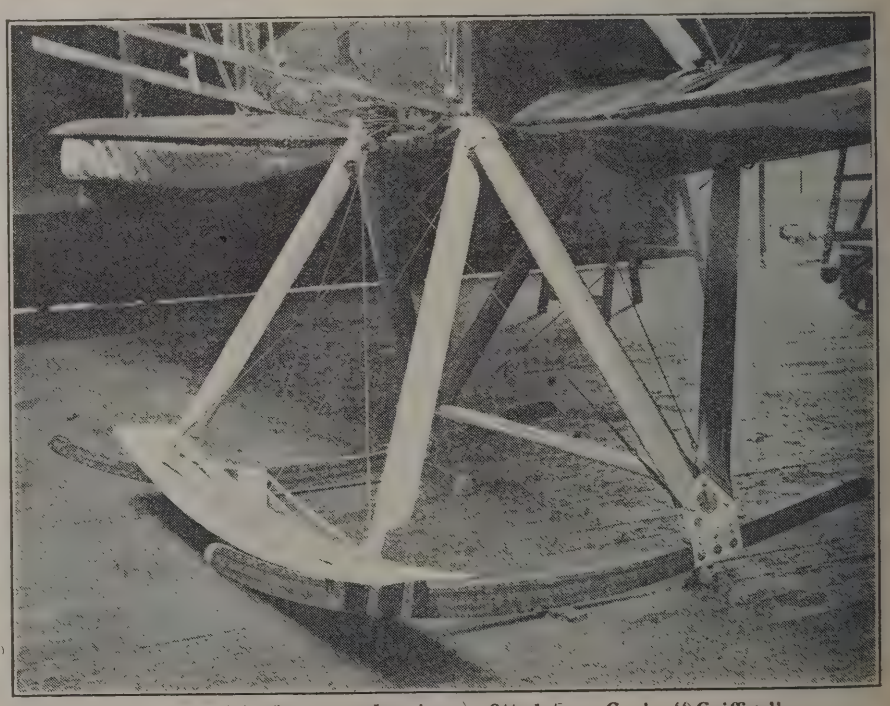
Certain F.E.2ds were also fitted with flotation gear on exactly similar lines. In this case the wheels were cast adrift in a very simple manner. Instead of slinging the wheel-axle above the skid, the axle was placed under the skid and held on by a catch of the sliphook type which was released by a cable pulled by the pilot and allowed the whole axle to drop clear.

The essential feature of the flotation gear was the method adopted for inflating the air bags. To provide the necessary buoyancy for a 2,500-lb. machine, allowing a reasonable margin, bags of a total volume of at least 50 cubic feet were necessary. The standard steel compressed air bottles used for starting seaplane engines were about 2 ft. long by 6 in. dia., and contained the equivalent of 20 cubic feet of air at atmospheric pressure, compressed to about 1,200 lb. per sq. in. and weighed somewhere about 12 lb. each. Thus for direct inflation of the bags of even a small two-seater machine three bottles would be needed, and a large amount of space would be required.

To overcome this trouble experiments were made with air injectors, and a very simple and satisfactory type was devised, consisting of a jet of very fine bore directly connected to the high pressure bottle surmounted by three cones of increasing diameter pressed out of solid drawn steel tube. The small end of the last cone was coupled directly to the main cock in the bag supply pipes.

This type of injector would inflate a bag whose cubic capacity was three times the bottle air content to a pressure of 1 lb. per sq. in. in less than one minute.

The general scheme of the connection is shown in a sketch, and the *modus operandi* of inflation was as follows:—The main air cock B being open the valve on the air bottle A is opened and high pressure air allowed to flow till air



Skid and hydrovane chassis, as fitted to a Grain "Griffin."

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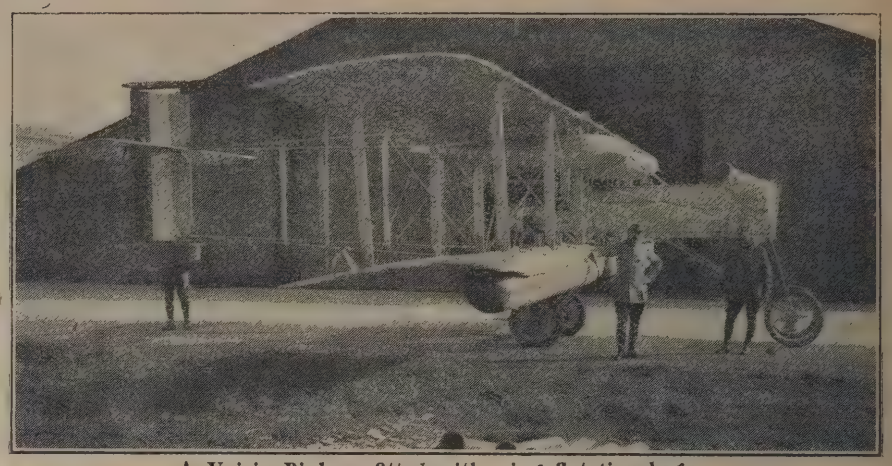
NOEL ROAD
ACTON.

could be felt blowing back through the injector. This occurred when the air bags were fully inflated and could be felt immediately by the hand. Cock B was then shut off.

This process took from 20 to 40 seconds, according to the size of air bag and the bore of the injector high pressure jet.

Further refinements were also fitted, as a valve which cut off communication between the two air bags, and a hand trimming pump with which it was possible to compensate for leakage in either or both bags when afloat.

Finally, a wholly automatic system was revised whereby a pilot, having decided to alight on the water, turned on the air cock, and the whole process of inflating, turning off the bag supply cock at the right moment, and releasing the wheels was performed for him without further action on his part.



A Voisin Biplane fitted with wing flotation bags.

Regarded as an emergency fitting for land machines which have to operate over sea, this flotation gear has many good points. It was simple to construct and in use, was not unduly heavy, could be adapted to almost any type of aeroplane, and it would keep a machine afloat right way up for many hours



Emergency Flotation Gear on a Curtiss J.N.4.

in quite a rough sea. Small single and two-seater machines so fitted would remain in one piece on the water under weather conditions which would break up most seaplanes of similar size, and the pilot of a machine so fitted could go out to sea with considerably greater confidence than in a land machine devoid of such apparatus.

On the other hand, there is some reason to suppose that the success of the P.V. emergency flotation gear was used in certain circles as an argument against continuing experimental work on the smaller classes of seaplane, and that it is thus indirectly responsible for some of the neglect into which this type of aircraft has fallen.

For commercial land machines which in the course of their route may have to cross stretches of sea, this gear has considerable value, and it is therefore noted here that the system is covered by patents in the name of Lt.-Col. H. R. Busteed, and that the rights for the manufacture thereof have been granted by him to Short Bros., of Rochester.

[THE END.]

NEW COMPANIES.

Aero and Motor Company, (Manchester), Limited.—Private company. Registered Nov. 29th. Capital, £2,000 in £1 shares. To take over the business of a motor car dealer carried on by A. D. Scarlett at 8, Peter Street, Manchester, as the "Aero and Motor Co.," etc. The first directors are:—A. D. Scarlett, 25, Plymouth Grove West, Manchester; B. M. Papelian, 46, Clarenden Road, Chorlton-on-Medlock, Manchester (of Persian nationality); A. Scarlett, 25, Plymouth Grove West, Manchester. Regd. Office:—8, Peter Street, Manchester.

First Atlantic Flight, Limited.—Registered Nov 29th. Cap. £100 in £1 shares. Objects: To carry on the business of manufacturers of and dealers in aeroplanes and airships, and all parts, equipment or accessories therefor, etc. The subscribers (each with one share) are:—A. W. Claremont, Vernon House, Sicilian Avenue, Bloomsbury, W.C.1., solicitor; H. L. Stuart, Vernon House, Sicilian Avenue, Bloomsbury, W.C.1, solicitor; C. R. R. Tildesley, Vernon House, Sicilian Avenue, Bloomsbury, W.C.1, solicitor; and four clerks. No person had consented to act as directors to Nov. 18th. Solicitors:—Claremont, Haynes and Co., Vernon House, Sicilian Avenue, Bloomsbury, W.C.

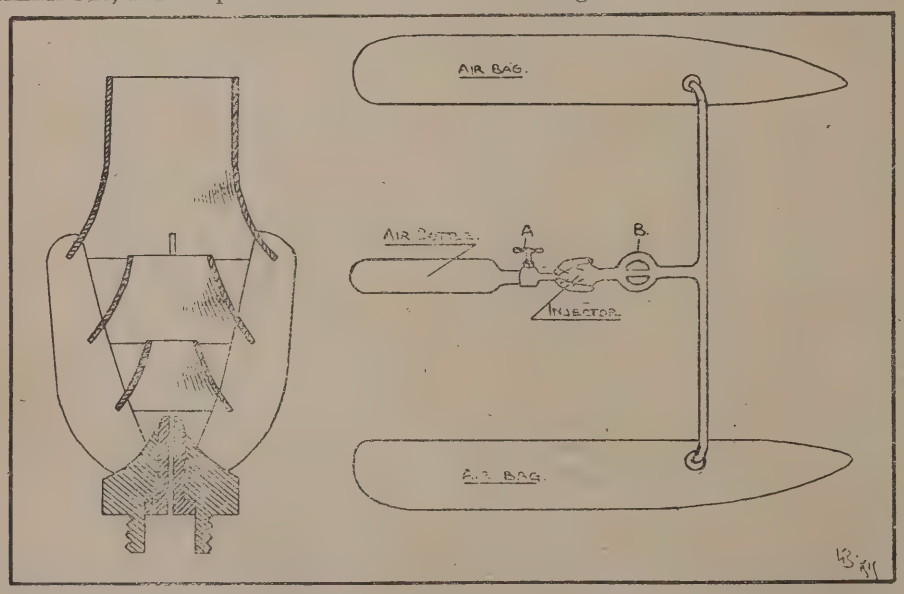


Diagram of the injector, and of the inflating connection for the P.V. Emergency flotation gear.



Photograph of the injector and air cock.

London-Paris
Air Express

Mails—Parcels—Passengers

DAILY TIME TABLE.

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LE BOURGET (depart) 12.30 p.m.
HOUNSLOW (arrive)... 2.45 p.m.

Mails

By arrangement with the British and French Post Offices an express air-mail is now carried daily on this route. The fee is 2s. 6d. an ounce, over and above the usual rates of postage, and letters which are handed in during the morning in London, up to the times indicated, and at the Post Offices specified below, will be delivered in Paris by about 4 p.m. the same afternoon.

G.P.O., King Edward's Buildings, 11 a.m.; Threadneedle Street, 10.45 a.m.; Lombard Street, 10.45 a.m.; Parliament Street, 10.45 a.m.; Charing Cross 10.50 a.m.; W.C. District Office, 11.10 a.m.; W. District, 11.15 a.m.; S.W. District Office, 10.40 a.m.

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The passenger fares are as follows:—Single, £21; return, £42. This fare includes free conveyance by motor-car to Hounslow Aerodrome from any point within a mile of Piccadilly Circus, and also conveyance by motor from Le Bourget into Paris. Similar arrangements exist as to the journey from Paris to London. A passenger, called for at an hotel in London at 11 a.m., arrives at the door of his hotel in Paris by 4 p.m. the same afternoon.

Parcels

The rate for parcels is 5s. 1b., but in the case of parcels weighing more than 2 lbs., or for regular consignments, much lower rates can be quoted If handed in up to 10 a.m. at the agents specified below, parcels will reach Paris the same afternoon; whereas by land and sea, even if a special "Grand Vitesse" fee is paid, a parcel is several days, and perhaps a week, in reaching its destination.

Full particulars regarding freights can be obtained from Aircraft Transport and Travel, Ltd., 25-27, Old Queen Street, S.W.1., or from the American Express Co., Queen Street and Haymarket; Thos. Cook & Son, Ludgate Circus, E.C., and 38-39, Piccadilly, W.; General Transport, Ltd., 52, Crutched Friars; J. Jackson & Sons, 7-8, Charing Cross, and King William Street, E.C.; Henry Johnson & Sons, 18, Byward Street, and Beak Street, W.; Carter Paterson & Co., 6, Maddox Street, W., and 3, Cannon Street, E.C.; Lep Aerial Travel, Piccadilly Circus (Criterion Corner); and Hernu, Peron & Co., 98-100, Queen Victoria Street, E.C.

NOTE.—Parcels are received up to 10.30 a.m. at the two depots mentioned above of the American Express Company; or up to as late as 11.30 a.m. at the Hounslow Aerodrome.

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NAVAL & MILITARY AERONAUTICS

[The official "Gazettes" and Personal Notices will be found on page 2028.]

GREAT BRITAIN.

FROM THE "COURT CIRCULAR."

BUCKINGHAM PALACE, Dec. 10th.

The King held an Investiture in the Ball Room of the Palace at 11 o'clock this morning.

The following were severally introduced into the presence of the King, when His Majesty invested them with the Insignia of the respective Divisions of the Orders into which they have been admitted:—

THE MOST DISTINGUISHED ORDER OF SAINT MICHAEL AND SAINT GEORGE.—Companions.—Air-Commodore Edward Maitland, R.A.F. (also received the Air Force Cross); and Lieut.-Col. Philip Herbert, R.A.F. (also received the Insignia of a Commander of the Most Excellent Order of the British Empire (Military Division)).

THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE (MILITARY DIVISION).—Commander.—Sqdn. Ldr. George Scott, R.A.F. (also received the Air Force Cross)

THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE (MILITARY DIVISION).—Officer.—Sqdn. Ldr. Donald Rainsford-Hannay, R.A.F.

Member.—Capt. George Golding, R.A.F.

The King then conferred decorations as follows:—

THE DISTINGUISHED SERVICE CROSS.—Capt. Frederick Horstman, R.A.F.

THE MILITARY CROSS.—Capt. Charles Smart, R.A.F.; Flying Officer Robert Reid, R.A.F.; Lt. Henry Sparkes, K.R.R.C., attd. R.A.F.

THE DISTINGUISHED FLYING CROSS AND BAR.—Capt. William Hubbard, R.A.F.

THE DISTINGUISHED FLYING CROSS AND THE AIR FORCE CROSS.—Sqdn. Ldr. Reginald Leslie, R.A.F.

THE DISTINGUISHED FLYING CROSS.—Lieut.-Col. William Douglas, R.A.F.; Capt. William Reed, R.A.F.; Capt. James Robb, R.A.F.; Lt. William Ackery, R.A.F.; Flying Officer Robin Haworth-Booth, R.A.F.; Flying Officer Hedley Nicholls, R.A.F.; Lt. Cyril Rayment, R.A.F.; Flying Officer Adrian Reeves, R.A.F.; Lt. Francis Robinson, R.A.F.; Lt. Ian Ross, R.A.F.; Lt. Frederick Russell, R.A.F., Flying Officer Hugh Saunders, R.A.F.; Lt. Victor Siddons, R.A.F.; Flying Officer Charles Spackman, R.A.F.; Lt. Malcolm Stewart, R.A.F.; and Pilot Officer Francis Seed, R.A.F.

THE AIR FORCE CROSS.—Wing Comdr. Cuthbert Rabagliati, R.A.F.; Sqdn. Ldr. Douglas Harries, R.A.F.; and Flying Officer Guy Harris, R.A.F.

BUCKINGHAM PALACE, Dec. 11th.

The King held an Investiture in the Ball Room of the Palace at 11 o'clock this morning.

The following were severally introduced into the presence of the King, when His Majesty invested them with the Insignia of the respective Divisions of the Orders into which they have been admitted:—

THE DISTINGUISHED SERVICE ORDER.—Wing Comdr. Charles Stanford, R.A.F. (late Surgeon-Comdr., R.N.); Flight Lt. Alfred Whistler, Dorsetshire Regiment, attd. R.A.F. (also received the Distinguished Flying Cross and Bar)

THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE.—Member.—Military Division.—Maj. Errol Knox, Aust.P.C.

The King then conferred decorations as follows:—

THE MILITARY CROSS AND THE DISTINGUISHED FLYING CROSS.—Flight Lt. Edmund Tempest, R.A.F

THE DISTINGUISHED FLYING CROSS.—Sqdn. Ldr. Andrew Walser, R.A.F.; Flight Lt. Douglas Lapraik, R.A.F.; Capt. William Scott, R.A.F.; Capt. Robert Sharp, R.A.F.; Flight Lt. John Yonge, R.A.F.; Lt. Sydney Bull, R.A.F.; Flying Officer Peter Haworth, R.A.F.; Flying Officer Norman Mawle, R.A.F.; Lt. Thomas Scott, R.A.F.; Flying Officer Reginald Skelton, R.A.F.; Lt. Robert Spence, R.A.F.; Lt. William Steele, R.A.F.; Lt. Eric Walker, R.A.F.; Flying Officer Edward Waring, R.A.F.; Lt. Ignatius Welby, R.A.F.; Lt. George Welsh, R.A.F.; Lt. Harold Wickett, R.A.F.; Lt. Paul Wilkins, R.A.F.; Lt. Norman Williams, R.A.F.; Lt. Roy Wilson, R.A.F.; Lt. Lawrence Wingfield, R.A.F.; Sec. Lt. Leslie Thres, R.A.F.; Sec. Lt. Ronald Turner, R.A.F.; and Sec. Lt. Alfred Watters, R.A.F.

NAVAL.

ADMIRALTY APPOINTMENTS.

The following appointments have been made:—

Dec. 10th.—Art. Engrs.—R. V. Nelson, to "Furious," addl., for "Alexander," on reducing to reserve complement, Dec. 5th.

R.A.F.—Flight Lt. (A.).—D. G. Donald, to "Vindictive," Aug. 1st.

Gunner.—E. W. Roberts, to "Furious," for "Alexander," Dec. 11th.

Dec. 11th.—Engr. Lieut.-Comdr.—J. D. Grieve, to "Vivid," addl., for "Eagle," Dec 10th.

Art. Engrs.—W. R Switzer, to "Vivid," addl., for "Eagle," Dec. 30th.

Wt. Mech.—A. M. Stuart, to "Vivid," addl., for "Eagle," Dec. 30th.

R.A.F.—Flying Officer (S.).—H. L. Macro, to "Pegasus," Dec. 2nd.

Flying Officers (A. and S.).—S. C. Strafford and W. R. Curtis, to "Pegasus," Dec. 2nd.

O. Officers (O.).—E. B. C. Betts, L. Ritson, E. J. Garner, and D. R. W. Thompson, to "Pegasus," Dec. 2nd

Lord Jellicoe's Report.

In the course of Lord Jellicoe's report to the Commonwealth Cabinet upon the sea defence of Australia, it is recommended that the Naval requirements of Australia shall be divided into three classes and that the first of these, "the striking force," shall contain one aircraft-carrier to every two units.

Lord Jellicoe also recommends the formation of a Far Eastern Fleet which shall contain four aircraft-carriers.

No. 6 Wing R.N.A.S. Dinner.

On Saturday, Dec. 13th, at the Trocadero Restaurant, members of No. 6 Wing, R.N.A.S., Otranto, Italy, held their first re-union dinner. Col. G. H. K. Edmonds, D.S.O., the first C.O. of the wing, presided, and among those present were Comdr. Murray Sueter, R.N., Col. A. Longmore, D.S.O., Comdr. Beuttler, R.N.R. Maj. Pulford, Maj. Mackenzie, and Maj. Leslie. In all some forty members attended.

Such was the success of the dinner that it was unanimously determined to make it an annual affair, and it is hoped to hold the next dinner on the second Saturday in December of next year.

MILITARY.

The Afghan War.

The following is taken from some telegrams, received on Dec. 8th from India, which contained information regarding the state of affairs on the North-West Frontier:—

"Minor raiding by Mahsuds continues, and a party of 100 strong are reported out to attack the aerodrome at Bannu. The houses of several of the chief Mahsud Maliks are reported to have been destroyed by recent air operations.

The Piti Madda Khel and Hassan Khel sections of the Tochi Waziris, inhabiting the Upper Kaitu valley, refused to comply with our terms, and were effectively bombed on the morning of Dec. 6th, when 2¼ tons of bombs were dropped and 2,100 rounds of small-arm ammunition fired. These were the only sub-sections of Tochi Waziris who had remained recalcitrant.

Air operations against the Mahsuds continue with good effect."

There is no indication that this news is official.

Owing to the Mahsuds' decision, at a Jirgah held more recently than the one of Dec. 8th, to accept the British terms, aerial operations have been provisionally suspended.

According to Reuter it appears probable that the aerial bombardment of Afghan towns and villages is not alone sufficient to bring about the surrender of the tribes, and it is now likely that troops will be taken into the Mahsud country.

AIR FORCE.

Summary of the Results of the R.A.F. Mail Services.

The following communiqué was issued by the Air Ministry on Dec. 12th. THE AEROPLANE takes no responsibility for the official phrasing:—

Some interesting detailed statistics are now available regarding the six months running of the Folkestone-Cologne mail service which was terminated towards the end of October.

The actual cross-Channel service was inaugurated on March 1st, and was the development of various mail delivery services which had for some time previously been in operation in France and Belgium. Prior to March 1st the mails were shipped to France and taken by ground transport to the aerial distributing centres. These, services, however, were not carried out regularly for any lengthy period over particular routes, but were constantly being changed as the movement of troops and progress of demobilisation rendered necessary. It is, therefore, not possible to give any detailed and useful statistics for the period, before March 1st but it is of interest to note that out of 1,023 trips commenced only 45 were uncompleted from any cause. This represents an average percentage of successful flights of not less than 96. If the fact be borne in mind that all these flights took place over difficult country, and in the bad weather of the winter months December to March, this result is particularly good.

Three squadrons were at first employed on the cross-Channel service—Nos. 18, 110, and 120, equipped with D.H.9a, D.H.9, and D.H.4 machines.

From March until July the mails were not usually carried direct from Hawkinge to Cologne, but were flown from Hawkinge to Maisconcelle (later on Marquise) and there transferred to other machines for Cologne.

Neither Maisconcelle nor Marquise, however, were half-way stages, both being considerably nearer Hawkinge, so that the longer and more arduous portion of the journey, including that over the range of high hills between Lille and the German frontier, had to be negotiated by the pilots of Nos. 110 and 18 Squadrons at Maisconcelle and Cologne respectively.

The distance from Hawkinge to Maisconcelle was roughly 67 miles and from Maisconcelle to Cologne 229 miles—a total distance of 296 miles against 250 miles over the non-stop route

adopted later. The average time for the first stage was one hour, and for the second two hours and a quarter.

From July 22nd the squadron at Marquise ceased to operate and the through service between Folkestone and Cologne was thenceforward regularly flown until the termination of the aerial mail. Even before that date many individual through flights had been successfully made.

During the six months' flying subsequent to March 1st, 1,842 trips were made, comprising rather over 3,000 hours in the air. Up to 460 lb. weight of mails were carried per machine trip.

Of the 1,842 flights begun, 96 per cent. were successfully completed. Of the 4½ the percentage of flights which failed slightly over 2 per cent. were due to engine trouble, or mechanical defect and under 2 per cent. to bad weather.

Of the through flights from Folkestone to Cologne of 270 begun 267 were completed, or only 1 per cent. of failures.

The regularity of service was also good. Mails were carried from Folkestone on 146 out of the 182 days under review and from Cologne on 139 days. The percentage works out at 80.2 per cent. and 76.4 per cent. respectively. The times of departure of the aerial service were fixed so that in the event of the weather being impossible for flying the mails could be sent by rail or boat without delay.

A striking feature of this service was its immunity from casualties. During the six months covered, only one pilot and one passenger were injured, both in the same accident.

Although this service has provided valuable data on many of the points which arise in the working of a commercial service, it has been found impossible for various reasons to deduce actual running costs per lb. of mail carried. For instance, the total possible load of the machines in use was 600 lb., but not more than 460 lb. were ever carried in one machine and very often considerably less; and again, of each machine available was not employed as regularly or as frequently as it would have been on a commercial service.

The figures would not therefore have represented true values for the cost per ton carried.

The London-Paris Service.

Details have also been prepared of the London-Paris service for the same period.

This service was carried on by two composite squadrons one at Hendon—afterwards moved to Kenley—and the other at Buc, near Paris. The machines used on this service were chiefly D.H.4s, but Handley Page, Martinsyde, and Bristol "Fighter" types were also employed—all the machines being fitted with Rolls-Royce engines. This service differed from the Cologne service as being primarily for passenger work though official mails and dispatches were also frequently carried.

The total number of trips made from the commencement of this service to the end of August amounted to 744, while 934 passengers and 1,028 mail bags were carried. A certain number of these flights were to various other French or Belgian towns; 90 per cent., however, were to Paris.

Of the flights made between March 16th and the end of August—556 were completed and 52 failed; 13 on account of weather conditions and the remainder owing to mechanical defect or engine trouble. The percentage of successful trips therefore amounted to 91.

In this service machines were not working to their full capacity. Naturally, owing to this fact, the resulting cost (which was obtained for another purpose) is higher than would otherwise have been the case, but the data so obtained are interesting and valuable as roughly indicating the possibility of commercial aviation as a paying proposition, though it has not been possible to work out the costing in great detail.

In arriving at these figures allowance has been made for depreciation on buildings and plant of 5 per cent. per annum on original cost, as well as rates and upkeep. Depreciation on the machines employed has been charged for the one month's running under review at 1/12th of their initial cost, thus allowing a complete write off of each machine in one year, while that on engines has been taken at 1/36th of initial cost, allowing lifetime as three years. This, of course, is in addition to the full charges for all personnel employed and all stores consumed.

Taking the average weight of a mail-bag as 25 lb. and of a passenger as 130 lb. and working on the figures of May as being a representative month on this service, the actual cost worked out to one shilling and a halfpenny per ounce per 205 miles—the actual distance between Kenley and Paris.

During the six months there were five accidents on the service in which three pilots and one passenger were killed and two pilots and one passenger were injured.

Taking the combined results of the two services it appears that of 2,450 trips begun since March 1st no less than 2,331 were successfully completed, the proportion of failures amounting only to 5 per cent., the percentages due to weather and mechanical defect being 2.8 per cent. and 2.2 per cent. respectively.

As the early months of this period provided particularly bad weather this result is satisfactory.

100 Squadron R.A.F.

The first annual dinner for the officers of 100 Squadron will be held at the Holborn Restaurant, London, on Jan. 3rd, 1920, at 7 p.m., the dinner for W.O.'s, N.C.O.'s and men on Dec. 31st, 1919, at 6.30. Will all members who can attend please write at once to Captain C. Gordon-Burge, Dent-de-Lion, Westgate-on-Sea, Kent?

A Presentation.

Sir Chas. Wakefield, Bart., has presented set of trophies, cups and medals to the Royal Air Force for a series of boxing



AN AERIAL REVIEW.—Three Squadrons of Bristol "Fighters" at Spiel, Cologne, awaiting inspection by General Sir William Robertson, G.C.B., G.O.C. the Army of the Rhine.

competitions amongst the officers and men. The trophies, cups, and medals have all been specially designed and the gifts have been accepted by the Air Council, and the trials will begin shortly. The trophies are on view at the premises of Skinner and Co., Ltd., 34, Bond Street, W.1.

A Walking Championship.

Mr. W. Hehir, R.A.F., of the Surrey A.C., won the Southend Harriers' open handicap on Dec. 13th. The handicap was held over the roads in the Chelmsford district, and from scratch Mr. Hehir covered 7 miles 1,000 yards in 58 min. 19 sec.

AUSTRALIA.

The Air Ministry announced on Dec. 13th that Capt. Wrigley, Australian Flying Corps, with Serjeant Murphy as observer, had just completed a flight from Melbourne to Port Darwin. The flight was made on a B.E. 2E machine, with a 90 h.p. R.A.F. engine. This machine was four years old. This is the first time that Australia has been traversed by air.

FRANCE.

The New Organisation of the Aerial Arm.

The aerial arm will consist in future of 11 regiments. Five of these are allocated for observation duties and will be under the orders of the corps commanders in whose areas they are stationed. Each regiment will be commanded by a colonel (in principle), and each will consist of four groups divided into two or three escadrilles. Each group will be under a lieutenant-colonel and captains will command the escadrilles.

The five regiments described above will be stationed as follows :—

1 Regiment : Tours (Commandant Muiron).
2 ,, Le Bourget (Commandant Delafond)
3 ,, Lyon (Commandant Benoit).
4 ,, Dijon (Commandant Maginel).
5 ,, North Africa (Commandant Rolland).

Two further regiments will be formed at a later date.

In addition there is an independent Force (presumably directly under the orders of G.H.Q.), consisting of three regiments for aerial fighting and three bombing squadrons, all under the command of Colonel de Vaulgremand. The regiments will be commanded as follows :—1st Fighting, Commandant Brocard; 2nd Fighting, Commandant de Marancourt; 3rd Fighting, Captain Bladigniere; 1st Bombing, Commandant Vuillemin; 2nd Bombing, Commandant Galet; 3rd Bombing, Commandant Laurence.

Aerial Surveying.

Commandant Vuillemin and Lieut. Dagneau, whose arrival at Algiers was reported last week, left that place for Constantine, Biskra and Lake Chad on Dec. 14th. They took with them mechanics and an observer. Landing places have been arranged. The distance to Lake Chad is roughly 950 miles.

ITALY.

The Italian correspondent of THE AEROPLANE writes :—

War Losses of Italian Airships.

The following referring to the end of 12 of the 25 Italian airships mobilised has appeared since the censorship was revived here.

V.1 (Royal Italian Navy).—Brought down by artillery fire at Pola on Aug. 5th, 1915, and fell into the sea. Her crew of five were made prisoners.

P.6.—Burnt in her shed at Campalto by Austrian aircraft, Aug., 1915.

M.2 (Royal Italian Navy).—Brought down by the combined efforts of aeroplane and artillery fire on the return from a trip to Fiume at Lussin on June 8th, 1915. Lost two dead, one wounded, and four prisoners.

M.3 ("City of Ferrara").—Hit by artillery fire in the Vippacco Valley on May 23rd, 1915. Fell to the earth at Codroipo.

M.4.—When returning from a bombing raid at dawn on May 4th, 1916, was hit by artillery fire near Gorizia. The heroic end of Capts. Pastine Casella and Coturri with pupil Pilot Pasquali and Serjt. Maj. Motorist Berardis is an Italian war epic.

M.5.—Burnt at Turin on June 3rd, 1916, owing to collision in the air with an aeroplane. The C.O. perished with five others, and five men were wounded.

M.7.—Was torn away from her anchorage by a hurricane and lost at sea, Aug. 16th.

M.8 (Royal Italian Navy).—Was set on fire in her shed and burnt in Sept., 1917, by Austrian aeroplanes.

M.10.—Hit by artillery fire at Prosecco and fell at Latisana, Sept. 22nd, 1917.

M.12.—Was hit by artillery fire from the Hermada district and was wrecked in the sea at Grado on the morning of May 22nd, 1917. Commander Valle perished with her, as also navigating officer Soli.

M.13 (Royal Italian Navy).—This vessel, too, was set on fire and burnt in her shed by enemy aeroplanes, Sept., 1917.

M.17 (Royal Italian Navy).—Fell into the Venetian lagoons on the night Feb. 3-4th, 1918. Thought to be a victim to a shell from Motta di Livenza.

The comparatively small total of 13 deaths and 10 prisoners divided among 12 biggish airships shows the comparative safety of the lighter-than-air vessel even in warfare. It is noteworthy, too, that M.1 and M.6 are still in commission and going in for educational work—T. S. H.

POLAND.

Lieut. Edwin Pike Graves, late R.A.F. pilot, was killed at Lemberg while taking part in an exhibition flight given by the Kosciuszko squadron, the squadron of American fliers serving with the Polish army against the Bolsheviks. Mr. Graves, who is an American, joined the Koscinszko squadron shortly after he was demobilised from the British Royal Air Force.

The right wing of an Austrian-made Albatros D.III which he was flying came off while doing a roll. He retained his presence of mind, loosened his safety belt and jumped with a parachute. Unfortunately the machine was only 150 feet from the ground by this time and he struck the ground just as the parachute was opening. He was instantly killed. He was engaged to Miss Dulcie Huntington, of West Kensington, London.—P. B.

U.S.A.

An Echo of Recent Hostilities.

Mr. Daniels, Secretary for the Navy, has approved the sentence of dismissal passed by the Naval Court-martial upon Capt. Edmund George Chamberlain, U.S.N.A.S. The court-martial was held, partly in Paris, early this year, and Capt. Chamberlain was tried for certain statements made with regard to a somewhat extraordinary exploit in aerial warfare in which he claimed to have taken a principal part.

A Service Sale.

The Navy Department are to sell some two hundred seaplanes and flying boats, and a number of engines and accessories. At a sale held on Sept. 22nd twenty-seven seaplanes and a considerable quantity of equipment were sold, out of a total of two hundred and nineteen seaplanes and flying boats and four hundred and forty-one engines that were offered, the remainder being unsold as the bidding did not come up to the appraised value.

AIRCRAFT IN PARLIAMENT

Dec. 8th.—The following written answer was given :—

AIR MAIL SERVICE (FEE).

Lieut.-Comdr. KENWORTHY asked the Postmaster-General whether he is aware that the Assistant Postmaster-General in the Government of the United States of North America has stated that by use of aeroplanes to carry mails between New York, Chicago, and Washington at two cents a letter a saving will be effected of over 1,500,000 dol. in 1920 over all other methods of transit; and, in view of this statement, will he reconsider the air-mail fee of 2s. 8½d. between England and France with a view to popularising this service and placing it on a commercial footing.

Mr. PEASE : The sum of 1,500,000 dol. referred to by the hon. Member is the estimated value of the travelling post offices and other railway rolling-stock and the time of post office sorters which will be rendered unnecessary by the provision of the additional aeroplanes recently ordered by the United States Post Office for its air mail services. Payment for the conveyance of mails by rail in the United States is made on a basis different from that in force in this country, but I do not gather that the sum indicated is a net saving consequent on the use of aeroplanes for the conveyance of mails. The air mail service between London and Paris is experimental, and the arrangements are of a temporary character and will be reviewed after six months' working. I hope that when permanent arrangements for the service are made it will be possible to reduce the amount of the special fee.

* * *

Dec. 9th.—The following oral answer was given :—

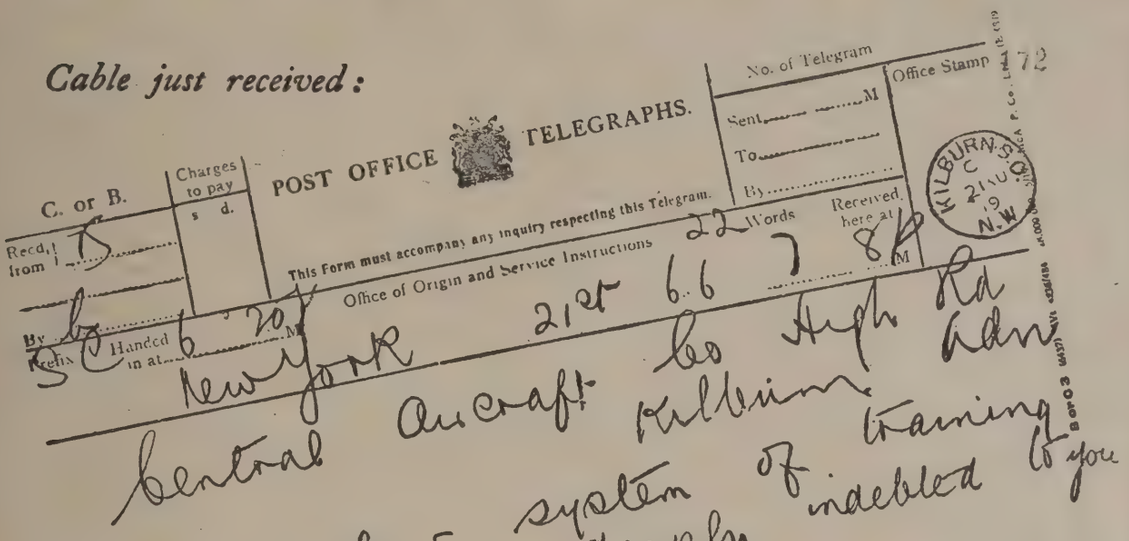
HELICOPTER FLYING-MACHINES.

Lieut.-Comdr. KENWORTHY asked the Secretary of State for War whether he is aware that the French Government have recently granted a sum of about £4,000 to aid inventors in carrying out experiments with the helicopter type of flying-machine; whether the Air Ministry are alive to the very great importance of such experiments; whether all encouragement is being given to British inventors who may wish to experiment with this system; and whether any sums of money have been granted for such experiments.

Mr. CHURCHILL : the answer to the first and second parts of this question is in the affirmative. The answer to the third and fourth parts is that any proposals for a helicopter type flying-machine brought to the notice of the Air Ministry are sympathetically considered and such financial assistance as appears proper is given. Adequate financial provision has already been made for the purpose. Since June, 1916, this line of research has been continually explored, and I am personally familiar with the details of the progress made with these experiments, in which, while Minister of Munitions, I took a great interest.

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Dec. 10th.—The following oral answers were given:—

PARIS EXHIBITION (BRITISH AEROPLANES).

Lieut.-Comdr. KENWORTHY asked how many British aeroplane firms are showing at the Paris Exhibition; whether the number is satisfactory; and what steps are being taken to encourage and assist British firms to attend foreign exhibitions of aircraft.

Capt. GUEST (Joint Parliamentary Secretary to the Treasury): I have been asked to reply to this question. The answer to the first and second parts is that six British aeroplane firms are showing at the Paris Exhibition, and that on the whole this number of exhibitors may be taken to be satisfactory. The Society of British Aircraft Constructors was unable to obtain sufficient space on the ground floor for a corporate exhibit, and, therefore, are not exhibiting. In regard to the last part of the question, offers of assistance were made to the Society of British Aircraft Constructors at a meeting held early in October.

AIR MINISTRY—STORES DEFICIENCIES.

Mr. RAPER asked the Secretary of State for War how much has been written off since the Armistice as a charge against the public for stores deficiencies of air squadrons stationed in Great Britain and of the various air store depots and parks which were at that time in existence.

Capt. GUEST: This information would take some time to collect, and I am unwilling at present to throw additional work on the Air Ministry and local Air Force staffs; but if my hon. friend presses for it I will obtain the information and send it to him

Mr. RAPER: Can the hon. and gallant gentleman give us some rough idea of the amount?

Capt. GUEST: No, I cannot, and I do not think a rough idea is what the hon. Member requires.

Mr. RAPER: When can we have these particulars?

Capt. GUEST: When the pressure on the Ministry is a little less than it is now.

COMMERCIAL ORGANISATION.

Mr. RAPER asked the Secretary of State for War if he will now appoint a small but permanent committee, composed of two or three hon. Members of this House and two or three gentlemen outside the House who have a knowledge of commercial organisation, to assist the Air Ministry authorities in finance and business matters generally.

Capt. GUEST: I have nothing to add to the answers which I have already given to my hon. friend in reply to similar questions on March 31st and April 3rd last.

Mr. RAPER: Is it not a fact that the last answer given was that this question was under discussion?

Capt. GUEST: Yes, sir; and it is still under consideration.

THE DOUGLAS-PENNANT CASE.

In view of the irrelevance of the majority of the evidence given it has not been considered desirable to publish periodical accounts of the progress of this case. Much paper would have been covered by material of little relative importance in the progress of the world, and it would, in consequence, have been necessary to exclude from the paper news of greater value.

Miss Douglas-Pennant was appointed Commandant of the Women's Royal Air Force on May 4th, according to an Air Ministry's circular issued through the Press Bureau. This announcement was, in the view of the Committee, "an instance of the want of accuracy on the part of the Air Ministry, of which we have had more than one illustration in the present case." She had not made up her mind to accept any such post nor did the office exist in fact. The rank then in existence was "Chief Superintendent." She was never given a formal appointment, and her office was therefore not governed by King's Regulations in the paragraphs dealing with removal for misconduct. "She never signed the form of enrolment App. A, pp. 41 to 43 of F.S. Pub. No. 14; she was never enrolled; and if she wore without objection, as we believe she did, the uniform of the Women's Royal Air Force, that is but another illustration of the want of system in the proceedings of the Air Ministry. . . . Her employment was only a temporary employment by way of loan." (From the National Health Insurance Commission). . . . "The Minister could dispense with her services at any time if, in the honest exercise of his discretion and in the interest of the public service, he thought it right to do so."

Omitting the intervening history, it is sufficient to say that Lord Weir dispensed with her services on Aug. 28th. After consideration she felt that she had been unfairly treated, and in person and through friends and supporters she successfully agitated for the formation of a Select Committee of both Houses to inquire into her grievances. Before this Committee she laid a mass of charges and complaints, accusing officers of all ranks with, in some cases, intrigue, in others incivility, and in a few instances immorality.

The Committee went into the specific charges of obstruction in detail, and it was shown by means of minutes in the files that these charges were unfounded.

They then examined the charges as to immorality in the W.R.A.F. and the support said to be given thereto by certain general officers. Para. 57 of the Report describes Miss Douglas-Pennant's action in this matter:—

"Miss Douglas-Pennant could not produce a single minute to M.G.P. or any superior officer calling his attention to the existence of immorality and to her being powerless to prevent it. Sir Godfrey Paine (her witness) says that she never mentioned immorality to him, that he 'had a suspicion, but she certainly did not accuse any individual or any particular hostel, or anything like that. It was general.' She was asked to name any witness who could give evidence upon the subject. She named Mrs. Beckett. She did not call Mrs. Beckett. She named Mrs. Digby Read. She did not call Mrs. Digby Read."

The following paragraph from the Report (para. 121) summarises the service character of Miss Douglas-Pennant and may well end this piece:—

"Miss Douglas-Pennant is, upon the materials before us, shown, we think, to be a woman full of zeal and activity, much impressed with her own importance, very reckless in her imputations upon others (of which we have had grievous examples in this case), and one not at all likely to get the best out of those with whom she had to work or over whom she had authority. The story of the intrigue against her has originated, in our opinion, in her distortion of events and from her incapacity to see things in their true perspective. This distortion reaches its climax when she accuses Sir Auckland Geddes of being a party to the intrigues. There is no doubt about it. She says so (Q. 1364, p. 74), and the same with Lady Rhondda (Q. 1365, p. 74)."

ARMS AND THE MAN.

Mr. Robert Loraine, actor-manager (better known, perhaps, to readers of this paper as Lieut.-Col. Robert Loraine, D.S.O., M.C., late R.F.C.), has achieved, at the Duke of York's Theatre, another success in "Arms and the Man," which, if not perhaps equal as a *tour de force* to "Cyrano," is, in one's personal opinion, an even better piece of acting. Mr. Loraine shows his ability as a manager no less than as an actor in selecting this particular play for production at this particular moment when a little of the glamour of soldiering has passed and when people are more inclined to regard the soldier as an integral part of the composition of the nation and as a man who follows a profession as a profession, free from high falutin' ideas. Both the play and the acting will do good.

The story of "Arms and the Man" is probably best known to the majority of Londoners by way of "The Chocolate Soldier," and there will doubtless be those who will regret that Mr. Loraine has omitted to interpolate into Mr. Bernard Shaw's text the one tune which made that saccharinated opera the craze of the crazy, but that is merely by the way.

Mr. Loraine is to be particularly congratulated on having chosen his companions in the cast. Miss Campbell is adequately "stagey" as Raina, but she might perhaps make a greater effort to drop her staginess when she is "discovered" in the last act by the Swiss captain.

Mr. Gerald Lawrence is, one thinks, inclined to over-do the staginess of his part. His method of playing reminds one somehow of the famous American critique of a production of "Romeo and Juliet" in which the critic remarked that "with a little assistance from the stage carpenter the Romeo could adequately have played the balcony." The untutored Bulgar may be grandiloquent, but one doubts whether he is ever deliberately "stagey."

Miss Holmes-Gore, as Louka, gives one of the best performances that has been seen for many years. She manages to combine skilfully the aspect (albeit very charming) of the semi-savage Bulgar with the manners of a tea-shop waitress. When so many important parts are wasted on incompetent actresses it is a pity that so little has been seen of Miss Holmes-Gore, who could play so many parts so much better.

Miss Beverley Sitgreaves as Raina's mother was as near the perfect person for the part as one could imagine, and Mr. Arthur Whitby as the servant, Nicola, is wholly excellent. The performance of Mr. M. R. Morand as Major Petkoff, the Bulgarian heavy father, was a perfect gem as a character study. One remembers Mr. Morand giving equally fascinating character studies in the Grossmith parts of Gilbert and Sullivan operas, and in "The Rose of Persia." It is a treat to see such acting as his.

One is a trifle doubtful as to whether the fashions of the Servo-Bulgarian war period were precisely those worn by the ladies of the cast. They struck one as belonging to an earlier date, but perhaps the Paris fashions took a year or two to reach Sofia. Also one has doubts as to whether the Servian officers were French képis. One's personal recollection of the pictures of the period is that the Servians wore a head-dress resembling the Austrian shako, but one assumes that Mr. Loraine made the necessary research into the costumes of the period before dressing the parts.

Be that as it may, the performance is wholly excellent, and Mr. Bernard Shaw's pitiless logic and biting humour will probably be better appreciated to-day, now that everybody has been closely in touch with militarisin in one form or another, than it was when the play was last staged in London.—

C. G. G.

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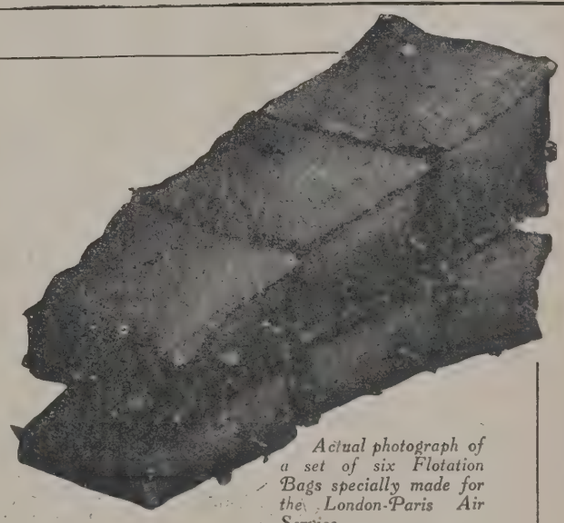
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The Airco Service.

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Flights scheduled, 240; flights successfully accomplished, 189; prevented by weather, 27; interrupted by weather, 19; interrupted by mechanical defect, 5; approximate mileage, 52,290; average speed (m.p.h.), 102.

Date.	Type.	Pilot.	Left Hounslow	Arr. Paris.	Left Paris.	Arr. Hounslow	Pass
Dec. 8th	DH9.	Lt. Campbell-Orde	12.40 p.m.	2.45 p.m.			Mail
	DH9.	Lt. Lindley	45 m.p.h. N. wind	qually	12 20 p.m.	3.35 p.m.	Mail
Dec. 9th	DH4a.	Lt. McMullin	12.30 p.m.	2.50 p m.			2
	DH9	Lt. Tebbit	12.45 p.m.	3 00 p.m.	low	fog	Mail & mec 1 and Mail
	DH9.	Lt. Powell			12.15 p.m.	2.50 p.m.	
Dec. 10th	DH16.	Capt. Baylis	12.55 p.m.	anded L'mpne 1.55 p.m.	Thick fog in Paris		2 and Mail
Dec. 11th	DH9.	Lt. Robins	12.40 p.m.	3 20 p. m			1 and Mail
	DH4a.	Lt. Bradley	Bad visi	bility	12.15 p.m.	crashed Caterham	1 and Mail
Dec. 12th	Thick fog in Channel and N.E. France. No flying possible.						
Dec. 13th	Weather totally unfit for flying.						

DEC. 10th.—The mails and parcels, which were in the D.H.16 piloted by Capt. Baylis, who landed at Lympne on account of the weather, completed the journey by air on the next morning.

DEC. 11th.—Lieut. S. B. Bradley left Le Bourget with one passenger, mails, and parcels. The pilot encountered very bad visibility of the Surrey Hills and unfortunately crashed at Caterham. The passenger, who was killed instantly, was Mr. George F. Rand, a Buffalo banker. Lieut. Bradley was seriously injured and died in Croydon Hospital on the morning of the 12th inst.

The mails and parcels from the crashed machine were duly delivered the following morning.

The First Inquest.

During the inquest held by the East Surrey Coroner at Caterham on Dec. 15th on the body of Mr. George S. Rand, a banker of Buffalo, New York, who was killed in the aeroplane accident while flying from Paris to London on Dec. 11th, Mr. Theophilus, solicitor, who appeared for Aircraft Transport and Travel, Ltd., said that the aerodrome at Kenley was most unfortunately situated, owing to local conditions with regard to the hills and the frequent mists.

Major Cyril Patteson, of the Aircraft Co., stated that the Surrey hills there were 800 ft. high, and, therefore, liable to the gathering of a lot of clouds. It might be perfectly fine and suitable for flying at Croydon on that afternoon, while at Kenley it was very cloudy and dangerous for flying.

The Coroner returned a verdict of "Accidental death."

The inquest on Mr. S. B. Bradley, the pilot of the machine, was to be held on the afternoon of Dec. 17th.

The Handley Page Services.

The regular service to Paris and Brussels will be available up to the day before Christmas for anyone who wishes to make the journey. In order to afford the pilots protection against the bad weather constantly encountered during the winter months, cowlings fitted with Triplex Safety Glass windows are being built over the cockpits of the machines on the services.

LONDON-PARIS.—Dec. 9th.—Capt. Jones piloted nine passengers and 124 lb. of freight from London to Paris. Sir George Noble was one of the passengers and experienced his third flight to Paris in a Handley Page machine.

During the week ended Dec. 10th 34 passengers and 1,245 lb. of freight were carried.

LONDON-BRUSSELS.—During the week ended Dec. 10th nine passengers and 434 lb. of freight were carried.

BROOKLANDS.

Everything in the garden was lovely at Brooklands on Dec. 10th. The sun shone brightly, but with seasonable heat. The wind was fresh; and the smell and sight of the pines exhilarating. The sentry at the gate did not die of exhaustion through shouting down the telephone to the R.A.F. Adjutant, asking permission for two on a "stink-wheel" to enter. And so two entered.

Just inside the entrance were found several beautifully camouflaged fuselages of Sopwith "Salamanders," which were being assisted onto R.A.F. lorries for a little country drive. Nothing of interest, except in the way of scenery, was then seen, until the first sheds were reached.

The Sopwith sheds contain many and interesting machines. The most excellent lines of the "Pup" are seen in the "Snapper" and the "Dove." There were several training machines there, a useful-looking monoplane, and the somewhat dismantled Schneider Cup machine.

Martinsydes, Ltd., engaged attention first, for out somewhere near the centre of the aerodrome was the first and only F.6. The machine had been hastily rigged for photographing purposes, and had a bucket containing sand hooked to its tail to prevent it from flying away. It is a sporting two-seater biplane of very pleasing appearance, somewhat like the F.4 fighter, and fitted with a 300-h.p. Hispano-Suiza engine.

In the interior of the Martinsyde shed is quite a museum. Besides an F.5 and another machine there are quite a number of fuselages of former machines, including the last of the "Tinsides." On the rear wall there are numbers of airscrews, some of great antiquity. At the works a new sporting type is being built, which is to have an engine of considerable horse-power.

In the early afternoon four Vickers "Vimy" machines, the first piloted by Sir John Alcock, K.B.E., D.S.C., set off for an aerodrome in Norfolk.

EASTBOURNE.

It is announced that the Eastbourne Aviation Co.'s flying school will be re-opened on Jan. 1st, 1920. It is proposed to include a course of tuition for aviatresses.

LONDON.

HOUNSLOW.—The War Office require the aerodrome at Hounslow for cavalry training purposes, and so the civil station will have to be moved. Although the inhabitants of Kenley are so adverse to aircraft, it is very probable that the new terminus will be on their Common. The site is said to be 300 ft. higher and less liable to become fog-bound than Hounslow. On the other hand it is in most dangerous country and is frequently hidden by low clouds.

It has been decided by the Directors of A. V. Roe and Co., Limited, that ordinary pleasure flying is to cease for the winter months.

Though there are many days during the winter on which flying is very enjoyable, such days are a minority in a British winter; and it is very doubtful whether the public is yet sufficiently educated in air matters to grasp the fact that a flight on a clear, frosty day, especially if a light fall of snow has taken place, is one of the most exhilarating of winter sports. It would certainly not be worth while to keep aerodromes open on the chance of a few passengers desiring winter flights.

This decision, however, does not mean that all the Avro machines will be sent away from Hounslow. Arrangements will be made for flying pupils to continue their courses of instruction, and demands for special flights can be met.

AUSTRALIA.

The Progress of the Vickers Vimy.

A Reuter message states that Captain Ross Smith was seen at Maronboy, to the north of Daly Waters, on the afternoon of Dec. 13th, proceeding in the direction of Port Darwin. It is therefore believed that engine trouble developed and that Captain Ross Smith decided to return to Port Darwin,



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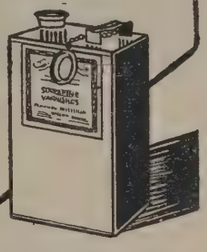
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but instead successfully landed in the bush. He evidently resumed his voyage on the next morning, as he was subsequently seen passing over Daly Waters going southwards.

Government Assistance.

The Australian Government are encouraging civil flying by giving free instruction to returned soldiers taking up commercial flying. Many aeroplanes have arrived in the country, mostly Sopwiths.

INDIA.

The following "unofficial communiqué" was issued by the Air Ministry on Dec. 12th :—

Civil Aviation.

It is understood that the Government of India have decided that the development of civil aviation in India will in so far as mails are concerned best be attained by granting a monopoly for the carriage of mails throughout India to a single air transport company, which will not be linked with any aircraft manufacturing company. The monopoly will be limited to the carriage of mails, the postal rates for which will be fixed by the Government of India.

In fixing rates for the carriage of goods other than mails and for the carriage of passengers, the company operating the mail monopoly will have a free hand in open competition with any other companies which may be established for such traffic.

The Air Board.

An Air Board in India has been constituted as a purely advisory body to advise the Commerce and Industry Department. This Department now deals with all questions concerning civil aviation. The members of the Board consist of the Secretary to the Government of India (Commerce and Industry Department), the Director-General of Posts and Telegraphs, India, the Officer Commanding the Royal Air Force, a representative of the General Staff, and the Financial Advisor, Military Finance Department. There is also a Secretary of the Board.

THE ARGENTINE.

A Franco-Argentine Company.

An Argentine officer, Lieut. Houtsch, and a Frenchman, M. Jean Guichard, have formed a company in Buenos Ayres to instal a series of aerial transport services. The capital of the company is 1,000,000 piastres, of which three-quarters have been subscribed.

The Buenos Ayres-Montevideo Service.

An aerial service between Buenos Ayres and Montevideo has just been started. M. Jansen, the French Minister Plenipotentiary, M. Holf, the French Consul at Buenos Ayres, and Colonel Precardier, Chief of the French Mission, were present at the inauguration ceremony.

BELGIUM.

The Congo Air Service.

A Reuter message from Brussels dated Dec. 15th stated that the balance of the staff to inaugurate the air postal service between Leopoldville and Stanleyville in Belgian Congo would embark at Antwerp on Dec. 16th in the steamer "Albertville." The party included the two aviators MM. Franz Orta and Bastin, two mechanics and two joiners.

It is hoped that the air mail service will be in operation before the end of January.

CHINA.

The first Handley Page aeroplane was completely assembled and flown on Dec. 6th in Peking. One of the passengers was Mr. T. A. Barson, the chairman of the Peking firm whose enterprise was responsible for the first important aviation deal with China.

The machine was put together by Chinese workmen unable to converse with the foreign mechanics in charge, and there was some anxiety about the trial flight, which, however, was a perfect success.

On the same afternoon several pre-war military aeroplanes were flying, one built by Chinese. They were very much dwarfed by the Handley Page.

FRANCE.

The American Aero Club.

Mr. Augustus Post, Secretary of the American Aero Club, and delegate to the recent Aeronautical Congress of Belgium, has arrived in Paris recently from Italy. He stated that his club, besides offering large prizes for cross-Atlantic and Pacific flights, amounting in all to over £15,000, is trying to arrange a flight round the World

The Paris-Melbourne Flight.

M. Poulet left Bangkok on Dec. 2nd, two hours after the departure of Capt. Ross Smith, and was caught in an equatorial storm. Steering by his compass he managed to reach Rangoon, 350 miles behind his starting point, after a flight of eight hours.



PROXIME ACCESSIT. M. Etienne Poulet, who is the runner-up in the flight from Europe to Australia.

The "Auto" of Dec. 11th stated that he would return to Paris by air, and receive the Medaille Militaire for his exploits during the war and for his present flight. M. Poulet will then begin preparations for a round-the-world flight in the competition organised by the American Aero Club.

A message from Sydney dated Dec. 13th stated that strong representations were being made to the Federal Government to cable £1,000 to him and invite him to visit Australia before returning to France.

Capt. Marchal and America.

Capt. Marchal is about to embark for the United States, where he intends to make arrangements for a cross-Atlantic flight. He has already submitted his scheme to the Under Secretariat of Aviation in the French Government.

GERMANY.

A Flight to Warsaw.

A "Times" correspondent cabled from Berlin on Dec. 10th that a commercial Handley Page aeroplane, carrying five British civilians, landed at the Allgemeine Elektricitats-Gesellschaft's aerodrome at Spandau on that morning. The machine had travelled from London via Cologne. The passengers are staying in Berlin, pending a decision by the German authorities as to whether they shall be allowed to continue their flight to Warsaw. A later account stated that that machine was piloted by a Capt. "Hearn," and was to be sold in Warsaw.

The civilian pilots of the machine are Capt E. D. C. Herne and Capt. Macnaught Davis. The Handley Page machine would have been sent by sea, but it was found too big to be carried under the bridges on the railway line from Danzig to Warsaw. Accordingly the two pilots, with two mechanics and a Swiss interpreter, set out by air.

While held up for a week by bad weather at Cologne they obtained permission from the German authorities for themselves to enter Germany, but they could not get a permit for the aeroplane. They continued nevertheless and at Paderborn, in Westphalia, an attempt was made to stop them.

Capt. Herne's account is as follows :—

"I suddenly saw two German machines in full war paint, Iron Crosses and all, making for us. They flew close alongside, the pilots motioning to us with their hands to land. We did not want any explanations except with the proper authorities in Berlin, so we flew on, waving our hand in a friendly way.

"When the Germans saw that we were not coming down, they were furious and flew round us for 20 minutes, crossing so close as almost to graze us with their wing-tips and shaking their fists at us angrily.

"At Spandau the Germans were simply amazed to find that we were a British civilian machine and had never seen our

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international markings before, but they treated us very well, gave us hot drinks, and drove us to Berlin."

The German authorities had to refuse to allow the aeroplane to continue to Warsaw on Dec. 14th, as it was impossible to warn the frontier guards in time.

HAVANA.

A company has been formed in Havana, financed by Senor H. S. Mesa, a wealthy Cuban, for the establishment of a passenger air service to Cuba, Miami (Florida), and New York. It was announced in some New York newspapers that six three-passenger and two sixteen-passenger machines are to be used on the service.

ITALY.

The Government Competition.

The Italian correspondent of THE AEROPLANE writes :—

Details of the long-promised Government Competition for aeroplanes are being divulged. Briefly, the powers that rule are plumping for a small land aeroplane and a very big hydro-aeroplane. Presumably, the S.I.A.I. pluri-motored flying-boat, which is said to be of big dimensions, and two, or possibly three, large craft from down South, of which one hears vaguely, fill the latter part of the programme, not forgetting the Caproni hydro-triplane, with its many engines.

The Paris Aero Show.

What the F.I.A.T. have in store is more likely to be seen at the Paris Show than here. The new star-radial-engine is said to be making its debut there, and two or more of the latest big flying machines, including the Transatlantic type, which will run the risk of getting into the midst of the strike fiend by travelling tortoisewise. Perhaps its power plant will acquire a healthy taste for heavy oil fuel from the French locomotives, which may be all to the good of the breed.

The Tripoli Escadrille.

It is reported that one of the seaplanes belonging to the Tripoli escadrille recently covered the distance of 1,000 kilometres between that place and Bengasi in 7 hr. non-stop with three up. As usual, the weather conditions, as in all health resorts, were unfavourable and quite unusual. But, anyhow, I am told all sorts of good things as to this escadrille's hard battle with obstacles, human and material, which would appeal to any equipment officer who had tried to get things organised.

The Pilots' Trade Union.

Col. Piccio writes that he did not accept the post of President of the Roman Pilots' Trade Union, which, instead, was conferred on Col. Ferrari.—T. S. H.

SOUTH AMERICA.

According to the "Times" of Dec. 13th a regular air service has been inaugurated between Buenos Aires and Montevideo by members of the French Aviation Mission.

SPAIN.

The Necessity for Passports.

The Ministry of the Interior has issued instructions that the pilots and passengers of foreign aircraft landing in Spain are to be asked to produce their passports. If they fail to show these papers they are to be detained pending instructions from the Ministry. There is no difficulty in obtaining passports to Spain, and plots are advsed to comply strictly with the regulations in these matters.

A Madrid—London Flight.

The following account of their flight from Madrid to London in a "Vickers-Vimy Rolls" bombing aeroplane is given by Capt. Cockerill and Capt. Broome :

We left Madrid on the morning of Dec. 4th in thick mist, and, flying above this and clouds, crossed the Guadarama Mountains at 7,000 feet. We flew by a compass course above the clouds for 1½ hours, and then came through and found ourselves at Aranoa. We made Vittoria in 2 hours 40 min. The aerodrome at Vittoria was very wet. The machine got bogged, and it took one day to get out of it.

We left Vittoria for Bordeaux on Dec. 5th, crossed the Pyrenees above the clouds on compass course, and came through the clouds about six miles out to sea off Orio. On arrival at Bordeaux we found the aerodrome under water, so decided to make Paris. On the way we found the light failing, and so landed at Tours 4 hours 40 min. after leaving Vittoria.

On the next day (Dec. 6th) we made Paris in two hours. The weather was very bad, with clouds at 500 ft., and rain and snow the whole way. We left Paris on Dec. 8th in a 40-mile-an-hour gale, ran into several bad storms, and were forced to land at Marquise after 3 hours 50 min. against the gale.

We left for London on the morning of Dec 9th in thick mist and against a head wind. On reaching Chatham the mist was so bad that we could not see ground from 300 ft., so flew on compass and reached Hendon 1¼ hours after leaving Marquise.

SWEDEN.

Lieut.-Col. G. L. P. Henderson, M.C., A.F.C., R.A.F., who has been flying from London to Stockholm, has been delayed considerably by exceptionally bad weather, having arrived in Scandinavia just at the season when the weather is changing over from the settled weather of autumn to the settled cold weather of winter. Between Hamburg and Stockholm he flew for many miles through snow-storms, and was either compelled to lose sight of the ground altogether, or to fly within 100 feet or so of the tree-tops. It speaks well for his 160-h.p. Beardmore engine that despite the appalling weather through which it has passed, it has never given him a moment's trouble.

Colonel Henderson remarks that there are a good many fields in Sweden in which it is possible to land, many of them quite suitable for a D.H.4, and, he adds, if it is impossible to get down safely it probably does not hurt any more in a D.H.4 than in an "Ack-W." to get the top of a pine tree stuck up through the floor! He believes that in summer, with the corn growing, it would be difficult to find a good landing ground, and in some places landing is impossible for stretches of 20 and 30 miles, and he therefore recommends seaplanes for flying in Sweden.

The obvious difficulty in selling British aeroplanes in Sweden is that one can buy two twin-engined German seaplanes for the price of one single-engined British seaplane.

UNITED STATES OF AMERICA.

The following notes are taken from "Automotive Industries" of Oct. 23rd :—

Weather Forecasts.

A daily weather forecast for fliers has been inaugurated by the Weather Bureau of the United States Department of Agriculture. The country has been divided into thirteen zones and the forecasts are sent out for each zone to the various army posts, aerodromes and publications interested. Forecasts are made at 9.30 a.m. and 9.30 p.m., and cover a period of 24 hours. They indicate whether the flying weather will be "poor" or "good," whether there is a prospect of rains or clouds and the strength and direction of the winds. In addition they estimate the strength of the winds at various altitudes.

The Aerial Mail Service.

A rebuilt De Havilland 4 mail aeroplane, fitted with a Liberty engine, made a non-stop flight of 415 miles from Cleveland to Jersey City on Oct. 17th. The distance was covered in 3 hr. 26 min., the rate of speed being 129 m.p.h. This was the longest non-stop flight ever made by a mail aeroplane.

The purpose of the voyage was to determine how much more mileage it was possible to get out of alcohol as compared with petrol. The results obtained were in keeping with the two months' flying on this synthetic fuel between New York and Washington.

An Aircraft Exhibition.

The first aeronautical exposition in 1920 will be held in Chicago during the week of Jan. 8th, and, it is said, will be the first show of its kind ever to be held outside New York. The Manufacturers' Aircraft Association of New York have announced that the exhibits will be of types mostly for the use of private owners.

Dropping Dodgers.

The following paragraphs headed Milwaukee (Wis.), Sept. 27th, are taken from "Automotive Industries" of Oct. 2nd, and left in the American language, as the narrative would only be spoilt by translation :—

"History was made in the Wisconsin dealer trade during the week when Leslie D. Frint, Oldsmobile distributer, made a real flying trip to the factory at Lansing, Mich., using his Curtiss JND4 airplane. It was the first time that a dealer or distributer in this part of the country has essayed to call on the manufacturer in this manner.

"Frint, some time ago, purchased a Curtiss flying machine and organised the L. D. Frint Aeronautical Co., to establish an aerial taxicab line. He leased a large field at North Milwaukee, built a hangar and advertised trips at $10 and upward. The ship was campaigned on the country fair circuit in Wisconsin this fall.

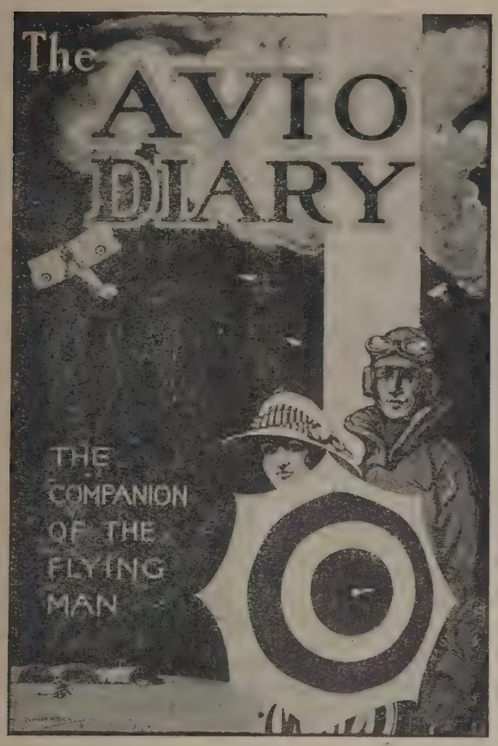
"Frint left at 9.42 o'clock Monday morning and arrived at Lansing at mid-afternoon, making a stop at South Bend, Ind., en route. The pilot was Lieut. H. R. Overly, late of the Army Air Service, who is now acting as Frint's aeronautical manager.

"The ship carried a large supply of red, white and blue dodgers, which were dropped from the sky as the travellers arrived over the Olds Motor Works. The dodgers were in the form of an S O. S. message, urging the plant to 'whoop 'er up' and supply more passenger cars and trucks 'I am up in the air for your answer,' said Frint, actually and figuratively, in the dodger.

"Before returning to his airport at Milwaukee, Frint intends to make a side trip to Detroit, and also to stop off at Cleveland."

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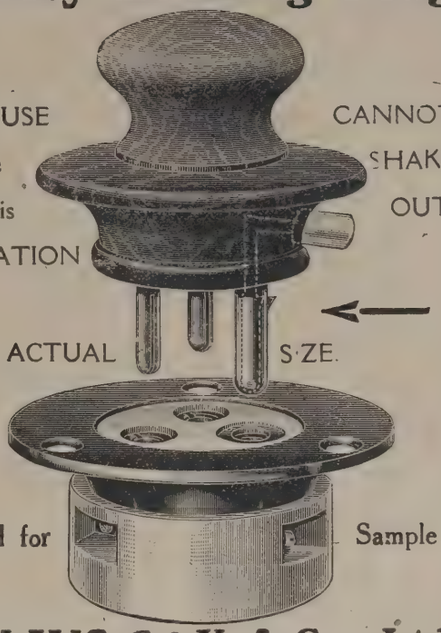
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NAVAL.

Admiralty, Dec. 1st.

R.M.—Capt. G. E. Wildman-Lushington returns to Corps duty from the Seconded List (R.A.F.), and will be borne supy. to estbt. until absorbed, Oct. 23rd.

MILITARY.

War Office, Dec. 9th.

Territorial Force.—Infantry.—4th Bn., Yorks. R.—Sec. Lt. D. I. B. McCullock to be Lt., and to remain secd. R.A.F., Nov. 13th, 1918.

War Office, Dec. 12th.

Regular Forces.—Infantry.—Durh. L.I.—Lt. J. B. Tait, attd. R.A.F., resigns his commn., Sept. 27th (substituted for the notification in "Gazette," Sept. 26th).

Memorandum.—Sec. Lt. J. H. Ferguson, attd. R.A.F., retires on ret. pay, Dec. 13th.

Territorial Force.—Infantry.—4th Bn., North'n R.—Sec. Lt. E. Phillips to be Lt., and to remain seconded (R.A.F.), April 25th, 1918.

War Office, Dec. 13th.

Regular Forces.—Special Reserve of Officers.—Infantry.—4th Conn. Rangers.—Lt. A. P. V. Daly relinquishes his commission on appointment to a commission in the R.A.F., Aug. 1st.

AIR FORCE.

The following relinquish their temp. R.A.F commns. on return to Army duty:—Flight Lt. A. P. Davidson (Lt., H.L.I.), Nov. 27th; Sqdn Ldr. H. E. Rudkin, O.B.E. (Maj., R. Irish Regt.), Dec. 1st.

Capt. (actg. Maj.) H. F. Atkinson-Clark, M.V.O., O.B.E. (Capt., Scots Gds.), relinquishes his commn. on ceasing to be empld., and is permitted to retain rank of Maj., Aug. 1st.

Maj. H. F. Towler (actg. Lt., R.N.R.) relinquishes his commn. on ceasing to be empld., and is granted rank of Lt.-Col., Oct. 25th (substituted for notification in "Gazette," Nov. 11th).

Transferred to unempld. list, from (S.O.):—Lt. H. F. Walker, M.B.E., Nov. 30th; Capt. G. G. Shepherd, O.B.E., Dec. 1st.

Air Ministry, Dec. 5th.

R.A.F.—The following officers have been granted short service commns. in the ranks stated, with effect from Dec. 5th. They will retain their seniority in the substantive rank last held by them prior to the grant of the short service commission.

In the case of officers now gazetted Flying Officer or Observer Officer, from Pilot Officer, seniority will date from the date of the "Gazette":—

Sqdn. Ldr.—J. P. C. Sewell, O.B.E. (A.), M. E. A. Wright, A.F.C. (A.P. (T.)).

Flt. Lts.—A. H. S. Baker, O.B.E. (S.O.), J. S. Browne (A.), B. C. Meates (A.), H. I. Hughes (T.), C. Musgrave, A.F.C. (A.), P. W. Snell, A.F.C. (A.).

Flying Officers.—F. P. Adams (A.), C. Ayling (A.), Rev. R. M. Bankes-Jones (A.), C. E. Barraclough (A.), C. O. Bird (A.), S. W. Bird (A.), G. Birkett (A.), H. Bligh (A.), V. A. Boulle (A.), W. J. Brown (A.), F. Carpenter (A.), P. J. Cox (A.), W. J. Daddo-Langlois (A. and S.), A. B. M. Dale (T.), F. G. C. Dickinson (A.), B. A. de Nevers (A.), J. MacG. Fairweather (A.), F. A. Giles (A.), A. V. H. Gompertz (A.), W. I. Hannon (A.), F. H. R. Henwood, D.F.C. (A.), R. J. H. Holland (A.), F. L. Hopps, A.F.C. (A.), W. R. S. Humphreys (T.), J. R. Jaques, M.C. (A.), A. R. Jones (A.), K. F. Jones (A.), R. Lamb (A.), R. Littlejohn (Ad.), E. R. Longhurst (A.), R. F. C. Metcalfe (A.), S. E. Mailer, A.F.C. (A.), L. G. Paget, A.F.C. (A.), L. W. Park (Ad.), R. C. Preston, A.F.C. (A.), W. C. Pruden (A.), G. Robinson, M.C. (A.), J. A. Rudd (A.), W. W. Saunders (A.), J. A. H. Savage (S.O.), C. H. Tancred, M.B.E. (S.O.), C. H. Teagle (A.), T. A. Thornton (A.), F. D. Travers, D.F.C. (A.), S. F. A. Welsh (Ad.), H. J. Young, M.B.E. (Ad.).

Obrs. Officers.—J. C. Bulteel, B. E. Essex, A. P. Ledger, M. J. Wyatt, M.C.

Flying Officers (from Pilot Officers).—E. H. Attwood (A.), P. Bailey (A.), C. H. Billings (A.), E. Bird (A.), A. D. L. Carroll (A.), W. J. Cooke (A. and S.), G. C. W. Dufty (A.), J. B. Duminy (A.), J. Edmunds (A. and S.), C. C. Gissing (T.), V. W. Helps (A. and S.), H. S. Hobby, M.C. (A.), E. R. C. Hobson (A.), H. W. Iles (A.), D. M. I. Macarthur (A.), H. N. V. Le V. Noel (A.), W. H. L. Oxland (A.), S. H. Potter (A.), R. C. Pretty (A. and S.), H. C. Price (A.), C. O. Rigden (A.), J. H. Shaw (A.), J. Silvester (A.), M. F. Tomkins (T.), G. M. Trundle (A.), E. A. Turnbull (T.), G. W. Wilson (A.).

Obsr. Officers (from Pilot Officers).—W. A. Armstrong, E. D. Barnes, F. H. Buggé, B. C. S. Byrne, R. T. Carter, G. S. Coggan, B. G. Drake, K. H. Holley, L. W. Kitt, T. L. Lowe.

The notifications appearing in the "London Gazettes" of the dates indicated below, appointing the following officers to short service commissions, are cancelled:—Flt. Lt. N. R. Cook, D.S.C. (A. and S.); Flying Officer G. J. Fowler, A.F.C. (A.), Oct. 24th; D. S. C. Macaskie (T.), Nov. 11th.

The notification in the "Gazette" of Nov. 28th relative to Flt. Lt. E. F. Turner (T.) is cancelled, and that in the "Gazette" of Oct. 24th, appointing this officer to a short service commission, stands.

R.A.F.—The heading of the list of promotions which appeared in the "London Gazette" dated Nov. 28th should read "permanent and short service commissions, and re-seconded officers," instead of "permanent commissions."

Flying Officer W. B. Thomson (A.) is granted a permanent commn. in the rank stated, Aug. 1st.

The notification in the "Gazette" of Aug. 1st, appointing the following officers to permanent commns., is cancelled:—Capt. E. E. N. Burney, M.C. (A.), Capt. L. M. Lilley, O.B.E. (T.), Lt. M. Minter (A.), Lt. G. R. Barry (T.), Lt. D. N. Thompson, M.C. (S.O.).

The notification in the "Gazette" dated Oct. 28th, appointing the following officers to permanent commns, is cancelled:—Flt. Lt. M. R. N. Jennings, M.C., A.F.C. (A.), Flt. Lt. A. B. Shearer (A.), Flying Officer C. O. B. Beale, D.S.O. (A.).

The initials of Lt. R. H. F. S. de V. Somerset are as now described, and not as stated in "Gazettes" of Aug. 1st and Sept. 16th.

The following temp. appts. are made at the Air Ministry:—Staff Officers, 3rd Class (T.).—Flt. Lt. L. D. McKean, Nov. 13th (Q.)—Flying Officer H. J. Birtels, Nov. 24th.

The following temp. appts. are made:—Group Capt. H. C. T. Dowding, C.M.G., is graded for purposes of pay and allces. as an Area Comr., whilst officiating in comd. of an area, from Sept. 1st to Oct. 17th.

Staff Officer, 1st Class.—(Air).—Wing Comdr. C. W. Wilson, M.C., Oct. 16th.

Staff Officers, 2nd Class.—(P).—Sqdn. Ldr. H. A. Michell, O.B.E., Oct. 16th, from (S.O.), 1st Class. (Air).—Sqdn. Ldr. R. L. G. Marix, D.S.O., Nov. 12th.

Flying Branch.—Wing Comdr. W. F. MacNeece, D.S.O., D.F.C., to be Wing Comdr. (A.), from (S.O.), Dec. 4th.

Sec. Lt. E. Phillips to be Lt., Nov. 10th, 1918.

The following relinquish the temp. R.A.F. commns. on return to Army duty:—Pilot Officer (Hon. Flying Officer) A. J. Cyr (Lt., Can. Forestry Corps), May 9th; Flt. Lt. (Hon. Sqdn. Ldr.) G. Disney (Maj., Essex R.), Oct. 27th; Flt. Lt. C. C. Clark (Lt., R.F.A.), Nov. 10th; Flying Officer J. K. Smith (Lt., Lanc. Fus.), Nov. 12th; Flying Officer V. Bayley (Lt., L'pool R.), Nov. 14th; Flying Officer W. F. Nickolay (Lt., E. Yorks. R.), Nov. 17th; Flying Officer L. Gellatly (Lt., Gord. Highrs.), Nov. 20th; Wing Comdr. G. E. Todd, O.B.E. (Maj. (Bt. Lt.-Col.), Welsh R.), Nov. 27th.

Sec. Lt. J. F. M. Phillips relinquishes his commn. on ceasing to be empld., Oct. 25th.

Sec. Lt. H. A. Ball, M.M. (Lt., R.H. and R.F.A.), relinquishes his temp. R.A.F. commn. on retirement from the Army, Nov. 23rd.

Transferred to the unempld. list:—Sec. Lt. C. C. Brooks, Lt. (actg. Capt.) S. Stanger, M.C., D.F.C., Sec. Lt. C. E. Stewart, Sec. Lt. A. Tencer, Sec. Lt. A. H. Wilkinson, Feb. 1st; Lt. A. B. Hopper, March 15th (substituted for notification in "Gazette" of Sept. 16th); Sec. Lt. H. E. Fisher, April 19th; Sec. Lt. J. V. Price, April 22nd; Lt. H. B. Lilley, May 1st; Sec. Lt. L. P. Worthington, June 3rd; Ses. Lt. N. Lotter, June 14th; Lt. R. N. L. Munro, July 5th; Lt. A. Dickson, July 9th; Lt. H. M. Cartwright, July 10th; Sec. Lt. F. G. Wright, July 12th; Sec. Lt. W. Dowding, July 29th (substituted for notification in "Gazette" of Aug. 5th); Lt. A. J. Stopford, Aug. 11th (substituted for notification in "Gazette" of July 29th); Sec. Lt. D. J. Dillabough, Sec. Lt. T. Hartford, Aug. 22nd; Sec. Lt. J. F. Starkey, Aug. 29th; Sec. Lt. V. B.-P. MacCallum, Sept. 10th; Lt. W. H. Oliver, Sept. 12th (substituted for notification in "Gazette" of Nov. 7th, wherein this officer was shown as "Capt."); Sec. Lt. (Hon. Lt.) D. A. McDonald, Sec. Lt. A. G. Power, A.F.C., Sec. Lt. Le Roy Springstead, Sec. Lt. G. H. Swan, Sept. 26th; Lt. C. C. Caldwell, Sec. Lt. W. A. Grant, Sec. Lt. A. H. McDonal, Lt. H. W. Price, Sec. Lt. A. H. Smith, Sec. Lt. G. R. Spradbrow, Sec. Lt. A. Strachan, Sec. Lt. H. C. Sweetman, Sept. 28th; Lt. E. F. H. Davis, Lt. G. M. McWilliams, Sec. Lt. E. G. Shafer, Sec. Lt. H. J. Smith, Capt. G. L. E. Stevens, Sec. Lt. D. Stevenson, Lt. H. E. Stewart, Lt. G. Stocks, Lt. E. C. R. Stoneman, D.F.C., Sec. Lt. R. Williams, Lt. W. Windrum, Sept. 29th; Sec. Lt. J. W. Chadwick, Lt. P. M. Tudhope, D.F.C., Oct. 6th; Capt. W. Lambert, Sec. Lt. F. C. McConnell, Oct. 7th; Capt. Lord Alington, Oct. 12th (substituted for notification in "Gazette" of Nov. 14th); Sec. Lt. W. E. Lewis, Oct. 17th; Sec. Lt. H. Edge, Oct. 31st; Lt. W. P. James, Nov. 1st; Sec. Lt. A. Turner, Nov. 7th; Sec. Lt. A. R. L. Lango, Sec. Lt. R. A. Wade, Nov. 12th; Lt. H. G. Lomberg, Sec. Lt. J. W. McArthur, Sec. Lt. P. A. Savoie, Lt. J. M. Smith, Lt. A. B. Taylor, Capt. W. B. Tisdall, Sec. Lt. W. L. Woodhouse, Lt. J. A. Wright, Nov. 13th; Capt. H. J. Roach, A.F.C., Capt. S. D. Scott, Nov. 15th; Sec. Lt. (Hon. Lt.) D. M. Davies, Lt. H. E. Hyde, Lt. R. T. Whitney, Nov. 16th; Sec. Lt. E. J. Storey, Lt. J. T. Thursfield, Nov. 17th; Sec. Lt. E. C. W. Bray, Sec. Lt. (Hon. Lt.) H. S. Hobby, M.C. (Yorks R.), Sec. Lt. C. C. Thurrel, Sec. Lt. D. F. Turpin, Nov. 18th; Lt. L. V. Dell, Nov. 19th; Capt. F. Rose, A.F.C., Sec. Lt. J. D. Swallow, Nov. 20th; Lt. L. H. Gibbon, Lt. W. A. L. Spencer, Nov. 21st; Lt. C. W. Bragg, Sec. Lt. W. A. Greig, Lt. S. Jones, Sec. Lt. H. Runciman, Sec. Lt. (Hon. Lt.) H. Taylor, M.C., Nov. 22nd; Sec. Lt. H. Ellison, Nov. 26th; Capt. K. Capel, Nov. 30th.

The following Lts. relinquish their commns. on account of ill-health and are permitted to retain their rank:—F. K. Ratcliffe (contracted on active service), Nov. 27th; P. W. Anderson (caused by wounds), A. D. Robertson (contracted on active service), Nov. 28th.

Sec. Lt. E. M. Nicholas relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, May 8th.

Sec. Lt. S. Le Roy Switzer is antedated in his appt. as Sec. Lt. (A. and S.), May, 25th, 1918.

The notification in "Gazette" Sept. 5th concerning Lt. F. G. M. Sparks is cancelled (notification in "Gazette" June 6th to stand).

The notification in "Gazette" Oct. 17th concerning Lt. H. W. Auerbach is cancelled (notification in "Gazette" Oct. 28th to stand).

The notification in "Gazette" Nov. 18th concerning Lt. J. N. Catling is cancelled.

The notification in "Gazette" Nov. 18th concerning Sec. Lt. (Hon. Lt.) A. Cox (Lt., R. Welsh Fus.) is cancelled.

Administrative Branch.—Sec. Lt. J. A. McGilley to be Lt., March 1st.

The following relinquish their temp. R.A.F. commns. on return to Army duty:—Flying Officer Sir H. W. A. Ripley, Bt. (Lt., 1st Dgns.), Feb. 17th (substituted for notification in "Gazette," Feb. 7th); Flying Officer C. C. Statt (Lt., Oxf. and Bucks. L.I.), April 15th; Sqdn. Ldr. K. L. Buist (Maj., H.L.I.), Flying Officer J. E. G. O'Byrne (Lt., R. Muns. Fus.), Nov. 19th.

Lt. T. J. Hudson (Sec. Lt., Ex. Reg. Empld. List) relinquishes his temp. R.A.F. commn. on retirement from the Army, Dec. 6th.

Transferred to the unempld. list:—Sec. Lt. E. A. Parnell, Feb. 4th; Sec. Lt. S. J. Mitchell, March 12th; Lt. F. R. Hatch, March 31st (substituted for notification in "Gazette," June 24th); Sec. Lt. C. W. McKissock, May 1st; Lt. K. V. Stratton, May 28th; Maj. S. E. Parker, M.B.E., A.F.C., Aug. 1st; Lt. E. R. Wilkinson, Sept. 12th; Sec. Lt. B. Shaw, Oct. 8th; Capt. H. D. Stanton, Oct. 9th; Lt. R. B. Guy, Lt. J. McGilley (substituted for notification in "Gazette," Oct. 28th, wherein this officer was shown as Sec. Lt.), Oct. 13th; Sec. Lt. W. P. Taltavall, Nov. 2nd; Sec. Lt. J. P. Strydom, Nov. 7th; Capt. (actg. Maj.) W. G. Scott, Nov. 10th; Sec. Lt. J. W. Clarke, Nov. 13th; Sec. Lt. F. F. Anslow, Sec. Lt. (Hon. Lt.) E. T. Fielding, Lt. E. C. Rylands, Nov. 15th; Sec. Lt. N. F. Cooke, Nov. 17th; Lt. (Hon. Capt.) J. W. Harling, Nov. 18th; Capt. J. H. Hannay, Sec. Lt. J. S. Shipway, Lt. (actg. Maj.) R. Tait, Capt. A. Toomey, Sec. Lt. (Hon. Lt.) G. Watts, Nov. 21st; Sec. Lt. M. W. Taplin, Nov. 24th; Sec. Lt. J. S. McLeod, Nov. 26th.

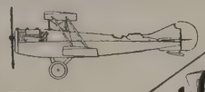
Technical Branch.—Pilot Officer F. Simpson to be Flying Officer, without the pay and allowances of that rank, Oct. 1st (substituted for notification in the "Gazette" of July 29th).

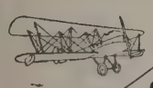
The following relinquish their temp. R.A.F. commns. on return to Army duty:—Flying Officer E. Gayton (Lt., R.F.A.), Nov. 15th; Pilot Officer (Hon. Flying Officer) W. W. Smith, M.C. (Lt., actg. Capt., Shrops. L.I.), Nov. 18th; Flying Officer (Lt., N. Staffs. R.) P. S. Laughton, Nov. 20th.

Transferred to the unempld. list:—Sec. Lt. A. T. Watts, April 15th; Lt. W. B. Wood, Aug. 18th; Lt. A. W. Allan, Sept. 16th (substituted for notification in the "Gazette" of Nov. 18th, wherein this officer's rank was shown as Sec. Lt. (Hon. Lt.)); Sec. Lt. H. E. Edwards, Sept. 26th; Lt. A. V. Sutton, Sec. Lt. F. P. Ward, Sept. 28th; Sec. Lt. A. S. Roberts, Sept. 29th; Lt. (Hon. Capt.) D. A.

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English, Oct. 10th; Sec. Lt. (Hon. Lt.) J. R. Rayneau, Nov. 1st; Lt. G. H. Johnson, Nov. 8th; Sec. Lt. J. L. H. Thomson, Nov. 11th; Capt. H. I. Hughes, Nov. 12th; Sec. Lt. G. H. Taylor, Nov. 13th; Sec. Lt. (Hon. Capt.) W. J. Collins, Capt. W. A. B. Laing, Sec. Lt. G. T. Laverty, Nov. 15th; Lt. W. T. Davis, Nov. 17th; Capt. J. H. Sayner, Nov. 20th; Sec. Lt. J. C. Corbin, Sec. Lt. C. C. Cruttenden, Sec. Lt. F. G. Eckford, M.B.E., Lt. T. Foster, Capt. C. W. M. Ludgate, Nov. 21st; Capt. A. R. Wood, Nov. 27th.

The notification in the "Gazette" of July 18th concerning Maj. G. Dixon-Spain, M.C., is cancelled. (Notification in "Gazette" of June 27th to stand.)

The notification in the "Gazette" of Oct. 28th concerning Lt. J. Butterfield, wherein this officer was shown on the unempld. list, is cancelled. (Notification in "Gazette" of Nov. 7th to stand.)

MEDICAL BRANCH.—Capt. B. H. Swift is transferred to the unempld. list, Oct. 23rd.

DENTAL BRANCH.—Capt. H. L. Thorn is transferred to the unempld. list, Nov. 19th.

W.R.A.F.—Deputy Administrator (actg. Administrator) Mrs. M. Gerard reverts temporarily to the rank of Asst. Administrator on ceasing to be empld. as Administrator, Oct. 1st, and is empld. in her substantive rank of Deputy Administrator, Oct. 20th.

The date of relinquishment of appt. of Deputy Administrator E. V. M. Anderson is Oct. 6th, and not as stated in "Gazette" of Nov. 7th.

The date of relinquishment of appt. of Deputy Administrator M. C. Ralston is Nov. 8th, and not as stated in "Gazette" of Sept. 19th.

To be Actg. Asst. Comdt., Class I:—Asst. Comdt. II K. L. Curlett, O.B.E., Nov. 4th.

To be Actg. Deputy Administrator:—Asst. Administrator I. O. S. Goddard, Dec. 4th.

The following officer relinquishes her appt. on the grounds of ill-health:—Asst. Administrator E. B. Imeson, Nov. 8th.

The following officers relinquish their appts. at their own request: Deputy Administrators.—Mrs. G. Pertwee, M.B.E., Mrs. F. Day, M.B.E., Sept. 18th; Mrs. A. Hughes-Gibb (actg. Adm., D.A.C.), Nov. 5th.

Asst. Administrators.—M. D. Newton, Aug. 5th; L. M. Gore-Hart, Aug. 30th.

The following officers relinquish their appts. on completion of service:—Comdt. Dame H. C. I. Gwynne-Vaughan, D.B.E., Dec. 5th.

Administrators.—Mrs. B. D. Beckett (D.A.C.), Oct. 31st; M. N. Thornton, Nov. 3rd; O. Earlam (actg. Asst. Comdt. II), Nov. 22nd; Mrs. M. A. Atkin (D.A.C.), Nov. 23rd.

Deputy Administrators.—F. M. Girdler (actg. Adm.), Nov. 3rd; M. F. E. Scott, Nov. 4th; Mrs. C. Balthazar-Gething, M.B.E., E. R. Sinclair, Mrs. N. E. Moore-Anderson, Nov. 8th; J. Alexander, Nov. 14th; D. E. B. Livesay, Nov. 15th; I. A. Coombs, Nov. 20th; A. G. Jones, Nov. 21st; V. Dening, Nov. 25th; E. I. David (actg. Adm.), Dec. 1st.

Assistant Administrators.—A. A. Screech, Oct. 10th; E. A. Burbidge (actg. Dep. Adm.), Oct. 11th; E. N. Forshaw, M. H. Silcock (actg. Dep. Adm.), Oct. 15th; M. C. Whidborne (actg. Dep. Adm.), E. Curry, Nov. 1st; G. Bell-Cox (actg. Dep. Adm.), O. P. Downes, N. Maunsell, Nov. 4th; E. L. Smith (actg. Dep. Adm.), Nov. 7th; M. S. Cole-Hamilton (actg. Adm.), E. R. Gill, A. M. Davis, M. E. Hamilton (actg. Dep. Adm.), Mrs. M. M. Pope, Nov. 8th; Mrs. M. M. Gattie, R. Newling, Nov. 10th; L. A. Goodwin (actg. Dep. Adm.), Nov. 12th; I. Carss, Nov. 14th; K. J. Wright (actg. Dep. Adm.), M. A. Scholefield (actg. Adm., D.A.C.), Nov. 15th; F. H. Spinney (actg. Adm.), Nov. 18th; J. St. C. Balls, Nov. 19th; E. M. Williams (actg. Dep. Adm.), Nov. 21st; Mrs. K. L. Churchill, K. G. Mitchell (actg. Dep. Adm.), Nov. 22nd; D. Hodgson (actg. Dep. Adm.), Nov. 25th; N. Campbell (actg. Dep. Adm.), Dec. 5th.

MEMORANDA.—Lt. W. F. Kisbey is granted the hon. rank of Capt., Feb. 19th.

Temp. Hon. Lt. A. R. Densley relinquishes his commn. on ceasing to be empld., May 31st.

Capt. L. M. P. Sulivan, O.B.E., is transfd. to the unempld. list, from (S.O.), Nov. 23rd.

The notification in the "Gazette" of Aug. 8th concerning Capt. H. F. Atkinson-Clarke, M.V.O., O.B.E. (Scots Guards), is cancelled.

The notification in the "Gazette" of July 8th concerning 27168 Cadet J. Evans is cancelled.

AIR MINISTRY, Dec. 9th.

R.A.F.—Flying Officer G. Archer (O.) is granted a permanent commn. in the rank stated, with effect from Aug. 1st.

The notification in the "Gazette" of Aug. 22nd appointing Capt. G. L. Godden, O.B.E. (T.), to a permanent commn. is cancelled.

The notification in the "Gazette" of Oct. 28th appointing Flying Officer C. T. Black (A.) to a permanent commn. is cancelled.

The notification in the "Gazette" of Dec. 2nd appointing Flying Officer A. L. M. Van der Byl (A.) to a permanent commn. is cancelled.

The following temp. appts. are made:—Staff Officers, 2nd Class.—(P.)—Sqdn. Ldr R. J. F. Barton, O.B.E., Dec. 4th; (O.)—Sqdn. Ldr. F. A. J. B. Wiseman, O.B.E., Oct. 18th, from (S.O.), 1st Class.

Staff Officers, 3rd Class.—(P.)—Flight Lt. L. A. K. Butt, Dec. 4th; (T.)—Flight Lt. W. J. B. Curtis, O.B.E., Oct. 18th, from (S.O.), 2nd Class.

FLYING BRANCH.—Sqdn. Ldr. D. L. Allen, A.F.C., to be Sqdn. Ldr. (A.), from (S.O.), Oct. 18th.

The following Capts. are graded for purposes of pay and allowances as Majs. whilst empld. as Majs. (A'ship), from May 1st to July 31st:—R. A. Cochrane, A.F.C., G. M. Thomas, D.F.C.

Flight Lt. D. G. Donald, A.F.C., to be actg. Sqdn. Ldr. whilst empld. as Sqdn. Ldr. (A.), without the pay and allowances of that rank, Aug. 1st.

Flight Lt. F. N. Halsted, D.S.C., D.F.C., to be Flight Lt. (A. and S.), from (S.O.), Nov. 24th.

The following Lts. are graded for pay and allowances as Capts. whilst empld. as Capts.:—R. B. Gibb (A'ship) to Sept. 8th; L. W. Baker, D.F.C. (K.B.), to June 3rd, May 1st; Lt. S. G. Barlow to be Lt. (O.), from (Ad.), July 22nd.

Flying Officer (actg. Flight Lt.) C. E. Maitland, D.F.C., relinquishes the actg. rank of Flight Lt. on ceasing to be empld. as Flight Lt. (A.), Sept. 21st.

Sec. Lts. to be Lts.:—(Hon. Lt.) J. Duncanson, June 1st, 1918 (since relinquished his commn.) (substituted for notification in the "Gazette" of Oct. 14th); (Hon. Capt.) W. E. Dowling, Aug. 11th, 1918; F. L. W. Dowling, May 16th; K. S. Eagles, June 7th; H. Nattrass, I. C. Slater, June 20th.

Pilot Officers to be Flying Officers:—J. E. Phelps, Aug. 7th; J. H. Mehigan, Oct. 1st.

P.F.O. H. W. Symmes (late R.N.A.S.) is granted a temp. commn. as Sec. Lt. (A.), Aug. 1st, 1918.

78700 Cadet H. L. Edwards is granted a temp. commn. as Sec. Lt. (O.), July 6th, 1918 (substituted for the notification in the "Gazette," July 16th, 1918, wherein this cadet was described as "Harold Edwards").

Sqdn. Ldr. F. E. Sandford, A.F.C., is placed on the half-pay list, Dec. 10th.

The following relinquish their temp. R.A.F. commns. on return to Army duty:—Lt. G. F. Elliott (Lt., Canadian A.S.C.), March 25th; Lt. C. A. Hore, M.C. (Lt., N. Staffs. R.), June 26th; Flight Lt. K. H. Riversdale-Elliott (Lt., Scottish Rifs.), Nov. 9th; Flying Officer R. J. E. P. Goode (Lt., R. Dublin Fus.), Nov. 12th; Flying Officer C. V. A. Bucknall (Lt., Dragoons), Nov. 18th; Flying Officer R. H. F. De V. S. Somerset, D.S.O. (Lt., Coldstream Guards), Flying Officer (actg. Flight Lt.) A. D. K. Perkins (Lt., R. Irish Fus.), Nov. 20th; Pilot Officer (Hon. Flying Officer) C. B. Crawford (Lt., Oxford and Bucks. L.I.), Nov. 21st; Flight Lt. S. P. Simpson (Lt., Bedford and Hertford R.), Nov. 24th; Pilot Officer (Hon. Flying Officer) H. J. Vickers (Lt., Indian Army Res.), Dec. 3rd; Flight Lt. S. B. Horn, M.C. (Capt., Dragoon Gds.), Dec. 4th.

Transferred to unempld. list:—Sec. Lt. D. W. Bell, Jan. 6th; Sec. Lt. E. H. Elliot, Sec. Lt. W. K. Lees, Sec. Lt. E. R. S. Nurse, Feb. 1st; Sec. Lt. (Hon. Lt.) J. E. T. Sutcliffe, March 13th; Lt. H. J. Knudson, April 7th; Lt. M. V. Kelly, April 19th; Sec. Lt. N. L. Neff, May 21st (substituted for notification in "Gazette," May 20th); Sec. Lt. I. W. Hoeffler, May 23rd; Sec. Lt. C. B. A. C. Chase, June 12th; Sec. Lt. J. D. S. MacCallum, June 14th (substituted for notification in "Gazette," June 6th); Lt. G. H. Alleby, Sec. Lt. G. A. Beatty, Lt. E. B. Denison, Sec. Lt. C. W. Kerr, July 12th; Sec. Lt. E. H. J. Davidson, July 16th; Sec. Lt. J. Hogg, July 29th; Sec. Lt. L. C. S. Delapina, Aug. 2nd; Sec. Lt. W. J. McIntyre, Aug. 5th; Sec. Lt. T. B. Davie, Aug. 7th; Sec. Lt. F. A. Mathews, Aug. 13th; Capt. F. S. McGill, Aug. 14th (substituted for notification in "Gazette," Nov. 28th); Lt. R. U. Hoodinott, Lt. G. C. Hyde, Aug. 20th; Sec. Lt. H. C. Dean, Sec. Lt. G. Goad, Aug. 22nd; Sec. Lt. H. Milward, Aug. 28th; Lt. C. E. J. Barbour, Aug. 29th; Sec. Lt. H. T. Ayliff, Lt. I. C. Dick, Sept. 9th; Lt. B. R. Digby, Sec. Lt. T. Dixon, Sept. 10th; Lt. H. J. L. Kirkpatrick, Sept. 13th; Lt. S. S. Stone, Sept. 20th; Lt. J. W. Kembery, Sept. 23rd; Lt. J. W. Pearson, D.F.C., Sept. 25th; Lt. H. A. Armstrong, Sec. Lt. M. Baker, Sec. Lt. C. F. Baumhofer, Sec. Lt. A. W. L. Beauchamp, Sec. Lt. C. R. Benedict, Sec. Lt. H. Bennett, Sec. Lt. H. M. Best, Sec. Lt. R. Davis, Sec. Lt. W. D. Durran, Sec. Lt. P. A. Kingsland, Sec. Lt. R. H. McKee, Lt. S. Wyborn, Sept. 26th; Sec. Lt. C. F. Barton, Lt. F. E. Beauchamp, Lt. P. R. Beare, Sec. Lt. E. C. Bigelow, Lt. J. R. Black, Lt. T. G. Blakely, Lt. H. H. Cooper, Lt. W. C. Daniel, Sec. Lt. P. H. Desarmeau, Sec. Lt. E. R. Dixon, Sec. Lt. G. R. Dranfield, Lt. A. S. Dunn, Sec. Lt. G. E. Dunn, Sec. Lt. W. H. Henrion, Sec. Lt. W. A. Henry, Lt. I. W. Hunter, Sec. Lt. G. C. Hyatt, Lt. F. W. Kemp, Sec. Lt. G. H. P. Knowler, Sec. Lt. D. B. McColl, Sec. Lt. R. S. McConnell, Sec. Lt. F. O. McDonald, Sec. Lt. C. K. McDougall, Sec. Lt. W. E. MacDougall, Lt. E. D. MacFarlane, Lt. T. C. McKechnie, Lt. G. P. McNaughton, Sec. Lt. A. P. Malone, Sec. Lt. A. S. Mathews, Sec. Lt. C. G. Mathias, Sec. Lt. J. Morren, Sept. 28th; Sec. Lt. W. R. Allison, Lt. A. Bentley, Sec. Lt. J. P. Bernigaud, Sec. Lt. C. E. Binet, Sec. Lt. W. W. Coates, Sec. Lt. N. W. Davidson, Sec. Lt. D. W. Davies, Sec. Lt. J. M. Dickinson, Sec. Lt. W. L. Dougan, Sec. Lt. A. B. Dunn, Lt. R. S. Durno, M.C., Lt. L. A. Hawkins, Sec. Lt. M. J. Hennessey, Sec. Lt. M. B. Henselwood, Sec. Lt. R. G. H. Humphrey, Sec. Lt. R. G. H. Hurton, Sec. Lt. J. F. Hyde, Sec. Lt. E. A. Kenny, Sec. Lt. F. B McElrea, Sec. Lt. T. E. McFeely, Lt. G. McIntyre, Sec. Lt. A. D. McLean, Lt. A. G. Makings, Sec. Lt. A. S. Maltby, Sec. Lt. F. C. Marwood, Lt. J. T. Menzies, Lt. A. E. Mewett, Sec. Lt. R. W. Moss, Sept. 29th; Lt. R. Douglas, A.F.C., Sec. Lt. J. B. Downing, Oct. 6th; Lt. S. E. Wise, Oct. 7th (substituted for notification in "Gazette" of Oct. 24th); Lt. H. F. Davidson, Lt. J. D. Mail, A.F.C., Oct. 9th; Lt. J. C. Green, D.F.C., Oct. 10th; Lt. M. A. Benjamin, M.C., Sec. Lt. W. T. S. Lewis, Oct. 12th; Lt. A. S. Barnes, Oct. 13th; Lt. C. W. Seymour-Hall, Oct. 17th; Sec. Lt. I. Duval, Lt. J. P. Lloyde (substituted for notification in "Gazette" of April 1st), Oct. 29th; Lt. A. T. S. L. De Lacroix, Oct. 31st; Sec. Lt. R. R. Beebe, Lt. D. C. Henderson, Nov. 2nd; Lt. K. R. Thomas, Nov. 3rd; Lt. J. O. Holliday, Nov. 4th; Sec. Lt. A. K. Doull, Nov. 6th; Sec. Lt. L. S. Barlow, Nov. 10th; Lt. W. H. L'Estrange Graham, Nov. 12th; Lt. E. Dixon, Lt. R. E. Dodds, D.F.C., Capt. J. W. Hobbs, Lt. S. R. Mantle, Sec. Lt. J. A. Peterson, Sec. Lt. H. Wensley, Nov. 13th; Lt. F. W. Clark, A.F.C., Nov. 14th; Sec. Lt. G. H. Cavill, Sec. Lt. W. T. Doherty, Nov. 15th; Lt. A. L. Bartlett, Lt. T. R. Dixon, Lt. F. A. Hobro, Nov. 17th; Sec. Lt. S. F. Bett, Sec. Lt. H. C. McKinley, Nov. 18th; Lt. R. P. Bufton, Sec. Lt. D. Martin, Nov. 19th; Lt. C. W. Moorhouse, Sec. Lt. L. W. D. Peacock, Nov. 20th; Lt. A. Brock, Sec. Lt. G. A. Dover, Nov. 21st; Sec. Lt. S. C. H. Biddle, Sec. Lt. C. E. Howley, Sec. Lt. G. Martyn, Nov. 22nd; Sec. Lt. R. W. Cawston, Nov. 23rd; Lt. H. C. Gooch, Nov. 25th; Lt. S. Smith, Nov. 27th; Sec. Lt. H. E. Harden, Lt. W. J. Porter, Nov. 28th; Lt. H. Riches, Nov. 29th; Lt. D. C. Barrington, Nov. 30th; Lt. C. A. Morris, Dec. 2nd.

The following Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—J. N. Catling (contracted on active service), Oct. 20th; F. O. Rooks (contracted on active service), Nov. 6th; R. K. Mackenzie, Nov. 29th (substituted for notification in the "Gazette," Sept. 6th, 1918); W. E. B. Oakley (contracted on active service), Dec. 2nd.

Sec. Lt. H. C. Belore relinquishes his commn., being physically unsuited for the duties of pilot or observer, Oct. 23rd, 1918 (substituted for notification in the "Gazette" of July 26th, 1918).

The following Sec. Lts. relinquish their commns. on account of ill-health contracted on active service, and are permitted to retain their rank:—W. C. Taylor, Oct. 17th; H. B. Mills, Nov. 13th.

The notification in the "Gazette" of Sept. 5th concerning Sec. Lt. F. R. James is cancelled (notification in the "Gazette" of May 2nd to stand).

The notification in the "Gazette" of Oct. 14th concerning Maj. A. K. Robertson is cancelled.

The notifications in the "Gazette" of Nov. 7th concerning the following officers are cancelled:—Lt. W. S. Campbell (notification in "Gazette" of Oct. 24th to stand); Sec. Lt. (Hon. Lt.) E. Lawson (notification in "Gazette" of Nov. 25th to stand); Sec. Lt. W. C. Taylor.

ADMINISTRATIVE BRANCH.—Flight Lts. to be Flight Lts., from (S.O.): H. W. M. Paul, O.B.E., M.C., Oct. 13th (substituted for notification in the "Gazette" of Nov. 18th); G. C. Anne, O.B.E., Oct. 18th.

Sec. Lt. (Hon. Lt.) E. T. Fielding to be Sec. Lt. (Hon. Lt.), from (T.), from May 1st to Sept. 17th, and is graded for purposes of pay and allowances as Capt. whilst empld. as Capt., from May 1st to Sept. 17th.

Lt. C. M. McGorrery to be Lt., from (O.), Dec. 18th, 1918 (substituted for notification in the "Gazette" of March 4th).

Flying Officers to be Flying Officers, from (S.O.), Oct. 18th:—C. S. Fulton, W. Myers, M.C., D.C.M., (Hon. Flight Lt.) H. Pallett, and to be Hon. Flight Lt., A. G. Stradling, R. W. Ward, B. H. Godfrey, Nov. 12th; Flying Officer E. G. Williams to be Flying Officer, from (A.), Oct. 27th.

Sec. Lts. to be Lts.:—T. Gill, Oct. 22nd, 1918 (substituted for notification in "Gazette" of July 29th); A. L. Kidd, May 4th; W. E. G. Heanley, M.B.E., July 10th.

Sec. Lt. (Hon. Lt.) T. Mumford to be actg. Lt. whilst empld. as Lt., Aug. 8th, 1918 (substituted for notification in "Gazette" of Oct. 29th).

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Sec. Lt. S. A. Hipple (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt., March 1st.

Capt. (Hon. Maj.) T. M. Koss (Qrmr. and Maj, Dragoons) relinquishes his commn. on ceasing to be empld., Nov. 19th.

The following relinquish their temp. R.A.F commns. on return to Army duty :—Lt. C. E. Bright (Lt. (actg. Capt.), E. Lancs. R.), Feb. 8th; Flight Lt. K. B. Harbord (Capt., R.F.A.), Nov. 23rd.

Transferred to the unempld. list :—Lt. F. J. E. Brake (R.G.A., S.R.), Feb. 1st (substituted for notification in "Gazette" of Nov. 18th, wherein this officer's rank was shown as Sec. Lt.); Capt. A. W. Barrington-Foote, July 11th; Lt. D. F. Hurr, M.C., July 18th; Sec. Lt. G. A. McGillivray, Aug. 22nd; Sec. Lt. O. J. Dean, Aug. 23rd; Sec. Lt. T. D. Drury, Aug. 25th; Sec. Lt. B. J. Pearn, Aug. 31st; Lt. C. L. De Beer, Sept. 10th; Lt. G. A. F. Hudson, Sept. 11th; Lt. S. De Freitas, Sept. 20th; Sec. Lt. W. E. Blackett, Capt. W. R. C. Da Costa, Sept 29th; Lt. H. D. Duncan, Oct. 11th; Sec. Lt. J. Birtwistle, Oct. 12th; Lt. S. J. Dodson, Oct. 20th; Sec. Lt. A. H. Betteridge, Oct. 23rd; Sec. Lt. R. P. Briscoe, Nov. 9th; Lt. (actg. Maj.) F. T. Chapman, Sec. Lt. E. U. Poyser, Nov. 11th; Lt. A. G. W. Grantham, Nov. 15th; Sec. Lt. H. G. Brodie, Lt. J. B. V. Clements, D.F.C., Nov. 17th; Lt. S. A. E. Cowell, Sec. Lt. J. P. Nolan, Nov. 21st; Sec. Lt. E. J. K. Boden, Nov. 22nd; Sec. Lt. G. W. C. Dawson, Nov. 28th; Capt. J. W. J. Ashton, Nov. 29th.

Lt. C. S. Bignell relinquishes his commn. on account of ill-health (caused by wounds), and is granted the rank of Capt., Dec. 2nd.

Sec. Lt. A. F. P. James relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Dec. 1st.

The notification in "Gazette" of Nov. 7th concerning Capt. E. P. L. Baker is cancelled.

Technical Branch.—Wing Comdr. (actg. Group Capt.) A. V. Bettington, C.M.G., relinquishes actg. rank of Group Capt. on ceasing to be empld. as Group Capt., Nov. 17th.

Sqdn. Ldr. F. H. Unwin, O.B.E., to be Sqdn. Ldr., Grade (B), from (S.O.), Oct. 18th.

The following Capts. are graded for purposes of pay and allowances as Majs. whilst empld. as Majs., Grade (A) :—A. M. Low, May 1st; H. L. Rutty, from May 1st to July 31st.

Sec. Lt. R. G. Meech is graded for purposes of pay and allowances as Capt. whilst empld. as Capt., Grade (A), from May 1st to Aug. 28th.

Sec. Lt. C. W. Bentley to be Lt., Grade (A), May 16th (substituted for notification in "Gazette" of July 29th).

Sec. Lts. to be Lts. :—P. A. Edmonds, R. H. B. Tomlinson, May 16th.

Sec. Lts. to be actg. Lts. whilst empld. as Lts., Grade (A) :—R. J. Shanks, from April 1st, 1918, to Aug. 31st, 1918; (Hon. Lt.) P. A. Albrecht, June 22nd, 1918, to Feb. 27th.

Sec. Lt. J. Parsons is graded for purposes of pay and allowances as Lt. whilst empld. as Lt., Grade (A), from Feb. 15th to July 21st.

Lt. (Hon. Capt.) W. C. Green, M.C., to be Lt., Grade (B), from (Ad.), July 1st (substituted for notifications in "Gazettes" of July 29th and Sept. 12th).

Sec. Lt. F. Denham to be actg. Lt. whilst empld. as Lt., Grade (B), from Sept. 30th, 1918, to April 30th (since demobilised).

Pilot Officer (actg. Flying Officer) L. Freeborn, M.B.E., relinquishes actg. rank of Flying Officer on ceasing to be empld. as Flying Officer, Grade (A), Nov. 22nd.

Sec. Lt. A. G. Allan to be Sec. Lt., Grade (A), from (Ad.), Aug. 10th, 1918.

Sec. Lt. H. L. Vahey to be Sec. Lt., Grade (A), from unempld. list, Nov. 6th, with prec. next below S. Maunder.

Pilot Officer J. H. Furniss, M.B.E., relinquishes the grading for pay and allowances of Flight Lt. on ceasing to be empld. as Flight Lt., Grade (B), Nov 30th.

Flight Lt. P. P. Gaskell relinquishes his commn. on ceasing to be empld., and is permitted to retain his rank, Sept. 22nd.

Sqdn. Ldr. A. W. Colley (Maj., N. Lancs. R.) relinquishes temp. R.A.F. commn. on return to Army duty, Nov. 20th.

Transferred to the unempld. list :—Capt. H. B. Griffiths, April 1st; Sec. Lt. D. Humphrey, May 20th; Sec. Lt. G. D. Croskery, July 17th; Lt. C. S. McFie, Aug. 5th; Capt. P. W. Goodchild, Sept. 4th; Lt. P. M. H. Currie, Sec. Lt. G. W. H. Hogan, Sept. 28th; Lt. A. P. Beal, Sec. Lt. E. B. McLaren, Sept. 29th; Lt. B. H. McLeod, Oct. 2nd; Sec. Lt. W. J. Mabey, Oct. 4th; Sec. Lt. A. S. Kessler, Oct. 6th; Lt. D. Richardson, Oct. 30th; Lt. W. W. Bull, Maj. J. Dickson, O.B.E., Nov. 1st; Lt. W. E. N. Clark, Nov. 10th; Lt. C. P. W. Jolliffe, Nov. 11th; Lt. F. Begley, Nov. 12th; Sec. Lt. E. Barter, Nov. 15th; Lt. H. C. Bishop, Sec. Lt. W. J. Brittain, Lt. A. S. Hooppell, Nov. 16th; Sec. Lt. A. F. B. Cannon, Nov. 18th; Sec. Lt. H. G. Bill, Sec. Lt. E. A. Masters, Nov. 19th; Lt. W. W. McDonald, Lt. H. A. B. Miller, Nov. 20th; Capt. C. A. Proctor, Nov. 20th.

Sec. Lt. (Hon. Lt.) M. W. J. Kelly relinquishes his commn. on account of ill-health (caused by wounds), and is permitted to retain the rank of Lt., Dec. 2nd.

Lt. J. G. Proger is dismissed the Service by sentence of a General Court-Martial, Oct. 23rd.

The notification in the "Gazette" of Nov. 7th concerning Sec. Lt. E. W. Barton is cancelled.

Medical Branch.—Flight Lt. (actg. Sqdn. Ldr.) W. Darling, M.C., to be actg. Wing Comdr. whilst specially employed, Nov. 1st.

Flight Lt. (actg. Sqdn. Ldr.) H. M. S. Turner, M.B.E., to be actg. Wing Comdr. whilst so empld., Dec. 1st.

Flying Officers to be Flight Lts. :—P. C. Parr, Aug. 14th; M. Hyman, Oct. 31st; A. Briscoe, Nov. 19th; E. G. O'Gorman, Nov. 21st; C. McC. Jones, Nov. 25th; S. G. Seymour, Nov. 26th; W. E. Sheil, Nov. 27th.

Transferred to the unempld. list :—Capt. J. A. Johnson, Nov. 12th; Lt. M. M. Price, Nov. 19th.

The surname of G. Packham is as now described, and not "Packman," as stated in "Gazette," Aug. 8th, 1918.

Chaplains Branch.—The Rev. B. W. Keymer, O.B.E., relinquishes appt. of Deputy-Chaplain-in-Chief and relative rank of Sqdn. Ldr. on ceasing to be empld. as Deputy-Chaplain-in-Chief, and reverts to rank of Chaplain, with relative rank Flight Lt., Oct. 20th.

The Rev. J. L. Thomas, M.C., is transferred to unempld. list, Nov. 29th.

Memoranda.—Overseas Cadet 91666 R. M. Haldane is granted an hon. commn. as Sec. Lt., Jan. 31st.

The following Probty. Flight Officers are granted hon. commns. as Sec. Lts. :—H. J. Drew, Feb 23rd; N. J. C. Clark, H. Knight, March 7th; E. W. Alston-Smith, April 11th; N. G. Durham, May 19th.

The following Cadets are granted hon. commns. as Sec. Lts. :—180280 A. R. Lusk, Jan. 6th; 176317 R. M. Campbell, Jan. 15th (substituted for notification in "Gazette," Aug. 19th, wherein this cadet's number was stated as 126312); 318632 D. J. Sherlock, March 26th; 176117 H. E. Rees, March 27th; 175125 T. I. Hodge, April 4th (substituted for notification in "Gazette," May 30th, wherein this cadet was described as 17125 T. T. Hodge); 37081 W. P. G. Branson, May 31st; 11395 W. E. Smith, Sept. 14th.

Wing Comdr. J. W. O. Dalgleish, O.B.E., is placed on half-pay list, Dec. 10th.

Air Ministry, Dec. 12th.

R.A.F.—The following officers have been granted short service commissions in the ranks stated, with effect from Dec. 12th. They will retain their seniority in the substantive rank last held by them prior to the grant of the short service commission.

In the case of officers now gazetted Flying Officer or Observer Officer, from Pilot Officer or Probationary Flight Officer, seniority will date from the date of "Gazette" :—

Flight Lts.—G. H. Hooper, M.C., D.F.C. (A.); C. T. Lally, M.C., A.F.C. (A.); C. E. M. Pickthorn, M.C. (A.); E. M. Pollard (A.); F. J. Powell, M.C. (A.); R. S. Smith (K.B.)

Flying Officers.—G. H. Allison (A.); M. Ballard (A.); G. C. Bladon (A.); M. Burbidge (A.); R. Clelland (T.); J. Cottle, D.F.C. (A.); F. H. Davies, M.C. (A.); N. L. Desoer (A.); L. C. Dodkins (A.); C. A. Elliott (T.); E. T. H. Ellis (A.); W. V. N. Grant (A.); B. R. Harris (A.); L. N. Hollinghurst, D.F.C. (A.); J. S. Hughes (A. and S.); S. Jones, D.F.C. (A.); H. R. Junor, D.F.C. (A.); E. G. Keeping (A.); J. L. Kirby (A.); I. E. McIntyre, A.F.C. (A. and S.); H. W. McKenna, D.C.M. (T.); G. Martyn (A.); A. Miller (A.); J. L. Montgomery (A.); F. A. Norton (A. and S.); C. S. Oddie (A.); R. M. Rankin (A.); N. M. S. Russell (A.); A. W. Saunders, D.F.C. (A.); W. J. Seward (A.); O. E. Sharpe (A.); B. E. S. Smith (A.); R. de L. Stedman (A.); C. F. Toogood (A.); F. R. Wynne (A.).

Observer Officers.—H. A. Cooper, M.C., A. J. Cox, R. S. Greenslade, E. Major Greenwood, W. G. Hanton, P. Hardy, M.C., R. McK. Jamison, D.F.C., C. H. F. Nesbit, G. L. Nicholson, J. J. W. Nicholson, D.F.C., A. E. Reynolds, A. D. Sinclair, G. R. Terry, A. F. Wynne.

Flying Officers (from Pilot Officers).—E. A. C. Britton (A.); H. A. Dinnage (T.); F. R. Eason (A.); D. D. MacA. Eastwood (A.); E. N. Fenton (A.); H. W. Gill (A. and S.); D. E. Hall (A. and S.); E. N. Hewitt (T.); C. E. Howley (A.); D. G. R. Lord (A.); J. A. McDonald (T.); J. W. F. Merer (A.); W. Parkinson (T.); W. E. Purdin (A. and S.); B. H. C. Russell (A.).

Observer Officers (from Pilot Officers).—H. Alexander, L. W. Beck, C. G. Boothroyd, D.F.C., F. W. Brown, R. A. Brunton, M.C., A. H. Darnbrough, J. Davison, L. J. Hoare, W. McGowan, B. J. Malyan, D. H. Murray, R. T. Rich, H. Taylor, M.C., A. L. Wilcox.

Flying Officer (from Prob. Flight Officer—Late R.N.A.S.)—D. C. Duncan (A.).

(To be continued.)

PERSONAL NOTICES.

MILITARY.

Engagements.

FLOOD-PAGE—BREACH.—The marriage arranged between Philip Horsley Flood-Page (late captain, R.A.S.C., T.F., and R.A.F.) and Barbara (Betty), youngest daughter of Mr. and Mrs. W. Powell Breach, of Newham, Steyning, will take place at Steyning on Jan. 10th.

LEATHLEY—FOSTER.—A marriage has been arranged, and will shortly take place, between Mr. Forde Leathley, M.C., R.A.F., son of the Rev. J. Forde Leathley, Rooske, Dunboyne, Meath, and Ida, daughter of the late Mr. George Edward Foster and Mrs. Foster, of 7, Bickenhall Mansions, W.

Marriage.

WHEATLEY—HODGKINSON.—On Dec. 4th, at All Souls Church, Langham Place, Lieut. E. S. Wheatley, D.F.C., son of Col. H. S. Wheatley, C.B., S.M., of The Knoll, Farnham, was married to Dorothy, eldest daughter of Dr. Alexander and Mrs. Hodgkinson, of Bradshaigh, Farnham, Surrey, formerly of Manchester and Wilmslow.

AIR FORCE.

Death.

HALLINAN.—Capt. Charles Joseph Hallinan, late R.A.F., who died on Dec. 7th at the Mercy Home, Cork, was the elder son of Patrick Hallinan, of Cloonmullin, Midleton.

Engagements.

MACKENZIE—METFORD.—The engagement is announced between Capt. R. M. B. Mackenzie, R.A.F., youngest son of the late H. A. O. Mackenzie, and of Mrs. Mackenzie, of Belsize Park, Hampstead, and grandson of the late Sir George Mackenzie, Bart., of Coul, and Margaret Cecilia, only daughter of the Rev. G. A. S. Metford (late Minor Canon, and Sacrist of Bristol Cathedral) and Mrs. Metford, of St. Michael's Rectory, Sutton Bonington, Notts.

RIDLEY—BOLTON.—An engagement is announced between Lieut. D. L. Ridley, R.A.F., elder son of Mr. and Mrs. W. E. Ridley, of Heathfield, Coulsdon, Surrey, and Leslie, younger daughter of Mr. and Mrs. St. Clair Bolton, of 6, Hyde Park Mansions, W.

Marriages.

HOWETT—ALDRICH.—On Dec. 10th, at the Catholic Church, Farnborough, Capt. J. R. Howett, R.A.F., youngest son of Mr. and Mrs. R. Howett, of Market Harborough, was married to Hilda May, youngest daughter of Mr. and Mrs. W. A. Aldrich, Woolwich, by the Rev. Father Giltinan.

URQUHART—WILSON.—On Dec. 10th, at St. Anne's Church, Aigburth, Lieut. Frank Alexander Urquhart, R.A.F., of Edmonton, Alberta, was married to Geraldine Lucy Milne, elder daughter of Colonel G. Adshead Wilson, V.D., and Mrs. Wilson, of Aigburth, Liverpool, by the Rev. Canon W. E. Sims, M.A., Vicar.

DEC. 24, 1919.

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APROPOS DES OEUVRES DES CONSTRUCTEURS BRITANNIQUES D'AEROPLANES.

Parceque nos amis français—pour toujours nos Alliés dans les guerres futures, bien qu'aujourd'hui nos rivaux dans le monde commercial—jouissent du succès bien mérité d'une exposition aéronautique à laquelle quelques uns seulement des membres de la " Society of British Aircraft Constructors " sont représentés, il semble opportun de passer brièvement en revue ce que les dessinateurs britanniques d'avions ont fait dans le passé pour développer l'art et la science de voler et pour améliorer et perfectionner les aéroplanes et les aéro-moteurs.

Il est admis que le crédit des premières vraies connaissances acquises dans les airs au moyen des planeurs appartient à l'Allemagne, grâce à feu le regretté Professeur Otto Lilienthal. Il est admis que le crédit du premier vol en aéroplane à force motrice appartient aux Etats-Unis, grâce aux frères Wright. Il est admis que les vols pleinement controllés et les premiers faits acrobatiques dans les airs se placent aussi au crédit des Etats-Unis, grâce aux planeurs de feu le Professeur Montgomery. Il est admis que le premier essor donné à l'aviation est au crédit de la France, grâce aux frères Voisin, Louis Blériot, Henri Farman, feu Léon Delagrange, feu le Capitaine Ferber et grâce au support financier de feu Henri Deutsch de la Meurthe. Il est admis que les usages pratiques de l'aviation ont émané de la France grâce au moteur Gnome dû aux frères Seguin. Mais bien que la Grande Bretagne n'ait eu aucune part active dans tous ces développements, il est juste d'attribuer aux dessinateurs britanniques le crédit d'avoir fait l'aéroplane moderne ce qu'il est.

Les Premiers Biplans et Triplans.

Au crédit d'un dessinateur d'aéroplane purement britannique se place le remarquable succés de la production du triplan Avro de 1909 et le début de 1910. C'est l'avion que Mr. A. V. Roe pilota si bien avec un J.A.P. Moteur de 8 cylindres. Cet appareil lorsque construite en 1910 avec un moteur Green de 35 h.p. était indubitablement un des meilleurs avions de son temps, et était au fait le premier triplan satisfaisant.

Ce point est spécialement important et digne d'attention, parcequ'il est probable que l'arrangement de la surface des ailes dans un triplan jouera un role important dans le développement des grands avions de l'avenir. Ce point est également digne d'attention par le fait que durant la guerre les triplans ont été employés avec tant de succés par toutes les armées.

En 1911 Mr. A. V. Roe produisit son biplan avec le même moteur Green de 35 h.p. et de cet appareil dérivent certainement tous les biplans à hélices tractives qu'on emploie avec succès aujourd'hui. Et en rapport avec ce fait, il est spécialement intéressant de noter ici que le biplan Avro de ce jour, connu officiellement sous la dénomination Type 504K., qui est le successeur immédiat du petit appareil à moteur Green via l'appareil à moteur Gnôme de 80 h.p. de 1913, est sans aucun doute l'aéroplane le plus en usage par le monde entier. Il ne peut y avoir que trés peu de pays ou l'Avro n'est pas en usage courant. Il est certainement employé dans les limites du cercle arctic et également dans l'afrique du Sud et en Australie, du côté opposé de l'équateur. Il était employé comme avion type pour l'entrainement pendant la guerre et depuis l'armistice ce type d'appareil a transporté plus de passagers civils qu'aucun autre type d'aéroplane. Ceci sans un seul accident fatal.

Dans son genre, aucun appareil n'a atteint le succès de l'Avro. Il est aussi digne de remarquer le fait que, en 1912 Mr. Roe produisait le premier appareil entièrement fermé, ou " limousine,"," un nouveau type d'avion.

Les Premiers Hydravions Satisfaisants.

La Grande Bretagne peut aussi revendiquer une place prépondérante dans une catégorie de travail tout à fait différente. Il est admis que le premier avion s'élevant de l'eau était un " Curtiss," dessiné, construit et piloté par notre estimé ami Glenn Curtiss. Mais le plus grand développement des Hydravions est au crédit de Short Brothers. Aucune autre firme ne s'est consacrée aussi complètement ni pour une aussi longue durée de temps au travail des hydro-aéroplanes.

Feu Horace Short consacra son étonnante intelligence, qui avait déja perfectionné la turbine à vapeur, à la production d'un aéroplane assez fort pour traverser la mer, et le premier biplan à hélice tracteur Short avec le moteur Gnôme de 80 h.p. en fut le résultant en 1912. Celui-ci fut suivi par toute une série de hydravions avec doubles Gnômes de 160 h.p. 14 cylindres, moteurs Salmson à cylindres radials de 150 h.p., et plus tard avec les Sunbeams, d'abord de 150 h.p., puis 225 h.p., et plus tard encore, vers la fin de la guerre, de 260 h.p.

C'est avec ces trois derniers types qu'ont été faits presque tous les travaux navals dans l'air, soit bombarder les villes cotières allemandes, soit patrouiller la Mer du Nord et la Manche en quête de sous-marins, soit bombarder les positions allemandes sur la côte belge, soit patrouiller la Méditerrannée, soit établir un barage dans l'Adriatique, soit observer les positions ennemies en Bulgarie et en Gallipolie, soit photographier et bombarder les lignes de chemin de fer à 100 miles à l'interieur du pays en Palestine, soit corriger un bombardement dans l'Est africain allemand, soit faire des recherches dans l'Océan Indien pour découvrir les destroyers des navires commerciaux, soit patrouiller en Mésopotamie, soit distribuer des vivres dans Kut ou lancer des torpilles dans la mer de Marmora. A vrai dire une étonnante variété de travaux.

Les Premiers Appareils a Ailes Pliantes et les Premiers Appareils a Torpilles.

C'est aux Short Brothers qu'appartient le succés des premières ailes pliantes. Ce simple arrangement jouera un plus grand rôle dans l'aviation commerciale que dans la guerre, car dans le commerce l'espace comme le temps vaut de l'or.

C'est encore aux Short Brothers qu'appartient le premier succès des flotteurs á pontons. Plus tard c'est encore les appareils Short qui sont les premiers lanceurs de torpilles.

Les Premieres Ailes Variables.

C'est à un disciple de Horace Short, C. R. Fairey, un génie d'une plus jeune génération que revient l'honneur d'avoir construit une aile à courbature variable, donnant un atterrissage lent et un plus grand essor au départ., ceci, permettant d'obtenir un hydravion fonctionnant avec la facilité d'un aéroplane de grande vitesse. Ici nous nous trouvons de nouveau devant une question qui aura encore plus d'importance en temps de paix qu'en temps de guerre.

C'est aussi a C. R. Fairey que doivent être attribués les dessins du plus grand aéroplane du monde, un bateau-volant comprenant 5 moteurs Rolls-Royce "Condor" de 600 h.p. chacun. Ce géant de 3,000 h.p. est, parait-il, presque prêt pour l'expérimentation. Au fait la machine aurait déja pris son vol plusieurs mois, si ce n'etait que la firme Rolls-Royce est plus difficile à satisfaire quant à la perfection de ses propres moteurs que ne le sont ses clients, et c'est ainsi que les expérimentations ont été remises jusqu'au moment où la firme Rolls-Royce sera certaine que le "Condon" est un digne companion pour le "Eagle" et "Falcon."

Le Premier Grand Avion de Combat.

Nous reportant une fois de plus au debut de l'ère de l'aviation, nous trouvons une firme britannique qui certés a guidé le monde dans son genre de travail. "The British and Colonial Aeroplane Co.," plus généralement connue sous le nom de "Bristol Co.," a établi sa réputation en 1910 et 1911 comme constructeurs des fameux Bristol "Box-kites," de simples biplans construits strictement d'après les plans du biplan Farman, et renommé par la perfection de sa main d'œuvre.

Le premier appareil construite d'après un dessin de la firme même, dessin dû à l'eminent dessinateur Frank Barnwell, la "Bristol Bullet" fit rapidement son nom comme étant le mono-place le plus rapide de son temps, bien qu'il ne fut pas généralement employé pendant la guerre. Mais cette apparente indifférence pour une aussi bonne machine est compensée par le remarquable succès du "Bristol Fighter" qui plus que tout autre avion contribua à assurer la domination des airs au Royal Flying Corps en 1917.

Pourvu du moteur Falcon de la firme Rolls-Royce, ce biplace de combat avait tous les avantages d'un monoplace. Il était si rapide et si manœuvrable, sa résistance et la qualité de sa main d'œuvre si parfaites, que les pilotes le montaient avec une confiance inébranlable et l'employait pour chasser l'ennemi comme personne n'avait pu le faire jusqu'alors dans un biplace. Depuis la cessation de la guerre cet appareil a été modifié et transformé en un appareil de voyage des plus comfortables, ses grandes qualités aérodynamiques considérables le rendant très utile pour cet emploi.

Le dernier succès notable de la "Bristol Co." est le grand triplan "Braemar" un avion de luxe pour passagers, à quatre moteurs. Ce dessin britannique se distingue par le fait que cet appareil est de beaucoup le plus rapide et le plus facile à manier des triplans à plusiers moteurs, tous les autres avions de ce type étant plus lents et peu dociles au maniement.

Le Premier Biplan de Grande Vitesse.

Un autre pionier de l'aviation britannique peut revendiquer une innovation qui marque une époque dans l'ère des dessin d'avions. Le premier de tous les petits avions qui volaient avec succès, était le "Tabloid" de Sopwith, avec un moteur Gnôme de 80 h.p. Cet appareil était dû aux efforts combinés de T. O. M. Sopwith, H. G. Hawker et F. Sigrist. Cet appareil atteignait une vitesse maximum de 95 miles par heure et une vitesse minimum de 40 miles par heure, un écart de vitesse qui jusqu'alors avait été considéré impossible. De ce type proviennent tous les "destroyers," les "appareils de chasse," les "appareils de poursuite" de toutes les nations belligérants. Et cet appareil type peut à juste titre être considéré comme l'ancêtre de tous les petits avions de bas prix du temps présent et de l'avenir.

Le premier descendant direct du "Tabloid" était l'avion dans laquelle C. H. Pixton remporta le trophé Schneider pour Hydravions en 1914. Ce petit hydravion, avec moteur monosoupape Gnôme de 100 h.p., étonna les dessinateurs d'avions à Monaco, et c'est de cet appareil que dérivent tous les petits hydro-aéroplanes, depuis le type Schneider de la R.N.A.S. jusqu'au vicieux petit appareil allemand "Brandenburger."

Si nous considérons l'arbre généalogique des avions pour traversées au dessus des terres, nous voyons que le "Tabloid" est l'ancêtre du "Pup," du "Camel" et du "Snipe" chacun de ces appareils étant à son tour le principal avion de chasse de la guerre.

Dans l'ère de la paix son dernier degré de parenté est l'avion anonyme construite pour la malheureuse course pour le Schneider trophé de cette année, pourvue d'un moteur Cosmos du nom de "Jupiter." Depuis que des roues ont remplacé dans cette machine les flotteurs, elle a atteint une vitesse avec laquelle elle se range probablement comme l'appareil le plus rapide du monde entier.

Le Premier Appareil de Grande Vitesse a Longs Relais.

Nous retournant dans une autre direction, nous trouvons une des premières firmes britanniques de dessinateurs d'avions figurant au premier rang par leur mérite. H. P. Martin et G. H. Handasyde commencérent à construire leur premier avion en 1908. Plus tard ils produisirent un grand monoplan, qui, avec sa forme "Antoinette," se range comme la machine la plus belle et la plus minitieusement achevée de son temps.

Au début de la guerre, les associés, connus comme maintenant d'ailleurs sous le nom de la Martinsyde Co., construisirent un petit monoplace à moteur Gnôme, spécialement dessiné en vu d'obtenir une grande résistance, pouvant supporter le manque d'adresse du pilote à main et à pied lourds. Plus tard apparait le grand monoplace "Elephant" de la Martinsyde Co., pourvu du moteur Beardmore de 120 h.p. (plus tard 160). Cet appareil se distingua par son travail de bombardement. Et en 1917 la firme Martinsyde produit le fameux "Mother," monté d'un moteur "Falcon" de la firme Rolls-Royce, qui bat le record de la vitesse du monde entier par plusieurs milles à l'heure.

Cette dernière machine s'est à présente développée dans le type "F.4" un modèle pour tout dessinateur qui veut étudier là combinaison dans une seule machine des qualites de main d'œuvre, de résistance, et de vitesse.

Sans être une machine de course, le "F.4" est presque aussi rapide que les avions les plus rapides, et c'est un appareil dans lequel aucun pilote n'hésiterait à entreprendre le tour du monde.

Pourvue de flotteurs, qui en eux-mêmes sont une innovation dans le domaine de l'aviation, cette machine a une égale valeur comme hydravion et comme aéroplane.

Le Premiers Avions Multi-Moteurs.

Il est probable que c'est dans la production des avions multi-moteurs, que les dessinateurs britanniques sont le plus en avance sur les dessinateurs des autres pays. Il est presque certain que les premièrs avions bi-moteurs du monde ont été les appareils construits par Short

Brothers pour le ministère de la marine en 1912-1913. Et probablement le premier appareil bi-moteur employé pendant la guerre a été le "Caudron."

Mais il est certain que le premier dessin moderne de ce genre a été dessiné par Flight-Commander Dyott avant la guerre, et construit (après une longue et forte opposition des authorités) par la firm Hewlett et Blondeau en 1915-16. Peut être considéré comme le contemporaire de cet appareil, le bi-moteur dessiné et construit par C. R. Fairey. Ces deux machines achevèrent des vols d'expérimentation très bons, mais des "experts" techniques se refusèrent à les accepter, ces experts n'étant pas encore initiés aux possibilités de ces nouvelles engins de guerre.

Les Premiers Appareils de Bombardement et de Transport de Passagers.

C'est grâce a l'éloquence persuasive et aux arguments décisifs de Frederick Handley Page qu'un département technique des plus obstinés et obstructifs permit enfin la construction d'un avion bi-moteur qui pouvait réellement voler. L'importance du résultat obtenu par H.-P. se mesure le mieux lorsqu'on se rend compte que le succès du H.-P. entraina l'annulation de certains dessins officiels très beau sur papier mais qui n'auraient jamais pu voler, bien que, alimentés par une force motrice suffisante, ces appareils auraient pu se trainer dans les airs par la force brutale et l'ignorance.

Depuis l'apparition du H.-P. à deux moteurs Rolls-Royce jusju'qu'a la dernière creation H.-P. qui fit la traversée de Londres a à Paris en 2 heures et 10 minutes avec 2 moteurs Napier de 450 h.p. chacun, le record de la Handley Page, Ltd., fut un grand succès. Sans faire mention de son excellent travail pendant la guerre, une des débutantes bi-moteurs fut la première machine qui emporta 20 passagers dans un seule vol. Plus tard, une des machines à 4 moteurs fut la première a emporter 50 passagers du coup.

Comme appareil à lever de poids et à traverser de grande distance, la H.-P. a été vraiment remarquable. Cette firme place à son actif le premier voyage de Londres à Constantinople, de Londres en Egypte, et le premier voyage de Londres aux Indes. Ce n'est que grâce a l'armistice que le voyage de Londres à Berlin ne se fit pas. Il se peut que la nouvelle appareil à moteurs Napier pourra faire pendant la paix ce que son prédecesseur ne put réaliser pendant la guerre.

La Premiere Ligne Belge de Traffic.

Au crédit des avions Handley Page ce place aussi un beau record de vols en temps de paix depuis que l'aviation internationale est de nouveau permise.

Les services H.-P. entre Londres et Paris et entre Londres et Bruxelles ont fonctionné avec une régularité et un succès remarquables. En transportant des effets d'habillements aux Belges privés de tout, les H.-P. ont accompli à la fois un travail humanitaire et profitable.



The Avro "Baby" Biplane (35-h.p. Green engine), fitted with floats.

Nous tenons à rappeler que le fondateur de la firme, F. Handley Page s'est occupé lui-même de dessins d'avions depuis 1908. En 1909 il commença à développer l'idée des machines stables, et il continua à étudier cette question et à construire des machines d'expérimentation jusqu'au moment où le commencement de la guerre prouva que la pratique est plus importante que la théorie.

La Premiere Avion de Terre Patrouiller les Mers.

Un autre pionier de l'aviation qui a remporté des grands succès avec les bi-moteurs est Robert Blackburn de Leeds, qui également commença ses expériences en 1908. Avant la guerre le monoplan Blackburn était deja très bien connu. Au début de la guerre la firme s'occupa de construire des avions d'après des dessins officiels, mais bientôt le génie du fondateur de la firme se consacra aux dessins personnels et il en résulta le Blackburn "Kangaroo" à deux moteurs "Falcon" de la firme Rolls-Royce. Au début cette appareil devait être employé comme hydravion à flotteurs, mais presqu'instantanément elle fut convertie en avion a roues.

Maigré ce qui précéde l'appareil fut longtemps employé pour faire de longues patrouilles sur la mer du Nord, et à son avantage nous disons que cette avion a patrouillé les mers plus longtemps que tout autre machine de terre. L'appareil est facile a diriger de sorte que son pilote ne se fatigue pas vite.

Depuis la paix cette appareil fut exposée au Salon de la E.L.T.A. à Amsterdam. C'est là, que les deux "Kangaroos" prirent à bord le plus grand nombre de passagers dans le temps le plus court de toutes les autres machines, et les deux appareils rentrèrent en Angleterre sans nécessiter de raccommodages et ayant réalisé un joli petit benefice.

Les Premiers Aeroplanes Stables.

Dans un sens tout à fait différent, nous voyons un grand succés pour deux autres pioniers de l'aviation. En 1909 G. Holt Thomas, enthusiasmé par l'aviation qu'il avait fait en France, décida Louis Paulhan à venir démontrer en Angleterre. En 1910 il organisa le vol de Louis Paulhan qui remporta le prix pour le premier voyage aérien de Londres à Manchester. En 1911 il établit le Aircraft Manufacturing Co., Ltd., et commença la construction d'avions Farman. Plus tard il s'adjoignit Peter Hooker, Ltd., de Walthamstow, et commença la construction des moteurs Gnôme et Le Rhône.

En 1913 Geoffrey de Havilland, un ingénieur très doué se joint



Three-quarter Front View of the Martinsyde F.6 (300-h.p. Hispano-Suiza engine).

à lui. Ce dernier avait construit et piloté son appareil et son moteur à lui en 1909, et avait été nommé depuis dessinateur en chef du Royal Aircraft Factory où il produisit en tout premier lieu un biplan à hélice tractive en 1912, et un peu plus tard le fameux B.E.2c, le premier avion stable, en même temps qu'un appareil de vol de première qualité.

Les Premiers Avions de Bombardement en Plein Jour.

Le résultant de la combinaison fut la série des appareils "D. H." construits par le "Aircraft Mfg. Co., Ltd.," d'aprés les dessins de Geoffrey de Havilland.

Pendant la guerre le "D.H.2," à moteur Gnôme de 100 h.p., se distingua comme l'appareil de combat monoplace la plus efficace. Le "D.H.4," d'abord pourvu de moteurs Rolls-Royce, était le plus rapide des avions de bombardement à long relais de son époque.

Le "D.H.9" à moteurs "B.H.P.," et plus tard comme le "D.H.9a," à moteurs Liberty, se range parmi les avions de bombardement en plein jour encore plus rapides. Et à la fin de la guerre le "D.H.10," à moteurs Liberty, allait prendre service comme la plus rapide des avions à bi-moteurs de ce genre.

La Premiere Ligne Aarienne Londres-Paris.

Depuis la guerre les appareils "Airco," travaillées par la firme alliée "Air Transport and Travel, Ltd.," sous la direction du Général Festing, ont accompli le haut fait d'exploiter avec succès la voie des airs la plus importante du monde entier, sous les conditions géographiques et météorologiques les plus adverses. Malgré les brouillards et les tempêtes de la Manche et malgré le climat changeant de l'Angleterre, le service Airco a couvert plus de 50,000 miles entre Londres et Paris sans perdre ni un seul passager, ni un colis, ni un courrier. Leurs machines et leurs pilotes ont fait plusieurs voyages alors que le bulletin officiel marquait les conditions atmosphériques nefastes à l'aviation. Le pourcentage des jours auxquels il leur a été impossible de faire la traversée est extraordinairement minime.

C'est à la firme Airco que revient le crédit d'avoir prouvé d'une façon absolue que le transport par voie d'air appartient maintenant à la liste des propositions commerciales.

Le Premier Veritable Appareil de Combat.

Un autre grand succès dans l'aviation appartient également à une firme britannique. Vickers, Ltd., fut la première grande firme d'armement qui ouvrit un département à l'aviation, grâce a l'énergie de feu le Major H. F. Wood. Avant la guerre beaucoup de ceux qui se rangent maintenant comme chefs de notre service d'aviation, firent leur apprentissage sur des machines de Vickers, Ltd.

Au début de la guerre le seule avion de combat convenable était le biplan Vickers, à moteur Gnôme de 100 h.p., le résultat des efforts combinés de feu Harold Barnwell et G. H. Challenger. Pendant la guerre les usines Vickers construisirent d'énormes quantités de machines de différents types et en 1918 le fameux biplan "Vimy" fit son apparition, trop tard cependant pour prendre du service actif. Après l'armistice cette avion fut developpée en appareil civile par son dessinateur R. K. Pierson, et nous avons ainsi l'excellente aeroplane "Vimy."

La Premiere Traversee Transatlantique Directe, et le Premier Voyage aux Antipodees.

Avec une splendide initiative la firme Vickers entreprit la question de la traversée de l'Atlantique. L'organisation de cette entreprise fut dignement confiée au Capitaine P. D. Acland qui prit charge du département de l'aviation après la mort du Major Wood.

La traversée de l'Atlantique en un vol ininterrompu fut accompli avec un avion Vimy à deux moteurs Eagle de la firme Rolls-Royce, par le Capitaine John Alcock accompagné du Lieutenant A. Whitten Brown comme passager.

Et maintenant s'annonce l'arrivée en Australie de l'avion Vimy, encore à deux moteur Rolls-Royce, piloté par le Capitaine Ross Smith, avec comme passagers son frère Keith Smith et les sergents Bennett et Shiers. Vraiment un triomphe pour la maison Vickers.

La Premiere Revindication de l'Industrie.

De ce qui précède il est évident que les grands résultats obtenus en aviation, soit en temps de guerre, soit en temps de paix, appartiennent en grand partie aux pioniers britanniques.

Il sera avantageux a tous ceux qui ont l'intention d'equipper des services aériens militants, ou des services postaux, ou simplement des services de passagers, de considérer sérieusement les mérites des firmes britanniques avant de s'aventurer dans l'achat d'avions en grandes quantités.

Il n'est pas moins intéressant de noter que dans l'aviation en temps de paix les firmes britanniques ouvrent également la voie. Le fait que rapportait une publication officielle qu'aucun appareil spécial n'avait été construite pour l'aviation civile est décidément incorrect.

Les Premiers Avions Commerciaux.

Il semble donc utile de rappeler que le premier avion commercial du monde, dessiné a cet effet, a été produit au début de cette année par Mr. Frederick Koolhoven, de la British Aerial Transport Co., une firme créée pendant la guerre. Cette appareil officiellement dénommée "F.K.26," mais généralement connue sous le nom "Big Bat," est reconnue non seulement comme étant la première aéroplane commerciale, mais aussi comme étant un des meilleurs avions en tant que dessin et construction. Pourvu d'un moteur "Eagle" (Rolls-Royce) cet avion possède la vitesse d'une machine de guerre et se manie à la perfection.

Cet avion est un digne successeur du "Bantam" produit en 1917 avec un moteur "Wasp" de l'A.B.C. et qui fut rejetté par les "experts" du Ministère de l'Aviation, bien qu'à cette epoque cet avion était le meilleur monoplace de combat. En 1918 La "Basilisque" avec son moteur "Dragonfly" de 350 h.p. (A.B.C.) était egalement refusée, bien que plus rapide que toutes les autres avions de l'époque.

Il y peu de dessinateurs d'avions qui soient aussi versés dans la question que l'est F. K. Koolhoven.

Une autre appareil purement commerciale est la Westland "Limousine," produite par M. A. Bruce, précédemment un collaborateur dans la production de la torpille Brennan et le Brennan monorail. La Westland Co. fut formée pendant la guerre par la fameuse firme d'ingénieurs Petter à Yeovil, et leur "Limousine" est digne de leur réputation.

Le Premier Grand Canot-Volant.

La Grande Bretagne a ouvert la route dans une autre branche de l'aviation. Bien que les canots volants aient été organisés par Glenn Curtiss, ils one été perfectionés par feu John Porte, qui mourut avec le grade de Colonel de la R.A.F.

Ses canots-volants de Felixstowe, qui atteignent leur point culminant dans le grand bateau le "Felixstowe Fury" ont guidé le monde dans ce genre de travail.

Il est intéressant de noter que la construction des bateaux volants se continue par S. E. Saunders, Ltd., à Cowes, par la Supermarine Co., à Southampton, et par la Gosport Aviation Co. à Gosport. Short Brothers construisent également des bateaux-volants bien que premièrement ils étaient constructeurs d'hydravions à flotteurs-pontons.

Les Premiers Deserteurs.

Malheureusement beaucoup de grandes firmes qui ont construit de bonnes machines et réalisé d'énormes bénéfices pendant la guerre, se sont retirées de l'industrie de l'aviation. Mais probablement ils ne représentent qu'une petite perte pour l'industrie aéronautique, bien que leur argent eut été utile pour faire des travaux d'experimentation. En compensation d'autres grandes firmes se

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maintiennent dans l'industrie pour continuer les travaux d'expérimentation jusqu'au moment ou l'aviation sera accepté comme proposition commerciale.

Les Premiers Succes dans la Nouvelle Industrie.

Parmi ceux-ci citons la Austin Motor Co., avec son Austin "Whippet"; Boulton & Paul, Ltd., avec leur magnifique bi-moteur "Bourges"; et MM. Beardmore & Co., Ltd., avec plusieurs différents types pour l'expérimentation. Ces maisons ont déja fait preuve de mérite et peuvent se classer avec les pioniers, et le "Nighthawk" de la British Nieuport Co. peut revendiquer une place parmi les avions les plus rapides du monde.

En résumé l'industrie britannique de l'aviation peut se mesurer avec les industries de la France et de l'Allemagne si on la juge d'après les accomplissements de ses produits.

Nous n'avons pas eu l'intention d'établir ici une histoire de l'aviation britannique. Il s'agit simplement d'un bref coup d'oeil dans le domaine de ce qu'ont fait nos avions et leur producteurs.

Nous espérons avoir été clairs et de quelque utilité a nos lecteurs.—C. G. G.

THE LATE JOSÉ WEISS.

Though the name of José Weiss, who died on December 11th, may mean but little to the present generation of aviators, he was, none the less, among those to whom aviation of to-day and of the future owes most, for to him was due very largely, even if indirectly, the development of the uncapsizable aeroplane. Though no aeroplane designed by José Weiss ever flew, in the presently accepted sense of the word, yet he showed many of the successful designers of to-day what it was possible for an aeroplane to do.

José Weiss was born in Alsace, and at an early age he came to England, as his father objected to living under German governance. On reaching man's estate he became a British subject and devoted himself to the profession of painting. He adopted Sussex as his model, and for years he painted that delectable county in all her moods, phases, and manifestations.

His name as an artist is, perhaps, not very well known to the vulgar many in this country, but his pictures were held in high esteem abroad, especially in America, where he sold the majority of his works. He worked fast and hard, and made money comparatively easily, and whatever money he made beyond his household expenses and his own simple needs he spent on his aeronautical experiments.

One first had the honour of meeting José Weiss early in 1909, when he was experimenting with his gliders at Amberley. At that time he had already achieved considerable success, and had developed the bird-like type of monoplane with which his name was associated.

This machine had a stout, stumpy body, with cantilever wings which were swept backwards and upwards, so that the two wing-tips acted as a tail. The wing-tips were, in fact, the whole control, for there was no rudder or elevator.

By dint of careful experimenting and reasoning Mr. Weiss had arrived at a perfect combination of horizontal and vertical surfaces, so that his machines were absolutely stable: that is to say, they were uncapsizable and self-righting. By warping the wing-tips up or down, the machine could be made to bank and turn to right or left as desired, and by pulling both wing-tips up together the machine could be made to throw its nose up and stall.

With José Weiss in his experiments at Amberley was associated his friend and neighbour Keith, also an artist. Between them they evolved a number of theories concerning the flight of birds, and they applied these theories to their models. Some of those theories have been recorded in print in letters and pamphlets written by José Weiss, and it would be well worth the while of our clever young designers of to-day to study them.

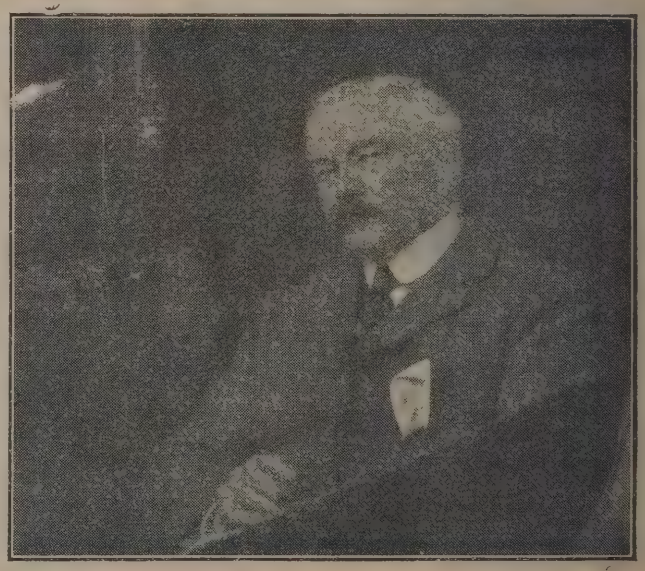
These theories appear to have been particularly right in connection with the design of the fuselages of aeroplanes, and it is a fact that the bodies of the most efficient modern machines approximate in shape to those advocated by José Weiss. Also it is interesting to note that the Weiss wings were of the cantilever type which now seems to be coming into use, especially in Germany.

In 1909 the experiments at Amberley progressed to the stage of building man-carrying gliders. These were piloted by Mr. Gordon England—later to become famous as a pilot, designer, works manager, and consulting engineer—and by Mr. Gerald Leake, a young artist-pupil of José Weiss, who has since done well as an artist in America. Greatly daring, these youths were launched, in these frail structures of linen and bamboo lashed together with waxed thread, from the top of Amberley Mount into the up-current of a wind blowing against the hillside, and on one occasion Mr. England rose to a height of 30 ft or so above the starting-point, landing eventually in the valley nearly a mile away.

The success of these gliding experiments led to the building of a power-driven machine, which did in fact make straight flights on the sands at Littlehampton and at Brooklands. But, owing to an incompetent engine and to lack of knowledge of constructional detail work in the machine itself, it never flew satisfactorily.

Later Mr. Handley Page, then building experimental machines at Barking, interested himself in the Weiss theories and built several machines more or less on Weiss lines. One of these, piloted by the late Edward Petre, was the first aeroplane to fly through London, when it voyaged up the river from Fairlop in Essex to Brooklands. On the same machine and its successor much flying was done at Hendon by the late Wilfred Parke, R.N., and during 1914 a biplane on similar lines was flown by the late Rowland Ding, including a flight to France with a passenger.

Since then it has been found possible to achieve stability by means involving less complicated methods of construction, but the fact remains that the Weiss machines were a distinct step forward in the search for



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the uncapsizable aeroplane. It is, however, rather for his research work and for his theories as to the increase of efficiency in aeroplanes by way of body and wing design that José Weiss deserves to be remembered.

Of late years he and his friend Keith have been experimenting with a flapping-wing machine actuated by man-power only. Though nothing has been published about the results achieved, one believes that considerable success attended their efforts. José Weiss himself said that it was actually possible with their experimental machine for a man to lift his weight on the wings with the machine supported on slings between two trees, though they had not ventured to attempt a free flight. It is to be hoped that some record of these experiments will be available in the future.

José Weiss was by nature a philosopher as well as an artist, and it grieved him deeply that the aeroplane, which he regarded as the dove of peace which was to bring one nation into friendly intercourse with another, should first be made manifest rather as the eagle of war. He regarded war as wicked and wasteful, and could never bring himself to think of it as a biological necessity. His kindly and gentle nature abhorred the cruelty of it all, and he hoped that by the education of humanity the world's peoples might be taught to love one another.

At any rate, he had the satisfaction of seeing aerial communication growing into a practical proposition, albeit the machines which fly do so by means which do not accord with his theories. If the world held many people like José Weiss, this aerial communication of which we are all so proud would go far to produce universal peace. Unhappily there are few like him, and the world is the poorer for his loss.—C. G. G.

SIR JOHN ALCOCK, K.B.E.—1892—1919.

On Thursday afternoon, December 18th, 1919, Sir John Alcock died in hospital at Rouen as a result of an aeroplane accident at Côte d'Evrard, about 25 miles from Rouen. He had left England in the morning on a Vickers "Viking" biplane which was so designed as to be capable of alighting either on land or on water. He intended to fly to Paris and to alight on the Seine opposite the Grand Palais.

It is difficult, in the absence of detail, to judge the reason for the accident, but eye-witnesses state that at about one o'clock on December 19th they saw a large aeroplane approach in a very high wind. It became unsteady—in the eye-witnesses' view—and finally crashed to earth. The pilot, Sir John Alcock, was found in the wreckage, unconscious, with serious injuries to the head. He was removed to Rouen, was operated on without delay, but died without regaining consciousness at 4.30 p.m. on the same day.

There is always regret at the death of the great and the robbing of the earth of another of those spirits which illumine its progress, but there is peculiar sorrow at the loss of Sir John Alcock. Modest, unassuming, and quietly efficient, he had few, if any, enemies, and his general popularity was unquestioned.

Born of no distinguished line, supported by none of the extraneous advantages that come from wealth or worldly position, he earned the gilded spur by a successful endeavour that gave him a true place in the knightly succession which has kept chivalry alive throughout the centuries. None of those who have sought the great adventure in the past would hesitate to acknowledge him as of their class. Those who knew him best liked him the most, and that is the finest praise for any man.

The son of Mr. John Alcock, of Kingswood Road, Fallowfield, Manchester, he was born in that town in 1892. Eighteen years later he was apprenticed to the Empress Motor Works. A little later, if my memory is accurate, he became connected with the Sunbeam Company. In any case he was flying a Maurice Farman biplane, fitted with one of the earliest Sunbeam aeroplane engines, in 1911-12, taking his aviator's certificate—No. 368—on November 26th, 1912, at Brooklands.

At the outbreak of war he joined the R.N.A.S. and was posted to Eastchurch as an instructor. He was later made chief instructor to the "Acrobatic" Squadron—a curious inversion of his usual practice in life. After repeated efforts he succeeded in being posted to an active service unit. He was appointed flight commander at Mudros in 1917, and on September 30th in that year he was awarded the D.S.C. for gallantry in attacking three enemy seaplanes off Lemnos. In the long-distance bombing raids which gave distinction to the aviators at Mudros he took an active part until towards the end of the year he was brought down off Suvla by engine failure. Swimming ashore with his crew, he hid in the rocks for some hours, only to be captured in the end. All three were kept prisoners in Turkey until the beginning of the Armistice. He was then released.

On his return home he accepted an appointment with Vickers, Ltd., and early in the present year he left for Newfoundland with a Vickers "Vimy" biplane. All the world knows the story of his Atlantic flight with Mr. A. Whitten Brown, R.A.F., on June 14th-15th.

His Majesty the King, in appropriate recognition of the spirit of their endeavour, appointed them both to be Knight Commanders of the Order of the British Empire.

Since that time he continued in his work for Vickers, Ltd., unspoilt by his great success, and, as ever, entirely averse to any manner of unnecessary advertisement.

The sympathy of the world will be with his mother in her great loss. Her consolation may be found in the recollection of his achievements in the past, and that the death he would have chosen came to him in the end.

This entirely insufficient memoir will be supplemented next week by a further notice by one who knew him and liked him well.—W. E. DE B. W.

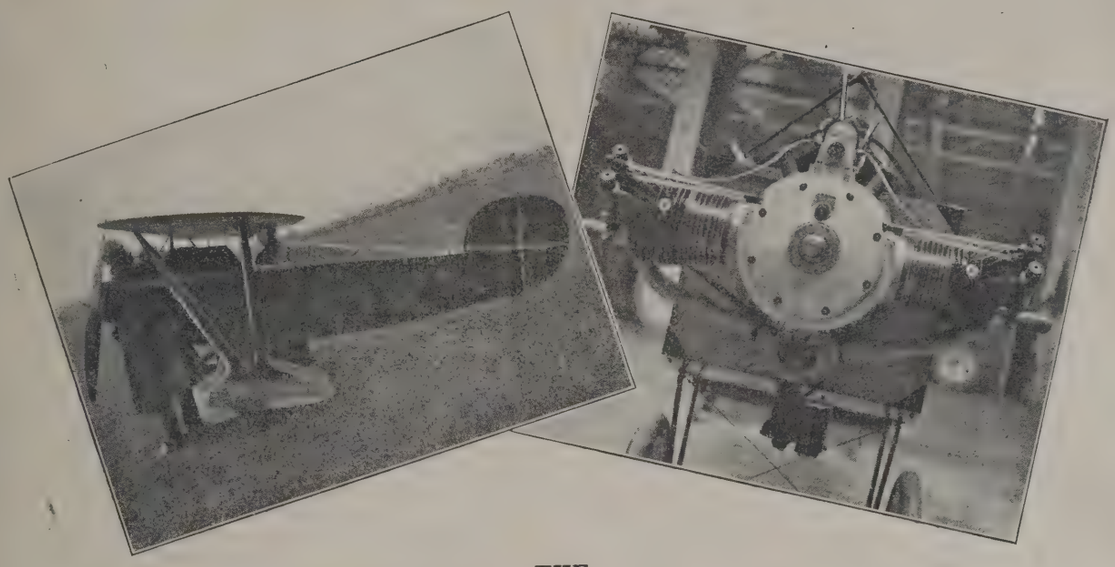


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THE NAVAL ESTIMATES.

The Navy Estimates for the year 1919-1920 were presented to Parliament by command of His Majesty late in the past week. There is naturally little reference to aeronautics in the votes as the Admiralty has at present no responsibility in aerial matters. In Vote 9 there appears an allocation for "Aviation" of £978,100 less an appropriation in aid of £70,000. This vote covers salaries, wages, matériel, etc., in "aviation establishments," but a footnote shows clearly that these sums relate to the construction and maintenance of the airships which have now been handed over to the Air Ministry. Therefore no object will be served by an attempted analysis of the expenditure.

The First Lord's Statement.

The First Lord of the Admiralty made his statement in the House of Commons on Dec. 10th, 1919. Towards the end of his speech he referred to the influence of aviation on the employment of big ships.

The Board of Admiralty are just as well aware of the fact as anybody else that we have immense possibilities before us. Who can say what is going to be the development of the Air Service in the future, and what is to be the effect of the Air Service? I was told to-day that the Air Service is going to be so effective that it will destroy the battleship, which is such a big target. That is the view of one side. I go to a great airman and I say, "I am told that our big battleships are not going to be of any use, because they offer such big targets for bombs which are heaven knows how many tons in weight, and which are to be dropped from the clouds onto the battleships." He said, "Some people will tell you that, but, speaking for the air people, I can say that as fast as they develop that attack we are developing a counter-attack and defence, and we shall have something to say before you abandon your big ship simply because an airship has been devised that is going to threaten you with bombs." There are the two sides to the question. I am taking neither side. We have to-day in His Majesty's Navy some of the most magnificent ships the world has ever seen, wonderful productions, and to destroy these vessels because we are told that the air is going to replace the Navy would be a criminal thing for any Board of Admiralty to do.

He then states that scientific investigation is proceeding and that the powers of aircraft and of the submarine will be gauged from time to time. There we may safely leave the official view for the present. It is not wise to destroy the existing form of a service until the future course of action is clear. Reduce programmes if you will, but that is sufficient. Nothing in the war has proved that the aeroplane can eliminate battleships.

The Debate.

Mr. Lambert opened the Debate and speedily came into collision with the Chairman of Committees as to the propriety of discussing the Air Ministry when the House was in Committee over the Navy Estimates.

The policy of the existence of the Air Ministry could not be dealt with in this Committee as it was a matter requiring legislation.

Mr. Lambert doubted whether or not the great surface ships of the present, such as the "Hood," costing, as it did, £6,000,000, had any future value in view of the possibilities of aircraft and submarines.

He then discussed the position of the great dockyards from a strategical point of view, but without any special reference to aircraft.

The Debate was continued by Rear-Admiral Adair, who has always held pronounced views as to the use of aircraft in naval war, and, in one's own opinion, views which are essentially sound, based, as they are, on strategic principles and the knowledge of psychology, which is the foundation of all good staff work.

Rear-Admiral ADAIR: I say that the Admiralty have been negligent in respect to the Air Force associated with the Navy. I will put it that way to avoid any question of policy.

In my opinion, any personnel working with the Navy as part of an Air Force must primarily be seamen. Aviation is only a means to an end, and that end in the case of an Air Service attached to the Navy is maritime warfare. The efficiency of the Navy, I say, is bound up intimately with its Air Service, and perhaps it would be well if I just mentioned to the Committee what the actual duties are of an Air Force serving with the Navy. They are embarked in ships called carriers, such as the "Argus," which carry aircraft to operate at distances beyond the reach of those which lie at shore bases. Such ships carrying these aircraft can accompany the Fleet, and the aircraft may be sent out as scouts for the Fleet, or they may actually take part in a Fleet action, when it occurs, by the use of bombs or aerial torpedoes, or they may be used with the same weapons against enemy fleets in their own harbours. They are embarked in fighting-ships, battleships, and the larger cruisers, as aids to efficient gunnery. There is the spotter, flying in a small machine, watching the fall of the shot, and there is the fighter, flying in another small machine, who has to protect the spotter from the enemy. The long-range fire of the Navy is absolutely bound up with this service of spotting and the protection of the spotter. They are employed at shore bases—coastal areas, I believe the correct term is—from which they defend the coastal waters against submarines and mines of the enemy, or they can be used from these bases for reconnoitring such distance as is feasible within their range of action, or they can be employed, again, with bombs or with Whitehead torpedoes, to attack enemy ships. In short, their duties are all forms of maritime warfare that can be effective from the air. That sounds rather paradoxical, but that is the actual fact.

Every one of these duties is linked absolutely with the Navy, and they are purely naval matters. They must be under the command and direction of naval officers. The information, for example, which a Commander-in-Chief requires as to the composition, the disposition, the course, and the speed of a Fleet, which has to be brought in, perhaps, by one of these scouts—I ask the House to consider, could any man but a man who has been educated in Fleets bring back intelligible intelligence to that Commander-in-Chief? If they are not properly educated in Fleets prior to their becoming aviators, then they may bring misleading and absolutely dangerous information to their Commander-in-Chief. In my opinion, there can be no question whatever about it that the Naval Air Service must be formed of men who are part and parcel of the Navy, and no amateurs can effectively do the work. Herein lies the first blunder, if I may call it so, of the Admiralty. They started the Royal Naval Air Service as a separate Service, and on no account should they have dissociated the administration of that Service from the Navy itself; it should have been a part of it, and when they allowed the whole of this Service to be turned over to the Air Ministry they made a still greater blunder, because they were turning it over to people who did not appreciate the needs and duties of the Navy, and it was highly probable, therefore, that any progress in naval aviation would not be what it should have been.

Let us see for a moment why they turned this Royal Naval Air Service over to the Air Ministry. At the outset of the war aircraft could be numbered, perhaps, by dozens. There were very few firms, and those only small ones, in the country who could produce them. Practically speaking, there were no fighting machines, and the manufacture of these fighting machines had to be done very hurriedly. There was great competition and rivalry between the two Services, and of course friction ensued. Neither party knowing exactly what they wanted, there were constant changes, and each party, the Army or the Navy, was demanding to be served first, and each wanted its own latest invention. All that occurred and led to the amalgamation of the two Forces, the Royal Naval Air Service and the Royal Flying Corps, under an Air Minister. I am not criticising that, but only stating facts. I do not wish to touch on policy, but I say that in future no such difficulties as those will occur. There need be no clash of interests whatever, for the productive capacity of the country now is quite sufficient to meet every service, however distinct it may be. I speak as a manufacturer, and the firm with which I am connected has made every sort of aircraft and engine under the sun. I wish to impress on this Committee that the true lesson learned as regards air service during the war was this—that the duties of the Naval Air Service were very different from those of the land Air Service, required different material, different administration, and a different education for its personnel. What has happened? In a letter that he addressed to the "Times" the other day, the late Under-Secretary for the Air said, "As a consequence of the amalgamation of the Naval and Military Air Force, the Air Force increased to an astonishing degree on the military side." That is all I wish to read, but I wish to supplement that statement, and my supplement is this, that I say emphatically that the amalgamation had a most prejudicial effect.

I will mention a few facts indicating the lack of progress in the Naval Air Service. The first is that no aeroplane specially adapted as part of the equipment of a battleship for this spotting, and the fighting machine accompanying the spotter, has even yet been designed. What has been used has been a makeshift arrangement. Certain obsolete forms of land service aircraft have, I believe, been employed with certain air-bags attached to them for the purpose of alighting on water. A proper machine is absolutely essential and should have been produced long ago. The second item I wish to refer to is this, that little or nothing has been done towards producing an armour-piercing bomb. An armour-piercing bomb is absolutely essential for the attacking of a ship that has a protective armoured deck. In not seeing that such a bomb has been produced the Admiralty have been neglectful. The third item that I refer to is that there is no such thing existing as a really reliable and accurate sight. It stands to reason that when you are aiming on a submarine from 5,000 ft. or 10,000 ft. in the air you must have a very accurate sight, and, owing to the movement of the machine, it is necessary to have some such thing as a gyroscopically controlled one. Two years ago such a sight was nearing perfection, and yet the Navy has not got it yet. The fourth item in which failure to make progress has occurred is this. Some five years ago there was actually fired from a naval aeroplane, or it might have been a seaplane, a Whitehead torpedo—successfully discharged from a craft in the air; but only this year, five years later, an attack has been carried out by such a craft with such a torpedo on a fleet with success. I say that if the Admiralty had been doing their duty they would have had all these items completed long ago; and I would go so far as to say this, that, had the progress of the Naval Air Service been left in the hands of the Navy, the German fleet might have been destroyed in Wilhelmshaven long before the Armistice. That is rather a severe charge to make, but I think it is one that is justifiable.

These views coincide with those expounded by the Editor of this sheet in that "root and branch" manner which is as prolific in the production of friends as of enemies. He has emphasised the necessity of naval aircraft being manned by naval officers of experience and he has, with unpleasant accuracy, described the negligence of the Admiralty in matters closely concerning the Royal Naval Air Service. There is no need for further comment than to express complete agreement with Admiral Adair.

Major-General Seely, released from the cares of office, spoke in his usual manner, and said once again those things which he has so often reiterated before. After his customary defence of the separate Air Force principle he stated an imaginary case as follows. Should the First Lord desire additional aircraft he must address his "appeals to the right hon. gentleman the Member for Dundee (Mr. Churchill), and the right hon. gentleman the Member for Dundee says, "I am not in a position to give you these things which you so vitally require for the safety of the Fleet and its efficient conduct." "Why?" asks the right hon. gentleman. "Because I consider they are required for the Army," is the reply. "And why do you so consider?" "Because I interviewed myself five minutes ago, and so I decided." That is really opera bouffe; it is not Government."

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Major-General Seely's style is well known. It is a mass of superlatives plausibly arranged but based on little that is solid. In his speech all he has succeeded in saying is that he does not approve of any proposal to abolish the Air Ministry, and that it is absurd to place the War Office and Air Ministry under the same Statesman.

He was followed by Viscount Curzon, who, always devoted to the Navy, and prevented joining that Service in early youth owing to ill-health, served with distinction in the "Queen Elizabeth" during nearly the entire war.

Viscount CURZON: . . . The Air Services are what I would next deal with. I feel some considerable difficulty in alluding to this matter at all, but I should like to say this much, that I do know there is a great deal of anxiety about it on the part of the Navy. I have had the opportunity of getting to know something about the matter, and it has been put to me that it is obviously very difficult for the Commander-in-Chief of the Grand Fleet to have to communicate at one and the same time with both the Admiralty and the Air Ministry upon various subjects connected, say, with the aviation services of the Atlantic Fleet. I suggest to the right hon. gentleman that this is rather a difficult situation, and one which does not entirely make for efficiency.

Major-General Sir John Davidson, who was Director of Operations under Lord Haig in France, spoke later on the necessity for the creation of a Joint Imperial General Staff in order to co-ordinate the work of the War Office, Air Ministry and Admiralty.

Captain H. W. Benn was the next to make any reference to aerial matters. He said:—

. . . . My view, and I am sure it is the view which naval officers hold, is that the aerial arm has been as much a part of the Navy as the submarine, that there is a portion of the Air Service as regards the Navy which is analogous to the submarine service, and that it should be manned by men with naval experience, who would do their time in the air work, and when they are too old to fly would revert to the Navy in the same manner that the submarine officers revert to the Service ship. These men would be of inestimable value to the Service, having had air training and experience in flying. There is another view of the subject, and that is that the Admiralty have produced the submarine service, a child of their own, and encouraged it in every way, and it has benefited by the traditions of the Naval Service. In a similar way, if the Navy were responsible for their particular section of the Air Service, that section would have the naval training and the naval experience which is necessary for sea warfare. I do not want it to be understood that I am suggesting the abolition of the Air Ministry, or any reduction or supplanting of the Independent Air Service. That has been laid down as a policy of this House, and is not one which is open to question. I do not think that anybody either in the Army or the Navy would suggest that there should not be an independent Air Service. It is only that there are certain branches of the Service which, in my opinion, should be manned by naval men.

Lieut-Commander Kenworthy referred briefly to the relinquishment of airship building in this country, but he was more troubled by the number of motor cars in the Navy.

In the course of a general reply, Dr. Macnamara, Parliamentary Secretary to the Board of Admiralty, said:—

. . . As regards the interesting comments of my hon. and gallant friend the Member for the Shettleston Division (Rear-Admiral Adair), my right hon. friend the Member for South Molton (Mr. Lambert), my right hon. and gallant friend the Member for Ilkeston (Major-General Seely), and my hon. and gallant friend the Member for Greenwich (Captain Hamilton Benn), in regard to the question of the relations between the Navy of the future and operations in the air, that, obviously, is a matter of high policy. It is a question for the Board of Admiralty in the first instance, and then for the Cabinet. If I do not discuss that now, my hon. and right hon. friends will see that it is a matter for a higher authority than I possess, but that, again, will be a matter which, as I have said, will be referred to those responsible for its consideration.

At the end of the general discussion there was a further intervention by Major-General Seely to which the First Lord replied.

Mr. LONG: I have no hesitation whatever in answering my right hon. friend's question, as far as it is possible for me to do so, although I might take refuge, if I chose, in the very ordinary Parliamentary reply that the whole of his question is hypothetical, because really it centres in his conclusion, what course shall I take as First Lord of the Admiralty if and when I find that the present arrangement does not conduce to the efficiency of the Navy? My right hon. friend and I are too old friends to quarrel, but if I wanted to quarrel I might say he must leave it to me to say what course I take when I do not feel it consistent with my honour and credit to remain a member of the Government. That is really the answer to his question. When he asks me about the present situation, that is a totally different question, and, as we have discovered to-night, it is extraordinarily difficult, if not impossible, to answer it within the very narrow limits which we are allowed in this Debate, owing to the fact that we have to accept the existing condition of things under which the Air Board is a Ministry by itself. My right hon. friend is an enthusiastic supporter of a separate air administration. My hon. and gallant friend (Rear-Admiral Adair) does not share my right hon. friend's views. He does not approve of the existing state of things, but he still more disapproves of a separate Air Ministry, and wants a reversion to the original condition which existed before the Air Minister was appointed.

Before the Air Board was appointed the Board of Admiralty and the War Office were each responsible for their respective air branches. Owing to the very unsatisfactory state of things which arose during the war public opinion became very excited, and the opinion of this House was not only unanimous, it was more than that. No Government could have resisted the pressure of Parliament to get rid of this dual control, by the two military Departments, and to substitute a separate Air Ministry. Therefore, it would be kicking against the pricks to attempt, even if you believe in the old system, to go back to it now. Parliament deliberately arrived at this conclusion. I was a member of the Government at the time, and I know how great the pressure was. The Air Department was created, and up to the constitution of the present Government it was under a separate head. The Air Department is now under a Secretary of State, who is also Secretary of State for War. My right hon. friend (General Seely) thereupon rehearses to the Committee an imaginary conversation between myself and the head of the Air Board. I was unable to recognise either myself or the head of the Air Board in the conversation which was rehearsed with artistic skill. He asks me, "What are you going to do when the Secretary of State for War and the Secretary of State for Air, Mr. Jekyll and Mr. Hyde, this dual political personality, tells you that, having discussed the matter with himself, he cannot give you at the Admiralty what you want for the air, because he has already given it to himself at the War Office?" I do not want to take refuge in the hypothetical, but I think I may pray for mercy and say that we have plenty of other difficulties to deal with. We have had a most interesting debate. Everybody who has spoken has criticised the Admiralty and the First Lord, and has attacked us and abused us. [HON. MEMBERS: "No!"] Well, at any rate, the majority have. Ninety-eight per cent. have, and the other 2 per cent. that have praised us have done it more in the sense of favours to come than of favours received. At the end of the debate, with my bruised ribs, and in my exhausted condition, I find myself being asked what I shall do in a hypothetical situation, when the Secretary of State for War says that he has consulted the Secretary of State for Air, and the Secretary of State for Air cannot give to the Secretary of State for War all that he wants, and therefore the Secretary of State for War cannot give the First Lord of the Admiralty all that he wants. That state of things has not yet arisen. As a matter of fact, the chief of the naval staff, who is the First Sea Lord, and the chief of the air staff have been in constant communication. I do not say for a moment that I am satisfied with what the Air Board has done, but I have no reason to believe that this is because the Air Board has surrendered itself to the War Office. I am not at all sure that it is not the case that the Air Board take a different view of what we want than we take ourselves. It may be that my combat in the future will not be with the Secretary of State for War, but with the Air Board, who may take a different view from what we take of naval requirements. All I can say is that when the moment arrives when I find—if I am still First Lord of the Admiralty—that the Navy suffers, the first thing I shall have to do will be to discover whether the culprit is the Air Board or the War Office, and the second thing will be to decide, having found the culprit, the course to take in regard to my own position. I do not think I ought to be asked to state in advance what course I should take. My right hon. and gallant friend has taken his own course. He has, in accordance with a long and honourable Parliamentary position, resigned the office he held because he felt that he could no longer serve the country in that capacity. He may rest assured that I am not likely to hold my office one moment longer than I feel I can hold it consistent with my duty to my country.

THE AIR ESTIMATES.

The "Air Estimates of Effective and Non Effective Services for the Year 1919-1920" were debated in Committee by the House of Commons on Dec. 15th and 16th. As in this year analysis of the Air Estimates would be useless in view of the rapid changes brought about by demobilisation the following abstract is published for information:—

ABSTRACT OF AIR ESTIMATES, 1919-20.

Pp.	Votes. Nos.		Total Numbers
		I.—NUMBERS:	
3	A	Total Number of Officers and Men on the Establishment of the Royal Air Force, exclusive of those serving in India	(a)150,000

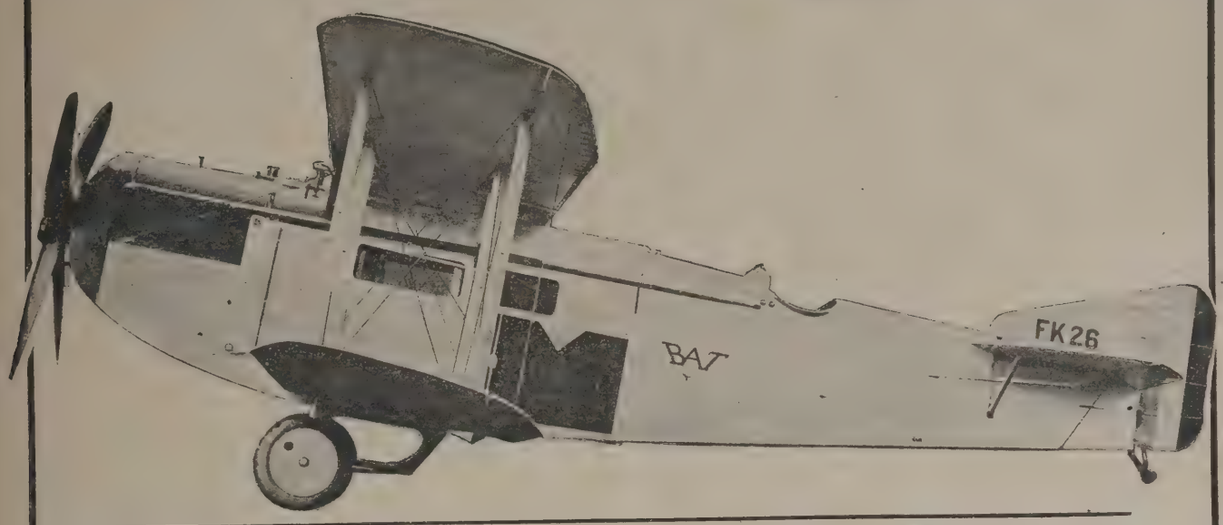
Pp.	Votes. Nos.	II.—EFFECTIVE SERVICES	Gross Estimate £	Appropriations in aid £	Net Estimate £
5	1	Pay, etc., of the Air Force	21,501,000	450,000	21,051,000
8	2	Quartering, Stores (except Technical), Supplies Animals and Transport	6,712,000	609,000	6,103,000
10	3	Technical and Warlike Stores	19,867,850	545,000	19,322,850
12	4	Works, Buildings and Lands	6,801,000	399,000	6,402,000
15	5	Air Ministry	692,100	100	692,000
22	6	Miscellaneous Effective Services	204,000	1,000	203,000
		Total Effective Services	55,777,950	2,004,100	53,773,850

Pp.	Votes. Nos.	III.—NON-EFFECTIVE SERVICES.			
24	7	Half Pay, Pensions, and other Non-Effective Services	258,000	1,000	257,000
		Total Effective and Non Effective Services	56,035,950	2,005,100	54,030,850

(a) Number voted by the House of Commons on March 14th, 1919.

It is noted on page 3 of the Estimates that the maximum number of all ranks serving at home and abroad (excluding those in India) is 150,000. This number will be reduced by March 31st, 1920, to 35,000.

The debate was opened by Major-General Seely, who, with a note of bitterness, usually absent from his somewhat rococo speeches, enlarged again on his favourite theme of the sin done to good government by the linking of the Air Ministry and War Office under one Secretary of State. It seemed to listeners as he proceeded that his anger was directed more at the personality of the combined Secretary of State than at the abstract principle, though the latter literally formed the excuse. He appealed to the Committee to support his view that no one man, however hardworking he might be, could give adequate time to both Ministries. His second point was "that it is grossly unfair to the Admiralty," reiterating the arguments used by him in his speech on the



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Navy Estimates, and quoting the views of Lord Fisher as to the revolutionary effect of air power on future naval effort. Therefore, the Admiralty must be better treated in aerial matters.

He could see no reason for the dual appointment save economy in that both Departments share the expense of the salary due to the Secretary of State, which, though his work is doubled, remains at the standard rate of £5,000 a year.

He repeated his statement that Mr. Churchill could only give one-tenth of his time to the Air Ministry, quoting, curiously, as support, the War Office statement "that they cannot answer their letters." Here Mr. Churchill intervened: "I never said I was not able to answer my letters."

General Seely: "No; but you never answered them."

Mr. Churchill: "That is very unjust."

Having thus exposed the futility and the personal nature of his grievances, he repeated his entire gamut of views and sat down.

Mr. Bonar Law, as Leader of the House, here made a statement in explanation of the position as the Secretary of State for War could hardly be expected to justify a situation for which he was not personally responsible

He rapidly came to the War Office letter question, and said that some people seemed to think that detail work was the concern of Secretaries of State.

"The right hon. Gentleman even carried that so far as to imply that because letters are not answered promptly by the War Office that therefore the Secretary of State must have more to do than he can do That really had nothing whatever to do with the case. I should say at once if the Secretary of State for War attempted to answer the letters in detail which came to the War Office that would be the best proof that he was unfit for his job and should be removed from it"

In regard to Major-General Seely's views as to the unworkable nature of the present arrangement, he said:—

"I would venture to say to my right hon. Friend and the Committee—and I think I can say it to him without any offence, and I am sure that in a sense he realises his position—I do believe that system has worked worse with him than would be at least possible with some who had not held so distinguished political posts in the past, and who had not his distinguished record in the War. I am afraid that throughout my right hon. Friend did not accept the position that he was only an Under-Secretary, to carry out the duties of the Secretary of State for Air."

There was no intention of doing away with the independence of the Air Ministry.

As to the powers of one man to do the work required by the two Departments, he indicated in many words that Mr. Churchill possessed sufficient energy and skill to undertake all that was required of him in these matters. He pointed out the absurdity of assuming that economy in the matter of the salary could have anything to do with the appointment.

In his view the two most important things at the moment in connection with the fighting Services of the Crown are the demobilisation and the arrangement of the Air Force in relation of the Army. It has to be decided where squadrons and other air units are necessary in the view of the Army, hence it is desirable that the ultimate departmental decision should be in the hands of one man. No such question is urgent in so far as the Navy is concerned. And with this general dissertation he concluded.

Lt.-Col. Moore-Brabazon Speaks.

Lieut.-Colonel Moore-Brabazon next caught the Speaker's eye. Referring to the Trenchard Memorandum [published in these pages last week] which he regarded as the most interesting aeronautical document ever put before the House, he said:—

"I see one or two lines in this Report which disturb me, and if I may I will read them:

"'In addition, there will be a small part of it (the Air Force) specially trained for work with the Navy and a small part specially trained for work with the Army, these two small portions probably becoming in the future an arm of the older Service.'

"Does that foreshadow a return to a small Royal Flying Corps and a small Royal Naval Air Service over and above a separate Air Force?"

To which Mr. Churchill promptly answered "No."

This satisfied Lieut.-Colonel Moore-Brabazon for the moment, but he asked "whether the cost of machines for these two separate Services will be borne on the votes of the other Service and not on the Air Vote?"

To this the reply was that the Air Force would pay.

He said that many obstacles hindered the Army and the Navy in their operations (such as wire netting, trenches, mines and submarines), but the Air Force had powers to which there was no answer. Aeroplanes could fly in a fog to a place hundreds of miles away without being seen. [One thinks that in referring to the absence of an answer the speaker revealed his lack of knowledge of anti-aircraft defence and its powers.]

Future wars would only be won by the "ultimate industrial resources of a country." The enemy's first object would be to attack the industrial arm of the State which in England is based on Birmingham, and in Scotland on Glasgow. Only one Force could defend it—the Air Force. [It is a little hard to see why the aerial arms of the two older Services working in co-operation with the other arms of their respective Services should not be quite as successful in defence. The gun and the searchlight will not cease to share the responsibilities of A.A. defence with aircraft.—Ed.]

The Advisory Committee on Civil Aviation.

From war he turned to peace:—

"Now I want to say a word on civil aviation. I had the honour of serving on that Advisory Committee which has given a Report. First of all, the supremacy which this country has got to in the air is not entirely due to the military. That seems to be sometimes forgotten. I quite admit that there are many manufacturers who have become very wealthy, but that is not all they want, and I think, from the point of view of rewards, we have been very lax in looking after those brains and those organisers which, quite apart from any military point of view, have put us on top. I heard someone say the other day that if Wilbur Wright had been an Englishman he might have got an O.B.E. The Advisory Committee on Imperial Air Routes had an extraordinarily difficult task, because if there ever was anything in the air, so to speak, it was civil aviation. The whole question was the most nebulous I have ever approached, and nobody knew anything about it whatever. There were no figures, and what experience there was was only based on a military basis, and we had very little to go on at all. One very leading light was asked by us what was holding back civil aviation, and he replied, with very great confidence, 'Your Committee.'

"If anybody interested in the air has read the Report furnished by the Committee, I hope it will be noticed that really the demands are very moderate indeed. We took into consideration the financial condition of the country.

"What was at the back of our minds was how to avoid building up a goodwill against the State. We have seen necessities of life, like the telephones, started by private enterprise and then pushed on to State, the State having to pay for the goodwill created. What was at the back of our minds was to arrange some scheme whereby the State at some time could take control of all aviation throughout the world without having to pay for vested interests. The recommendation was that all aerodromes should be State-owned."

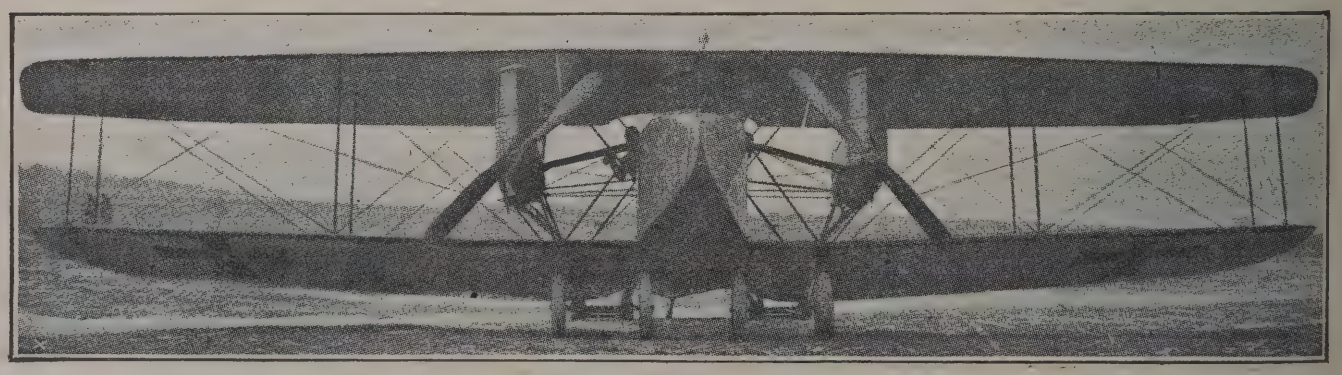
And so, after asking the Secretary of State to talk of these matters, he ceased to address the Committee.

Mr. Lambert protested against the joint secretaryship in fewer words but with greater simplicity than General Seely. Leaving this argument he quoted Lord Fisher and Sir Percy Scott on the approaching extinction of the surface ship unless it receives adequate aerial protection. Hence he argued the Air Ministry should be under the Admiralty and not under the War Office. [Which it is not in any case.—Ed.]

He protested against the expenditure on a cadet school at Cranwell which must, he thought, cost £1,000,000 at least in construction work alone. Why not use part of Osborne and Dartmouth, which he was sure would not be filled completely by Naval cadets in the future.

The training of officers in the R.A.F. in navigation, engineering and wireless was, he thought, very similar to that common in the Navy. An additional reason why Air Force officers should be trained in Naval establishments. Similar considerations affected the training of boys in the R.A.F.

Mr. Oswald Mosley, whose claim to be the "Child in the House" has been destroyed by Mr. Harmsworth, protested against the dual Secretaryship and appealed for a Minister of



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Defence. Major Glyn, in the course of an interesting but somewhat rambling speech, said that anti-aircraft defence was highly important in view of the intensive bombing which would be the certain prelude of any future war. Consequently the Air Force should be developed as a separate force. "I think," he said, "the greatest point of all in maintaining the Air Force you are maintaining a great prestige. Those pilots who fell on British service have laid a tradition which is the envy of the world." [Yet it was a naval and military tradition which inspired them, for the Air Force had only seven months of warlike existence.—Ed.]

In further reference to anti-aircraft defences, he said:—

"When the war came to an end we had eleven squadrons of aeroplanes with the necessary landing grounds and alighting stations in the vicinity of London. We had a special telephone service and listening posts, and two or three barrages of coastal searchlights. We also had 280 anti-aircraft guns situated at suitable points, and, incidentally, I may mention that most of those points have been dug up, and who is to know where they were? I suggest that, at any rate, the concrete foundations might be retained and a cheap post put up announcing, 'From this place guns were fired to destroy the aeroplanes of the enemy.' Altogether we had 30,000 men on the establishment. Of course, you cannot depend altogether on anti-aircraft gunfire, and you must meet like with like."

In regard to civil aviation he could not understand why the Peace terms had left Germany in possession of about 8,000 aeroplanes. The Germans "have now 7,000 miles of aerial routes with alighting arrangements and definite transport services." Should we not, in view of this, do everything we can foster civil and military aviation? Was £15,000,000 enough in a normal year to spend on these matters?"

Rear-Admiral Adair continued the debate. In general his remarks were similar to those in his speech in the debate on the Naval Estimates. He advocated strongly the formation of a Naval Air Service and quoted Sir Hugh Trenchard in favour of aerial arms to the older Services. But thought it desirable to retain in addition a separate Air Force.

The surface sea-borne ship would, in his view, never be replaced by aircraft in the economic sense. In the military sense he thought that ships would improve contemporaneously with the development of aircraft. The torpedo was to abolish surface ships forty years ago. It has not yet done so. In fact a cruiser, fitted with anti-torpedo blisters, was torpedoed and improved its speed immediately.

The destroyer, or ships of destroyer size, capable of 70 miles on hour on the water and then spreading wings and passing through the air at 150 miles an hour was a certainty of the future, though perhaps not in his lifetime.

The one essential in the future was that the Admiralty should be responsible for Naval aviation. The Air Ministry was not competent to deal with such matters, not from general inefficiency but from lack of detailed knowledge.

Capt. Wedgwood Benn protested against any division of the Air Force. He did not agree that the Navy required a special type of aeroplane. It was not necessary to man seaplanes with seamen. The aviator's knowledge was of a special class and did not coincide with naval knowledge even on similar subjects. The wireless equipment was different, there was the art of flying and the special problems of the defence of the machine.

The Air Ministry had stated that there was no intention of dividing the Force, but he was a little uneasy at the attitude of the Admiralty because the First Lord in his speech in the Navy Estimates had not definitely stated that the Navy would not have an Air Service of its own. In regard to the supply of officers he did not wish the main supply to come from the public schools, which he assumed was the intention. Mr. Churchill interposed to say that there would be promotion from the ranks.

Captain Benn continued:—

"I do not think promotion from the ranks meets the case. My experience is that people promoted from the ranks never have the status of the officers who have entered direct. They are usually pushed into administrative or other jobs. At any rate, that is my view, and I think that the field should be absolutely open for boys to enter exactly on a parity from all social classes. The history of the War has shown that, although all classes contributed very nobly, by no means all the most brilliant pilots have been chosen from the class of boys to whom the whole thing would be restricted if such a plan were adopted."

The scientific side of the pilots' work should be developed. The present exaltation of the "stunt" pilot was bad for aviation. [Here one thinks that all are in agreement.—Ed.]

Research ought not to be starved. Civil aviation should be encouraged, as even from the military point of view it must not be forgotten that the larger machines used in war for bombing and the transport of relatively large numbers of men would be the outcome of the civilian type.

The Secretary of State for Air then rose to make his statement, which is given here in compressed form.

Mr. CHURCHILL: This Debate has been both peculiar and agreeable. It has been peculiar from the fact that it has taken a very different course from that on which it was originally launched by my right hon. and gallant Friend who opened it, and from the fact that out of, I think, seven speakers, five—I am not sure I should not be right in saying six—have all propounded different schemes for the location of the Air Force in our general defensive organisation, or for the general organisation of our defensive Services. First of all there was my right hon. and gallant Friend, whose policy is perfectly clear. He wishes to take the Air Force away from the Army. But there sat beside him on the bench the right hon. Gentleman the Member for South Molton (Mr. Lambert), who uprose and employed an argument of great vigour to show that it should be taken away from the Army only to be put under the Navy—thereby encountering my right hon. and gallant Friend on all his arguments as to the impossibility of one man doing two jobs, and of placing the Air Force in helotage to some other more powerful Service. Then we had the gallant Admiral the Member for the Shettleston Division of Glasgow, whose idea is that the Air Force should be split into three—that there should be three separate Air Forces, one for the Army, one independent, and one Naval Air Force—a proposal for which he was very properly and soundly rebuked by the hon. and gallant Gentleman (Captain W. Benn), who spoke last. We have had, too, a very interesting and suggestive speech from the hon. and gallant Member for Stirling (Major Glyn), who, as I gathered from his statement, is in favour of the general organisation of the three forces in the ambit of one single Ministry of Defence, supported by a Joint Imperial Staff. Amid all these divergent points of view, so powerfully argued, so ingeniously framed, and so eloquently expressed, I seem to have escaped from the direct pursuit which my right hon. and gallant Friend had intended to set upon my heels. That is why I say the Debate, as well as being peculiar, has been agreeable.

If I do not immediately embark upon an examination of these elaborate questions of government of the various defensive forces, I hope that those who have taken part in the discussion will not think it is because I do not consider them important and interesting, but for the moment I feel it to be my duty to recall the Committee to some of the more immediately practical issues and questions with which, in Committee of Supply, we have to deal. First of all I would like to refer to the financial aspect, because we have heard a great deal of it at one time or other in the Session, and it is surprising that it should never have been mentioned at all during the course of this Debate.

In March, Air Estimates were presented of approximately £66,500,000, and the present Estimate is for £54,000,000, so that there is an apparent reduction of £12,500,000. I say "apparent" advisedly, because £11,250,000 out of those £12,500,000 are transferred bodily from the charges of the Air Ministry to those of the Ministry of Munitions, and the actual net saving to the public on the new Estimates over the old is only £1,250,000. I am very anxious that the House should clearly understand exactly what the position is, and should not think that we are in any way trying to mislead them as to the actual financial position. This £150,000,000 would have been greater by £2,000,000 if the airships had remained on the Admiralty vote. We have had put on our charge £2,000,000 for airships which otherwise would have figured on the Admiralty Vote. Therefore the total net actual saving on the Air Estimates as now presented is £3,250,000. To this may be added a further almost certain saving on the Ministry of Munitions Vote through not going on with contracts instead of taking delivery of machines. That is to say that owing to the reduction in the demand we are wiping out contracts by compensation instead of by taking delivery, as was done the first few months after the Armistice. It is probable that the reduction will at least amount to £3,000,000, and it may be more; so that the total benefit to the Exchequer is in the neighbourhood of £6,250,000, to which may be added the £400,000 which my right hon. Friend was able to secure by his judicious sale of one of our airships to the United States, and possibly by other sales which are in contemplation and which were not foreseen when the Estimates were originally introduced. Therefore the saving is not £12,500,000, but the public may consider it is better off by the changes which have taken place by something between £6,000,000 and £7,000,000.

These Estimates which are now laid for the Army and for the Air Force are not the Estimates for next year. They are the Estimates for last year, which ought to have been presented in March. It was not possible to prepare them, and I promised that both Estimates should be laid before the end of the year. I am doing this in fulfilment of my pledge. But, of course, we are mates will be introduced. By the end of February or the beginning of March whoever represents these Departments will lay the new Estimates before the House, and there will be a long series of opportunities of Debate and discussion on all matters connected with Air and Army policy. I shall reserve till then the task of making a full statement on the Army. . . .

The Estimates of 1918-19 for the Air aggregated £370,000,000, including the Vote for the Ministry of Munitions for aircraft. In 1919-20 they have fallen to £54,000,000, and the limit which the Cabinet has approved for the framing of the Air Force Estimate next year is approximately £15,000,000, so that, whatever else may be said, a very great reduction is being effected in the scale of our expenditure.

But this scheme which has been prepared by the Chief of the Air Staff, working for a long period of time in collaboration with some of the other able officers who under his leadership rose to eminence in the War, has been commented upon with favour by practically every hon. Member who has spoken to-day.

I hope the Committee will not underrate the very considerable merit of the achievement accomplished in elaborating that scheme. During the present year the Air Force has had to be reduced from an enormous war organisation, rapidly expanded in every direction, down to almost nothing, and a modest, compact, permanent peace-time Air Force is being erected out of and upon its ruins. Whereas the Army and the Navy both had permanent pre-war structures to fall back upon and reduce down to, and were strongly organised and established on that basis, the Air Force had nothing at all except its emergency war organisation. At the same time a double element of uncertainty was playing over the whole field, namely, uncertainty as to the rate at which the German and Turkish situations would allow demobilisation to be carried out, and, secondly, uncertainty as to how much money would be allocated for the permanent post-war Air Force. It was inevitable during this period of arrest, of dissolution, of uncertainty, and of reconstruction, that everyone should feel disquieted and uncomfortable. The Air Ministry had not only to work out plans for the future in all their detailed complexity, but they had to have two or three sets of alternative plans carried forward simultaneously through all their variations and complications, so as to be ready to come forward with a complete scheme at an early date, in accordance with whatever scale of Air Force was ultimately sanctioned by the Cabinet. I confided this task to Air-Marshal Trenchard, and with his staff he has been engaged during the last three or four months on its execution. Early in October the Cabinet definitely approved a permanent organisation for the Royal Air Force on a scale of approximately £15,000,000 a year, of which the Indian charges will be borne by India. This organisation has now been elaborated in full detail, and every move in demobilisation, the transfer of stores, surrender of aerodromes, etc., has for some time past been made in direct relation thereto. The full organisation will, of course, be laid before the House when the Air Estimates for next year are produced. But the central principle which has always been followed throughout this year has been the maintenance of the independent status and identity of the Royal Air Force.

(To be continued.)

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THE AIR FORCE.

By the courtesy of the Secretary of the United Service Institution I am permitted to publish a précis of a lecture delivered on Dec. 3rd by Air Commodore Brooke-Popham, C.B., C.M.G., D.S.O., A.F.C.

The title is a little misleading as the lecturer dealt mainly with the problems and the material of flying.

He explained at the opening of the lecture the principal conditions affecting flight by human beings. The influence of wind on the pilot's progress and his dilemma if he does not know its strength and cannot see the ground are described. "I might mention that wind is always a disadvantage to an aeroplane if one wants to get to a place and come back again."

The next point to which attention was given was the effect on aircraft of the decrease in air pressure as the altitude increases. At 15,000 ft., for instance, "the air pressure is just half what it is on the ground." Hence the aeroplane has to be flown at a greater angle owing to reduced support, and as the resistance is reduced the speed will be greater (other things being equal, which they are not!). The engine deprived of the weight of air loses power. One well-known engine that gives 360 h.p. on the ground, only gives 200 h.p. at 15,000 ft. The propeller, on the other hand, rotates with greater speed owing to the rarefication of the air. "The net result of all these is decrease of performance with altitude." Commodore Brooke-Popham considers that "the only means of getting over this appears to be to use a propeller having some method of altering the pitch."

From the effects of altitude on the aeroplane the lecturer turned to the trials of aviators at great heights. "A temperature of minus 20 deg. Fahr., which is not unusual, is, I am informed, the average winter temperature at the South Pole. At this temperature any metal that is touched with the bare skin will have a serious effect. I remember an observer who for some reason or other touched his gun with his mouth, and left the greater portion of his lips sticking to it." The introduction of electrically heated clothing reduced greatly the discomforts of flying at great heights.

All of this is elementary and has little interest to those experienced in aeronautics. The interest began when he dealt more closely with the aeroplane in war and spoke of the advance made in the design, supply, and fighting efficiency of aircraft.

In August, 1914, there existed 272 aeroplanes in the R.F.C. and R.N.A.S. Of these, in his opinion, scarcely 90 were fit for service. The R.F.C. took with it to France on August 13th "thirty-two machines in units and a further twelve in reserve," leaving in England sixteen war machines which were sent over later. Thus with the exception of training machines and some others of which the only attraction was the charm of antiquity, England was left without aircraft. He notes as an interesting point that the engines in the machines sent to France were all of foreign design and manufacture.

When hostilities ceased the factories of England were producing ninety aeroplanes a day, fifty per cent. of which were of English design and all but a few were of English manufacture.

"During the last eighteen months of the war, the average wastage [of aeroplanes] was 51 per cent. per month, i.e., all the machines with squadrons in France had to be replaced once every two months, or six times a year. In other words, each machine only lasted an average of sixty days, which would only mean a little over sixty hours flying per machine."

The wastage due directly to enemy action never at any time reached 25 per cent., even if to this were added a proportion of the missing machines it is doubtful if the wastage due to enemy action ever amounted to more than a third of the total losses.

The lecturer then dealt with some of the problems connected with aerial navigation. He described the many troubles which affect the aeroplane compass and the methods by which these troubles were overcome. In his view, and in that of all wise pilots, good instruments are absolutely essential if one is to fly through clouds with reasonable safety.

One method of navigating aircraft when the land is invisible is by wireless. It is now quite a simple matter to find the direction from which a wireless signal is being sent, by means of a rotating coil. Consequently if the direction of two sending stations is known, it is possible to fix one's position by an intersection.

He emphasised the high value of wireless, both telegraph and telephone, in the development of aviation, and said that messages had been sent by wireless telephone from an aeroplane from over 100 miles. At the time of the armistice there were 520 wireless officers and 6,200 wireless other ranks in the Air Force in France alone.

A description was then given of bombing raids carried out by aeroplanes over German territory and the moral effect caused thereby.

The lecturer was under no illusion as to the great value of torpedo-dropping aeroplanes for future Naval warfare. "The normal range at which torpedos are dropped from aircraft is about 600 yards, and at this range a trained pilot will make a practical certainty of hitting a destroyer." A certain degree of defence for the aeroplane against the ships' guns can be provided by a smoke screen formed by convoying aircraft.

In reference to seaplanes and aeroplanes for use over the sea he described the flotation gear experiments carried out at the Isle of Grain, of which full details were given in a recent series of articles by Captain Sayers which appeared in this paper.

At the conclusion of his lecture he gave a few figures as to the fighting in France, which, being of general interest, are produced here.

"The best day we ever had as regards bringing down enemy aircraft was on October 30th, 1918, or to be strictly accurate, 4 p.m., the 29th to 4 p.m. the 30th. On that day we did in 70 enemy machines, and they were all properly crashed, not merely driven down out of control. Our casualties that day were 17 aeroplanes missing.

"With regard to bombing, our best day's work was in April, 1918, 4 p.m. 11th to 4 p.m. 12th, when we dropped 43¾ tons.

"As regards photographs, our best day's work was May 3rd, 1918, when 4,090 new photographs were taken.

"It may interest you to know that the total number of prints of aircraft photographs issued in France during 1918, up to the armistice, was over 6,000,000, the great majority of these being produced by the Air Force themselves. In that connection it might be interesting to note the consumption of a certain chemical, known as hybo-sulphite of soda. Ordinarily one buys it by the ounce. Our total consumption during the war amounted to 120 tons.

I am not quite certain as to the best day for the number of hours flown, but I know that on April 12th over 3,100 hours total flying was put in, which, when converted into miles, means a great deal more than sufficient to go from here to the moon."

THE FLIGHT TO AUSTRALIA COMPETITION.

The complete telegraphic diary of Capt. Ross Smith has now come to hand and is as follows :—

Nov. 12th.—The Vickers-Vimy left Hounslow at 9.10 a.m. Weather misty as far as Lympne, but Channel clear. Encountered heavy cloud of snow at Etaples, and climbed to 8,000 ft. Flew by compass course. Next saw ground three hours later over Roanne, after meeting further snow. Intense cold, 75 deg. frost; instruments frozen, machine covered with ice; food too frozen to eat. From Roanne ground visible times. Very relieved to see Lyons. Favourable wind throughout, but much time wasted avoiding storms. Vimy behaved splendidly. Arrived Lyons 3.40.

Nov. 13th.—Left Lyons 10.6, fine weather. Sunshine all day; few heavy clouds, otherwise perfect flying day. Flew along Riviera, crossed Gulf of Genoa; Remo, Spezia. Landed Pisa 2.40, too late to get to Rome. Going Taranto to-morrow. Alps looked very fine in sunlight. Vimy O.K.; crew well.

Nov. 14th.—Yesterday at Pisa heavy rain, aerodrome under water. Attempted to start, got bogged, and spent day on machine.

Nov. 15th.—Had engines running 8 o'clock to-day. Bogged badly in taxi-ing. Used planks and Italian mechanics dug out machine; bogged again, but finally got out. Start sensational. Serjt. Bennett (mechanic) held tail down until machine working, then made running jump at rear cockpit, hauled aboard by Shiers as machine was leaving ground. Aerodrome 2 in. under water, but Vimy rose beautifully. Crew very wet but cheerful. Encountered strong head wind, ground speed only 50 miles per hour. Passed through some heavy clouds, otherwise hazy and bumpy. Landed Rome 3 o'clock.

Nov. 16th.—Left Rome 9 a.m. Landed Taranto 11.45. Again low clouds, visibility bad. Passed over Capua and Naples, then turned east over mountains; flew low over Vesuvius, but weather too bad to photograph. Very bumpy over mountains, machine falling several hundred feet at times. Good wind helping us. Greatest assistance afforded us at Taranto by aerial route. Spent afternoon on machine.

Nov. 17th.—Left Taranto 8 to-day, arrived Suda Bay 4.35. Strong wind on our beam, low clouds, rain all the way to South

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Greece. Attempted to get above clouds, but too high, so flew at 800 ft. Following coast, nearly hit small island in mist. South Greece to Crete good weather, slight head wind.

Nov. 18th.—Left Suda Bay 8 to-day, arrived Cairo 3.30. Weather again bad. Low clouds made crossing Cretan mountains difficult. Wind slightly favourable, steered south course after leaving, but had to fly through rain at 2,000 ft. most of the way across the Mediterranean. Passed two steamers halfway; checked ground speed and drift on them. Crossing took 2½ hours. Struck African coast at Sollum, then flew east to Cairo across desert via Matruh. Hope to reach Demascus or Baghdad to-morrow. All very pleased to have got here. Hope for better weather now. So far have taken 30 flying hours, mostly through rain and storms. Throughout greatest assistance rendered by aerial route stations, nothing being too much trouble. It is largely due to their excellent organisation that we are here so soon. Vimy going perfectly.

Nov. 19th.—Left Cairo 10.30; dull weather. Crossed Canal at Kantara, then over Romani along coast under thick cloud to Gaza. Turned inland to Ramleh, then Haifa. Owing to heavy rain flew low to Jordan over Sea of Galilee, thence to Damascus. Interesting seeing old places again, recalling memories of the war. Landed, Damascus 3. Met many old R.A.F. friends.

Nov. 20th.—Delayed until 11. First rain since March. Ground getting sticky. Oiled tyres to stop mud sticking, and left. Flew to Tadmor, turned east, crossed desert Abu Kemal, followed Euphrates. Met head wind and landed at Ramadie battlefield at dusk. Pegged down machine. Heavy gale at night. Turned out troops to hold machine; anxious time for two hours, but Vimy weathered the storm.

Nov. 21st.—Left Ramadie 1.15; good wind; first good flying day of journey. Passed Baghdad, Kut, Garden of Eden, landed Basra 4.40. Overhauling to-day; Bunder Abbas tomorrow. Yesterday weather cheered all considerably after ten days' trying conditions. Crew well; engines behaving beautifully.

Nov. 22nd.—At Basra overhauling machine and engines, making adjustments; nothing wrong.

Nov. 23rd.—Left Basra 6.30; perfect day, beautiful sunrise. Flew over Bushire along coast Persian Gulf, landed Bunder Abbas (Persia), 2.20. Nearly eight hours in the air; machine never faltered. Persian coast very rough and barren. Passed several R.A.F. emergency grounds. Welcomed here (Bunder Abbas) by British Consul, the O.C. troops, and the local Persian Governor. Great interest manifested by local inhabitants; some had never seen an aeroplane. Hope to reach Karachi to-morrow if wind favourable, otherwise Charbar.

Nov. 24th.—Left Bunder Abbas to-day 7.30, arrived Karachi 4.10. Good day, uninteresting scenery. Followed coast all the way. Engines and machine no trouble; crew rather tired after nearly nine hours' flying. Welcomed in India by General Fowler and Air Force, also a party of Australians who "coo'eed" lustily. Weather much warmer—a contrast with England 13 days ago. Hope to reach Delhi to-morrow if wind favourable.

Nov. 25th.—Left Karachi to-day 7.40, arrived Delhi 4.30. Journey uneventful. Good day, slight head wind. Met by General MacEwen and numerous others. All Air Force arrangements perfect; greatest assistance. During last three days have flown 25 hours, covering 1,600 miles. Machine and engines no trouble; crew well. Allahabad next, possibly to-morrow.

Nov. 26th.—Remained at Delhi resting.

Nov. 27th.—To-day at 10.30 flew over city 10 minutes, then started Allahabad. Near Muttra one oil gauge "dud." Landed and repaired. Continued; after 90 minutes landed at Allahabad 5 p.m. Good flying. Passed Taj Mahal at Agra, Cawnpore. Crew and machine well.

Nov. 28th.—Left Allahabad 8.30, arrived Calcutta 1.45. Good trip. Following wind, clear sky, uneventful. Landed on the racecourse; large crowd. All well. Akyab to-morrow.

Nov. 29th.—Left Calcutta 8.30; landed Akyab 1 p.m. A large and distinguished gathering to see us off, including Lady Ronaldshay and many cinemas and cameras. Great interest was displayed in machine, especially in the parts which flew the Atlantic with Alcock. The racecourse at Calcutta is small when taking off. Many hawks were circling round close to the ground. We were very frightened that a hawk would hit the propeller and smash it.

Just off the ground the machine struck two hawks, one hitting the propeller at a nasty moment as the machine almost hit the trees in avoiding more birds. No damage to the propeller, but pieces of hawk were hanging on the machine the whole journey.

Circled Calcutta and flew east to Chittagong across mouths of the Ganges, and then south in good weather. Poulet here. Both machines leave for Rangoon to-morrow. All well.

Nov. 30th.—Arrived at Rangoon. The Vimy and the Caudron first machines seen there. Both flew from Akyab across country to Irrawaddy River which followed to Prome. Thence guided by railway to Rangoon. Calcutta-Rangoon best part of journey. Leaving to-morrow for Bangkok.

Dec. 1st.—Arrived at Bangkok. Greatest assistance and courtesy shown by Prince Pitsanoluke and aviation corps.

Dec. 2nd.—Left Bangkok 7.0 and arrived at Singora at 1. Escorted first 50 miles by four Siamese machines. Course south along east coast of Malay Peninsula. First two hours good, then met heavy monsoon; rain, wind strong and changeable, sometimes helping and sometimes against. Necessary to fly 500 ft. three hours, following coast. Almost blinded with rain, but country impossible for landing. Had to continue, hoping for the best. Worst flying conditions ever encountered. Last hour better. The aerodrome at Singora is bad and stumpy. Had to land in a cross wind on a small dry patch. Safely down with luck. Later, taxi-ing the machine, tail skid caught root and broke fitting; not serious. Great interest of local population in seeing their first aeroplane. Decided that, owing to weather, we could not reach Singapore without more petrol. Wired Asiatic Petroleum Company, Penang, to send urgently. During night heavy squalls; crew held machine all night. Great assistance and hospitality, Prince Yugala and local officials.

Dec. 3rd.—Torrential rain with wind. Repaired skid, crew wet through, working on machine all day cheerfully. Petrol arrived evening; raining too hard to put in.

Dec. 4th.—My birthday. Weather bad. Decided to try for Singapore. Left Singora 10, arrived Singapore 5. Take off at Singora very rough, but convicts had cleared stumps yesterday. Aerodrome very wet in patches. Got off in a cross wind—lucky. Rain all the way. Flew 2,000 to 500 ft. all the way. Great reception here, huge crowd. Hope Java December 6th. Port Darwin, Dec. 10th. Vimy and crew well.

Dec. 5th.—Rested at Singapore.

Dec. 6th.—Flew to Kalidtjatti in Java, nearly 700 miles. Worst stage of journey as regards landing grounds. On arrival at the Dutch Military Flying School were greeted by the Governor-General of the Dutch East Indies and others.

Dec. 7th. Went from Kalidtjatti to Sourabaya. Uneventful trip. The aerodrome appeared hard, but was very soft underneath. Landed successfully, but when taxi-ing machine sunk to axles. Required 200 coolies to get machine out. Bamboo mat road then constructed. The machine was moved to end of the ground 400 yards in seven hours using the mats in relays. Dinner with British residents.

Dec. 8th.—At the aerodrome at daylight. By 9 a.m. had built mat road 300 yards in length. Attempted to start, but some mats caught the tail, machine swerved round and once more badly bogged. Dug machine out. At noon had constructed a road of laced mats 350 by 20 yards. Started again and succeeded in getting off. Flew east along islands and landed at Bima in Sumbawa. Excellent Dutch aerodrome. Well entertained by local Sultan and Dutch Controller

Dec. 9th.—Started for Atamboca in Timor Island, another Dutch military station. Entertained by commandant. Only 350 miles to Port Darwin.

Dec. 10th.—Up at dawn, rode to aerodrome, three miles on Timor ponies. Thick fog delayed us two hours. At 8.30 a.m. fog lifted and headed for Darwin flying by compass. At 10.30 sighted cruiser "Sydney." At 12.30 sighted Bathurst Island, first glimpse of Australia. Landed Port Darwin 3.30 p.m.

A correspondent writes :—

At the works the news of the landing of Capt. Ross Smith at Port Darwin was received at Vickers Weybridge works at 11.45 a.m. on Dec. 10th, but there was no boisterous enthusiasm displayed as when the Atlantic flight was accomplished, for the workpeople were confident of the success of of their machine after reading the reports of its progress. Nevertheless, everybody was manifestly proud of the achievement.—J. F. S.

The Martinsyde Disaster.

The Air Ministry announced on Dec. 16th that information received from official sources threw further light on the loss of Capt. C. E. Howell, D.S.O., M.C., D.F.C., and Air Mechanic Henry Fraser, who fell into the sea at San Georgio Bay, Corfu, on Dec. 9th.

The accident is reported to have occurred at 8 p.m. A naval motor-boat and some fishermen proceeded to the spot where the machine had fallen, but arrived too late to save the occupants. The machine is lying in 30 ft. of water, and is believed to be salvable, although the bodies of the crew have not yet been found.

The machine left Taranto at noon on Dec. 9th bound for Athens, a distance of 400 miles, and apparently the aviators must have lost their way as they only reached Corfu, which was on their direct route, at 8 p.m., a distance of 150 miles, after eight hours' flying. The machine had a cruising speed of 100 miles per hour, and it is conjectured that she ran out of petrol, as it is unlikely that she would be filled up with petrol for the short run to Athens. According to weather reports the day was misty.

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THE PRODUCTS OF THE BRITISH AIRCRAFT INDUSTRY.—II.

In the issue of December 17th, under this heading were described the aircraft, aero-engines, and aeronautical accessories manufactured by the British and Colonial Aircraft Co., Ltd., the Westland Aircraft Co., Wm. Beardmore, Ltd., Austin Motors, Ltd., Martinsyde Ltd., Parnall & Co., the Aircraft Manufacturing Co., Ltd., Short Bros., Rolls-Royce, Ltd., the Cosmos Engineering Co., Ltd., and S. Smith & Sons (M.A.), Ltd. In addition, the B.H.P. engines manufactured by Arrol Johnston, Ltd., the Galloway Engineering Co., and the Siddeley Co. were described.

A further series of the products of other members of the Industry will be found below.

A. V. ROE AND CO., LTD.

The Avro firm requires little introduction to the world at large. Even in Germany its products were well known before the war, and during the war the Standard Avro two-seater has been a familiar sight in all Allied countries.

Of the early history of the firm it may suffice to mention here that in 1912, being then even a firm with an aeronautical history behind them, they had already produced and flown successfully two totally enclosed aeroplanes, the one a single-seater monoplane with a 40-h.p. 5-cylinder "Viale" engine, and the other the well-known "Military Trials" Avro two-seater with a 60-h.p. Green engine.

These two machines may properly be considered to be the direct ancestors of the modern "Limousine" type, and it is interesting to compare the two photographs here attached showing the modern Limousine version of the Avro, with the 1912 two-seater.

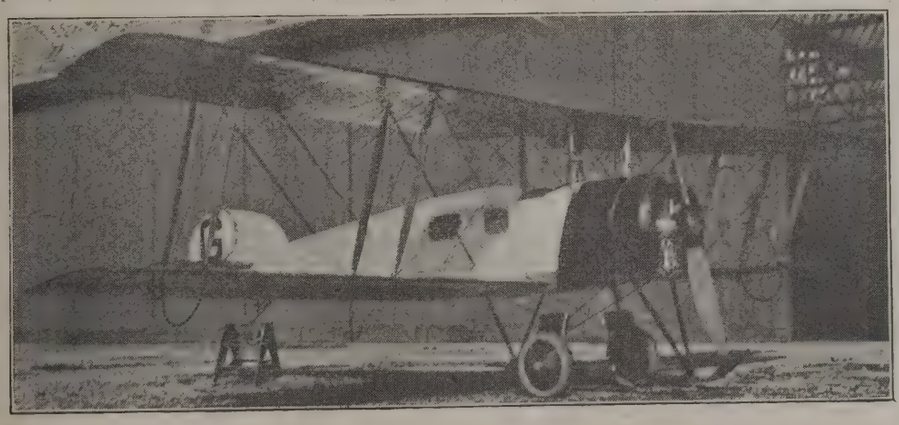


The ancestor of the "Limousine" Aeroplane. The all-enclosed Avro Biplane (60-h.p. Green engine), flying at the Military Trials, 1912.

THE AVRO "LIMOUSINE."

The Avro "Limousine" is essentially a modified Standard Avro training machine, fitted with a somewhat wider fuselage and centre section. Spare parts for the Standard type are also suitable for the "Limousine," and there is therefore no possible difficulty as to the supply of replacements, and, as the airworthy qualities of the original are conserved in the modified version the machine must be considered one of the most useful of small passenger-carrying craft.

The following table gives the main dimensions and the performance of this machine fitted with the B.R.1 engine. It is to be noted that, as with the standard machine, it is possible, to fit any of the Standard type rotary engines of from 100 to 150-h.p. and the A.B.C. "Wasp" of 170 h.p. to this machine without structural alterations.



THE NEW AVRO "LIMOUSINE."—This machine is one of the five-seater type Avros with the passengers' compartment enclosed. Two comfortably sprung bucket seats are fitted, and the cabin is provided with a door on each side of the body. Large Triplex glass windows are fitted.

SPECIFICATION.

Type	Enclosed "Limousine"
Name	Avro "Limousine."
Purpose	Passenger carrying, etc.
Span	36 ft. 9 in.
Wing area	335 sq. ft.
Tail area	26 sq. ft.
Elevator area	18 sq. ft.
Rudder area	9 sq. ft.
Fin area	6 sq. ft.
Ailerons area	45.5 sq. ft.
Engine and h.p.	150-h.p. B.R.1.
Airscrew, diam. and pitch and revs.	2-bladed Avro 9 ft., 7 ft., 1,300.
Weight of machine empty	1,431 lb.
Load per sq. ft.	7.42 lb.
Weight per h.p.	16.5 lb.

Performance—
Speed low down .....90 m.p.h.
Speed at 10,000 ft. .....75 m.p.h.
Landing speed .....40 m.p.h.
Climb—
To 5,000 ft. .....10.2 min.
To 10,000 ft. .....27.8 min.
To 12,000 ft. (Service ceiling) 41 min.

Other interesting recent products of the Avro Co. of a type suitable for sporting civilian use are the Avro "Baby" and the type 538.

THE AVRO TYPE 538.

The type 538 is a single-seater racing machine which can be fitted with any of the standard rotary or radial engines up to 170 h.p. In spite of its small size it is fitted with a double bay wing bracing, securing a light but sturdy structure.

The general particulars are :

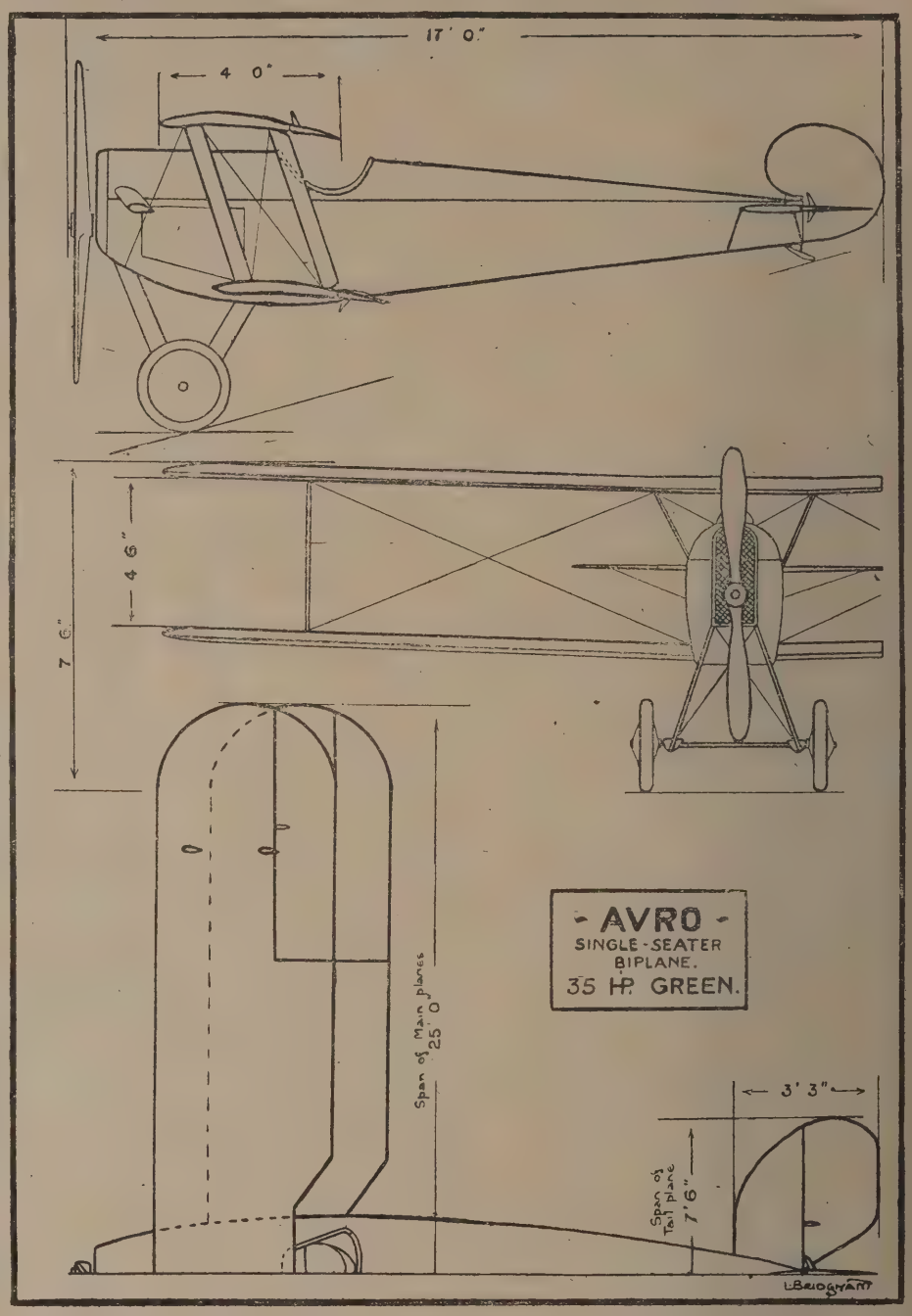
Span .....28 ft.
Length overall .....20 ft. 6 in.
Height overall .....8 ft. 6 in.
Weight empty .....975 lb.
Weight loaded .....1,400 lb.
Petrol capacity .....26 gall.
Oil capacity .....6 gall
Total surface .....210 sq. ft.
Weight per h.p. ...9.35 lb. (150 h.p.).
Weight per sq. ft. .....67 lb.
Performance—
Speed at sea level .....125 m.p.h.
Speed at 10,000 ft. .....112 m.p.h.
Landing speed .....46 m.p.h
Climb—
To 10,000 ft. .....10 min.

Cruising range at ¾ power, 108 m.p.h.; at 1,000 ft.—320 miles. The above figures relate to the machine fitted with the 150-h.p. Bentley Rotary (B.R.1.).

THE AVRO "BABY."

The little Avro "Baby" fitted with the 35-h.p. 4-cylinder Green engine has already established a reputation by reason of its excellent performance in the London Aerial Derby—wherein it won the handicap—by its flight to Amsterdam and back, etc.

The whole machine is simple in construction, easy to house, the engine is reliable and very quiet in running, and the performance is, considering the low power used, extremely good. As the machine is stable and easy to fly, has a very low landing speed, and is capable of every brand of "stunt" yet known to the pilot, it represents an ideal machine for the sporting owner-pilot.



The dimensions, etc., are :

Span .....25 ft.
Length overall .....17 ft.
Height overall .....7 ft. 7 in.
Weight empty .....610 lb.
Weight loaded .....825 lb.
Petrol capacity .....6 gall.
Oil capacity .....1 gall.
Total area .....180 sq. ft.
Loading .....4.58 lb. per sq. ft.
Weight per h.p. .....20.6 lb.
Performance—
Speed at sea level .....80 m.p.h.
Speed at 10,000 ft. .....71 m.p.h.
Landing speed .....33 m.p.h.
Climb—
To 5,000 ft. .....11 min.
To 10,000 ft. .....25 min.
Cruising range at 1,000 ft. and at 65 m.p.h. .....200 miles.

THE BRITISH AERIAL TRANSPORT CO.

Founded in 1917 to exploit the designing capabilities of Mr. Frederick Koolhoven, the B.A.T. Company has quickly achieved a world-wide reputation as designers and constructors of aircraft of very high performance.

THE "BANTAM."

The first production, the B.A.T. "Bantam," designed in 1917 as a single-seat fighter, was an immediate success. The essential features of this machine were : the three-ply fuselage of oval section entirely devoid of internal bracing wires, and of a maximum depth equal to the interplane gap, and the use of a two-bay bracing on wings of only 25 ft. span, together with the provision of a very wide undercarriage with wheels set under the inner row of interplane struts.

The three-ply fuselage is light and simple, and is extremely difficult to damage by machine-gun fire.

The use of a two-bay bracing for the wings permits of a light structure combined with strength and rigidity. The wide chassis renders it extremely unlikely that the wing tips will be damaged when landing on even the roughest ground.

The engine fitted was the A.B.C. air-cooled radial "Wasp" of 170 h.p.

Throughout the machine every part is of the simplest possible design. There are no forgings, and cast and machined parts are practically absent. As a fighter the machine possesses unique qualities. The pilot is so placed that by raising his head slightly through a hole in the top plane he has a clear view round in all directions, while the sides of the fuselage under the top wing are so cut away as to provide a perfect view downwards both in front and behind the bottom plane.

The grouping of the principal loads near the centre of gravity and the careful disposition of the control surfaces make



THE FIRST BRITISH VICTORY.—The Sopwith Seaplane, with 100 h.p. Monosoupape Gnome engine, piloted by C. H. Pixton, winning the Schneider Cup Race at Monaco in 1914.



The B.A.T. "Basilisk" (A.B.C. 320-h.p. "Dragonfly" engine).

this machine exceptionally quickly responsive to its controls and consequently a redoubtable fighter.

The armament consists of two Vickers' guns firing through the propeller by means of the C.C. gear, and 1,000 rounds of ammunition; the guns being placed inside the fuselage on either side of the pilot, they are very accessible and easily attended to in the air.

The following are the chief figures relating to this machine :—

Span	25 ft.
Overall length	18 ft. 5 in.
Total area of planes	185 sq. ft.
Weight loaded	1,330 lb.
Military load carried	525 lb.
Petrol capacity	22 galls.
Oil capacity	2½ galls.

Range of action 3½ hours, equal to 440 miles at 15,000 feet.

PERFORMANCE—

Speed at ground level	135 m.p.h.
Speed at 10,000 ft.	134 m.p.h.
Speed at 15,000 ft.	127 m.p.h.
Landing speed	50 m.p.h.
Climb—	
To 3,000 ft.	1 min. 30 sec.
To 10,000 ft.	7 min. 19 sec.
To 15,000 ft.	14 min.
To 20,000 ft.	22 min.

THE "BASILISK"

The B.A.T. "Basilisk," produced during 1918, was designed on lines very similar to the "Bantam," the main differences being an increased gap and chord, the setting of the pilot's seat aft the main planes, the raising of the upper plane to the level of the pilot's eye, and the installation of the A.B.C. "Dragonfly" of 320 h.p. The same simplicity and robustness of construction that characterised the "Bantam" is to be found in the "Basilisk," combined with a greatly improved performance.

The main dimensions of the machine are :—

Span	25 ft. 4 in.
Overall length	20 ft. 5 in.
Total area	220 sq. ft.
Weight (loaded)	2,000 lb.
Weight (empty)	1,275 lb.
Petrol	40 galls.
Oil	4½ galls.

Range of action 3 hours, equal to 475 miles at 10,000 feet.

PERFORMANCE—

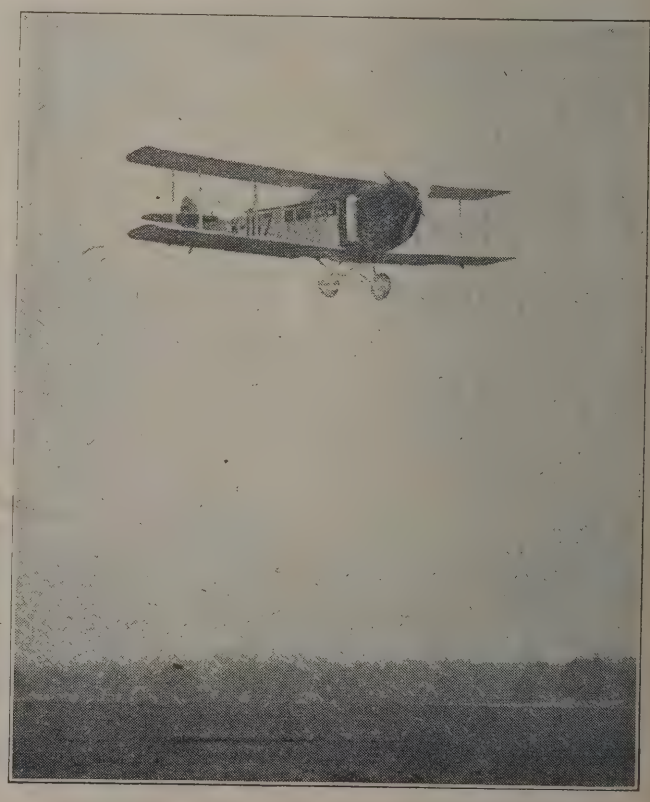
Speed at ground level	162 m.p.h.
Speed at 10,000 ft.	154 m.p.h.
Speed at 15,000 ft.	144 m.p.h.
Landing speed	52 m.p.h.
Climb—	
To 10,000 ft.	4 min. 20 sec.
To 15,000 ft.	8 min. 30 sec.
Service ceiling	29,000 ft.

THE B.A.T. F.K.26.

This machine is quite an exceptional product, for it will always bear the distinction of being the first aeroplane ever constructed solely for commercial purposes.

The designs were commenced the day after the great Armistice of 1918 was signed, and the machine was flying—and considerably exceeded its expected performance—in the Spring of 1919. To those who follow aircraft design closely it must be interesting to hear—so accurately was the original design conceived and interpreted throughout the drawing office and workshops—that once erected and flown the machine needed no adjustment whatever. She was *au point* on her very first flight.

The object in view in producing the F.K.26 was to provide an aeroplane equally suitable for mail or goods carrying or passenger work—a machine of moderate price, having a definite speed and load capacity advantage and a high degree of



The B.A.T. F.K.26 Passenger-carrier in the Air.

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"Consuta" is used for the cabins of the commercial type of Vickers "Vimy" bombers, entirely dispensing with the use of cross-bracing wires. It is now being used for the whole covering of flying boats—the largest type yet built. Its uses are limitless.

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general utility. A single-engined machine of the capacity of F.K.26 was chosen because it is believed that this general type will most efficiently fill the requirements of civil commercial aviation for the next few years at least.

As far as postal air traffic is concerned, high authorities agree that machines carrying approximately 1,000 lb. useful load will be the most effective in fulfilling trans-Continental mail requirements. It is obvious that the success of a mail service will, given regularity, hinge entirely on speed, and it follows that it will be more advantageous to the general community to have a frequent and rapid service transporting moderate loads than a lethargic and slower service catering for the very high load.

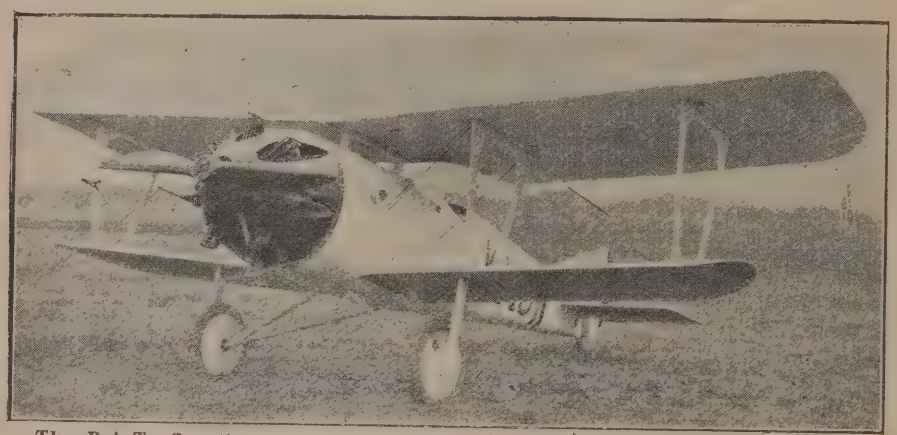


Three-quarter Rear View of the B.A.T. Sporting two-seater.

The same applies to passenger transport. Until a definite knowledge of the passenger-carrying capacity required on the different routes is gained by practical experience, it will be more economical and efficient to employ machines of moderate accommodation always working at full capacity than to run the risk of having larger and more costly machines flying with one half, or less, of their full remunerative load.

So much for the aim underlying the design of this type.

In actual performance the F.K.26 is capable of taking a useful and remunerative load of 1,000 lb. with sufficient fuel on board to give her an effective range of 660 miles at an economical cruising speed of 110 m.p.h. Constructionally the machine is clean, simple and straightforward throughout, which makes for ease and economy in effecting running repairs. One


The B.A.T. Sporting two-seater (200-h.p. "Wasp" A.B.C. Mark II engine).

of her most remarkable features is the cabin, which measures 8 ft. long by 6 ft. high by 3 ft. 3 in. wide, and which has no internal cross-bracings or obstruction to restrict the freedom of movement and comfort of the passengers carried. That such a large cabin could be introduced into a machine of such relatively small over-all dimensions (the fuselage measures only 35 ft. and the span 46 ft.) is exceptional, especially as it has been attained without sacrificing any strength at that part of the fuselage where the cabin is situated.

The landing chassis is a strong and sturdy job sprung by a combination of elastic and oleo shock absorbers working on the same principle as the recoil mechanism of a gun. With the machine's low landing speed of approximately 45 m.p.h., and such a strong but flexible chassis, safe landings are possible under circumstances where machines of less thoughtful design would suffer damage.

The tail is a more or less conventional arrangement; the stabiliser, however, is capable of incidence adjustment by means of a hand wheel by the side of the pilot's seat, to enable any variations of balance caused by any changes in the quantity or disposition of the load carried to be compensated for while the machine is in flight. The rudder is fitted at its lower extremity with a sturdy, well-sprung steerable tail skid, so that the machine may be manœuvred on the ground with ease and certainty.

The Rolls-Royce "Eagle VIII" engine is fitted as standard and is covered by a black enamelled cowl, the whole of which is detachable in order to give free and open access to the engine. The cooling is effected by two narrow vertical radiators on either side of the fuselage.

All engine controls from the pilot's cockpit to the engine compartment are positive, transmission being effected in each case by duralumin tubes mounted in ball bearings.

The engine may be started by the pilot from his seat.

THE B.A.T. SPORTING TWO-SEATER BIPLANE. TYPE F.K.27.

This machine was specially designed to avoid the disadvantages of the existing war types of machines when adapted for private purposes; these types invariably being either too bulky and expensive in upkeep or insufficiently powerful for all-weather use, and deficient in that speed which is, and will undoubtedly remain, the great advantage of aviation over all other means of transport. At the same time the sociability of a two-seater car has been aimed at.

The result is a small biplane, more or less of the same type as the famous "Bantam," but seating two persons side by side in such a position that, owing to the small chord of the bottom plane, a perfect view in all directions is obtained. There is ample space for luggage, and a very complete range of instruments is fitted.

Constructionally, the well-tried B.A.T. features are followed. The fuselage is entirely of three-ply wood construction, containing very few parts, easy to repair, and practically proof against any weather or climate.

The planes are quickly detachable by withdrawing six large pins, and detaching a few streamline wires. The number of the latter throughout the machine is very small, as incidence bracing is avoided by the special wing struts.

The engine is the 200-h.p. A.B.C. type "Wasp II," a radial 7-cylinder air-cooled type. It is extremely reliable and simple.

The chassis is also of the special B.A.T. type, the wide track of the wheels making landing exceptionally safe. The tail skid is steerable for manœuvring at low speed on the ground.

The span being only 26 feet by an over-all length of 20 feet, housing and handling is not a matter of difficulty. The performance is very high, a maximum speed of 140 m.p.h. being maintained, coupled with a landing speed of under 50 miles per hour. A height of 10,000 feet is reached in 7.5 minutes.


The B.A.T. "Crow" (40-h.p. "Mosquito" engine).

WESTLAND



If you are visiting the Paris Aeronautical Exhibition we shall be pleased to show you the Westland "Limousine" on Stand 20.

We shall also have another machine at Le Bourget Aerodrome for giving demonstration flights.

Above is illustrated the model we intend to exhibit. The first machine, which has been flying since last July, has proved an ideal machine for mail carrying or passenger transport-de-luxe.

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The machine is easy to fly, and in every way suitable for the sporting private owner or for any purposes where a load of up to 200 lb. is to be transported up to 400 miles in the shortest possible time.

THE B.A.T. "CROW" TYPE F.K.28.

This machine stands in the same relation to the usual type of aeroplane as the motor-cycle does to fully-equipped touring car.

In size, one of the smallest aeroplanes in the world, in construction, the simplest ever designed, it stands in a class entirely by itself. It is a remarkable fact that the whole machine can be completely dismantled in a few minutes by the aid of only one small spanner and a pair of pliers.

For ordinary storing purposes, where sufficient hangar space is not available, the single plane is taken off by removing 12 nuts. There are no bracing wires, and consequently no trueing up is necessary.

The pilot is seated under the plane in a little body on the big central skid between the wheels. This position, so near the ground, makes landing the machine on any sort of ground perfectly easy; in the case of very rough ground, the long skid prevents the machine turning over.

The engine, a 40-h.p. A.B.C. "Gnat," of the flat twin cylinder air-cooled type, is mounted on the front of the plane, and forms, with its mounting and the petrol and oil tank, a complete unit which is easily detached.

The torpedo-shaped tank holds 5 gallons of petrol and half a gallon of oil, sufficient for a flight of nearly two hours, covering a distance up to 120 miles.

It will be realised that this cheap miniature machine, with its unique position for the pilot, its extreme simplicity and accessibility, and its up-to-date flying capacities, is adaptable to a multitude of purposes in fields of utility which no aeroplane has hitherto touched. Among these, particular attention is drawn to its possibilities in the Colonies, for forest districts where the roads are the only landing space.



The "habitacle" of the B.A.T. "Crow."

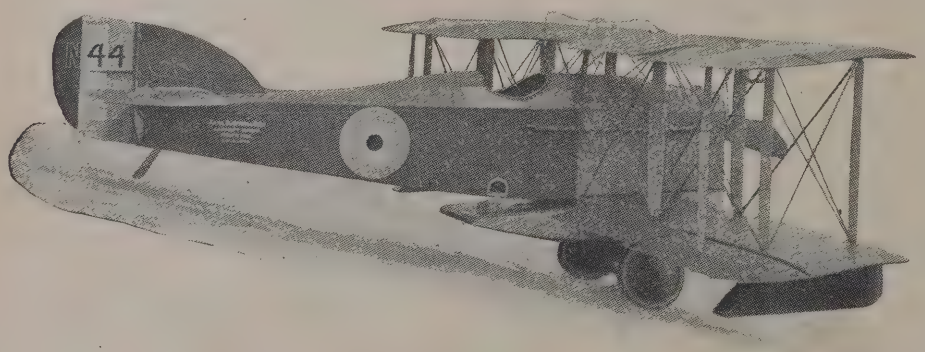
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Mann, Egerton and Co., Ltd., of Norwich, commenced their operations in 1899 as electrical engineers, and added unto themselves very shortly after a motor-car department.

The combined businesses led to a considerable development of their affairs, which continued to increase in prosperity till the outbreak of war.



The Mann, Egerton "Seaboard Scout" (200-h.p. Hispano-Suiza).

The company then undertook a large quantity of war emergency work and constructed many ambulances, car bodies, etc., for official purposes.

Very shortly they were asked by the Admiralty to organise the manufacture of seaplanes, a task which they undertook with conspicuous success, and seaplanes and aeroplanes in large numbers were turned out by them to the order of the Admiralty, the Air Board, and the Air Ministry.

Amongst the types produced were Short seaplanes, Short land bombers, Sopwith one-and-a-half strutters, Spad single-seaters, DeH.9s, DeH.9as, De H.10s, and so forth and so on.

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Telegraphic Address:
Vickerfyta, Knights, London.

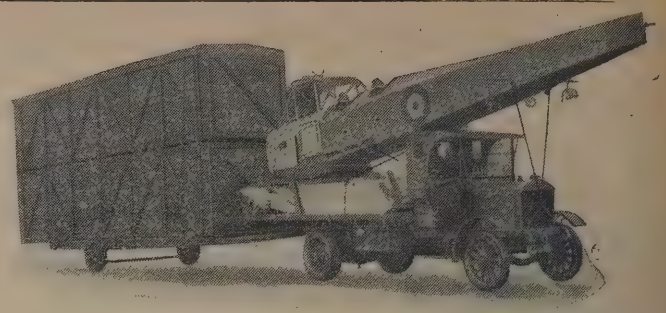
Telephone:
Kensington 6520 (4 lines).

Aviation Department,

IMPERIAL COURT, BASIL ST., KNIGHTSBRIDGE, S.W.3.

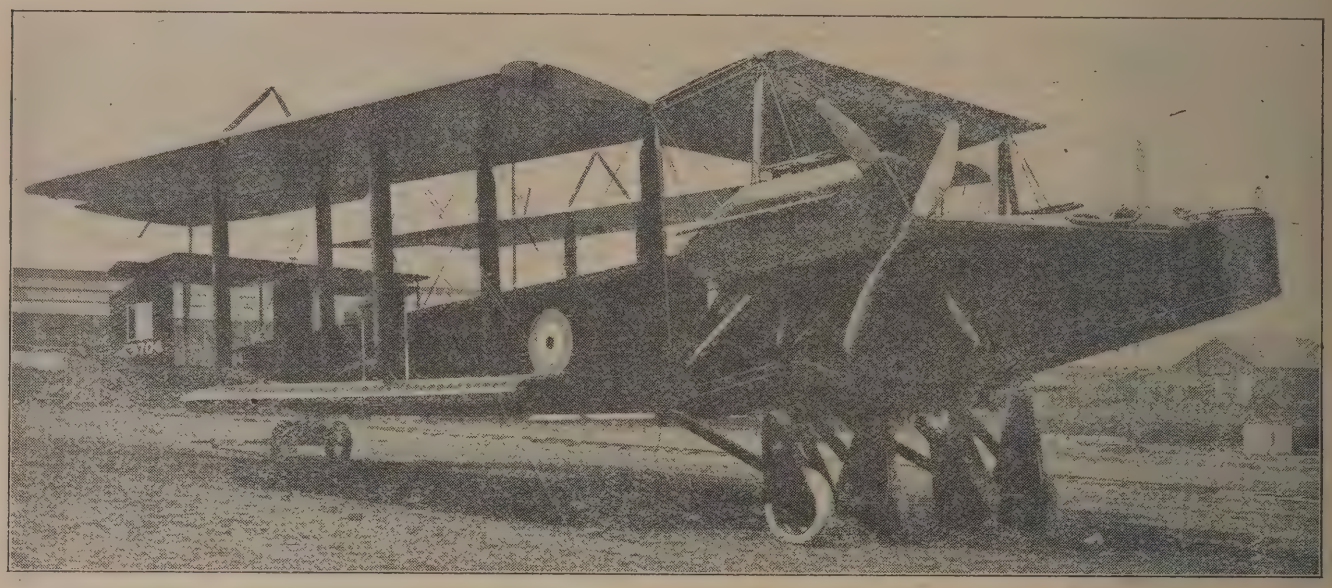
In addition their own designing department was responsible for at least one experimental machine which gave an excellent test performance.

With the advent of peace Mann, Egerton's have naturally reverted to their established business of electrical and automobile engineers. They do not, however, propose to abandon the results of their wartime aircraft experience. They are retaining their aircraft design department and are prepared, in response to *bona fide* inquiries, to submit designs and estimates for aeroplanes to meet Naval, Military, or Commercial requirements, but they do not propose to build machines except against definite orders.



A Mann, Egerton-built Seaplane packed for road transport.

THE HISTORY OF HANDLEY PAGE, LTD.



The twin-engined Handley Page Type O/400 Biplane with wings folded (two 375 Rolls-Royce "Eagle" engines).

After two years of experimental work in connection with early efforts to design a successful aeroplane, Mr. F. Handley Page started business as an aeronautical engineer, and on June 17th, 1909, founded the company which now bears his name.

Works were erected at Barking, covering about 10,000 feet, for the construction of aeroplanes—an ambitious venture at that uncertain period in the history of aviation.

The first machine to be produced by the company was a diminutive monoplane known as the "Bluebird," partly because of the form of its planes and partly because it was painted blue. This pioneer machine makes an interesting comparison with the Handley Page machines of the present day. The tail of the modern Handley Page is nearly twice the size of its tiny forerunner, and it could with ease carry in its great fuselage many machines of the dimensions of the "Bluebird."

The "Bluebird" provided a certain amount of useful data before it reduced itself to wreckage on the flying ground at Barking. Various other monoplanes were designed, and some survived the rigours of the experimental periods and others did not.

In 1909 an experimental biplane was built for an aviation enthusiast in Liverpool, and in the same year a Handley Page monoplane was exhibited at the Aero Show at the Olympia, London. The following year another type of monoplane was exhibited, fitted with a low-powered horizontal engine with two opposed cylinders.

Slowly by this process of evolution data was accumulated, which eventually resulted in the design of an aeroplane which can be described as the first really successful Handley Page machine.

This was a monoplane, fitted with a 50-h.p. Gnome engine. Its first pilot, the late Edward Petre, christened it the "Antiseptic," owing to the non-rusting paint which had been applied to it. The machine was exhibited at the Aero Show in London, and it performed, what were for those early days, very creditable flights, one of which was between Fairlop, near Ilford, to the works at Barking.

The span of the planes of this machine was 35 feet.

The span of the latest type four-engined Handley Page aeroplane is 100 feet.

The speed of this early monoplane was 50-60 miles an hour and its carrying capacity was confined to one man. To-day, a multi-engined Handley Page aeroplane can carry 30-40 passengers at a speed in the vicinity of 100 miles an hour.

The "Antiseptic" is still preserved intact, for unlike most efforts of pioneer aircraft designers it did not figure on the scrap-heap of "fallen hopes." The machine now hangs from the roof of the Handley Page works at Cricklewood, and it is one of Mr. Handley Page's most cherished possessions.

A larger machine, fitted with a 70-h.p. Gnome engine, was designed for the military aeroplane trials on Salisbury Plain in 1912.

The War Office then entrusted the firm with the making of machines of the B.E. type.

In 1912 the works were removed to Cricklewood. In the first instance the ground occupied was about five acres. The workshops have since been doubled in size.

Despite the increasing activities of the firm, experimental work was still assiduously carried on. A biplane with a 110-h.p. Anzani radial engine was produced, which had a speed of 75 m.p.h. and made a good impression at flying meetings at Buxton and Hull.

Throughout these experimental periods work was always carried out on the lines of inherent safety. From that time until the present day the Handley Page firm has throughout adhered to its principle of great lift, safety and reliability rather than striving for sensational achievements in the direction of record breaking speeds and climbing performances.

The latter, though useful assets in other spheres, are not calculated to advance the cause of commercial aviation.

A new type of biplane on an ambitious scale was being perfected when the war broke out. It was to have been equipped with a 200-h.p. Salmson motor. The firm was taken over by the British Admiralty in 1914, and since then the works have been engaged on the production of "giant" machines with multiple engines.

Lest it be supposed that the giant type is entirely a product of the war, it should be pointed out that the firm had conducted frequent experiments with big machines before Europe



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"SPORTING" TYPE
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Wings Folded.



KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.



Front View of the Type V/1500 four-engined Handley Page Biplane.

was thrown into a world-wide conflict. The results of these researches were placed before the Admiralty, who requested the immediate construction of a large experimental machine as suggested by the specifications.

Bomb-dropping was also studied by the firm to some purpose. Most Admiralty machines, in the latter stages of the war, were fitted with the Handley Page bomb-dropping gear.

THE TWO-ENGINE HANDLEY PAGE—TYPE O/400.

British Night Bomber, 1916-1918, Inclusive.

Span.—100 feet, (with wings folded) 31 feet.
Length.—63 feet; height 23 feet.
Weight.—Empty, 8,000 lb.; fully loaded, 14,000 lb.
Useful load (passengers, mail or cargo).—Two tons.
Number of passengers accommodated.—Twelve comfortably (20 if necessary).
Engines.—Two 350-h.p. Rolls-Royce "Eagle" 12-cylinder.
Petrol consumption.—40-45 gallons per hour.
Petrol tank capacity.—300 gallons (two tanks of 150 gallons each).
Maximum air speed.—95 miles per hour.
Touring air speed.—85 miles per hour.
Can maintain flight on one engine only, though at reduced speed.

History and Performances.

1915.—First machine designed and built for the Admiralty, left the ground at 1.51 p.m., December 18th.

1916.—July: An O/400 took 21 passengers to a height of 7,000 feet over London.

August: First squadron formed by R.N.A.S. at Dunkirk. From then till Armistice all British heavy night-bombing was done by this machine, numbers of which in use on Western Front increased rapidly.

1917.—O/400 flew from London to Mudros, via Paris, Rome, and the Balkans. Thence it bombed Constantinople, Adrianople, and other Turkish and Bulgarian towns on many occasions.

1918.—With Independent Air Force carried out extensive night raids over Rhine towns.

In our final offensive in Palestine, an O/400 played an important role, bombing H.Q.s and communication and doing the work of a squadron of smaller machines.

After the Armistice this machine returned to Cairo and flew from there to Delhi and Calcutta—the first machine to reach India by air.

1919.—Two military O/400s, H.M. Air Liners "Great Britain" and "Silver Star," fitted with saloon interiors, carried officials between London and the Peace Conference. One of them handled 700 passengers in a month of average winter weather.

Military O/400 performed the circuit of Britain—1,600 miles—in 30 hours' flying time.

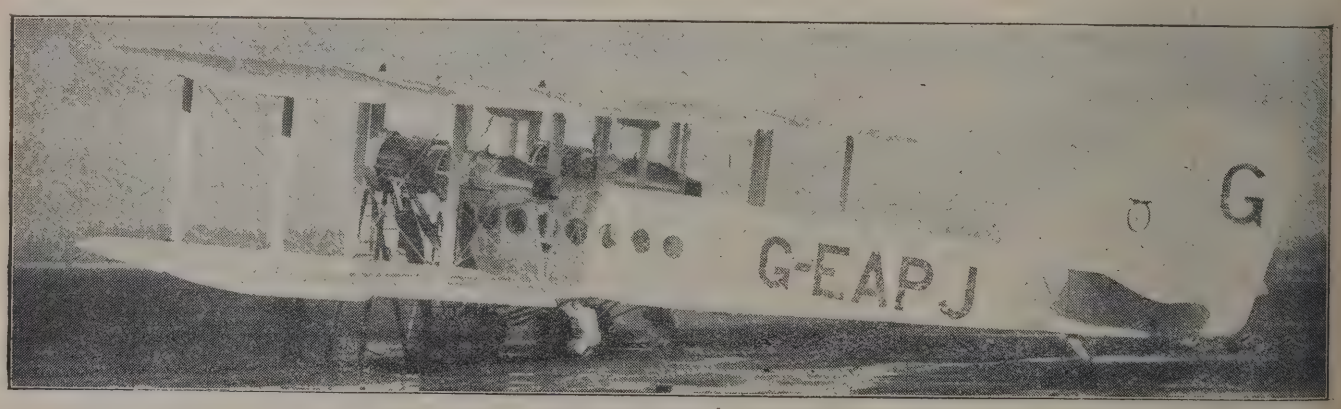
This type was used for the first delivery of newspapers by air in May, 1919.



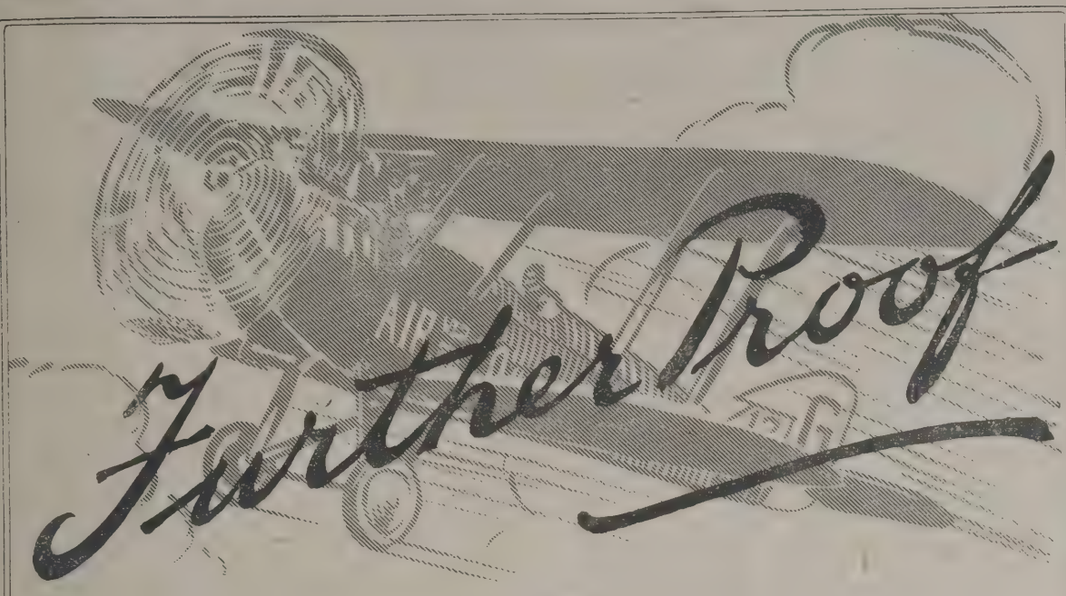
The Saloon of the W.8 Handley Page.

The Four-Engined Handley Page.

1918.—The four-engined Handley Page aeroplane was created for the purpose of bombing Berlin and designed



The new W.8 Handley Page Passenger-carrier (two 450-h.p. Napier engines).



Further Proof

of the

RELIABILITY and SPEED

of the

NAPIER

AERO ENGINE.

On Saturday 15th November a NAPIER engined AIRCO 9R aeroplane secured

18 BRITISH RECORDS

for speed, granted by the **Royal Aero Club.** All Records were obtained **in**

ONE day with
ONE machine and
ONE Pilot.

℄ Napier Aero Engines are on view at the Paris Aero Exhibition, in an Airco machine, Stands 19 & 21. Also in a Handley Page aeroplane, Stands 36 & 38.

Full particulars on application.

D. NAPIER & SON, LTD.,

14, New Burlington Street, W.1. Works: ACTON, LONDON, W.3.

to carry a weight of five tons of passengers or cargo. The Armistice intervened before the weather was sufficiently favourable for a number of these machines to fly to the German capital.

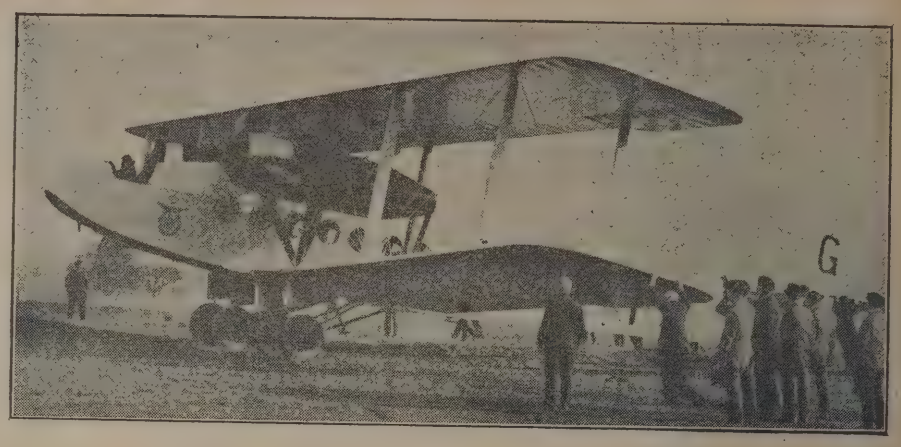
A V/1500 on its first big trial flight flew from England to India, including one stretch of 800 miles overseas and another non-stop a stage of 1,00 miles, from Cairo to Baghdad.

In London this type lifted 41 passengers to a height of nearly 8,000 feet.

1919.—Long flights of 500-600 miles and more were accomplished by these Handley Pages, including non-stop journeys from Belfast to Sheffield, Belfast to Cromer, Belfast to Folkestone, and London to Biarritz.

A four-engined Handley Page was entered for the Atlantic flight and during a test flight travelled from Newfoundland to Parrsboro, N.S., a distance of 600 miles, in 12 hours.

A V/1500 established a record by making a non-stop flight of 12 hours with 12 passengers on board.



The new W.8 Handley Page about to start for Paris.

THE HANDLEY PAGE W.8.

After lengthy experiment the firm of Handley Page, Ltd., assisted by the experience gained in the production of bombing machines, have built a magnificent "flying saloon" capable of carrying 15-20 passengers or heavy loads of cargo up to 2 tons.

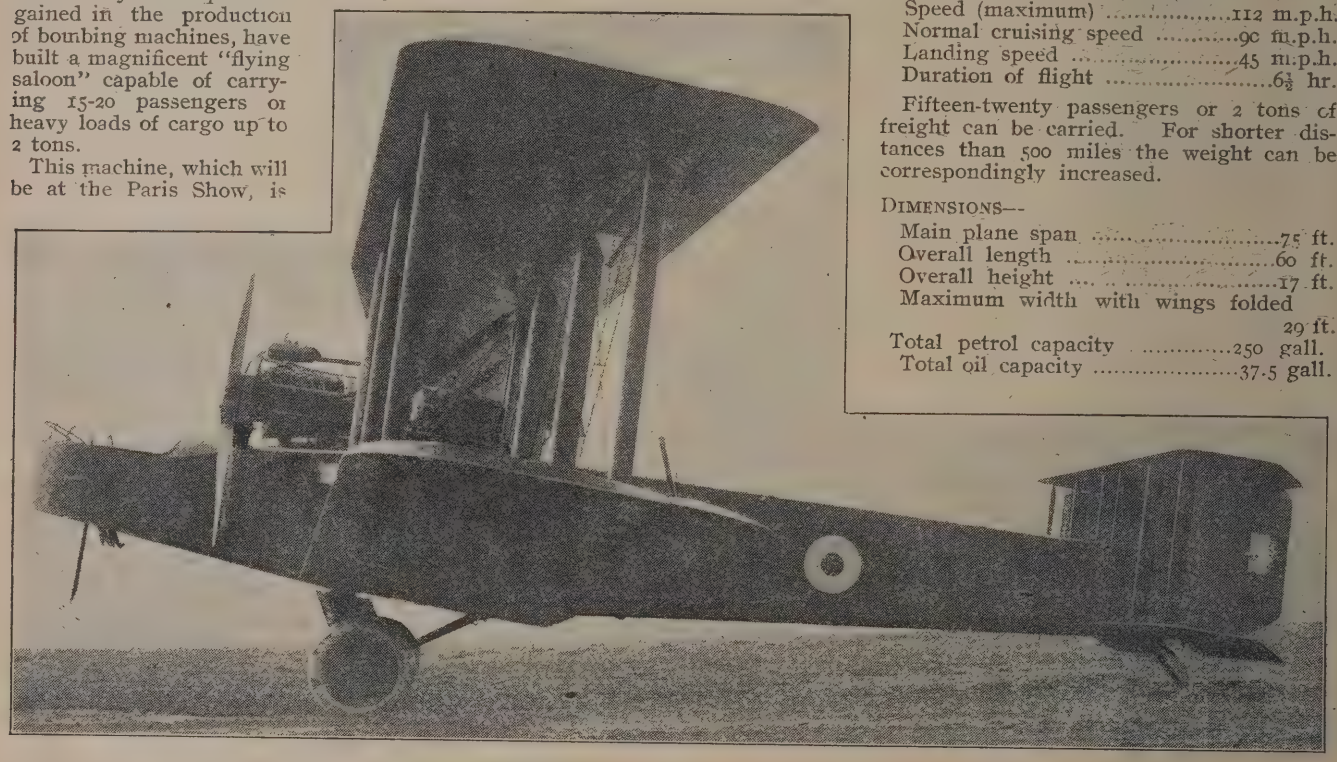
This machine, which will be at the Paris Show, is shown in attached illustration, and the general dimensions, etc., are given below :—

Specification and Performance.

Type of Machine ..... Twin-engine biplane.
Engines ..... Two Napier "Lion."
Maximum available horse-power ..... 450 h.p. each engine.
Cruising horse-power ..... 350 h.p. each engine.
Performance with normal maximum horse-power—
Speed (maximum) ..... 112 m.p.h.
Normal cruising speed ..... 90 m.p.h.
Landing speed ..... 45 m.p.h.
Duration of flight ..... 6½ hr.

Fifteen-twenty passengers or 2 tons of freight can be carried. For shorter distances than 500 miles the weight can be correspondingly increased.

Dimensions—
Main plane span ..... 75 ft.
Overall length ..... 60 ft.
Overall height ..... 17 ft.
Maximum width with wings folded 29 ft.
Total petrol capacity ..... 250 gall.
Total oil capacity ..... 37·5 gall.



The Handley Page four-engined VI500 Type Machine.

S. E. SAUNDERS, LTD.

During the war the firm of S. E. Saunders, Ltd., contributed a number of aeroplanes to the fighting services of the Crown, but as one would expect the greater portion of their output consisted of seaplanes.

These were almost, if not quite, entirely of the flying boat type, and with Mr. Saunders' unequalled experience of the building of light sea-going craft it is not surprising to learn that Saunders' built flying-boats had the best of reputations as staunch and seaworthy craft.

During the war period Mr. Saunders developed and brought to perfection the type of plywood construction known as "Consuta"—a modification of the original Saunders' sewn planking for racing boats—which was successfully applied to flying-boat hulls.

At the present time Mr. Saunders is busily engaged upon the design of a flying-boat amphibian machine from which it is safe to expect excellent results.

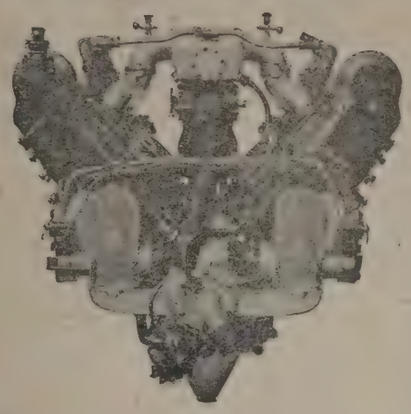
At the same time, in collaboration with Vickers Ltd., the firm is designing and building the hulls for superstructures built by Vickers.

AN ITALIAN VICKERS ACHIEVEMENT.

The Italian correspondent of The Aeroplane supplies the following notes on the recent developments by the Italian relation of the famous firm of Vickers, Ltd.

The Marchetti-Vickers-Terni Records.

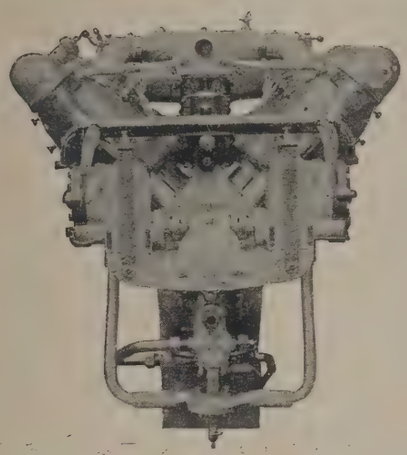
More details are now known about the climbing and speed records claimed for this biplane at Rome. The climb to 5,000 metres in 11 minutes and to 6,000 in 15 minutes 20 seconds and the 274 kilometres 220 metres an hour over a straight kilometer in both directions are correct. The machine is not appreciably different from the type of the former record, indeed is mostly the same material. It is, barring some of the ribs, a metal-built machine all through, has a single strut each side, no ailerons or fixed horizontal tailplane and a very complete warping device. The motor is the usual Spa, but of 250-h.p., and the lowest flying speed is 85 k. per hour. Other measurements are : span 8.40, length 5.50 metres, and flying weight 900 kilograms.



200 H.P. 8-cylinder Sunbeam "ARAB" engine fitted with type AV8s B.T.H. Magnetos.



275 H.P. 12-cylinder Rolls-Royce "FALCON" engine fitted with type AV12s B.T.H. Magnetos.



200 H.P. 8-cylinder Wolseley Hispano-Suiza "VIPER" engine fitted with type AV8s B.T.H. Magnetos.

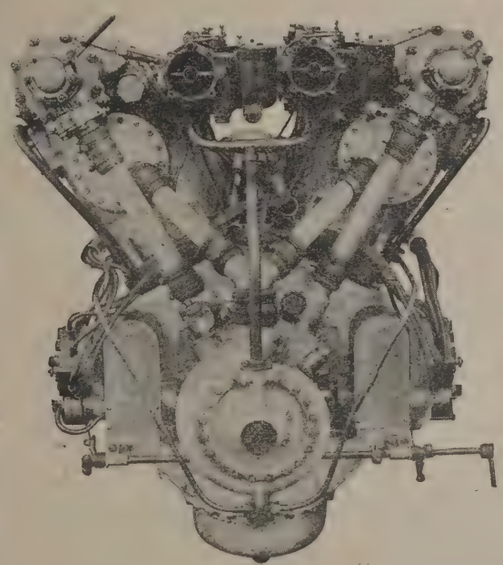
A few representative types of **Aero Engines** with

B T-H

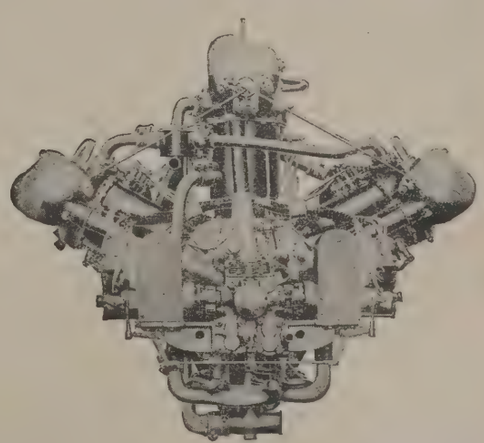
MAGNETOS

These Magnetos are noted for their high quality and reliability in service.

The British Thomson-Houston Co., Ltd.,
Lower Ford Street, Coventry, England.
Member of the British Ignition Apparatus Association.



650 H.P. 12-cylinder Siddeley-Deasy "TIGER" engine fitted with type AV12s B.T.H. Magnetos.



450 H.P. 12-cylinder NAPIER engine, fitted with type AV12s B.T.H. Magnetos.

THE SUPERMARINE AVIATION WORKS, LTD.

The Supermarine Aviation Works, originally founded in 1912 as Pemberton-Billing, Ltd., were laid down specially for the production of aircraft of the flying boat type.

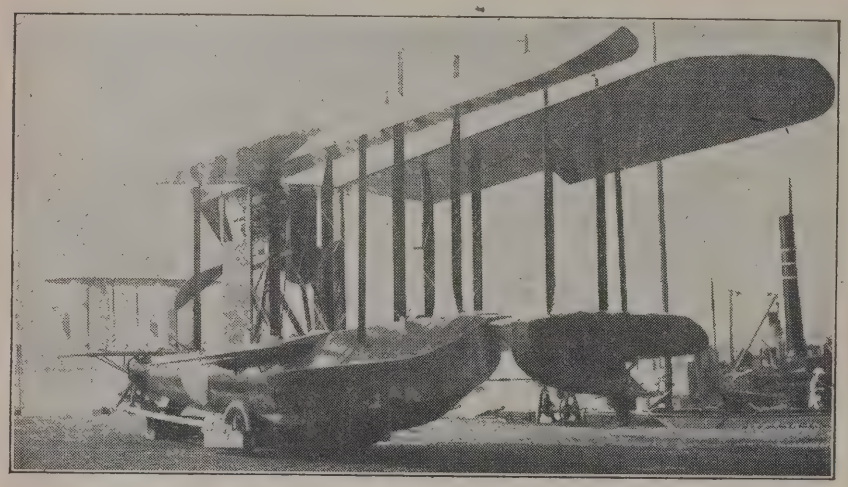
During the earlier part of the war their energies were to some extent diverted to the building of aircraft of other types, but the firm has more recently reverted to its original purpose, and is now exclusively concerned with flying boats and accessories.

During the war the company produced a two-seater reconnaissance machine of this type which, equipped with the 200-h.p. Hispano-Suiza, put up a remarkably fine performance, and the Supermarine "Baby"—a single-seat fighter flying boat with a very high speed.

The first type, modified in a number of respects and fitted with the 160-h.p. Beardmore engine, is to-day known as the "Channel" type, and is described below, together with other products of the firm



The Supermarine four-seater "Channel" Type Flying Boat (160-h.p. Beardmore engine).



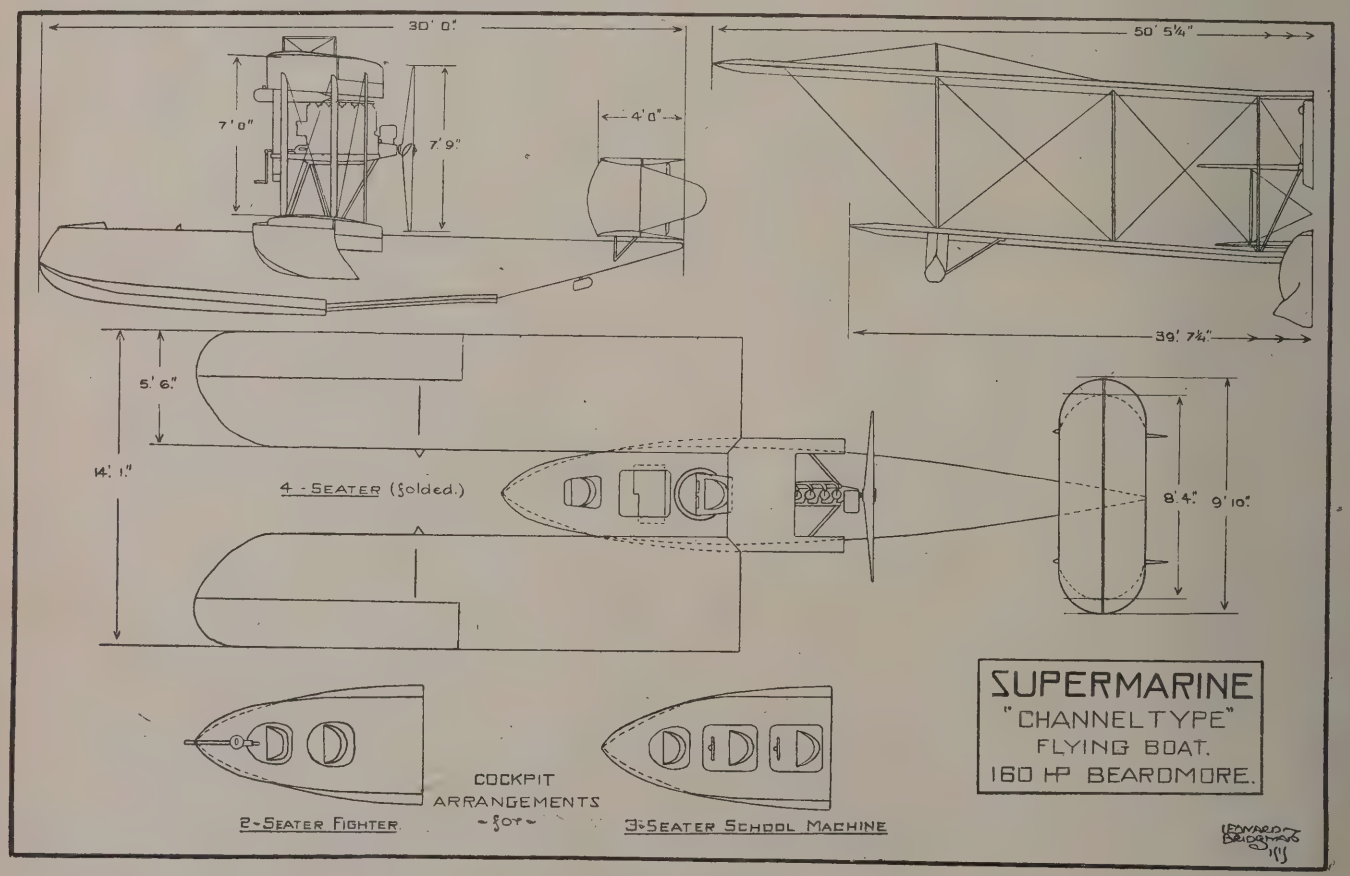
The Supermarine "Channel" Type Flying Boat with wings folded.

THE SUPERMARINE "CHANNEL" TYPE.

This machine is a single-engined flying boat of moderate size, fitted with folding wings, and a hull built and designed by boat designers, and not with a fuselage covered with threeply or similar makeshift arrangement.

The engine is carried beneath the centre section and drives a propeller direct. Fuel tanks are carried within the hull, and the accommodation for the crew is ahead of the main planes, the exact arrangement of the seats varying with the purpose for which the particular boat is intended. These are shown in a drawing appended hereto.

Three types of this machine have been standardised, viz., two-seater fighter, three-seater school machine, and a four-





The Supermarine "Sea Lion" (450-h.p. Napier engine).

seater passenger machine, which has been tested and tried out efficiently during the whole of the varying weather conditions of the past year with highly satisfactory results.

As a fighter the machine carries pilot, observer, two guns, wireless, and fuel for five hours at 100 m.p.h.

As a school machine it is arranged to carry two pupils at a time—one at the dual control actually learning to fly, and the second as a spectator of his efforts, thus gaining experience of being in the air and a notion of what is expected of him later.

As a four-seater passenger machine it is claimed that this is one of the most serviceable commercial machines in the world. It carries 540 lb. of useful load for a consumption of one gallon of petrol to every eight miles.

This type was used during the past summer season to inaugurate the first passenger service in flying boats that has ever been established.

The season was most successful, and many passengers were carried at Bournemouth, Southsea, and at the Isle of Wight summer resorts. Trips were also made to Land's End, Plymouth, Weymouth, Newhaven, and Dover. During the railway strike the first port to port service, viz., from Southampton to Le Havre, was established very successfully with these machines, and stranded passengers on each side of the Channel were enabled to make rapid, safe and comfortable crossings.

THE SUPERMARINE "SEA LION."

This machine, which is said to be the fastest flying boat in the world, is a small, fast, single-seater, designed primarily for war purposes.

With the Napier 450 h.p. engine, 2½ hours' supply of fuel, and a load of 140 lb. of guns and ammunition, the speed is 147 miles per hour. The hull is guaranteed to stand up to practically any weather, and the machine itself may be looped, rolled, spun, or put through any of the manœuvres demanded by aerial fighting.

PASSENGER AND MAIL SERVICE TRIPLANE "DOLPHIN."

In addition to these machines the Supermarine Works have designed a large type of flying boat of 1,500 h.p. This machine has been designed for 24 passengers, 5 crew, 1½ tons of mails. It will be capable of going to sea in practically any weather conditions. Accommodation will be most comfortable and luxurious; the boat will be unsinkable, owing to special arrangement of water-tight bulkheads.

A larger type of machine is now going through the firm's design section, of 3,000 h.p. It will be in many respects of a progressive nature, as well as embodying the well-known principles of the Supermarine flying boats.

Over and above the actual flying boats, the Supermarine Works have undertaken the manufacture of a special seaplane tender, in the form of a 14-knot 35 ft. motor-boat.

It is capable of weathering out heavy sea-going conditions and is suitable for towing. It has large carrying capacity for transfer of passengers, and large petrol tanks and pumps for re-fuelling machines while collecting mails, passengers, and cargo. Special derrick arrangement can be installed, facilitating removal of mail-bags, etc. Fitted with wireless and machine-gun if required, it is exceptionally quick on the helm and a first-class, well-designed boat.

THE CENTRAL AIRCRAFT CO.

The Central Aircraft Co. have been engaged in the aircraft industry since 1909, and by genuine hard work have earned a name that is respected both for the design and building of aircraft and also as a school of extremely high efficiency.

The School of Aviation has been thoroughly reorganised since the war, and instruction is now given on training machines of the firm's design by a staff of fully qualified instructors. In addition to practical flying, a course of theoretical work is given conducted on entirely new and modern lines.

The range of machines that they are producting are the "Centaur 2a," a 320 h.p. twin-engined nine-seater biplane; the "Centaur 2b," a 460 h.p. twin-engined nine-seater seabiplane; the "Centaur 4," a 80 h.p. or 100 h.p. training biplane; the "Centaur 5," a two- or four-seater sporting or touring biplane; and the "Centaur 5a," which is a seaplane version of the "Centaur 5."

The "Centaur 2a" is a twin-engined biplane, and has been designed as a nine-passenger or commercial machine. It is fitted with two 160 h.p. Beardmore engines and follows usual practice in general arrangement. Accommodation is provided for two pilots and seven passengers, who are seated in an electrically warmed cabin which is fitted with windows of "Triplex" safety glass, or, as an alternative, by taking out the seats, accommodation can be found for 15 cwt. of mails or goods. Its general appearance can be gathered from the photograph. Folding wings are fitted, which enable the machine to be stored in quite a small hangar



The Pilot's seat and one power plant of the Central Aircraft Co.'s "Centaur 2a."



Three-quarter Front View of the "Centaur 2a" (two 160-h.p. Beardmore engines).

SPECIFICATION.

Type of machine	Twin-engined biplane
Type number of machine	"Centaur 2a"
Purpose	Commercial
Span	63 ft.
Width folded	30 ft.
Overall length	39 ft.
Surface of wings	900 sq. ft.
Engine type and h.p.	Two 160 h.p. Beardmore
Weight empty	3,160 lb.
Load per sq. ft.	6 lb.
Weight per h.p.	16.9 lb.

Tank capacity in hours .....3 hr.
Tank capacity in gallons .....75 gall.
PERFORMANCE—
Speed low down .....90 m.p.h.
Landing speed .....40 m.p.h.
Disposable load apart from fuel..2,240 lb.
Total weight of machine loaded..5,400 lb.

THE "CENTAUR 2B."

The "Centaur 2b" is a similar machine to the 2a, but is fitted with twin floats in lieu of the ordinary undercarriage, together with a tail float and water-rudder and two small cylindrical wing-tip floats. The total weight is somewhat heavier in view of the additional weight of the flotation gear and the larger and higher-powered engines fitted. In all other respects it is similar to the 2a.



The Central Aircraft Co.'s "Centaur 2a" twin-engine machine.

SPECIFICATION.

Type of machine .....Twin-engined biplane.
Name or type number of machine .....Centaur 2b."
Purpose for which intended .....Commercial.
Spau .....63 ft. 6 in.
Width with wings folded .....27 ft.
Overall length .....39 ft. 6 in.
Total surface of wings .....895 sq. ft.
Engine type and h.p. .....two 230 h.p. Siddeley "Puma."
Weight of machine empty .....4,240 lb.
Load per sq. ft. .....7.3 lb.
Weight per h.p. .....14.1 lb.
Tank capacity in hours .....3 hr.
Tank capacity in gallons .....81 gall.
PERFORMANCE—
Speed low down .....100 m.p.h.
Landing speed .....45 m.p.h.
Disposable load apart from fuel .....2,260 lb.
Total weight of machine loaded .....6,500 lb.



The Central Aircraft Co.'s "Centaur 4" (100-h.p. Anzani engine).

THE "CENTAUR 4."

The "Centaur 4" has been specially designed and adapted for school work, and as such has been produced with a view to low cost of maintenance and ease of repair. To this end a large number of parts are made interchangeable. All interplane struts are identical, front and rear struts being of the same length and dimensions throughout. Top and bottom planes are exactly alike and may be used in either position as occasion demands. The same remark applies to rudder and elevators. This, coupled with the fact that the machine is easy to fly and possesses a very low landing speed, makes it ideal for instructional purposes. A large amount of work has been put in on this machine and the school have done some exceptionally rapid tuition with it. Either an 80 h.p. Renault or a 100 h.p Anzani engine can be fitted.

SPECIFICATION.

Type of machine,
Two-seater dual-control biplane.
Name or type number of machine,
"Centaur 4."
Purpose for which intended..Training.
Span .....34 ft. 3 in.
Overall length .....24 ft. 8 in.
Total surface of wings.....331 sq. ft.
Engine type and h.p.,
Renault 80 h.p or Anzani 100 h.p.
Weight of machine empty .....900 lb.
Load per sq. ft. .....4.2 lb.
Weight per h.p. .....18.65 lb.
PERFORMANCE—
Speed low down.....75 m.p.h.
Landing speed.....32 m.p.h.
Disposable load apart from fuel .....500 lb.
Total weight of machine loaded .....1,400 lb.

THE "CENTAUR 5."

"Centaur 5" has been designed as a sporting and touring machine, and is fitted with side-by-side seats and folding wings. Simplicity and strength are the outstanding features of the design, and the fact that it possesses a low landing speed makes it extremely suitable for a private owner. In the "Centaur 5a" the ordinary land undercarriage is replaced by a single central float, together with wing-tip and tail floats. Arrangements can be made whereby either form of alighting gear can be fitted to the same machine with the minimum of trouble, thus providing a most serviceable and economical double-purpose aeroplane.

SPECIFICATION.

Type of machine .....Two or four seater tractor biplane.
Name or type number of machine .....Centaur 5" or "5a."
Purpose for which intended,
Sporting, touring, etc.
Span .....36 ft. 6 in.
Overall length .....26 ft. 6 in.
Total surface of wings.....396 sq. ft.
Engine type and h.p.,
100-110 h.p. Anzani
Weight of machine empty.....1,200 lb.
Load per sq. ft. .....4.55 lb.
Weight per h.p. .....18 lb.
Tank capacity in hours .....3 hr.
Tank capacity in gallons .....24 gall.
PERFORMANCE—
Speed low down .....80 m.p.h.
Landing speed .....30 m.p.h.
Disposable load apart from fuel,
600 lb.
Total weight of machine loaded,
1,800 lb.

AIRCRAFT TRANSPORT AND TRAVEL, LTD.

The Aircraft Transport and Travel Company's exhibit at the Paris Show will be staged in conjunction with that of the Compagnie Generale Transaerienne, the French company in association with which Aircraft Transport and Travel are operating the London-Paris mail, passenger, and parcels service.

A feature of the Aircraft Transport and Travel exhibit will be a series of very beautifully reproduced coloured photographs, illustrating scenes taken during the operation of the London-Paris service, and also the Airco machines which are used daily on this express route.

In addition to the photographs of machines, there will be models of the new Airco 18 aeroplane, which is to come into use on the London-Paris service in the spring; the five-seater Airco 16, which has already done such good service between London and Paris; and also of the Airco 9 and Airco 4a.



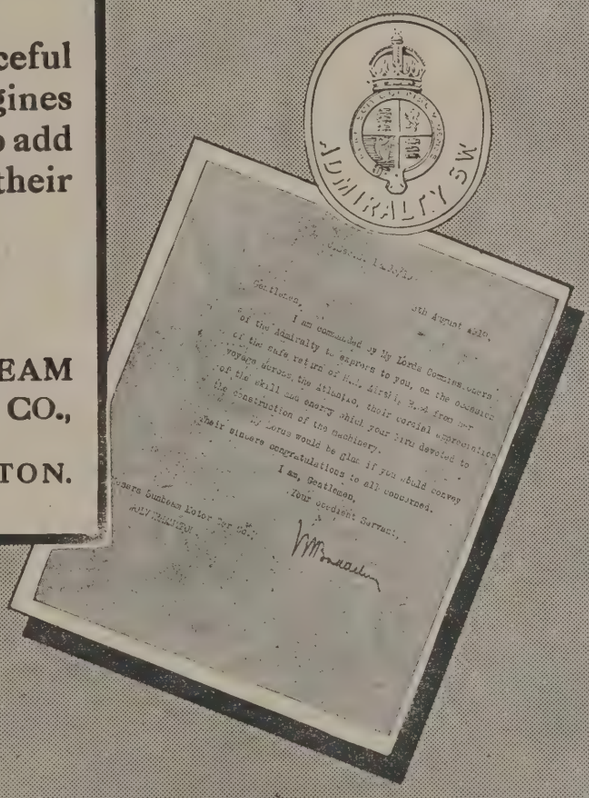
Front View of the "Centaur 4."

SUNBEAM-COATALEN AIRCRAFT ENGINES

contributed in no small measure to the aerial supremacy which was largely responsible for the Victory which crowned the Allied arms.

And in peaceful times, these Engines will continue to add to the fame of their name.

THE SUNBEAM MOTOR CAR CO., LTD.,
WOLVERHAMPTON.



A.B.C. ENGINES.

Walton Motors, Ltd., the manufacturers of the A.B.C. aero engines, have now decided to concentrate on the production of two types of aero engine for their post-war programme. These are the "Dragonfly" I.A. of 340 h.p. and the "Wasp" II, with a normal output of 160 h.p.

In general design the engines are alike, both are single-crank radial engines, the "Dragonfly" with nine and the "Wasp" seven cylinders.

The cylinders are of steel, turned from a single ingot, and with the cylinder heads integral with the barrel. The radiating fins are copper plated, in the well-known A.B.C. style, to assist in the dissipation of heat therefrom.

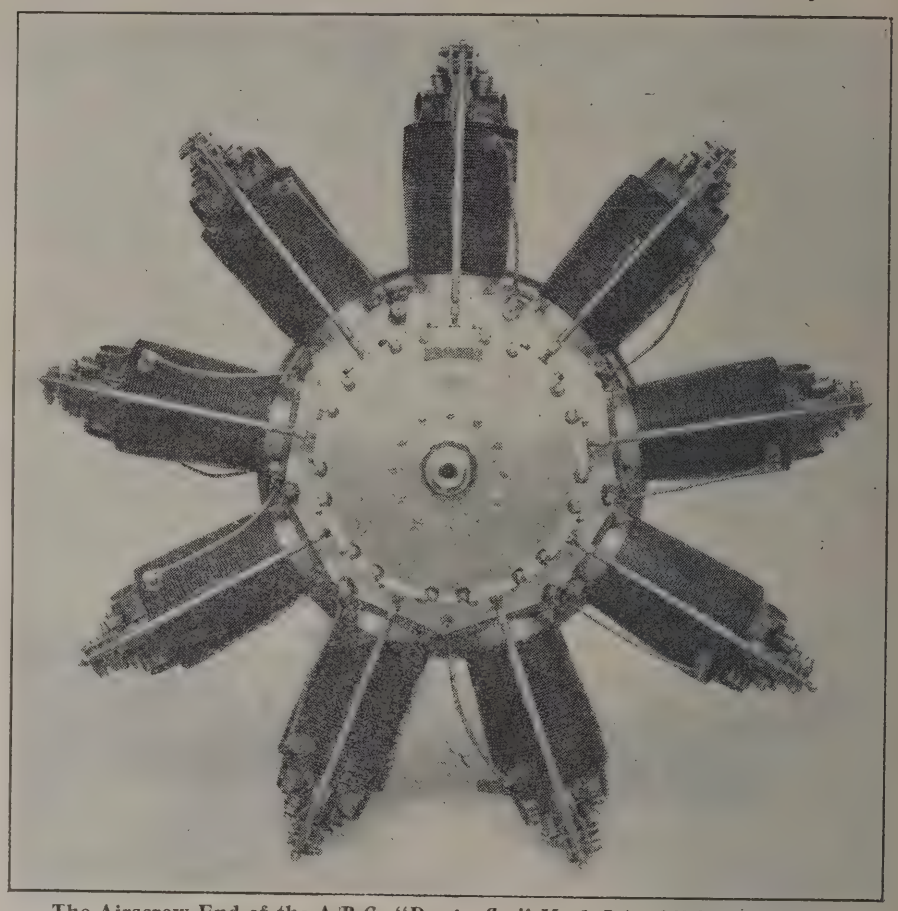
Each cylinder is equipped with three overhead valves, two exhaust and one inlet, operated through rocking levers and push-rods by a cam ring concentric with the crankshaft, which has four cams in the case of the "Dragonfly" and three in that of the "Wasp."

All bearings throughout are of either the ball or roller type, and in consequence very little oil is required for lubrication and there is no need for a high-pressure lubrication system.

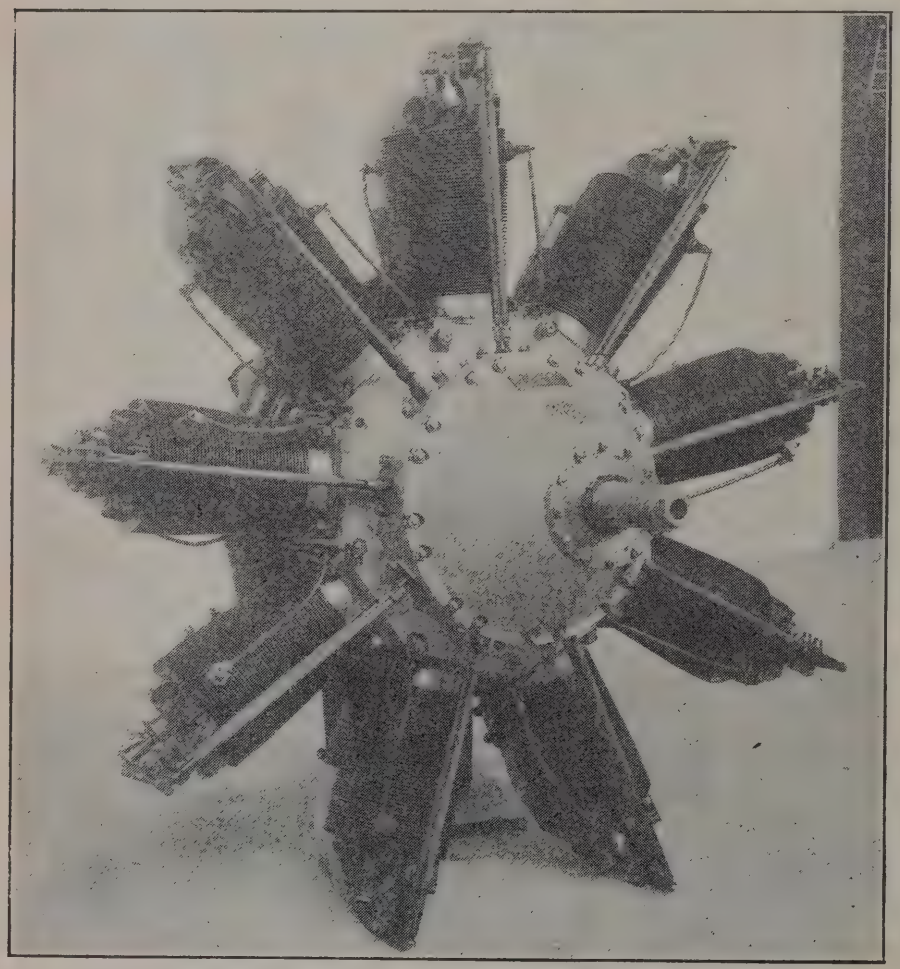
The following data concerning performances of these engines in war aircraft serve as an indication of their capabilities :—

Performance of A.B.C. "Dragonfly" I.A. engine fitted to a warplane carrying guns and other military load :—

Height.	Time in min.	M.P.H.
3,000	1¼	156
6,000	2¾	150
10,000	4 4-5	144
15,000	8 2-5	143
18,000	10¾	141



The Airscrew End of the A.B.C. "Dragonfly," Mark I.A. 340-h.p. engine.



Another View of the A.B.C. "Dragonfly" Mark I.A.

A height of 28,000 ft. corrected was obtained with this machine, the climb not being continued farther owing to lack of oxygen for the pilot.

Performance of A.B.C. "Wasp" I, 170 b.h.p. engine fitted to a B.A.T. Scout :—

Height.	Time in min.	M.P.H.
3,000	1½	—
10,000	5⅛	134
14,000	11¼	129

THE A.B.C. "DRAGONFLY" I.A.

SPECIFICATION.

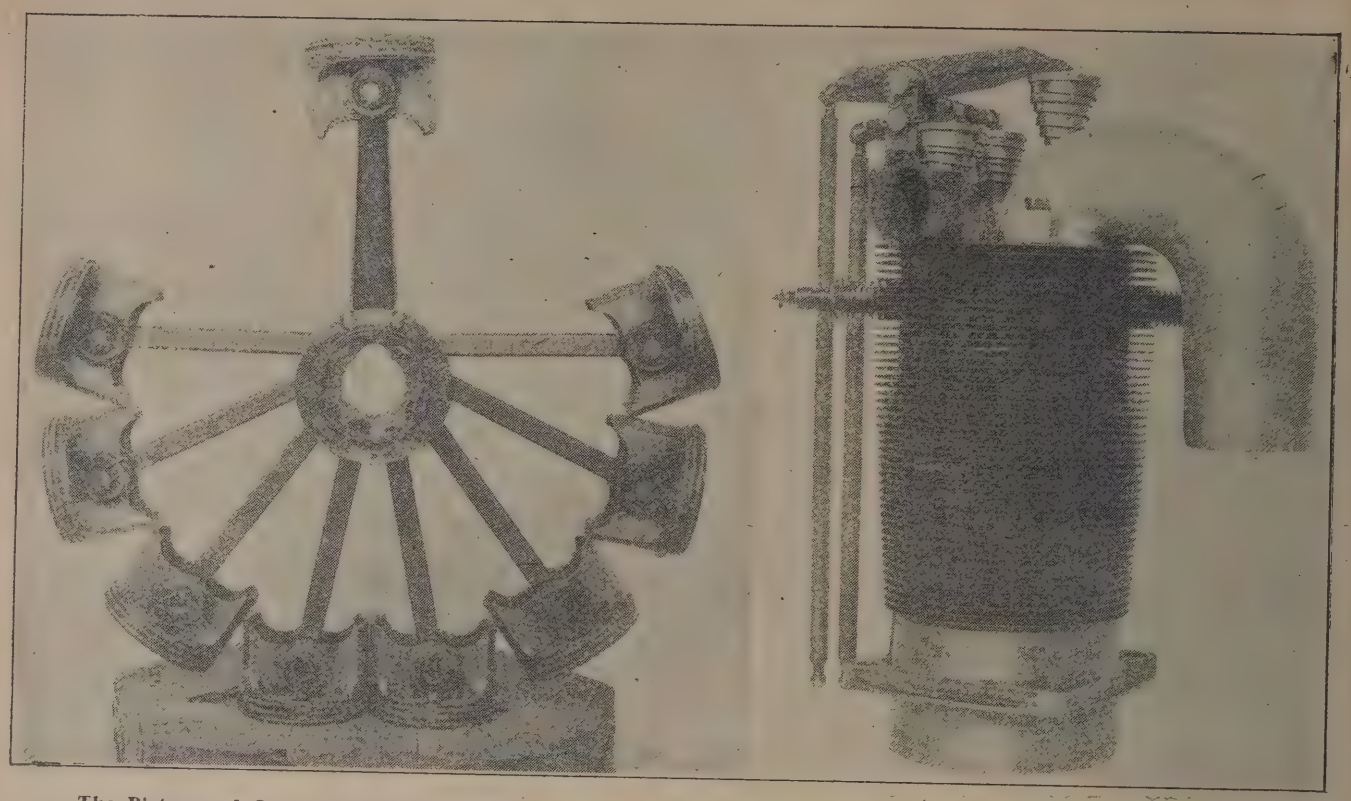
Type of engine. 9-cylinder static radial.
Type of cylinder.....Steel, fins A.B.C. copper coated, 3 overhead valves, 2 exhaust and 1 inlet.
Bore .....5½ in., equals 139.7 mm.
Stroke .....6½ in., equals 165.1 mm.
Normal b.h.p 340
Rotation ...Anti-clock facing propeller.
Normal speed .....1,650 r.p.m.
Lubrication—
2 rotary plunger pumps, 1 feeding through hollow camshaft to crankpin, centrifugal feed to big end and thence splash, 1 feeding to nose, dropping into cam and forming a permanent sump for gears in bottom of nose.
Oil recommended, Wakefield Castrol R.
Oil consumption .....7 pints per hour.
Oil consumption per b.h.p. hour, 0.021 pints.
Carburetters ...two A.B.C. carburetters.
Petrol consumption, 56 pints per b.h.p. hour.
Magnetos, two A.K.9 magnetos, 4 spark.
Speed of magneto .....1⅛ engine speed.



Telephone : WILLESDEN 2455.

Telegrams : "NIEUSCOUT, CRICKLE, LONDON."

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.



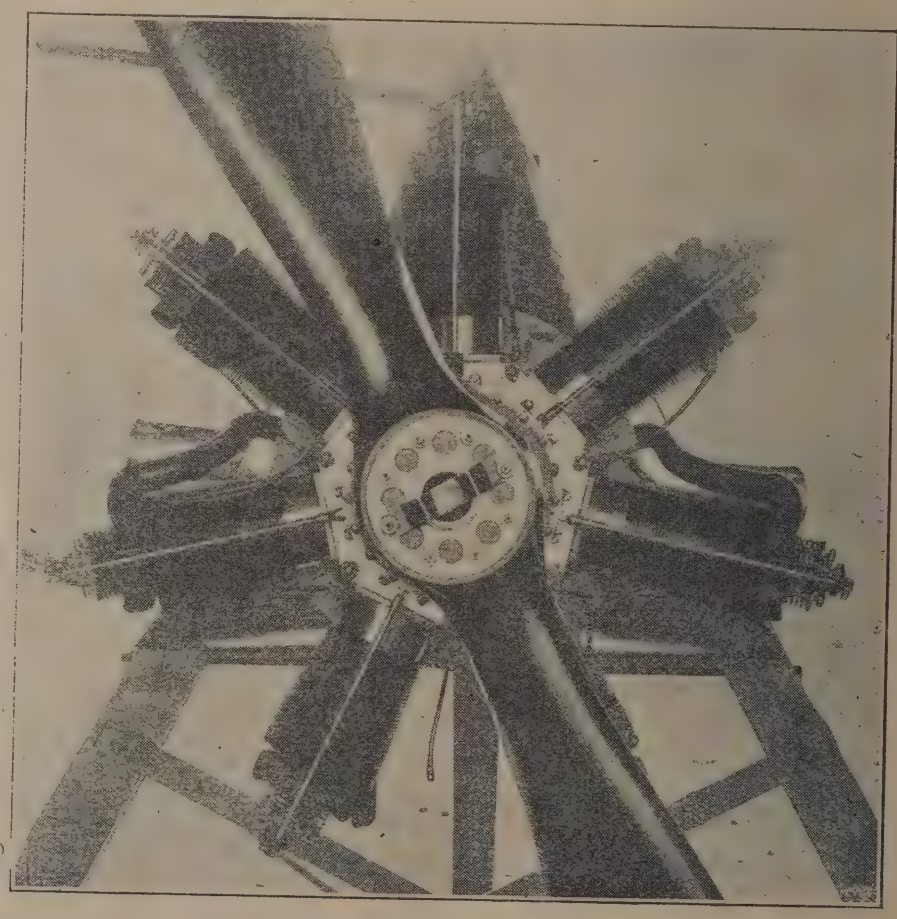
The Piston and Connecting-rod Assembly, and one Cylinder complete of the A.B.C. "Dragonfly" engine.

Mag. rotates .....Clockwise facing driving end of armature.
Rev. counter rotates .....Anti-clock facing driving shaft.
Speed of rev. counter drive .....¼ engine speed.
Weight of engine, including airscrew boss, but without oil or fuel ...600 lb.
Weight of engine per B.H.P. ...1.765 lb.

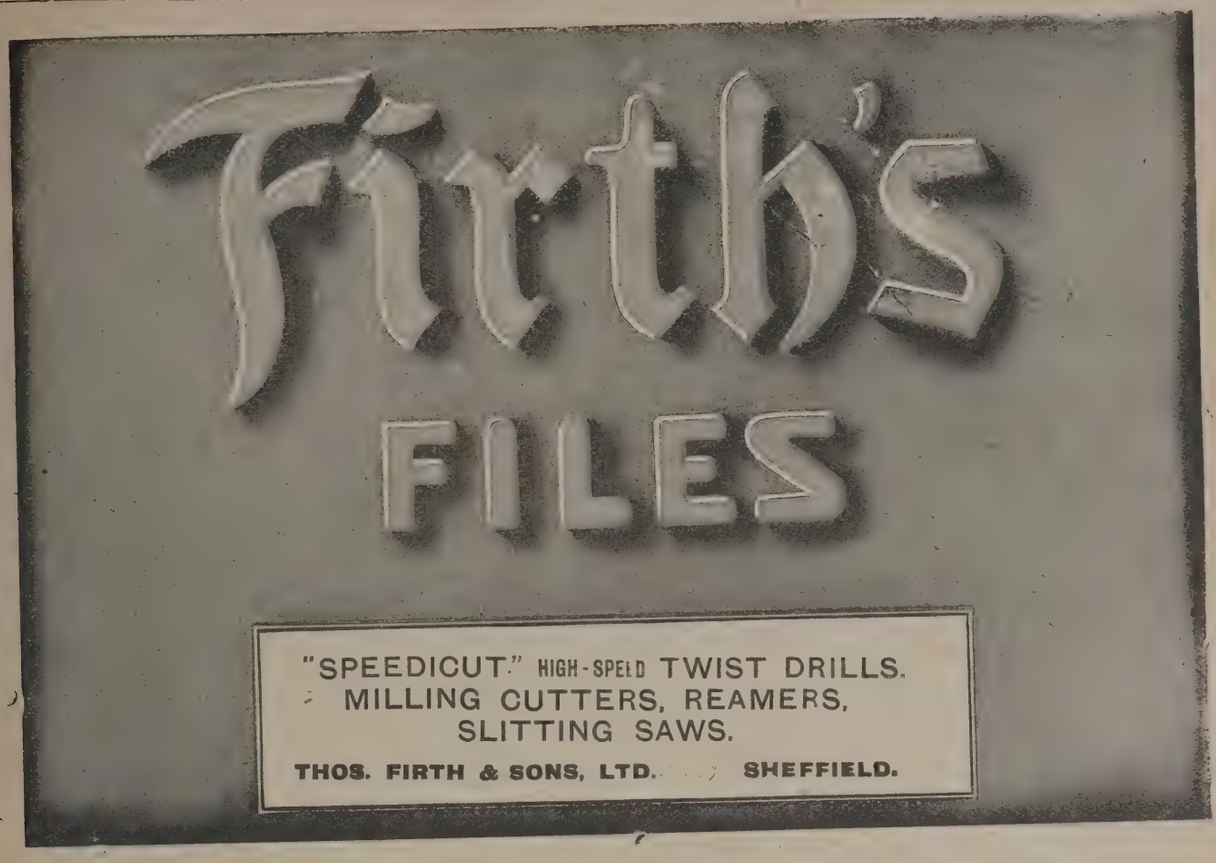
THE A.B.C. "WASP II."

SPECIFICATION.

Type of engine...7-Cylinder Static Radial
Type of cylinder ...Steel, fins A.B.C. copper coated, 3 overhead valves, 2 exhaust and 1 inlet.
Bore .....4¾ in.
Stroke .....6¼ in.
Maximum B.H.P. 200 .....(normal B.H.P. 160).
Rotation ...Anti-clock facing propeller.
Maximum speed ..... 1,850 r.p.m. (normal speed 1,650).
Lubrication—
Two rotary plunger pumps, 1 feeding through hollow camshaft to crankpin, centrifugal feed to big end and thence splash, 1 feeding to nose, dropping onto cam and forming a permanent sump for gears in bottom of nose.
Oil recommended...Wakefield Castrol R.
Oil consumption .....6 pints per hour.
Oil consumption per B.H.P. hour... ...0.03 pints (based on max. B.H.P.).
Carburetters .....Two A.B.C. 48 mm.
Petrol consumption ....0.56 pints per B.H.P. hour.
Magnetos .....Two P.L. 7 type, 2 spark.
Speed of magnetos .....1¾ engine speed.
Mag. rotates ....Clockwise facing driving end of armature.
Rev. counter rotates ....Anti-clock facing driving shaft.
Speed of rev. counter drive ... ¼ engine speed.
Weight of engine, including airscrew boss, but without oil or fuel .....350 lb.
Weight of engine per B.H.P. .....1.75 lb.



The "Wasp II" A.B.C. engine of 160-200 h.p.



GWYNNES
LIMITED.

CONTRACTORS TO H.M. GOVERNMENT

MANUFACTURERS AND SOLE LICENSEES IN THE BRITISH EMPIRE

"CLERGET" PATENT AERO ENGINES

S.B.A.C. THE SOCIETY OF BRITISH AIRCRAFT CONSTRUCTORS

ENGINEERS, LONDON.

"GWYNNE, LONDON." "HAMMERSMITH 1910"

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS

GWYNNES, LTD.

The firm of Gwynnes, Ltd., of Hammersmith, owned a world-wide reputation as manufacturers of pumping plant—more particularly of the centrifugal type—long before aviation came into being.

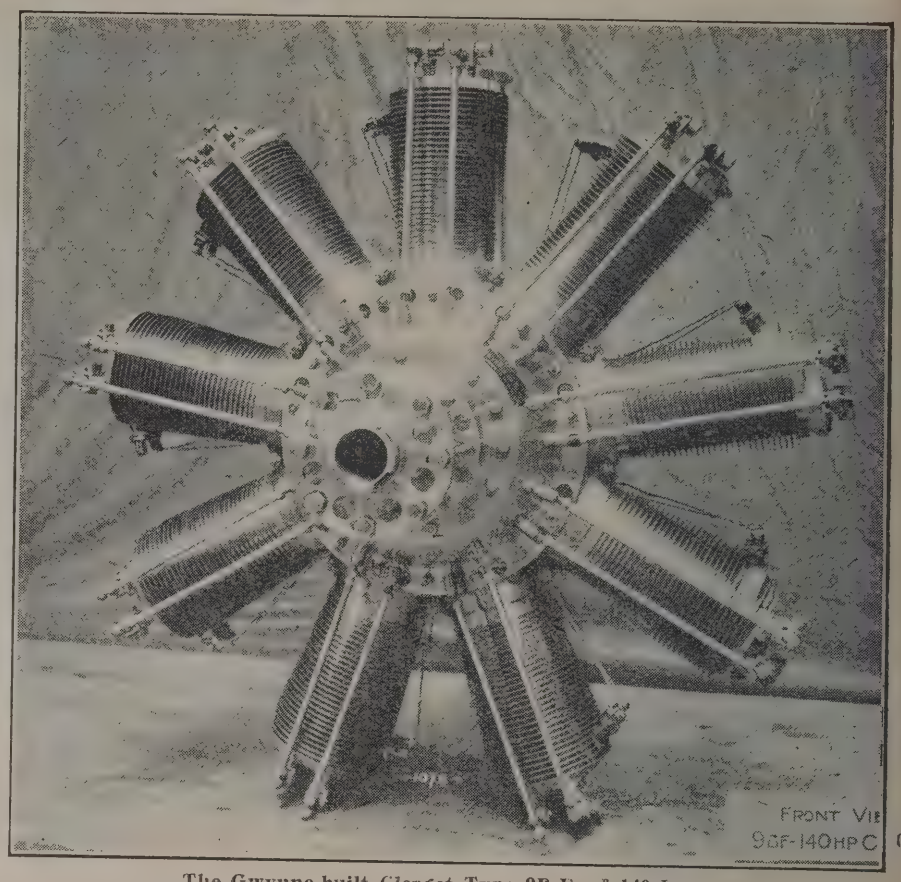
Quite early in the history of that art—before the war—Gwynnes took up the manufacture of rotary aero-engines of the Clerget type.

When war broke out they were one of the few firms who were in a position immediately to supply British-built aero engines, and, during the war, their production of these engines in the 80, 110, and 130 h.p. types became very large indeed. In addition, they produced in the latter stages of hostilities a quite considerable number of B.R.2 engines of 230 h.p. The output of Clerget engines during the war was roughly 2,750, and of B.R.2 engines, 900.

At the moment, Gwynnes, Ltd., are engaged upon the building of a small 9-cylinder 100-h.p. Clerget engine, with cylinders 105 mm. bore by 140 mm. stroke, which is designed to meet the demand for a light engine of low-running cost, giving on output sufficient for small fast single and two-seater machines.

This engine is built generally on the well-tried Clerget lines, and is in no sense an experimental attempt.

It may safely be assumed that Gwynnes, Ltd., are in a position to supply any of the other types of Clerget engines if a demand for them should arise.

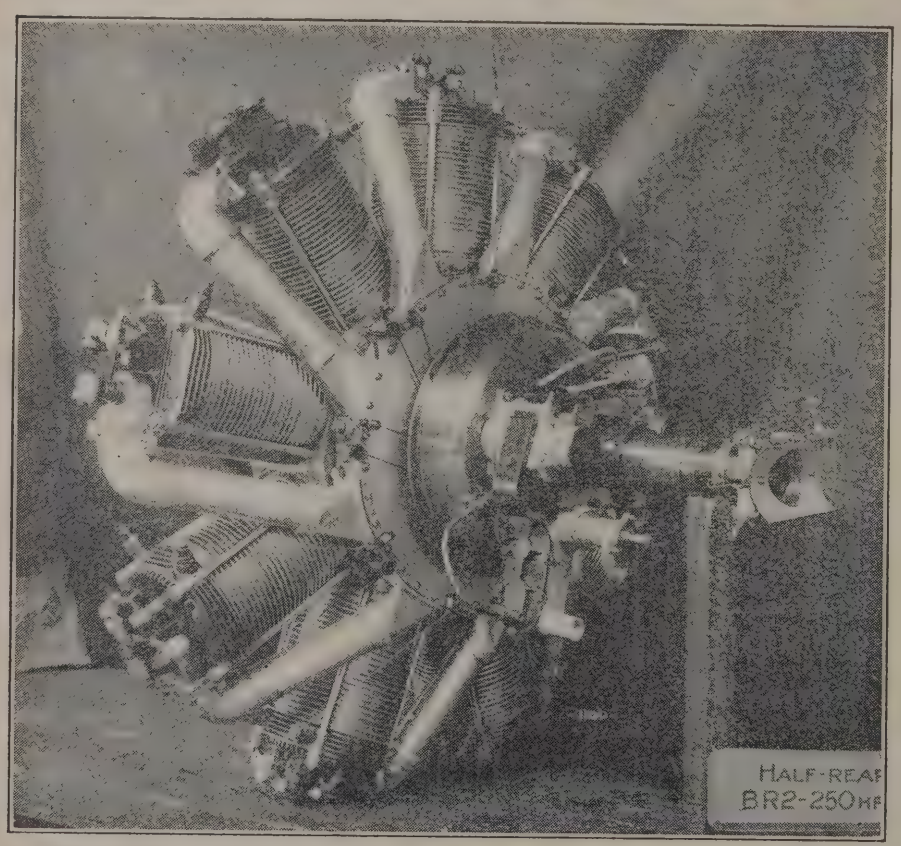


The Gwynne-built Clerget Type 9B.F. of 140 h.p.

The types of engines manufactured by the firm so far are:
Clerget type 7Z—80 h.p., 120 mm. bore, 150 mm. stroke.
Clerget type 9Z—110 h.p., 120 mm. bore, 160 mm. stroke.
Clerget type 9B—130 h.p., 120 mm. bore, 160 mm. stroke.
Clerget type 9B.F—140 h.p., 120 mm. bore, 160 mm. stroke.

The three latter engines vary mainly in the matter of compression ratio.

The new engine referred to above is known as the 9J.



Magneto End View of the Gwynne-built 9B.F. Clerget.

A sectional drawing of this engine, which is unfortunately too full of fine detail to reproduce here, reveals the fact that with one exception the well-tried features of the previous Clerget models have been retained.

The two mechanically operated valves in the cylinder head, the valve gearing and the arrangement of magnetos, carburetter and oil pump on the rear mounting plate are exactly as in the earlier types of Clerget.

The exception is in the construction of the cylinders, which are now built up with a steel liner, onto which is pressed a separate cooling skin from which project the usual radiating fins—this being apparently of aluminium.

The number of low-powered single-seater machines now being built for the sporting pilot owner will undoubtedly lead eventually to a demand for small sporting two-seaters at reasonable prices and of reasonable performance, but not of colossal speed, and equipped with economical engines.

This demand the new Clerget should effectively meet.

The high qualities of the Clerget engines produced by Gwynnes in the past, and the effective work performed by them in such famous machines as the Sopwith one-and-a-half strutters and the "Camels," and the excellent work put into the B.R.2s should be an ample guarantee that any engine supplied by the firm will be made of the best materials, in the best type of workmanship and finish.

BLOCTUBE CARBURETTORS
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RENÉ TAMPIER

CONSTRUCTING ENGINEER,
INVENTOR AND PATENTEE
CONTRACTOR TO H.M. AND ALLIED GOVERNMENTS.
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THE SOCIETY OF BRITISH AIRCRAFT CONSTRUCTORS

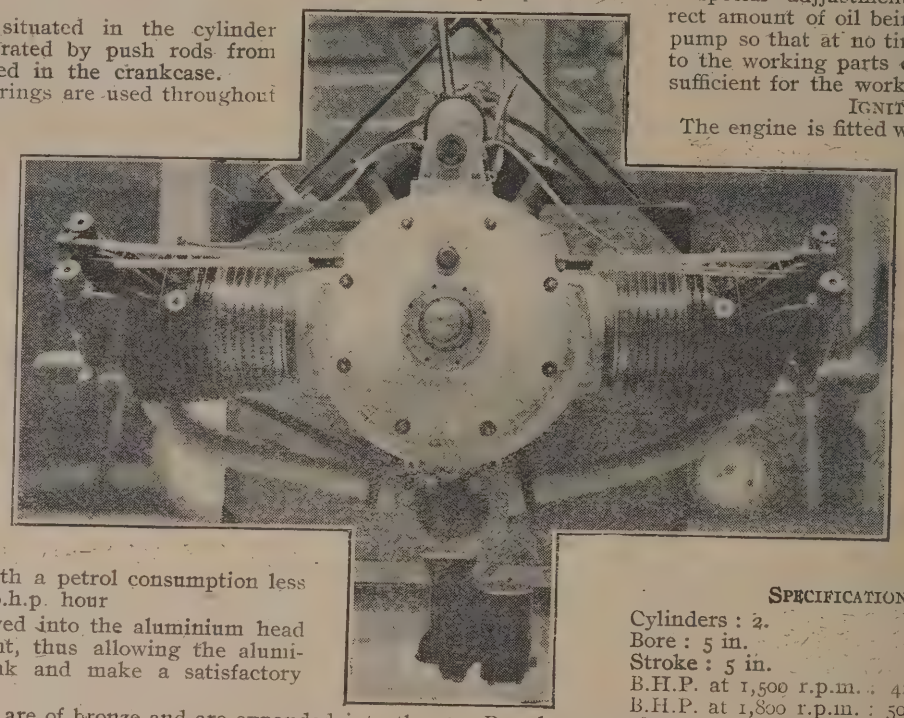
THE ARMSTRONG-SIDDELEY MOTORS, LTD.

The Armstrong-Siddeley 2-cylinder aero engine which has been designed for use in the smaller sizes of single-seater aeroplanes is air-cooled, and in general design it is an advance on any previous engine of its kind.

The engine has two horizontally opposed cylinders, 5 in. bore by 5 in. stroke, the offset between their axis being 1⅛ in. This is achieved by the use of roller bearing big ends to the connecting rods, and the result is that the out of balance couple, present in all engines of this type in which the cylinders are not exactly opposed, is reduced to a very small amount.

The valves are situated in the cylinder heads, and are operated by push rods from a camshaft contained in the crankcase.

Roller or ball bearings are used throughout the engine.



Cylinder Construction.

The construction of the cylinders is that of an aluminium alloy head into which is screwed a steel liner, thus forming the complete cylinder. This design is the outcome of a long series of experiments, and as much as 30 h.p. per cylinder has been obtained and a m.e.p. of 127 lb. per square inch has been reached with a petrol consumption less than 0.6 pints per b.h.p. hour

The liner is screwed into the aluminium head under heat treatment, thus allowing the aluminium alloy to shrink and make a satisfactory joint.

The valve seatings are of bronze and are expanded into the cylinder head, after which they are machined in position.

Valve Gear.

Each cylinder is fitted with two valves which are manufactured from the very best quality steel which is procurable for this purpose. They are operated, as stated previously, by external push rods operating through horizontally placed rocker shafts.

Crankcase Unit.

The cylinders are mounted by a special device onto an aluminium crankcase, which is constructed of one unit with a front cover through which the crankshaft protrudes to carry the propeller boss. The crankcase is neat in external appearance and is mounted onto the front of the aeroplane by four bolts which are accessible from the outside.

Lubrication.

The lubricating oil is contained in the base of the crankcase and is fed to the working parts of the engine by an oil pump. There is a special adjjustment to allow the correct amount of oil being supplied from the pump so that at no time is more oil going to the working parts of the engine than is sufficient for the working.

Ignition.

The engine is fitted with one ignition only, that is, a 2-cylinder magneto of British manufacture. It is not considered necessary or desirable to fit a dual ignition to an engine of this nature, as was necessary on larger engines used during the war.

Carburation.

The incoming gases pass through an exhaust heated jacket mounted on the underside of the crankcase.

Specification.

Cylinders : 2.
Bore : 5 in.
Stroke : 5 in.
B.H.P. at 1,500 r.p.m. : 42.
B.H.P. at 1,800 r.p.m. : 50.
Petrol consumption :
3½ gallons per hour at 1,500 revs. per. min.
Oil consumption :
2¾ pints per hour at 1,500 revs. per min.
Weight dry : 135 lb.
Overall breadth : 39.5 in.
Overall height : 31.15 in.
Overall depth : 20.5 in.
Engine fixing bolts P.C. diameter : 15 in.
Price (provisional) : £250 at works, Coventry.



The Cabin of the B.A.T. F.K.26. The first aeroplane designed *"ad hoc"* for commercial service.

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THE EMPLOYMENT OF METAL IN AIRCRAFT CONSTRUCTION.

It was, of course, inevitable that the development of metal in Aircraft Construction would in time lead to considerable alterations in the principles upon which aircraft are built. For instance, what may be called the "two-spar" wing with its internal bracing wires had become a set and universal type, and apparently, so long as wood remained the constructional material, it is reasonable to assume that wings constructed upon that principle would not have been departed from.

But the successful adaptation of metal to the requirements of aircraft construction has now rendered possible considerable departure from those formerly accepted lines, and one of the most noteworthy of these innovations is already to the fore in the shape of the "Mayrow-Wing."

This is an all-metal wing in the design of which the two spars as usually understood are abolished and internal wires absolutely done away with.

In the place of the usual twin spars the "Mayrow-Wing" has five longerons running parallel with the front edge of the wing and a number of transverse ribs placed obliquely from front to rear and connected with the longerons at each crossing point in such manner that the longerons and ribs together form a series of triangles. The wing can be surfaced either with fabric or metal. It is claimed that internal wires are neither necessary nor of any advantage, and therefore none are fitted.

This method of wing construction is a radical departure from the hitherto accepted principle upon which wings have been built, but providing that it can be successfully proved that the necessary strength and reliability is obtained, that point is hardly material.

It would certainly appear that a more advantageous distribution of stress is attained when it is taken up by a number of members all designed to bear a proportionate share of the load, but it does not necessarily follow that this new principle of construction would under actual flying conditions provide all the requirements successfully obtained under the "two-spar" principle of construction.

Still, the inventor and patentee of this innovation in wing building, Mr. James Mayrow, has had very considerable experience in metal construction. There are few men who have spent so long in pursuing the problem of metal construction of aircraft, and it is reasonable to suppose that a practical, as well as a technical, man, as he has proved himself to be, would launch upon the aircraft world anything that is not sound.

The Aircraft Steel Construction Company, which is the concern commercially exploiting this development of the "Mayrow-Wing," state that having lately acquired large new works at Stratford, they are now in a position to execute orders for this form of "All-Steel" wing for any type or design of plane at present flown, and are prepared to guarantee results. This latest form of metal wing is guaranteed to show a 50 per cent. greater margin of safety, weight for weight, than any twin-spar wing, whether the spars be of metal or wood.

The technical details of this wing should prove very interesting to all engaged in aircraft construction, and no doubt they will now soon be available for the investigation and consideration of all concerned.

An important result of the employment of metal as a constructional material for aircraft is the possibility of introducing complete standardisation and interchangeability of all members and parts.

The system under which the Aircraft Steel Construction Company build is designed to provide this. The problem in the case of aircraft presents many difficulties not met with in other structures. Nevertheless, the important point is that standardisation and interchangeability is really aimed at, for in no other type of machine is it of more importance and advantage than in commercial aeroplanes.

Under the most favourable flying conditions and with the best of skill and judgment small accidents, and therefore minor injuries, are almost inevitable in aviation. Consequently, the ability to replace a damaged member or part from stock is an advantage of almost incalculable value.

One point in connection with the work of the Aircraft Steel Construction Company is that they employ only specially treated steel, which they claim to be absolutely rustless. The process is a secret one, but they are prepared to submit steel treated by this process to the severest tests in the matter of rusting and oxidisation. Their own test is to place a steel member after passing through the process upon the sea shore between low and high water mark. In this manner the tide alternately submerges the metal in salt water and exposes it to the air, sun, rain and wind. If steel is to be employed in aircraft construction this question of rustlessness is of vital importance, and a steel that will sucessfully withstand a test of this severity could obviously suffer no deterioration whatever in a machine that is as carefully safeguarded and looked after as an aeroplane.

B.T.H. MAGNETOS.

When war produced a demand for magnetos, for which there was no established source of supply in the British Empire, it might have been expected that so wide awake an electrical manufacturing concern as the British Thomson-Houston Co., of Rugby, should have set itself to the problem of remedying this defect, and that B.T.H. magnetos should have established so great a reputation, even in the face of the fact that their products were markedly different to the almost universal "Bosch" of earlier times.

The B.T.H. magnetos of the A.V. type have been specially developed for aero engines and are made for either eight- or twelve-cylinder engines.

They are all of what is termed the inductor type of magneto—that is to say, that, instead of the usual type of armature winding attached to the rotating member of the magneto, and thus subject to vibration, centrifugal stresses, and the need for extreme compactness, the armature windings are wound on a fixed laminated core, and the rotating parts of the mechanism are confined to solid soft iron pole pieces whose rotation serves to direct the magnetic flux of the magnets proper through the armature core in alternating directions, to the contact breaker and to the distributor.

The advantages of the type are numerous. A much stronger construction is possible, armature slip rings and their attendant risks of leakages are avoided, and the use of a four-pole rotating inductor allows of four sparks per revolution being obtained instead of two, as with the usual form of magneto armature, and the magneto thus may operate at half the speed of rotation needed in the rotary armature type. The stationary armature coil arrangement makes it possible to use much simpler winding methods and allows of more space for insulation.

The high tension distributor is of the spark gap type, i.e., the rotating contact does not touch the distributor segments, but is separated by a short gap, and hence there are no high tension carbon brushes to wear out, stick, fill the interior of the distributor with carbon dust, or wear grooves in the distributor casing.

THE DEVELOPMENT OF TORPEDO AIRCRAFT.

Amongst those who have done good work in the development of torpedo-carrying aircraft in this country the Blackburn Aeroplane and Motor Co., Ltd., deserve some considerable mention.

Their first connection with the torpedo connection arose over the design of the G.P. (general purpose) seaplane in 1915-16. Although not purely a torpedo machine this twin-engined machine was arranged to carry a light torpedo as one of the numerous forms of armament to which it was susceptible, and with it the firm gained some experience of the fitting, carrying and dropping gear necessary to this class of work.

When the Sopwith "Cuckoo" was produced, and had been tested and found satisfactory as far as the aeroplane part was concerned, it was decided that the work of putting it onto a production basis should be put into the hands of a firm conversant with the essential torpedo problems, and the work was therefore entrusted to the Blackburn firm, who with the assistance of experts from the R.N.A.S. carried out much work in connection with the torpedo-dropping and aiming gear, the silencing of the engine exhaust, and the fitting of warming gear to prevent freezing-up of the air passages in the torpedo itself—a phenomenon which occurred frequently at high altitudes and which effectively demoralised the torpedo by preventing the torpedo engine functioning.

The problems of the "Cuckoo" being satisfactorily solved and the final pattern in production, Blackburns were asked to design a machine to carry a still heavier torpedo and at a higher speed and with a greater climb than the "Cuckoo."

These two requirements were met in the "Blackburd," though necessarily at the cost of some sacrifice of the manœuvrability which distinguished the "Cuckoo."

This machine represented a very difficult problem. A very large load had to be carried, and as it was to fly from the deck of a seaplane-carrier special measures had to be adopted to secure a quick get off. This was met by the use of trailing edge wing flaps giving the effect of a high lift wing when pulled down. The machine had to be fitted with emergency flotation gear of the "Port Victoria" type, which involved arrangements for releasing the wheels before alighting, and also before dropping the torpedo.

The control problem, with wing flaps, wheel release, torpedo release, air bag inflation gears, and so on, was a very complicated one, and required much ingenuity, but a practically fool-proof interlocked control gear which made it impossible for operations to be carried out incorrectly was devised, which greatly simplified the controls.

At the time of the Armistice a further torpedo-carrier, the "Kingfisher," was in course of design which incorporated many new features. The advent of peace has delayed progress on the "Kingfisher," but the firm have not abandoned the work, as they are confident that this type of machine has a very great future for war purposes.

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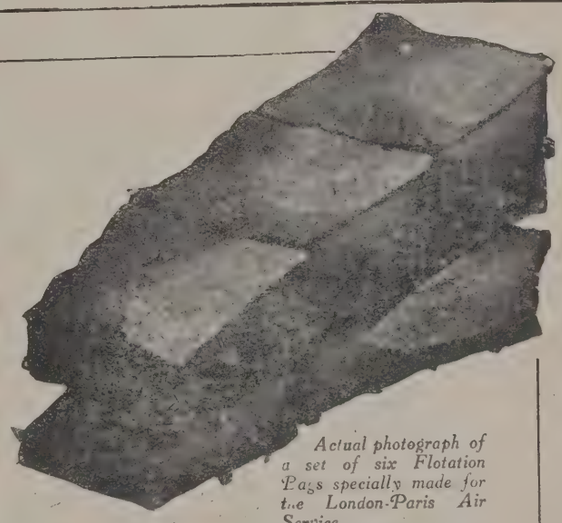
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Aeroplane Flotation Bags

The latest and most successful device for sustaining an Aeroplane when a forced descent has to be made upon the water. These bags, which are guaranteed absolutely air and water tight, are specially shaped to fit compactly into the framework of the fusilage. They are indispensable where flying is undertaken continuously over the sea, or other large stretches of water.



Actual photograph of a set of six Flotation Bags specially made for the London-Paris Air Service.

AIRSHIPS LTD.

LONDON OFFICES: 25-27, OLD QUEEN STREET, S.W.1.
WORKS: HIGH STREET, MERTON, AND HENDON.

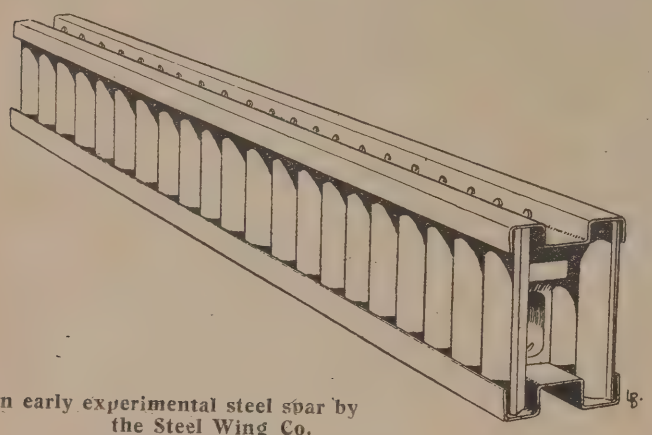
THE STEEL WING CO., LTD.

With the advent of peace and the possibilities of using aircratf for exploratory and development work in the less frequented parts of the earth, the importance of climate-proof aeroplanes assumes a new interest.

It might seem reasonable to assume that a form of construction capable of withstanding the rigours of the British climate would survive that of any other part of the habitable globe, and with the exception of a few particularly difficult—in the climatic sense—localities, this is largely true—so far as purely meteorological variations are concerned.

On the other hand, those countries whose human population is sparse usually abound in other forms of life—forms usually classed as lower but often possessed of a destructive capacity far in excess of that of the average human.

White ants, for instance, could reduce a timber-built aeroplane to produce with a speed and efficiency which would make any Government Salvage Department look silly, and, therefore, for climates where such destructive pests are indigenous, some more resistant structural material has its advantages.



An early experimental steel spar by the Steel Wing Co.

Apart, however, from such special local conditions, metal construction for aircraft has numerous and obvious advantages—provided that no handicap of weight or of deficient strength is thereby involved.

The difficulties of using metal as a substitute for timber in aeroplane structure are entirely manufacturing difficulties, and they have been very great.

Nevertheless, they have been successfully overcome by several English constructors, and amongst them by the Steel Wing Co., Ltd., who have been engaged in experimental work exclusively directed to this end for several years.

The essence of their solution of all the difficulties is the use of members constructed from thin steel strip, into which longitudinal corrugations are rolled or pressed, these corrugations having the effect of giving to the material that resistance to local stresses which is deficient in the original flat strip.

The result of their work is that the firm is now in a position to manufacture all-steel wings for any normal type of aeroplane, which shall weigh no more, and shall have a materially greater strength than wings of the usual timber type.

SAMUEL OSBORN AND CO., LTD.

Samuel Osborn and Co., Ltd., of the Clyde Steelworks, Sheffield, have been manufacturing alloy steels since the year 1871, when they acquired the sole right to manufacture "Mushet" self-hardening steel. Since then they have been making alloy steels under very special conditions and have developed this manufacture extensively.

They are now in a position to supply steels of the highest excellence for the special requirements of aircraft manufacturers. These special quality steels are manufactured under the supervision of a trained metallurgical staff, and give not only the usual static tests (tensile strength, etc.) required to meet the demands of aircraft construction, but also the more important resistance to shock, and endurance of "fatigue."

Their electric alloy steel gives the highest possible impact value and should be used for all parts where high impact resistance is necessary.

They will at any time be pleased to give purchasers and users any information concerning the heat treatment of their steels, their assistance in the choice of the most suitable steels, and the benefit of their experience in the endeavour to remove any difficulties encountered.

All steels bear the well-known "Hand and Heart" trade mark, and Messrs. Osborn recommend their C.H. brand (case-hardening) steel, their S.C.H. brand (special case-hardening) steel, and their E.S.C. brand (extra special case-hardening) steel, for gears and stamped parts. Where parts require a glass-hard surface with a strong core, capable of withstanding vibratory shocks, the S.N.C.H. brand (special nickel case-hardening) steel, and the H.N.C.H. (high nickel case-hardening) steel is recommended

Their rustless steel is suitable for valves and all purposes where it is desirable to avoid rust. N.C.C. and N.C.7 brand (nickel chrome case-hardening) steels are recommended for parts which have to withstand the severest shocks.

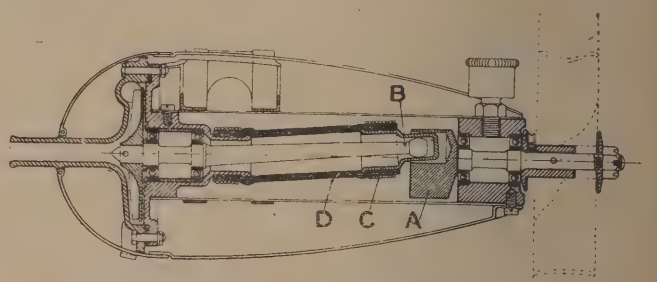
An ideal steel for R.A.F. "Specification 5.B" is their N.C.A.H. brand (nickel chrome air-hardening) gear steel; and M.T.R. (nickel chrome oil-hardening) steel will be found to give excellent results in tensile strength, elastic limit, extension and contraction, and is absolutely one of the finest alloy steels produced.

Aircraft manufacturers will also find that Osborn's "Mushet" high speed steel milling cutters and twist drills, and Mushet's special steel for turning tools, will give the utmost satisfaction.

THE AUSTIN "GLANDLESS" PETROL PUMP.

This type of centrifugal petrol pump has been thoroughly tested, and is now officially approved for use in aeroplanes supplied to the Air Ministry.

The "Glandless" pump, as will be seen from the illustration, consists of a propellor-driven crank "A" running in ball-bearings, which operates a short stroke crankpin "B," machined as a part of the impeller spindle of the pump itself. Interposed between the crank disc and the crankpin is a special metal thimble "C," which is connected directly to the neck of the pump body by means of a piece of standard petrol-resisting rubber hose "D."



The thimble "C" therefore only oscillates round a circular path, the crank disc revolving outside it and the crankpin inside it.

By this arrangement, provided all joints and connections are tight, there is no danger of petrol leakage, and the loss due to friction is reduced to a minimum. In ordinary use the petrol-resisting rubber hose lasts a considerable time, and, moreover, can be easily renewed by a standard piece of petrol-resisting rubber hose joint.

The "Glandless" pump is manufactured by the Austin Motors Ltd.

"CELLON DOPE."

During the last few months, as could only be expected, there has been very little doing in the aeronautical industry, but the policy of resting on the laurels gained through sheer hard work does not commend itself to Cellon, Ltd. Although very little is heard anent the work being done, it is comforting to know that experimentation is being carried out.

Cellon, Ltd., have been conducting quite a lot of experimental and research work on improvements in dope, with the result that in addition to their ordinary schemes for doping they are now in a position to supply a scheme in which the pigmented covering is entirely abolished, and the whole doping comprises only four coats. This scheme has been used by one or two firms on experimental machines, and they have expressed great satisfaction with it. It is prepared in all colours, thus giving firms a variety of shades in which they can finish their machines.

During the last few months consignments of "Cellon" have left this country for Holland, Spain, Norway, Argentine, Chili, Japan, Australia, and India.

As regards their post-war work it is interesting to see that Cellop Dope has so far been used on the Sopwith, Martinsyde and Boulton and Paul machines destined for the trans-Atlantic flight; on the Sopwith, Supermarine and Fairey machines, representing the British team in the "Schneider Cup" contest, and on the Sopwith, Martinsyde and Blackburn machines at present entered for the Australian flight.

It may be interesting to recall that in 1912 every important competition in this country was won on machines doped with "Cellon."

Telephones :
Gosport 217.
London : Gerrard 5716.

Telegrams :
"Flight, Gosport."
"Embellishment, London."
"Embellishment, New York."

GOSPORT AIRCRAFT Co.

DESIGNERS AND BUILDERS OF

FLYING BOATS

FOR

THE AIR MINISTRY AND FOR COMMERCIAL AND PLEASURE USE.

HEAD OFFICE & WORKS: GOSPORT.

Sir Charles Allom.
Charles E. Nicholson.
M. H. Volk, A.F.Aë.S. (General Manager).

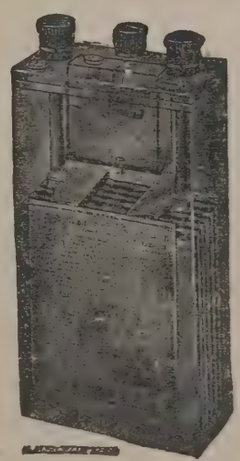
London Office : 15, George Street, Hanover Square, W.1.
New York Office : 19, East 52nd Street.

"Exide" EXCELLENCE.

In accumulator manufacture, more than in most things, quality of materials and the correct treatment of these materials is of supreme importance.

Years of research, the careful designing of each type for the work it is intended to do, critical selection of all materials and careful workmanship with modern appliances, all form the basis of our manufacture of

Accumulators of Quality.



220, SHAFTESBURY AVENUE, W.C.2,
is the address at which you may examine these accumulators.

THE Chloride ELECTRICAL STORAGE COMPANY LIMITED.

Head Office and Works
CLIFTON JUNCTION
MANCHESTER.

London Office
39 VICTORIA STREET S.W.1.

EDGAR ALLEN AND CO., LTD.

The steel maker's art (as practised by Edgar Allen and Co., Ltd.) is a true revolution. The ever-growing demand for new perfections and new varieties made by engineering problems has brought forth a succession of types. The pioneers of motor-car construction, in particular, called into being a whole series of alloy steels, conforming to new standards of resistance.

Similarly, in aircraft, the demand for steels of greater strength and tenacity necessitates a large amount of experimental and research work. Specialisation in steel, as worked out on scientific lines in the Allen Research Laboratories, has produced the liberal variety of Allen Steels, each with its special uses.

The dire necessities of war called for enormous quantities of special alloy steels for aircraft use which had not only to be up to standard in mechanical tests but also thoroughly reliable in use. The steel maker was supplied with what, at the time, were impossible specifications, and it was only by the scientific work carried on in the laboratories that not only was material made to conform to these specifications, but the manufacturers were enabled to produce even better results than asked for. Again, scientific steel-making for war-work and other purposes must leave nothing to chance.

At the Imperial Steel Works, Sheffield, Edgar Allen and Co., Ltd., exercise the strictest care throughout the manufacturing process. In some of the most useful alloy steels, surface flaws and blemishes are likely to form in the early stages of their manufacture. If they were not eradicated at the works, it is easy to see that finished steels might prove unreliable, and cause waste and trouble which no amount of laboratory work could prevent. Edgar Allen and Co., Ltd., treat their steels right through the manufacture in every possible way so as to eliminate all flaws, etc.

Each grade of steel is capable of playing many parts, much depending on treatments. The steel is first quenched at a fairly high temperature, and afterwards reheated to a specified low temperature, and then allowed to cool. On the thermal degree to which this reheating is carried depends the final characteristics of the steel.

A high reheating gives low tensile strength but greater toughness, and a low reheating greater strength, with some loss of toughness. Alloy steels are highly susceptible to such treatments, and by suitable variations can be made to acquire a remarkable variety of characters. This places at the disposal of the user a corresponding rich selection of steels made from one original material.

Edgar Allen and Co., Ltd., have produced amongst a number of extremely useful handbooks one that deals with the varieties of alloy steels suitable for aero- and motor-car engines. The correct Allen steel for every motor-car and aeroplane part is specified with the official and other accepted standards to which it conforms.

In addition to this handbook, which, with its charts and tables, is, in itself, of extreme practical use, the Edgar Allen Research service has been established, which is for the assistance of all steel users. They are willing to investigate the cause of difficulties connected with specimens submitted to them, and, if necessary, an expert demonstrator will be sent to assist in obtaining correct results. This service is placed freely at the disposal of engineers and constructors, and no fee is charged for research and advice.

A NEW AERIAL ROUTE MARKING DEVICE.

A new method of route indicating, which may become of immense importance to commercial aviation is at present being developed and tested in France.

It depends on the well-known fact that a conductor carrying an alternating electric current will induce in another conductor parallel to it a current alternating at the same frequency. The intensity of the current so induced becomes rapidly less as the distance between the two is increased, but with modern detecting appliances it is possible to transmit signals over several miles.

Taking advantage of this fact, it is proposed to delineate aerial routes by laying along each wires conveying alternating currents of definite frequencies which will be particular to each route, and to equip aircraft with a telephonic receiving set, which can be made to be directive by very simple means. An aircraft has then merely to pick up on its receiver the note proper to its desired route, and keep the sending wire of that note beneath it.

Aerodromes will be looped round by such a cable, so that in a fog a pilot would find himself flying round in a loop if he followed the note accurately, and will thus receive a signal which should enable him to land therein.

It is said that tests made with a cable laid in the tortuous entry to a difficult harbour have shown that it is possible to navigate a ship accurately by this means, and the value of such an arrangement for cross-country flying in bad weather should prove immense.—J. S.

TITANINE, LTD.

Among the recent developments of Titanine, Ltd., is the production of a material which is known as "Titanine Adhesive and Varnish," and which, it is hoped, will overcome part of the difficulties that have arisen from leakages to fabric-ed seaplane floats. The adhesive does not soften from heat, and is waterproof.

Certain people in finishing off seaplane floats have been known to apply the ordinary paint direct on to the canvas, which invariably results in rotting it, owing to most paints containing oil.

The "Titanine Adhesive and Varnish" is used as an adhesive to apply the canvas to the float, and also as a varnish after the fabric has been applied, thereby isolating the paint that is afterwards put on as an outside protective covering, and prevents any likelihood of leakage or of rapid deterioration.

In addition to the above product, Titanine, Ltd., also produce the following manufactures, all of which are well-tried and up to the standard claimed and required :—

"Titanine" Aeroplane Dope, "Planoline" fireproofing solution for use on fabric prior to doping, transparent and pigmented oil varnishes, Nitro pigmented finishing varnishes in all colours (suitable for commercial aviation), seaplane float paint, etc., etc.

BRUNTONS, LTD.

Bruntons, Ltd., of Musselburgh, the well-known manufacturers of all classes of high-grade steel-wire, wire rope, springs, and a host of other articles, as well as cold-drawn steel for all purposes, claim to be the first firm in Great Britain to produce tie-rods for use in aircraft.

As long ago as 1907 they supplied steel tie-rods to the British Government for use in construction of airships and aeroplanes, and have supplied wire and wire ropes for use with aircraft from very early times.

With the adoption of streamline tie-rods, more commonly called Rafwire, as standard bracing for practically every type of British aeroplane, Bruntons, Ltd., have enlarged their plant, until, at present, they are capable of producing larger tie-rods than any yet used in aircraft construction.

They now have a special factory equipped for the manufacture of tie-rods of various sections, together with all kinds of fitments, such as end fittings, fork ends of divers patterns, locking plates, turnbuckles, etc., and also steel wire, piano wire, and steel wire cables, of every necessary weight and strength.

Realising the necessity to combat rust and other corrosive evils in aircraft wiring, Bruntons, Ltd., have introduced a new method of depositing a thin zinc coating to wires and rods known as "Bruntonising." It is superior to the ordinary hot galvanising process in two main respects : first, the coating is quite smooth and bright, which not only gives it a better appearance but makes it adhere more firmly to the wire; secondly, the process has no deleterious effect on the physical properties of the wire, as hot galvanising has.

This process has been approved by the British Government as the most efficient protection from atmospheric corrosion that has yet been devised. They also have special plant for electro aglvanising, Cosletising and enamel spraying all wires and fittings.

BRITISH MAGNETOS.

Prior to the war it was the general idea that Germans were the only people who were capable of making reliable magnetos, and the name of Bosch was to be found on nearly every spark-producer in use on British cars and aero engines.

It was not until the war started that we had to settle down to the problem of making our own magnetos, and as the internal combustion engine was to play such an important part in all spheres of the fighting it is to the credit of the few firms who took upon themselves the task of creating and building up the British magneto industry that we succeeded in beating Germany in the air, on land and sea and under the sea.

An interesting handbook has been issued by the British Ignition Apparatus Association, of 8, Bream's Buildings, London, E.C.4, which has been produced in the interests of the British L.M. Ericcson Mfg. Co., Ltd., of Beeston, Notts, the British Thompson-Houston Co., Ltd., of Coventry, the E.I.C. Magnetos, Ltd , of Birmingham, the M.L. Magneto Syndicate, Ltd., of Coventry, North and Sons, Ltd., of Watford, the Thompson-Bennett Magnetos, Ltd., of Birmingham, and C. A. Vandervell and Co., Ltd., of Acton, W.3.

This booklet gives particulars of standardised British magnetos made to dimensions which permit of interchange and quick replacement of parts produced by the British firms mentioned above, who have helped to achieve success for Great Britain, and, at the same time, gained experience which guarantees satisfaction for the user.

A copy of this handbook will be sent to anyone who applies to the Publicity Department, British Magnetos, 8, Bream's Buildings, London, E.C.4.

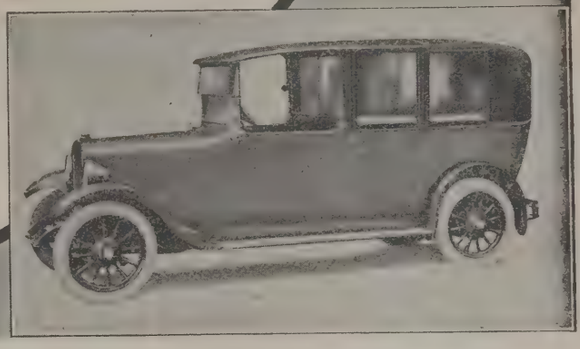


What flying has taught us—

The demand of the aeroplane for the utmost power from the lightest and most trustworthy engine, and our concentration on that problem, has taught us much—and each owner of the new Austin "Twenty" will benefit thereby.
More power with less weight and greater reliability combined with silent running, flexibility and marked economy are characteristics of the new Austin "Twenty" and assure its selection by discriminating motorists.

The new **Austin** *"Twenty"*

THE AUSTIN MOTOR CO., LTD.,
Head Office: NORTHFIELD, BIRMINGHAM
Telephone—Kings Norton 230.
Telegrams—"Speedily, Northfield."
And at London, Manchester and Paris.



18 NEW RECORDS

On Nov. 22nd, Capt. Gathergood, piloting a 450 h.p Napier Engined Airco 9R machine, secured the following 18 Official British Records :—

Longest distances in ¼ hour, ½ hour, 1 hour and 2 hours.

Greatest speed over straight flight of 5 Kilometres.

Greatest speed in closed circuit for 5, 10, 20, 30, 40, 50, 100, 150, 200, 250, 350, and 400 Kilometres —without alighting.

in 1 day, on 1 machine, with THE

ONE LUBRICANT

WAKEFIELD
Castrol
REGD. (R)

C. C. WAKEFIELD & CO., LTD.,
Wakefield House, Cheapside, London E.C.2.
and 21, Rue du Mont Thabor, Paris.

TRIPLEX SAFETY GLASS AT THE PARIS AERO SHOW.

As might be expected, "Triplex" Safety Glass will be represented in all its forms at the Paris Salon d'Aeronautique, both by the British Triplex Safety Glass Co., Ltd., and by the Société due Verre Triplex, of 17, Rue Desnouettes, Paris. In addition to an exhibit at Stand 4, Gallery C, where there will be a large selection of aeroplane wind-screens and windows, goggles, map cases, etc., practically all the flying machines exhibited will be fitted with Triplex Safety Glass wind-screens and windows.

There was, perhaps, no article used in aircraft during the war that was so consistently successful, and the fact that it is now being almost universally employed on all aircraft, motor-cars, etc., for wind-screens, windows, goggles, etc., is sufficient to prove that the qualities claimed for it are fully justified.

By a revolutionary method of making glass permanently and definitely unsplinterable, even under the heaviest blow or concussion, absolute safety and practically everlasting durability is ensured, many insurance firms even going so far as to make a considerable rebate on premiums charged on vehicles where Triplex glass is used, which is in itself one of its highest recommendations.

SWIFT, LEVICK AND CO.

Swift, Levick and Co., Ltd., who were known previous to the war as one of the largest manufacturers of special high-speed, nickel, cast, and electrically smelted alloy steels, have, since the commencement of the war, been one of the largest makers of all classes of electrically smelted alloy steel used in the manufacture of aeroplanes, aero engines and accessories. Among their specialities may be mentioned compass needles, permanent steel magnets for magnetos, and special armour-piercing bullet steel for use in aerial machine guns.

They claim to have been the largest British makers of all classes of compass needles, and turned out huge numbers of these for use in British and Allied aeroplane compasses. They also claim that they were the original British manufacturers of permanent steel magnets, and a very large percentage of the British aeroplanes, airships, etc., were run on magnetos using their steel magnets.

This particular part of their business has not fallen off since the war, and at present they are busy meeting the enormous demands put upon them by the motor-car industry. This remark also applies to all their grades of alloy steels, and they are turning out very large quantities for the construction of gear-boxes, driving-shafts, axles, etc., for the leading manufacturers of British motor-cars.

The experience gained by them during the war in manufacturing various grades of steel for employment in aircraft work has been of great assistance not only to them but the British industry at large, and accounts for the huge demands of the motor industry for their products. An interesting production, which naturally died with the cessation of hostilities, was the manufacture of a special armour-piercing bullet steel which was used largely by the Air Services during the latter part of the war.

HERBERT TERRY AND SONS.

It would certainly be interesting to know the limits to which a firm would put itself in the case of national emergency, in order to turn out articles of immediate use. This has been fairly well demonstrated in the late war, when firms accustomed to turn out articles of domestic necessity did not hesitate to build, according to the type of machinery available in their factories, anything from a tank to a split-pin. Herbert Terry and Sons, Ltd., of Redditch, who, before the war, were famous for the manuacfture of springs of all kinds, turned their attention to and turned out huge quantities of small parts such as springs, all kinds of press work, wire work, flexible shafting, cable controls, hose clips, etc., etc., and, incidentally, gained a reputation for producing everything of the highest grade, this reputation having as its outstanding feature the fact that the Sunbeam-Coatalen "Maori" engines fitted in the "R.34" in its memorable flight across the Atlantic and back had "Terry" valve springs throughout.

PETROL PRICES.

The present current prices of the products of the Anglo-American Oil Co., Ltd., are as follow:—Pratt's "Perfection" Spirit, 3s. 0½d. per gallon; Pratt's Aviation Spirit, 3s. 4½d.; "Taxibus" Spirit for heavy commercial vehicles, 2s. 10½d.

CASTROL AND RECORDS.

In connection with the 18 records made on Nov. 15th by Capt. Gathergood on an Airco D.H.9R. (450 h.p. Napier aero engine) it is interesting to note that Wakefield's "Castrol" was used as the lubricant and was responsible for the sweet and uninterrupted functioning of the engine, a task for which it is eminently suited, as has been proved in the past.

HALL AND PICKLES, LTD.

Hall and Pickles, Ltd., have just issued a descriptive booklet in which the different qualities of Tool Steels that they manufacture are enumerated together with the uses for which each is particularly suited. In addition, a few simple instructions for heat treatment and other particulars which may be of service to users of crucible steel are given.

Their high-speed qualities are sold under the registered corporate mark of "Hydra" and are steels of the finest quality, the result of the latest metallurgical research and practical experience, designed to meet the highest demands in machine-shop practice.

High-speed steel is a product indispensable amongst all users of tool steel. Since the time of its inception in the year 1900, when practical demonstrations were given at the Paris Exhibition, the development of this wonderful commodity has resulted in a remarkable revolution in machine-shop practice throughout the world.

In spite of the great care taken in the selection of materials of highest quality together with the employment of highly-skilled labour and extensive laboratory work, it is impossible to produce high grade high-speed steel which is entirely proof against injury when in the hands of the customer. The successful treatment of high-speed steel requires experience, care, and a high degree of skill, careful pre-heating and an intelligent forging so that a good heat is maintained during the operation.

The ultimate success of any high-speed steel tool depends entirely upon the amount of heat received in hardening and the way in which the heat has been applied.

In a similar way Carbon Cast Steel depends on the grade of iron used together with the applied skill of the steel melter and greater care is necessary in dealing with carbon steel, because most carbon steels have but a limited range of treatment, being much more sensitive and easily ruined in forging and hardening.

It is to this end that Hall and Pickles, Ltd., issue this handbook together with comprehensive instructions which are supplied with each brand of their steel, which, if carefully followed, cannot do other than produce the best possible results. In addition, to further assist their clients they have on their staff a highly-skilled high-speed steel expert, who is, at all times, willing to collaborate with anyone who is in difficulties regarding hardening and tempering their steels.

ANOTHER BROWN PRODUCT.

Brown Bros., Ltd., always to the fore where the comfort and convenience of aviators and motorists is concerned, have just put upon the market a very handy little file which is known officially as the "Spark" ignition file. It is sufficiently thin to get between the points of a sparking plug without separating them so far as to produce any danger of breaking the points in getting them back to the correct gap. In fact, the file itself is so thin that it can practically be used as a gap gauge for sparking plugs.

It is made specially for the job, and so, instead of having the usual sharp pointed tang, the steel rod from which the file is swaged is left in its original round shape and thus forms a convenient handle. The price of the file is 1s., which, in these days, is really remarkably cheap.

CORRECT LUBRICATION.

"Correct Lubrication," a 60-page booklet issued by the Vacuum Oil Co., Ltd., is considerably more than a mere statement of the excellence of Gargoyle Mobiloils. It is a real help to motorists, explaining in clear language the imperativeness of scientific lubrication and emphasising the reward of this practice—economy of repairs, of depreciation, and of fuel and oil. Engine and chassis troubles are delineated and their remedies stated, and a lengthy chart, embracing most types of motors, passenger and commercial, British and imported, shows the exact grade of "Mobiloil" to be used on each. Any one who reads this booklet—an act that involves no mental discomfiture—will gain an extension of knowledge that cannot fail to prove profitable.

AN EXPERIMENTAL VACANCY.

There is a vacancy in one of the few aircraft works now seriously engaged on experimental work for a technical assistant. Applicants for the post must have a thorough knowledge of the mathematics necessary for aerodynamic and stress calculations, and should preferably have held a similar position before. Draughtsmen, tracers and so forth are not required, but a thoroughly experienced person of the kind usually described in aircraft factories as an "x-chaser" or "stress-merchant."

Applications should be addressed in writing to "X," c/o The Aeroplane, 175, Piccadilly, W.1.

NAVAL & MILITARY AERONAUTICS

[The official "Gazettes" and Personal Notices will be found on page 2124.]

GREAT BRITAIN.

FROM THE "COURT CIRCULAR."

BUCKINGHAM PALACE, Dec. 16th.

The Right Hon. Winston Spencer-Churchill, M.P. (Secretary of State for War and Air), had an audience of the King this morning.

BUCKINGHAM PALACE, Dec. 17th.

The King held an Investiture in the Ball Room of the Palace at 11 o'clock.

The following were severally introduced into the presence of the King, when His Majesty invested them with the Insignia of the respective Divisions of the Orders into which they have been admitted :—

THE MOST HONOURABLE ORDER OF THE BATH (MILITARY DIVISION).—Companion.—Air Vice-Marshal John Higgins (also received the Air Force Cross).

THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE.—Officer.—Military Division.—Sqdn. Ldr. Frederick Unwin, R.A.F.

Member.—Sec. Lt. John Knight, R.A.F.

The King then conferred decorations as follows :—

THE DISTINGUISHED SERVICE CROSS.—Lt.-Col. Osborne Butcher, R.A.F.

THE MILITARY CROSS.—Capt. Evan Pybus, R.A.F.; Flying Officer Richard Bentley, R.A.F.

BUCKINGHAM PALACE, Dec. 18th.

The Marquis of Londonderry was received in audience by the King this morning, when His Majesty invested him with the Insignia of a Knight of the Most Noble Order of the Garter.

His Majesty held an Investiture in the Ball Room of the Palace at 11 o'clock.

The following were severally introduced into the presence of His Majesty, when the King invested them with the Insignia of the respective Divisions of the Orders into which they have been admitted :—

THE DISTINGUISHED SERVICE ORDER AND THE MILITARY CROSS AND BAR.—Flight Lt. Geoffrey Bowman, R.A.F. (also received the Distinguished Flying Cross).

THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE.—Member.—Military Division.—Capt. John Walker, R.A.F.

His Majesty then conferred decorations as follows :—

THE DISTINGUISHED FLYING CROSS AND BAR.—Maj. John Morrison, R.A.F.

THE DISTINGUISHED FLYING CROSS.—Flight Lt. Arthur Randell, R.A.F.; Lt. John Bacon, R.A.F.; Flying Officer Cecil Bouchier, R.A.F.; Lt. Edward Wheatley, R.A.F.; and Sec. Lt. John Brown, R.A.F.

THE AIR FORCE CROSS.—Sqdn. Ldr. Maurice Wright, R.A.F.; Capt. Thomas Hayes, R.A.F.; and Capt. Harry Robins, R.A.F.

NAVAL.

ADMIRALTY APPOINTMENTS.

The following appointments and promotion have been made :—

PROMOTION.—Lieut.—C. J. L'Estrange-Malone, M.P., to rank of Lt.-Comdr., seny. Dec. 15th.

Dec. 20th.—Surg. Lieut.—N. B. de M. Greenstreet, to "Royal Ark."

The R.N.A.S. at Dunkirk.

It is stated in the order issued by the Admiralty on Dec. 17th that service with the R.N.A.S. at Dunkirk, August 4th, 1914, to midnight, Nov. 22nd-23rd, 1914, does not qualify for the clasp to the 1914 Star.

MILITARY.

WAR OFFICE, Dec. 15th, 1919

The Secretary of State for War has received three dispatches from General Sir Reginald Wingate, G.C.B., G.C.V.O., G.B.E., K.C.M.G., D.S.O., on the military operations in the Hedjaz from June 9th, 1916, to Jan. 31st, 1919, from which the following extracts are taken :—

Dispatch No. 1, from Cairo, dated June 25th, 1917 :—

"When the Arab campaign opened on June 9th, 1916, the Turks were to great extent taken by surprise . . ."

"Early in October, although the pilgrimage had been carried out without hindrance, the situation in the Hedjaz had become a serious one, and the threatened [Turkish] advance from Medina *via* Rabegh to Mecca appeared to have a considerable chance of success. . . ."

"On Oct. 30th, 1916, incidentally the day after the Sherif had declared himself King, approval was given for the dispatch to Rabegh of a flight of aeroplanes, which it was hoped would prove of much value in the operations impending. The flight was dispatched to Rabegh early in November. . . ."

It was then decided that the only way of removing the threat against Mecca and securing the fall of Medina was to undertake raiding tactics against the railway and the enemy's lines of communications, from the North.

"The large consignments of supplies and munitions which it has been necessary to send to the Hedjaz have been almost entirely supplied by the Egyptian Expeditionary Force, and the Commander-in-Chief has also furnished most valuable assistance in the form of a Flight of the Royal Flying Corps, an Armoured Car Section, and other details. . . ."

In his recommendations at the end of this dispatch Sir Reginald Wingate says :—

"The Royal Flying Corps Flight, under the command of Major Ross, D.S.O., has more than maintained the traditions of the Corps. Exceptional difficulties of climate and terrain have been encountered and surmounted in circumstances of peculiar hardship, valuable reconnaissance work has been carried out, and the support, both moral and actual, which the Flight has given to the Arab Forces is incalculable. In this connection I am greatly indebted to Brigadier-General W. G. H. Salmond, Commanding the Middle East Brigade, Royal Flying Corps, for his unfailing help. . ."

Dispatch No. 2, from Ramleh, dated June 15th, 1918 :—

"Towards the end of July, owing to the severe strain on both pilots and machines, of continuous operations under conditions obtaining in Arabia during the intense heat of the summer months, it became necessary to withdraw the Royal Flying Corps detachment from the interior to refit at Weih, and a month later the unit returned to Egypt after nine months of exceptionally arduous and valuable service in the Hedjaz. . . ."

"Early in November the last Turkish aeroplane remaining in Medina was brought down with rifle fire by the Arabs near Bir Nasif. The wrecked machine was, in fact, subsequently recovered by the enemy and returned by rail to Medina, but since that date no further aerial activity has been shown by the Turks south of Maan. . . ."

Dispatch No. 3, from Cairo, dated Dec. 27th, 1918 :—

"At the date of my last dispatch of June 15th the isolation of the enemy's Second Composite and Hedjaz Expeditionary Forces had been effected. . . . Since then the Turkish garrisons in the Southern Hedjaz, including that of Medina, were entirely cut off from communication with the outside world, with the exception of a single aeroplane dispatch, which reached Tebuk from the north about the middle of August. . . ."

The Punjab Rioting.

Before Lord Hunter's Commission, which is inquiring into the measures taken to repress the rioting in the Punjab last April, Lieut.-Col. Frank Johnson, D.S.O., who was in command in the Lahore civil district, gave evidence in respect to the numerous orders he issued, which have been the subject of strong criticism in the Indian Press. "There was much excitement at Lahore, and in the evening a crowd of some 6,000 people advanced to the telegraph office. The police had to fire to induce the crowd to return. The state of the city was such that no white man could enter it. The police had to evacuate it, and it was given over to the mob. On April 12th he was told to enter the city. He was supported by four aeroplanes. He previously made arrangements for two of the machines to fly as low as possible, and the pilots were instructed that if they received a pre-arranged signal they were to drop bombs 100 yards away from the head of his column."

The Afghan War.

The following telegram from India dated Dec. 15th has been received in London :—

On Dec. 10th the frontier constabulary at Gumatti, eight miles north of Bannu, were fired on by a gang which was successfully bombed and dispersed by aeroplanes.

Trouble on the Euphrates.

A semi-official statement issued on Dec. 19th says :—

The latest news from Deir-ez-Zor, on the Euphrates, is that the Arab forces are still in occupation of the town. Aeroplanes sent to reconnoitre the place were heavily fired on.

AIR FORCE.

An Echo of Loch Doon.

Mrs. Charlotte Tilke McAdam, of Craigengillan, Ayrshire, has raised an action to have it declared that the whole operation of the War Department in taking possession of her estate of Craigengillan in connection with the construction of the Loch Doon Aerodrome was unwarranted and illegal. Mrs. McAdam is claiming £150,000 compensation for damage done to the estate, where she states several picturesque spots have been destroyed.

Craigengillan is of considerable extent, and includes a portion of Loch Doon, where, in 1916, the War Department decided to establish a large school of aerial gunnery.

The Department, the plaintiff says, had no authority to carry out the undertaking, and the scheme was not designed to meet any emergency, but to provide a school mainly intended for use after the war. The Department professed to act under the Defence of the Realm Act, but this, she maintained, did not apply to this undertaking and conferred no warrant for the invasion of her property. The plaintiff also refers to the operations undertaken at Bogton and Bogton Loch, where she says £60,000 to £80,000 was spent, and the place was never used as an aerodrome.

The Lord Advocate, in defence for the War Department, states that in taking possession of the plaintiff's property they acted strictly under the Defence of the Realm Acts and Regulations, and of the prerogative rights of the Crown. The establishment of the gunnery school was necessary, and its future would have depended on the course of the war. Its abandonment was due to physical conditions which had not been anticipated by those advising the War Department.

After considering other sites the General Officer Commanding the Royal Flying Corps selected Loch Doon as best suited to his needs. The difficulties due to the boggy nature of the ground and those due to rocks were fully considered, and it was part of the scheme to drain the bog and to raise the level of the Loch. Owing to certain difficulties the original plans were in part departed from as the work proceeded, and the need of taking Craigengillan House arose later. It was with great reluctance that it was taken.

Lord Blackburn, before whom the action was raised, has, of consent, stayed procedure in the case meantime.

The First R.A.F. Cadets.

The following are declared by the Civil Service Commissioners to be the successful candidates at the competitive examination held in November, 1919, for Cadetships at the Royal Air Force Cadet College; but their admission is conditional on their having passed the medical examination. A table of marks will be sent to each candidate as soon as possible.

	Marks.
*Mills, George Holroyd	9908
Buttar, Charles Philip	9295
*Henslowe, Francis Arthur	9108
Huxham, George Herbert	9098
*Shepherd, Gordon Carruthers	9050
Barrett, James Bufney	8929
*Revington, Arthur Pethick	8872
Wilcock, Watkin	8687
Shortt, Ronald Graham	8673
Brook, William Arthur Darville	8485
*Porter, Nicolas Arthur	8263
Waite, Reginald Newnham	8249
Taylor, John Edward	7812
*Murphy, Terence Cyril Edmund	7402
*Stone, Ralph Ashinhurst Bird	7394
*Johnson, Sidney Holroyd	7257
Loch, Desmond Reginald	7131
Rowe, Frank Charles Thorn	7098
Boultbee, Henry Leonard	7093
Mangles, Roland Arthur Ross	7043
*Brown, John Redvers	7041
Muir, James Errol Ross	6871
Connolly, Sylvanus George	6865
Hayter-Hames, Noel Cecil	6810
Faithfull, Arthur Frederick	6797
Berridge, Thomas Donald	6707
*Combe, Gerard	6371
Boyd, Eric Alexander	6351
*Keightley, Charles Frederic	6347
Gay, George William	6320
Mackay, Malcolm Bruce	6308
*Whelan, Robert Darley	6302
Lindsay, Humphrey David Richard Pelham	6239
Martin, John Leslie	6016
Goss, Eric Oliver	5943
Pontifex, Rupert William	5811
Griffith, William Scott de Gorrequer Delmage	5778
*Kearon, Hubert Vernon	5771
Desmond, Thomas Joseph	5768
Fleming, Theodore Slade Singleton	5689
Mitchell, Frederick George Stewart	5686
*Davis, John Houston Alexander	5651
*Gore, Charles William	5643
Spicer, Geoffrey Hardy	5621
*Bernard-Smith, George Christopher Bernard	5490
*Cooper, Ralph Alexander Byrne	5438
Glenn, Robert William Lowry	5115
Hawtrey, John Gosset	5086
*Falconer, Colin Logan	5071
Hayter, Matthew Charles	5054
*Spaight, Robert Henry Seymour	4973
Cooke, Desmond Aubrey Robert Bancroft	4938
Springfield, Cecil Montague Oakes Osborn	4909
*Lacey, Ernest Vair Sleigh	4807
Watts, George Edward	4776

* These candidates have received 400 marks for military efficiency.

A Territorial Air Force.

It is reported that there is a movement on foot in Leeds to form a small voluntary reserve force in connection with the R.A.F. The Blackburn Aeroplane and Motor Co., Ltd., have offered their aerodrome at Brough for training facilities, and it is hoped that the aerodromes at Tadcaster and Sherburn can also be used.

The Traditions of the R.A.F.

The Chartered Accountants' Students' Society held their annual dinner in the Connaught Rooms under the presidency of Sir William Plender on Dec. 17th. Air Marshal Sir Hugh Trenchard was among the guests.

In responding for the Imperial Services, Sir Hugh said that many traditions had been built up during the war, and among them the air spirit had proved itself equal to the older spirit of the Navy and Army. As an example of this, he mentioned that when Mannheim was bombed by half a squadron of the Air Force and only one machine returned, the remainder of the squadron went up without orders and turned what at first looked like failure into a glorious victory. While the older Services looked to age to build up their traditions, the Air Service looked to youth. Great as was the necessity for economy in these days, the necessity for maintaining our naval, military, and aerial supremacy was still greater.

R.A.F. Rugby Football.

The R.A.F. played Swansea at Swansea on Saturday, Dec. 13th, with the following result :—

R. A. F., 2 goals, 10 points; Swansea, 1 dropped goal, 1 penalty goal, 1 try, 10 points.

This match at Swansea was played in a downpour of rain, which was fortunate for the R.A.F., as the ball was very slippery and extremely difficult to hold, and as the Swansea backs had the ball very frequently. The R.A.F. forwards played a capital game, and Damant, at full back, played his soundest game this season. Swansea were the first to score by means of a penalty goal, but shortly before half-time McLennan picked up and scored a well-deserved try near the corner flag, which Dalziell converted brilliantly. No further score happened before half-time. R.A.F., 5 points; Swansea, 3 points.

In the second half Swansea got a drop goal and another try, while Maxwell dashed over for the R.A.F. and Dalziell converted. Swansea battered away at the R.A.F. line but could not penetrate the defence, and so the game ended in a draw of 10 points each. Considering that over half the team had not played together before, and as it was the first game this season for at least five weeks, it was a very creditable performance.

The R.A.F. Team :—Full back, Flying Officer Damant; three-quarter backs, Squadron Leader Penny, Flying Officer Churchman, Flight Lieut. Scott, Flying Officer McLennan; half backs, Flying Officer Dalziell, Flight Officer Massey; forwards, Wing Commander Breese, Flight Lieut. Scroggs, Flight Lieut. Simpson, Flight Lieut. Usher, Flight Lieut. Cripps, Flight Lieut. Gray, Flight Lieut. Whitworth, Flying Officer Maxwell.

BRAZIL.

A Coming Visit.

The Brazilian Government have selected the Brazilian aviators, Señors Alzir Rodricues and Bento Ribeiro to proceed on a visit to England and the United States in order to view aviation works.

A Purchase.

It is understood that the Brazilian Government have bought 30 aeroplanes for the Brazilian army from France.

POLAND.

One is indebted to the "Daily Mail" of Dec. 9th for the following story :—

The first two British officers to be given commissions in the Polish Army are Lieut. J. F. D. Tanqueray, D.F.C., and Lieut. L. S. Woodhouse, Croix de Guerre. Both were in the Royal Flying Corps during the war.

Interviewed by a "Daily Mail" reporter yesterday, Rear-Admiral V. Kloczkowski, Naval and Military Attaché to the Polish Legation, said he believed Lieuts. Tanqueray and Woodhouse are at present in Warsaw; their services would be employed with the Polish Flying Corps. Over 100 applications had been received, many from officers with very distinguished war records on the Western front. Only 25 commissions will be given to British officers meantime.

Officers are accepted in the Polish Army in the rank they held in the British Army. The engagement is for six months' service, renewal in periods of three months, with 30 days' leave every year. Rates of pay are 500 marks monthly for second lieut., 600 for lieut., 800 for captain. The spending value of a mark in Poland to-day is nearly equal to that of a shilling in the United Kingdom.

[Surely this case comes under the Foreign Enlistments Acts?—Ed.]

U.S.A.

The following has been extracted from the official "Air Service News Letter," dated Nov. 25th, 1919.

Squadron Insignia Approved by the War Department.

SQUADRON INSIGNIA APPROVED BY THE WAR DEPARTMENT.

The War Department authorises publication of the following from the Operations Division of the General Staff :

The Secretary for War has approved the insignia for 44 airplane squadrons, submitted by the Director of Air Service. These insignia are for use only on planes and on baggage for the purpose of distinguishing the different squadrons, and will not be worn as shoulder insignia by individuals. They comprise the insignia used in the A.E.F. by the squadrons actually organised in France, which saw action at the front.

FIRST.—The American Flag.

EIGHTH.—A great American eagle, with the wings spread, holding the American Liberty Bell.

NINTH.—A silhouette showing the beams of three searchlights pointing upward and forming the numeral IX.

ELEVENTH.—A cartoon of Mr. "Jiggs" carrying a bomb under his arm.

TWELFTH.—The Twelfth's insignia is not given.

THIRTEENTH.—The figure of death depicted by a skeleton running at full speed with a bloody scythe in his hand.

SEVEVTEENTH.—The great snow owl flying through the air ready to pounce upon the enemy.

TWENTIETH.—Three legs in a circle arranged in pin wheel fashion comprise the insignia adopted by the Twentieth Squadron.

TWENTY-SECOND.—A number of stars in a ring with a large star with a tail, evidently a comet, superimposed, represents the 22nd Aero Squadron

TWENTY-FOURTH.—An American eagle pouncing upon the German dachshund which is running away with its tail between its legs.

TWENTY-FIFTH.—A cartoon of a masked headsman with an axe.



EXPRESS TRAVEL BY AIR

The remarkable reliability of the Airco machines which are running the Daily Air Service between London and Paris is shown by the following summary of flights and mileages:—

1. THE NEW AIRCO 16.

45 Flights were made during the first twelve weeks, with a total approximate mileage of 11,400 miles.

2. AIRCO 9B

37 Flights have been accomplished by this machine, covering an approximate total of 9,250 miles.

3. AIRCO 4A.

This well-known machine has successfully made no fewer than 95 flights between London and Paris during the first 12 weeks, covering a total distance of approximately 23,750 miles.

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TWENTY-SEVENTH.—Another form of the American eagle, superimposed upon a large round spot.

TWENTY-EIGHTH.—A painted American Indian looking to the left. Its headdress includes a single feather.

FORTY-FIRST.—An oval enclosing a scene in an African desert, a camel appearing in the foreground. This is superimposed upon the numeral V, showing that the squadron was one of the Fifth Pursuit Group.

FORTY-NINTH.—A snarling wolf's head within a circle.

FIFTIETH.—A silhouette cartoon of a Dutch woman similar to the one in "Dutch Cleanser" advertisement.

EIGHTY-FIFTH.—Winged Cupid with a campaign hat sitting on the top of the world.

EIGHTY-EIGHTH.—A bucking broncho, ridden by a cowboy, all within a circle.

NINETIETH.—Pair of bones: the lucky number, seven, is uppermost.

NINETY-FIRST.—A mounted knight in pursuit of the winged devil, whose blood he has already drawn by the lance.

NINETY-THIRD.—An Indian head similar to that of the 28th, but in the reverse direction and bearing two feathers instead of one.

NINETY-FOURTH.—The well-known "hat in the ring."

NINETY-FIFTH.—The familiar kicking mule, poised on its front feet, ready to deliver a blow.

NINETY-SIXTH.—The head and shoulders of a red devil, who prepares to launch an aerial bomb. This figure is placed on a white triangular-shaped background.

NINETY-NINTH.—A conventional American bison in silhouette..

ONE HUNDREDTH.—The 100th Squadron shows the devil riding on an aerial bomb in flight.

ONE HUNDRED AND THIRD.—An Indian head with a large war bonnet decorated with a swasticka.

ONE HUNDRED AND FOURTH.—Figure of winged sphinx, placed in a large circle.

ONE HUNDRED AND THIRTY-FIFTH.—The Statue of Liberty with the rising sun as a background.

ONE HUNDRED AND THIRTY-EIGHTH.—A charging goat under full speed about to pass through the numeral V.

ONE HUNDRED AND THIRTY-NINTH.—An outline figure of flying Mercury.

ONE HUNDRED AND FORTY-FIRST.—A great Bengal tiger playing with a German helmet and iron cross.

ONE HUNDRED AND FORTY-SEVENTH.—A cartoon of a rat terrier.

ONE HUNDRED AND FORTY-EIGHTH.—The head of Liberty in a circle.

ONE HUNDRED AND FIFTY-FIFTH.—The head of a large arrow pointed upward.

ONE-HUNDRED AND SIXTY-SECOND.—A silhouette map of the United States.

ONE HUNDRED AND SIXTY-THIRD.—A silhouette of a cat with one eye closed standing on a bomb.

ONE HUNDRED AND SIXTY-FIRST.—A grinning clown with a cap and ruff.

ONE HUNDRED AND SIXTY-SIXTH.—Includes the sun with a pair of wings made of the American flag. In the foreground is a map of Europe, with Germany distinctly marked, while a hand, armed with an aerial bomb, hovers over it ready to drop the bomb.

ONE HUNDRED AND SIXTY-EIGHTH.—A winged skull in a circle.

ONE HUNDRED AND SIXTY-NINTH.—An unusual hieroglyphic somewhat similar to the monogram CB.

ONE HUNDRED AND SEVEVTY-FOURTH.—A black alley cat on a fence, silhoutted against the moon.

ONE HUNDRED AND EIGHTY-FIFTH.—A silhouette of a bat within a circle.

ONE HUNDRED AND EIGHTY-SIXTH.—Not reported.

TWO HUNDRED AND THIRTEENTH.—The head of an American Indian facing the right with two feathers in his scalp lock.

TWO HUNDRED AND FORTY-EIGHTH.—A black cat wearing a broad grin and decorated with a large bow tie made of an American flag.

TWO HUNDRED AND FIFTY-EIGHTH.—Reproduction of a lion, apparently carved out of stone.

TWO HUNDRED AND SEVENTY-EIGHTH.—Not reported.

THREE HUNDRED AND FIFTY-FOURTH.—A witch mounted on a broomstick supplied with model airplane equipment.

THREE HUNDRED AND SEVENTIETH.—A triangle with a star in the centre.

FOUR HUNDRED AND EIGHTY-SIXTH.—A large star or comet, with six smaller stars in its wake.

SIX HUNDRED AND THIRTY-EIGHTH.—A half-starved cat superimposed on the the numeral V, signifying the Fifth Pursuit Group.

ELEVEN HUNDRED AND FIFTH.—A winged elephant.

TWENTIETH.—An anarchist, ready to throw bombs.

EIGHTY-NINTH.—The front view of an American eagle in full flight.

A False Alarm.

It was reported on Dec. 20th that the Naval flying-boat N.C.4 (Lieut.-Comdr. A. C. Read) was several hours overdue. N.C.4 was engaged on a non-stop flight from Galveston to Mobile (Alabama). On the following day it was announced that the flying-boat was not missing but merely fog-bound at Grand Island, about 120 miles south-west of Mobile.

SUMMARY OF FOREST PATROL OPERATIONS, SEASON 1919.

The following summary of the work of the Forest Patrols operated from various aviation grounds of the U.S. Army is of interest:—

	Rock. 6/1-9/7	March. 6/1-9/7	March. 9/7-10/31	Mather. 6/1-9/2	Mather. 9/2-10/31	Red Bluff. 8/31-10/31	Fresno. 8/28-10/31	Oregon 8/1-10/8	Total.
Distance Covered.	36,854	46,291	22,252	31,128	16,530	29,239	19,709	33.715	235,724 miles.
Flying Time	410 hrs.	466 hrs. 56 m.	265 hrs. 54 m.	452 hrs. 56 m.	270 hrs. 34 m.	340 hrs. 39 m.	254 hrs. 26 m.	411 hrs. 24 m.	2872 hrs. 49 m.
Fires Discovered.	24	75	72	85	70	107	9	128	570
Accidents Involving Major Repairs,	0	3	0	1	0	2	0	2	8
Fatalities.	0	0	0	0	0	0	0	1	1
Airplanes used Daily.	2	3	2	2	2	2	2	2	17

THE CATTEWATER OLD BOYS CLUB.

The first meeting of the ex-officers and men who were stationed at the Seaplane Station, Cattewater, Plymouth, during the war was held at the Holborn Town Hall on Dec. 3rd in order to elect a committee to deal with all future dinners, reunions, etc., of this Club. Over 150 members were present, and it was decided to call the club "Cattewater Old Boys." The following Committee were then elected:—President, Mr. A. T. Sketchley, late Captain R.A.F.; secretary, Mr. Bosher; Mr. Kalber (late Lieut), Mr. Murphy (late Lieut.), Mr. Reid late Capt.), Mr. May, Mr. Ogle, Mamstree, Mr. Balch, Mr. Courtneidge. The first dinner will be held in London at the end of January. All members who were at Cattewater during the war are asked to send their names and addresses to Mr. Bosher, 33, Langdon Road, Junction Road, Highgate, N.

A PROBLEM.

The "Evening News" states that a correspondent at Wembley sent to the office of the paper a sample of washing "spattered all over with oil from the sky. The complete list of casualties was: 1 sheet, 1 vest, 1 white shirt.

"The problem is: Who is liable for the damage? Men learned in the law have been consulted. Some say the pilot is responsible, some say the owner of the machine, and others declare the maker of the engine should stand the racket.

"Until the Courts have fought it out the lawyers may well chuckle to themselves, 'It's an ill wind, etc.'"

One does not wish to appear unsympathetic, but one would point out to the owner of the washing that the cheapest and simplest course is to have the items re-washed unless he can sell them to a museum as souvenirs of Zeppelin raids.

HALF-WAY ROUND THE WORLD on "SHELL AVIATION" Motor Spirit.

Cable just received from the hero of the Great Australian Flight:—

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AIRCRAFT IN PARLIAMENT

HOUSE OF LORDS.

THE DOUGLAS-PENNANT INQUIRY.

On December 15th LORD HYLTON, Captain Yeoman of the Guard, moved that the report of the Women's Royal Air Force Inquiry relating to Miss Douglas-Pennant's charges be considered, in order to give noble lords who wished to speak on the matter an opportunity of doing so. He hoped their lordships would not think him presumptuous if he added that he felt the whole House had watched with admiration the patience and dignity with which Lord Wrenbury conducted the business of the Committee during its protracted sittings.

EARL STANHOPE said he desired to make a statement of an entirely personal nature. On the second occasion on which he brought the question of Miss Douglas-Pennant's dismissal from the W.R.A.F. to the notice of the House, July 30th, he made the statement, referring to scandals in the force :—

"I will give your lordships only one instance, and that is an instance in connection with which I have seen nearly the whole of the evidence and spoken to several of the witnesses." At the time he made that speech he was receiving statements with respect to the conduct of the Women's Air Force generally. The impression left on his mind in regard to the particular instance referred to was that he was justified in using those words. He was now convinced that he was not so justified, and he could only express his profound regret to the House for having made the statement.

In regard to his more general statements about grave irregularities, those were based on information which he considered trustworthy; but he now desired, so far as he was concerned, unreservedly to withdraw any imputation against individuals which might be contained in what he said.

Their lordships would do him the justice to remember that he had never at any time joined in making charges of immorality against the Women's Air Force. There were many thousands of women in that Force, and such a charge would be as absurd as it was grossly untrue. There was, however, one statement to which he ought particularly to allude.

His statement on July 30th contained a specific allegation of immorality against certain people. He desired to withdraw that statement and allegation unreservedly; and in doing so to apologise to their lordships for having made it.

There were others to whom he desired also to apologise. In making his statement he mentioned no names, but in the course of the inquiry names were necessarily made public. He desired therefore to apologise to Colonel Janson and Miss Glubb for having made any allegation against them. He had already communicated with their respective solicitors apologising for his statements, and had paid the whole of Miss Glubb's costs in connection with the inquiry.

He regretted that on the several occasions he brought this matter before their lordships he made statements that were inaccurate, and therefore misleading, and he trusted their lordships would realise how sincere was the apology he made.

EARL CURZON, Secretary of State for Foreign Affairs, said the House had listened with sympathy and respect to the obviously sincere apology offered by the noble earl. He did not desire to add to the difficulty and delicacy of the noble earl's position, but his personal explanation did not dispose of the case, because it was their lordships' House which by an almost overwhelming majority assumed a special responsibility in this matter; and it was fair to the House of Commons to recognise that it showed a juster perception of the character of this case than did some of their lordships.

In a short account of what had taken place he reminded the House that Lord Ampthill, who, he said, was far ahead of his colleagues in imputation, declared that the answers on the case given from the Government bench were wholly evasive and inaccurate. The solemn warning given by the Lord Chancellor on May 29th that their lordships in setting up a judicial inquiry would be taking a step which would lead to nothing but disaster and failure was ignored.

The Government declined to grant the inquiry, but subsequently a motion for the appointment of a Select Committee was carried in their lordships' House by 69 to 42. He thought then, and most of their lordships now thought, that a profound mistake was then made. But they were fortunate in obtaining the services of Lord Wrenbury as chairman of the Committee, and the tribunal over which he presided was an able and impartial tribunal.

The Committee's unanimous report stated among its findings that Miss Douglas-Pennant's charges of obstruction were not substantiated and that the accusations of immorality were wholly unsupported by evidence. It came, then, to this, that the charges which were so recklessly flung about, and had not spared authority, position, or sex, had completely broken down. Not one of the imputations made was sustained, and rarely, if ever, had there been an attack made by responsible persons which rested upon such flimsy foundations, and seldom, if ever, had such an attack, if delivered, met with such complete exposure and refutation.

He passed to the particular question to which Lord Stanhope had referred, not in the least degree with any idea of adding to the feelings of natural mortification and self-reproach to which the noble lord had just given expression; he mentioned it only because it had a wider implication and meaning. The main reason why their lordships had acted as they had was that they relied implicitly upon the character and statements of a noble lord possessing the reputation which Lord Stanhope enjoyed.

He could not help alluding to the passage in the Committee's report which related to the charge concerning the relations of a military officer and a young lady. The noble lord, he thought, committed a grave error in sheltering himself behind the privilege of their lordships' House.

A young lady was left to lie for months under the cloud of a disgraceful charge. She was compelled to submit to the indelicacy of a medical examination, she was subjected in the witness-box to a most dishonouring cross-examination by counsel for Miss Douglas-Pennant, and it turned out in the end, as the noble earl had asserted, that he had not seen a single witness, and he did not even know who told him.

As to the general charges of immorality at Hurst Park, they were equally deplorable, and they turned out to be equally unfounded. That such charges should have been made, based upon such evidence or lack of evidence, was proof of the length to which in this case recklessness and malice were allowed to go. Let their lordships remember that the Committee was set up not to consider charges of immorality, specific or general, although the victims of those charges were the persons who suffered most.

Scarcely anybody who could be brought within the purview of this matter was spared. The most wounding charges were made against ladies such as Lady Rhondda, Dame Katharine Furse, against eminent politicians, such as Sir Auckland Geddes, and against distinguished soldiers, such as General Bruncker.

If those charges had not been made under privileged conditions Miss Douglas-Pennant would have been answerable in damages and costs to a sum amounting to many thousands of pounds. As it was, the total expenses to the State in connection with this case would amount to over £10,000, of which only £220, the cost of the shorthand writers, could be charged upon the vote of the House of Lords.

Such was the financial consequence of this procedure. He failed to see any single compensating advantage. He hoped no lord who would speak after him would endeavour to make the point that the Committee was justified because of the complete exposure of the charges made, because that would be tantamount to saying that charges had only to be made sufficiently scandalous and sufficiently numerous in order to justify their lordships in setting up a Select Committee to inquire into them.

He would like to say one word as to the position in the matter taken up by their lordships' House. He was convinced that their lordships acted from perfectly honourable motives, and led by those motives they took the law into their own hands, and three times rejected the advice offered them by responsible Ministers of the Crown. They acted no doubt in the interests of justice, but they undoubtedly gave the impression—this was not the least unfortunate aspect of the case—that they were doing for one connected with their order what they would have been less eager to do for one of a humbler station. He did not say that was a just impression, but they had only to look at the papers to see that that impression existed.

The result of it all was that a large sum of public money had been expended, an immense amount of personal suffering had been caused and most inadequately compensated by the vindication that had been received, and a precedent had been set up which he agreed with the Committee in saying that they earnestly trusted would not form a precedent ever to be followed again. He thought this experience would lead every one of them to be less quick and impulsive in their suspicions, more moderate in the censures that they sometimes were too ready to pass upon public servants, more scrupulous in the evidence they required in support of charges of a very defamatory character, and, above all, more careful as to how they set in motion the great prerogative which, as the Upper House of Parliament in this country, they enjoyed.

The MARQUESS of SALISBURY said all their lordships respected Earl Stanhope for the very ample words he used in respect of the misinformation which he gave the House. But Earl Curzon was not content with speaking on that apology and the report of the Committeee, he also found considerable fault with their lordships' House for the action which the majority saw fit to take.

After all, the Prime Minister himself said an inquiry ought to be held. Although he (the Marquess of Salisbury) did not vote for the inquiry, it was fortunate that the suspicion which the previous history of this question had engendered was cleared away.

Earl Curzon had also reproved their lordships. That was an unusual thing for a member of the House to do. What the majority decided was generally accepted and submitted to.

He regretted that the noble earl should have suggested that in connection with any action which the majority of their lordships' House took there was a suspicion abroad that they would not have so acted if the lady in question had not been connected with themselves. He characterised such an impression as absolutely false. There was not a member who voted with the majority who was not inspired with the pure desire to see justice done.

* * *

HOUSE OF COMMONS.

Dec. 16th.—The following oral answer was given :—

ARMISTICE CONDITIONS.

Mr. CHURCHILL, replying to Brig.-Gen. Croft, said that Germany had handed over 5,000 guns, 25,000 machine-guns, 3,000 trench mortars, and 1,700 aeroplanes in accordance with the terms of the Armistice. These were the numbers laid down.

Dec. 17th.—The following written answer was given :—

MANSTON PARK STATION, MARGATE.

Mr. CHURCHILL, replying to Sir H. Nield, said that land at Manston Park belonging to Mr. J. Proctor was taken under the Defence of the Realm Regulations. It is proposed that this station shall be permanently retained for the R.A.F. This decision has only recently been made and is subject to Treasury sanction. Any question of the owner sustaining loss can be discussed in the course of the negotiations which must take place when the Ministry is in a position to take final action.

A Memorial.

It is proposed to build a Memorial and Thanksgiving Church at Billericay, Essex, where Major Sowrey, D.S.O., brought down an enemy airship, in the raid of Sept. 23rd, 1916. A site has been presented and a fund started, contributions to which may be sent to Messrs. Barclay and Co., Billericay, Essex.

Palmers in the £10,000 Flight.

After giving all due praise to the magnificent performance of pilots and mechanics in this epoch-making flight, a word or two should be said for the landing gear that made this performance possible, necessitating as it did halts at improvised aerodromes and landing grounds between London and Australia.

The "Vickers-Vimy" was fitted with four 900 mm. by 200 mm. Palmer landing wheels, or to put it in language better understood by the man in the street, four wheels shod with Palmer Cord Tyres three feet high and eight inches cross section.

All landings on this long flight were made without a single hitch, the various stages being reeled off with clocklike precision.

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GREAT BRITAIN.

The Customs at Hounslow.

The Air Ministry announced on Dec. 19th that Customs officers will not be in attendance at Hounslow between Dec. 25th and 28th inclusive. Steps have been taken, however, by which their attendance can be arranged for on short notice. Owners or pilots of aircraft who desire to obtain a clearance to or from the Continent on these days should give notice to the Civil Aerial Transport Officer at Hounslow, at least one hour before the attendance of the Customs officer is required.

THE CONTINENTAL AIR SERVICES.

The Airco Service.

From Dec. 15th to Dec. 18th the weather was officially reported to be totally unfit for flying, and no machines left Hounslow or Le Bourget on the Airco service.

On Dec. 19th the weather was better, and Lieut. Powell piloting a D.H.9, left Hounslow at 12.41 p.m., with one passenger and the mail. The passenger was dropped at Lympne at 1.05 p.m., having been flown from Hounslow at 168 m.p.h The machine arrived at Le Bourget at 2.20 p.m.

On the journey from Paris, Lieut. McMullin and Lieut. Campbell Orde, both piloting D.H.9s, left Le Bourget at 12.30 p.m. with the mail and parcels, and having encountered very bad weather over the Channel, landed at Lympne at 4.10 p.m. The mails and parcels were conveyed to London by train.

Owing to adverse weather conditions no machines left Le Bourget or Hounslow on Dec. 20th.

The Inquest on Lieut. Bradley.

A verdict of accidental death was returned on Lieut. S. B. Bradley at Croydon on Dec. 17th. He was the pilot of the Airco machine which crashed at Caterham on Dec. 11th, as noted in last week's issue of THE AEROPLANE.

R.34 and R.39.

It is learnt from a private source that the Scottish-built rigid airships R.34 and R.39 have been sold to a private English aeronautical company for use as commercial air vessels. Since the termination of the Transatlantic flight on July 13th of this year, R.34 has been lying in her shed at East Fortune, and has since only taken the air for a short time. The famous observation ship R.29, which occupied the same shed at the station, has been dismantled and broken up.

R.39, which is being built at a factory in the West of Scotland, will, on completion, leave for Pulham, Norfolk, along with R.34, where both, after final trials, will be reconstructed for passenger and goods-carrying. The sale was effected as a result of Mr. Churchill's speech in the House of Commons on Dec. 16th, when he stated that all British airships were to be sold for commercial use. The Naval Authorities will have, however, first claim on the use of the vessels in case of necessity.

BROOKLANDS.

A correspondent writes :—

There has been a slight increase in the amount of flying done at Brooklands during the past week. Machines taking the air were "Vimy" commercial and bombing machines, Mr. W. G. Chapman's 90-h.p. Curtiss D.H.6, one or two Sopwiths of various types, various Martinsyde F.4s and "A" machines, and the Vickers "Viking," amphibian, on which the late Capt. Sir John Alcock, K.B.E., D.S.C., crashed, and which he was testing at Brooklands. The flying-boat hull of this machine was unmistakable in flight. The machine appeared to be flying satisfactorily and to have a fair speed.

Great gloom prevailed at the Weybridge works of Vickers, Ltd., after the hearing of the news of the death of Capt. Sir John Alcock. He was greatly esteemed, respected, and admired by the workpeople, and was a familiar figure at the factory. It was reported that the "Viking" was in perfect flying condition when he left Brooklands for Paris, and that it appeared to be flying well as it left the aerodrome.

LEEDS.

Commander J. L. Cope, B.A., F.R.G.S., F.Z.S., who is to command the British Imperial and Antarctic Expedition to start from England in June, 1920, is taking with him a Leeds-built Blackburn "Kangaroo." The machine has already been bought and removed from the city.

The coming expedition, which, it is expected, will extend over five years, is the first on which an aeroplane has been taken. It will be carried to the last permanent winter quarters, whence trips will be made in the direction of the Pole in order to report on the conditions. As the party advance, food and other necessaries will be carried by this means from the base.

NEWCASTLE.

A correspondent writes :—

The City Council here are having plans prepared for sites for new aerodromes in two different localities, one at Kenton Road, one mile west of Moor Aerodrome, and second at Denton Road, two miles west of Moor Aerodrome. Meanwhile, all aviators are using Town Moor Aerodrome.

The Berkshire Aviation Co. started taking up passengers at Newcastle on Dec. 8th, and finished on Dec. 22nd, when they went to Edinburgh to give another "Flying Week." They are one of the only firms in Great Britain to continue taking up passengers in the winter. Glasgow will be visited after Edinburgh.

Their motto is :—

"Rain, Shine, Snow or Blow,
Pay your Quid and up you go."

SHEFFIELD.

Capt. C. A. Lewis, M.C., of the aviation department of Vickers, Ltd., has drawn up for the Sheffield Development Committee a suggested scheme for the establishment of a daily air service between Sheffield and London. Two aeroplanes would fly from Sheffield to London in the morning and two others would fly from London to Sheffield in the afternoon. At a cost per passenger per journey of £8, the undertaking would, it is estimated, yield 10 per cent. on an approximate capital outlay of £50,000.

AUSTRALIA.

Reuter telegrams, dated Dec. 20th, state that Capt. Ross Smith, on his flight across Australia, was obliged to land at Anthony's Lagoon, owing to a broken airscrew. This was repared, and he expected it to last until he reached Sydney.

He was next reported at Camonweal, and reached Cloncurry (Queensland) on Dec. 20th. The distances of Anthony's Lagoon, Camonweal, and Cloncurry, north-west of Brisbane, are approximately 1,300, 1,090, and 930 miles.

Flights from Tasmania.

The Bass Straits which separate Tasmania from Australia were flown across for the first time on Dec. 15th by Lieut. Long in an Alliance aeroplane. A few hours later a Sopwith machine arrived in Tasmania from Melbourne.

NEW ZEALAND.

A correspondent writes from Wellington :—

Aviation yet is in its infancy here, but soon it is hoped that both the Government and private firms will get busy. The climatic conditions of the Dominion are dead against aviation, and so it is extremely probable that the fight for supremacy will be most interesting and exacting. The continual gusty winds and the mountains afford no help to aviation.

It is believed that an important commercial venture is shortly to be started in New Zealand. A concern, which will form part of, or be connected with, the Larkin-Sopwith Company of Australasia, intends to begin operations. The headquarters will probably be at Auckland, where a flying school already exists, but aerodromes will be built in all the main centres. The company proposes to sell machines, institute flying lines, and undertake commercial flights, etc.; in fact, its operations will embrace everything practicable from a commercial aspect.

Passenger services will be instituted between all the principal cities. The main lines will, no doubt, be between Wellington, the capital of New Zealand, and Auckland, and Wellington and Christchurch and Dunedin. Auckland and Christchurch are the only two centres where aerodromes exist at the present time; and, in both cases, they are the sites of flying schools. Seaplanes are mostly used at the former city.

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And may every reader of "The Aeroplane"—every customer of ours, past, present, and prospective—share in that merriment and find therein a joyful pause in the arduous round of everyday activities.

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Wellington will be a very hard nut for the company to crack. It is centrally situated and the leading seaport of the Dominion, but it is very windy and surrounded by hills. The aerodrome is likely to be situated at one of the bays, providing the ground can be obtained, or at Miramar or Trentham. But at all these places the difficulties which have to be overcome are very great.

The line between Wellington and Christchurch lies over Cook Strait, a narrow strip of often very treacherous sea. The Auckland-Wellington run is over land the whole way. Landing grounds will be very scarce, however. At present, the Air Adviser's report is anxiously awaited for.

Lieut. D. C. Inglis, D.C.M., of Christchurch, will be prominently connected with the running of the New Zealand concern. Lieut. Inglis left New Zealand with the "Main Body," and gained the Distinguished Conduct Medal on Gallipoli. After service in France he transferred to the Royal Air Force and served for some time in France in a fast scout machine.—C. H. B.

THE WEST INDIES.

The Latin-American Division of the Bureau of Foreign and Domestic Commerce has announced that an English aviation company known as the Bahamas and West Atlantic Avro Co., Ltd., has been incorporated recently under the laws of the Bahamas.

The company plans to establish a commercial and passenger air service between Nassau and Miami (Florida) in January, 1920. The service will ultimately be extended to other West Indian islands.

BRAZIL.

According to the monthly bulletin of the British Chamber of Commerce in Brazil, dated Oct. 31st, the preparations of Handley Page, Ltd., for instituting public air services in various Brazilian zones, and starting with a service from Rio de Janeiro, south to Pelotas (Rio Grande do Sul), are at an advanced stage.

CUBA.

Fifteen million dollars is to be appropriated by the Cuban Government to the purchase of aeroplanes and airships to establish aerial mail and passenger services to the United States and other countries.

The Third Pan-American Aeronautic Congress is to be held at Havana from Feb. 21st to March 1st, 1920, inclusive, and over 25,000 dols. will be awarded in prizes to the aviators participating in the aerial contests.

Mr. Hannibal J. de Mesa, the President of the new Aerial League of Cuba, has bought two 16-passenger and four 3-passenger aeroplanes in France for the purpose of establishing an aerial transportation line between Cuba and different cities in the United States.

An organisation known as the Aerial League of Cuba has been founded with the co-operation of the Aerial League of America, with which it is affiliated, and the Aero Club of America. The Honorary President of the League is His Excellency General Mario G. Menocal, President of Cuba. As above, Mr. H. J. de Mesa is the President

DENMARK.

The Handley Page Tour.

The Handley Page aeroplane piloted by Capt. Stewart and Capt. Gran which flew from London to Denmark last summer has just concluded a number of demonstration flights in Scandinavia. The weather conditions met with were somewhat trying for aviation, as the country abounds with mountains and lakes, which fill the atmosphere with "lumps" and cross currents, apart from the difficulties such landscape presents in the event of forced landings.

On one occasion two snow ploughs had to be utilised to clear the ground before the machine could "take-off," and when it did start to run across the ground the slip stream from the airscrews sent great showers of snow seven feet high.

The machine gave exhibition flights at Copenhagen, Arrhus, and Christiania, where 454 passengers were given flights, including officials from the Legation. Great interest was taken in the aeroplane by the inhabitants and the flying officers stationed near Denmark. The latter had only a few Henry Farmans and Avros, and they were astounded when Capt. Stewart took an Avro up and carried out a few "stunts." Stunting is not a widespread art in Scandinavia, and Capt. Stewart on landing after a flight in which he mildly stalled the Handley Page, was enthusiastically congratulated on his excellent "loop."

FRANCE.

The Paris-Melbourne Flight.

After three ineffectual starts, owing to fog, M. Poulet left Rangoon at 8 a.m. on Dec. 8th, with the intention of alighting at Moulmein and thence proceeding to Bangkok. His engines were thoroughly overhauled at Rangoon.

When he had covered 100 miles and was flying at an altitude of more than 3,000 ft. above the mountains of Siam, a flight of vultures was encountered. One of the birds struck the right airscrew which broke, and a disaster was only narrowly avoided.

He made a successful landing in the mountains, and fitted a new airscrew, which he carried slung in his undercarriage. M. Poulet then returned to Moulmein, where he landed in the middle of the night.

The "Intransigeant" has opened a subscription for M. Poulet. The names of some of the most famous aviators of France are on the list, which totalled on Dec. 17th, over 5,000 francs.

Another Record.

A Reuter message from Paris, dated Dec. 26th, stated that Lieut. Roger, with two passengers, on that day reached an altitude of 6,000 metres, notwithstanding the fact that he had to fly through a dense fog during the first 4,000 metres. This is claimed as a record for altitude. The previous record was claimed by M. Poulet, who reached an altitude of 5,420 metres.

GERMANY.

The Handley Page machine piloted by Capt. Herne and Capt. Davis, which is flying to Warsaw, has continued its journey from Berlin, and reached Posen. The machine has created considerable interest, and in some cases alarm, among the German villagers, who are puzzled by the British marking and the unfamiliar appearance of the machine, which is not so well known there as in the Rhine provinces, to which it paid frequent bombing visits during the war.

HOLLAND.

At the beginning of next year, besides the aviation routes to be opened in Holland with connections to the South, there will be services between Holland and Germany, and Holland and England. It is also hoped to establish a service to the Dutch East Indies. The contracts for the service to England and probably for the Dutch East Indies have been given to British firms.

ITALY.

The Italian correspondent of THE AEROPLANE writes:—

The Federation of Aero Societies.

On 7th inst., at Milan, the Federation of Italian Aeronauts was formed for the purpose of uniting all those in any way engaged in aeronautical enterprise. The Turin "Association of Aviators and Aeronauts" joined the Federation en bloc, and steps were taken to approach the other existing societies on the matter. The Secretary of the National Aerial League also assisted. The Federation aims at being purely civilian.

A Successful Trial Flight.

The two Ricci Bros. of Naples send me news of their large seaplane, a three-engined 800-h.p. affair which began its trials on the 12th inst in the Bay of Lucrino, Naples, where the I.A.M. works are. The machine, not at full load, but with a useful cargo of 1,000 kilograms, reached a speed of about 170 the hour, considered quite good for a trial flight. It is



GERMANY'S RIGHTEOUS PRIDE.—The sketch, from "Luftpost," depicts a passenger in the new commercial Zeppelin "Bodensee," saying "*Prosit*! The country which produced such technical skill can never go under!"

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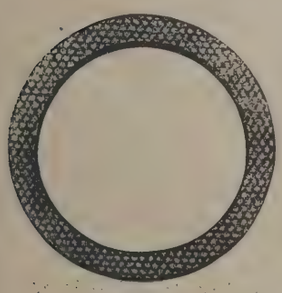
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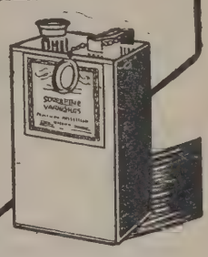


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intended to carry 15 passengers and a good lot of post or cargo. I understand the pilot was Bornancin, of Pordenone.

The Government Competition.

It is stated by a Southern paper that 2,000,000 lire is the prize money that the Government intends to offer for the best results in the Small Machine and Large Seaplane Concours which it is promoting. There would be, according to the journal, about 11 months' grace before the machines have to toe the line before the awful judges.

For the Tokio Flight.

A Caproni triplane preparing for the Tokio flight left Milan and reached Rome in 3½ hours, piloted by Lieut. Abba, one day last week.

Next Year's Grand Prix.

The Grand Prix of the Italian Aero Club and Italian Aviation Society is to take the following lines this next year: A contest for very small single-seater flyabouts, ditto for fast machine carrying pilot, passenger and having fuel capacity of about 500 kilometres, and a competition for machines with large weight carrying properties which must fly with at least a third of their h.p. out of service. By desire of the club's trade members these competitions are to be international. In the two first the greatest speed range will be accounted specially praiseworthy.

The Mail Service to Greece.

The Government has reminded Greece of the Postal Service Contract obligations signed between the two countries some long while back and noted in these columns. One believes the reminder refers to the Corfu Airport. The other end is that at Brindisi.—T. S. H.

POLAND.

The London-Warsaw Flight.

Capt. E. D. C. Herne, the pilot of the Handley Page biplane which successfully flew through Germany, telegraphed to Berlin on Dec. 20th that he had arrived safely at Warsaw in a blinding snowstorm.

SWITZERLAND.

The Italian correspondent of THE AEROPLANE writes:—

German Machines.

A Zepp.-built machine with eight people on board flew from Neuchatel to the opening of the Geneva Airport ceremonies. One understands this machine was one of the 20 sold recently to a Swiss company and that they have two 270-h.p. engines. The Ad Astra firm have four ex-military pilots to fly these machines.

The Geneva-Lausanne Service.

The Geneva-Lausanne passenger service costs 75 (Swiss) francs each way and 130 francs for a return ticket. The craft used are three-seater S.I.A.I. waterplanes.—T. S. H.

Civil Flying.

When the winter sports are in full swing there will be on special occasions an aeroplane passenger service between Zurich and St. Moritz. At Lugano and elsewhere civil flying promises to be very popular.

The military aviation authorities are helping the private firms very greatly, and the military aerodrome at Dübendorff, near Zurich, is to be placed at the disposal of civilian flying.

Flying weeks have been arranged near many of the chief towns, and, in order to popularise flying, lists of recent civilian passengers are posted in the streets of Berne and other cities.

The Conditions.

There are many difficulties to face in flying in Switzerland. The available spaces for landing are very small, and the thinness of the atmosphere at possible fields on the higher slopes of the mountains makes landing a precarious business, as the machine must be "put down" at a speed far above its normal landing speed, or a "pancake" will result.

Landing would not be difficult in the long level valleys, but most of them are spoilt for flying purposes by telegraph and telephone wires.

Developments.

A new aerodrome of which great things are expected is being constructed at Thun on the shores of the lake. A considerable number of machines are being built in the factory at Thun, including the Ilaefeli D.H.5.

UNITED STATES OF AMERICA.

The Boom of Civil Aviation.

The Special Commission to Organise the First Aerial Race around the World have issued a report on the numbers of aeroplanes sold for civil purposes throughout the United States this year.

This Commission was appointed by the Aero Club and the Aerial League of America, and includes as members, Mr. Louis D. Beaumont, the President of the Commission; Mr. Alan R. Hawley, the President of the Aero Club; Mr. Henry Woodhouse, the Vice-President of the Aerial League; and Major Charles J. Glidden, who is the Executive Secretary of the Commission.

They have travelled to numbers of towns in the United States and obtained the available data of the present and prospective aeronautic activities. In Chicago alone 380 aeroplanes have been sold since June, and in the cities so far visited nearly 1,000 have been sold. These machines are used for passenger and goods-carrying.

The "Aerial Age" states that the Commission was told that people were unable to buy aeroplanes, as the manufacturers could not deliver fast enough, and could not supply large multi-engined aeroplanes or flying-boats. Also, the aeroplane dealers in the cities stated that they could have sold ten times the number machines they were able to obtain.

The paper also states that in some places large automobile dealers have taken up the aeroplane business and stated their readiness to place orders for 100 machines of each type for next year. One dealer who bought 100 aeroplanes last June sold them all within 60 days and then bought 40 more, which he sold, and could dispose of 200 more if he could get deliveries. A Chicago dealer sold 750,000 dols. worth of aircraft parts and supplies.

Now that the military restrictions are removed a great aeronautic boom has started which has practically no limit except a possible failure on the part of manufacturers to provide suitable aircraft in large enough numbers.

Commodore Beaumont, Major Glidden, and Mr. Hillman, of the Commission to Organise the First Aerial Race round the World, were to sail for Japan and travel through 32 countries organising this competition.

Cross-Country Flights.

A schoolboy and his mother were flown recently in a Curtiss "Oriole," fitted with a 150-h.p. K.6 engine from Houston, Texas to Mineola, Long Island, a distance of 2,500 miles. The journey was started on Sept. 28th, and Mineola was reached on Oct. 7th, after a three days' stop at Binghampton, owing to fog. The "Aerial Age" states that the flying time was 19 hr. 45 min., and only 36 gallons of petrol were used. The cost of the journey, including all expenses—hotels, meals, etc.—was less than 275 dollars, of 3 2/3 cents per mile per person.

Mr. Emery H. Rogers, the manager of the Syd Chaplin Aircraft Corporation, recently established a new record by flying from San Francisco to Los Angelos (538 miles) in 4 hours 8 minutes with one passenger. The machine used was a Curtiss "Oriole" (K.6 150-h.p. engine).

The Lawson air liner started on its voyage from Mineola early in September, and having stopped at Cleveland, Buffalo, Syracuse, Mineola, Washington, and Connellsville has arrived at Dayton, Ohio, a total of some 1,800 miles. The machine is to continue to St. Louis. Ten to 20 passengers have been carried on various stages of the flight. According to the "Aerial Age" of Oct. 13-20th, in one of the first trial flights one of the engines was stopped immediately after taking off and the machine climbed to 11,000 ft. with one engine alone.

The four-engined Handley Page biplane which was intended for the trans-Atlantic flight and recently flew from Parrsboro, N.S., to Greenport, L.I., was flown over New York City on Oct. 13th.

An Aerial Mail Service Project.

The Governor of Puerta Rico is endeavouring to obtain Federal aid in a mail carrying project between that place and St. Thomas. The mail is now carried by slow sailing vessels, and although the distance between the two islands is only 30 miles, the mail takes more than 24 hours to get across. A flying-boat could make the journey in half an hour.

It is also planned to open up an aerial mail service to Hayti.

In connection with the great sugar fields aeroplanes would be very useful for the use of supervisors in trips over the plantations, many of which cover thousands of acres. These inspections now take many hours by motor-car, and the roads are not good.

With an aeroplane it will be a matter of minutes where it is now a question of hours. Aerial views from time to time will give a splendid idea of crop conditions for the use of the sugar companies.

Replanting Forests by Aeroplane.

The Forestry Service has been urged by a representative to start a reforestation programme for the fire-denuded areas in the Sierra Madre range by using aeroplanes to scatter millions of tree seeds over these mountains as soon as the rainy season begins.

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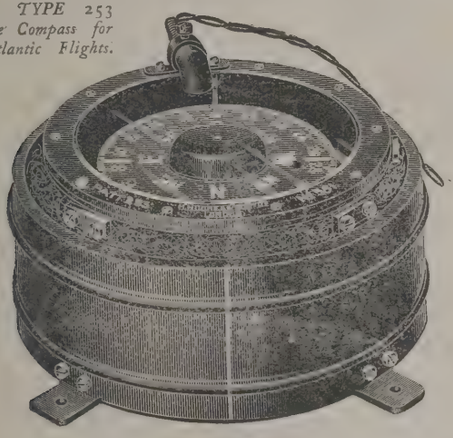
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MILITARY.

WAR OFFICE, Dec. 15th.

REGULAR FORCES.—OVERSEAS FORCES.—CANADA.—Can. Forestry Corps.—Temp. Lt. D. Neil ceases to be secd. to the R.A.F., Sept. 3rd (substituted for "Gazette" notification, Aug. 2nd, p. 9953, incorrectly specifying date as July 14th).

WAR OFFICE, Dec. 16th.

REGULAR FORCES.—R.F.C.—Mil. Wing.—Equip. Officer, 3rd Class.—Temp. Sec. Lt. A. F. Nethey, Gen. List, Oct. 29th, 1917.

MEMORANDA.—Col. the Rt. Hon. J. E. B. Seely, C.B., C.M.G., D.S.O., T.D., T.F., relinquishes the temp. rank of Maj.-Gen. on ceasing to be specially empld., Jan. 13th.

Sec. Lt. W. L. Rennie (attd. R.A.F.) retires, receiving a gratuity, Dec. 17th.

TERRITORIAL FORCE RESERVE.—Col. (temp. Maj.-Gen.) Rt. Hon. J. E. B. Seely, C.B., C.M.G., D.S.O., T.D., from Active List, to be Col., and is granted the hon. rank of Maj.-Gen., Dec. 17th.

WAR OFFICE, Dec. 16th

The King has been pleased to approve of the following rewards being conferred on Officers and other ranks of the Royal Air Force in recognition of gallantry in escaping from captivity while prisoners of war :—

BAR TO THE MILITARY CROSS.

Lt., T./Capt. (now Sqdn. Ldr.), T. W. Mulcahy-Morgan, M.C. (R. Ir. Fus.); Capt. A. J. Bott, M.C. (R.G.A., S.R.); Sec. Lt. (now Capt.) A. J. Evans, M.C.; Pilot Officer (Hon. Flying Officer) G. P. Harding, M.C.; Flight Lt. E. W. Leggatt, M.C. (Wilts. R.); Lt. S. G. Williams, M.C. (Devon. R.)

THE MILITARY CROSS.

Lt. L. J. Bennett; Lt. T. B. Bruce; Lt. S. E. Buckley (5th Northants); Capt. (now Maj.) D. B. Gray (Ind. A.); Flying Officer D. W. Grinnell-Milne, D.F.C. (R. Fus.); Flight Lt. G. S. M Insall, V.C.; Lt. C. Kennard; Flight Lt. G. F. Knight (R.W. Surr.); Flying Officer P. C. C. Martin (Can. Fd. Arty.); Sec Lt. P. A. O'Brien; Lt. F. J. Ortweiler; Lt. S. S. B. Purves (Sco. H.); Flt. Officer (Hon. Flt. Lt.) J. S. Poole, D.S.O. (K.R.R.C.); Flying Officer L. C. Russell (R. F's.); Flight Lt. L. D. Stewart, A.F.C. (R.G.A., T.F.); Flying Officer A. P. Taylor; Lt. J. K. Tullis (R.F.A.); Lt. L. A. Wingfield, D.F.C. (R.F's.).

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WAR OFFICE, Dec. 17th.

REGULAR FORCES.—INFANTRY.—SERVICE BATTALIONS.—Durh. L.I.—Temp. Sec. Lt. F. Hill, from R.A.F., to be temp. Sec. Lt., April 20th, 1918.

AIR FORCE.

AIR MINISTRY, Dec. 12th.

The notifications appearing in the "London Gazettes" of the dates indicated below, appointing the following officers to short service commns., are cancelled :—Flying Officer G. A. F. Gibson (T.) (substituted for notification in the "Gazette" of Nov. 28th), Sept. 12th; Flying Officer E. A. M. Waterton (A.), Oct. 24th; Flying Officer B. Turner (A.P. T.), Nov. 11th; Flight Lt. G. M. Boumphrey (A.), Nov. 28th.

The rank of Observer Officer G. S. L. Hayward, M.C., is as now described, not Flying Officer (A.), as stated in the "Gazette" of Oct. 24th.

R.A.F.—Flight Lt. K. H. Kiversdale-Elliot (A.) is granted a permanent commn. in the rank stated, with effect from Aug. 1st.

The following temp. appointments are made :—Staff Officer, 2nd Class.—(T.) Sqdn. Ldr. H. Stanley-Adams, D.S.C.; Dec. 4th.

Staff Officer, 3rd Class.—(T.) Flying Officer O. W. de Putron, Nov. 11th.

FLYING BRANCH.—Sec. Lts. to be Lts. :—A. McK. Matheson, Feb. 22nd; C. A. B. Caukwell (since demobilised), March 26th; H. Edge, May 28th; G. C. Lugg, June 6th; P. Fish, June 18th; M. Tallentire, July 5th; A. H. Allingham (since demobilised), July 20th; S. P. Watts, July 24th; A. Findley, July 30th.

Pilot Officers to be Flying Officers :—H. B. Williams, Aug. 23rd; K. W. Jones, Nov. 8th.

M. B. D. Whiteside (Lt., High. L.I.) (since deceased) is granted a temp. commn. as Sec. Lt., and to be Hon. Lt., May 31st, 1918.

Pilot Officer (Hon. Flying Officer) L. R. Hibbert (Capt., R. Lanc. R.) relinquishes his temp. R.A.F. commn. on return to Army duty, Nov. 18th.

The following relinquish their commns. on ceasing to be empld. :—Sec. Lt. D. R. Bradley, Aug. 10th, 1918; Capt. N. MacMillan, M.C., June 10th.

Transferred to unempld. list :—Sec. Lt. C. E. Turner, Jan. 26th; Sec. Lt. T. C. Ormrod, Feb. 11th; Lt. H. Harris, Feb. 28th (substituted for notification in "Gazette," Oct. 10th); Lt. L. Smith, March 13th; Sec. Lt. R. W. Frost, March 22nd; Sec. Lt. S. A. Garratt, March 23rd; Lt. A. E. Francis, April 14th; Lt. V. P. Cronyn, April 19th; Lt. P. W. Plaxton, May 23rd; Capt. J. E. D. Boyd, June 1st; Lt. E. B. Corry, Sec. Lt. B. T. P. O'Brien, June 13th; Sec. Lt. J. D. Chisholm, Lt. W. H. Collins, Sec. Lt. H. C. Cook, Sec. Lt. W. E. Cook, Sec. Lt. R. A. Crecine, Sec. Lt. D. A. L. Curtis, July 12th; Lt. (Hon. Capt.) U. A. Currie, July 28th; Sec. Lt. S. A. Pindar, Aug. 8th; Lt. E. O. Ockerby, Aug. 15th; Lt. J. E. Croden, D.F.C., Aug. 16th; Sec. Lt. H. H. Peterson, Lt. G. E. Pfeifer, Aug. 22nd; Sec. Lt. H. F. Cullen, Aug. 25th; Lt. A. A. Crowson, Aug. 27th; Sec. Lt. A. G. Peake, Sec. Lt. H. W. Perkins, Aug. 29th; Lt. W. A. Clarke, Sept. 2nd (substituted for notification in "Gazette," July 15th); Sec. Lt. L. W. C. Pearce, Sept. 8th; Lt. L. Michell, M.C., Sept. 10th; Sec. Lt. G. S. Cowie, Lt. G. T. Polkinghorne, Sept. 13th; Sec. Lt. G. H. Cote, Sec. Lt. H. C. Cramer, Sec. Lt. G. H. Palmer, Sec. Lt. T. C. Porteous, Sept. 26th; Lt. H. C. Wright (substituted for notification in "Gazette," Oct. 28th, wherein this officer's rank was shown as Sec. Lt.), Sec. Lt. P. Anderson (substituted for notification in "Gazette" of Oct. 17th), Sec. Lt. B. O. Mayne, Sept. 27th; Lt. A. E. Bingham, Sec. Lt. A. L. Burran, Sec. Lt. E. J. Christie, Lt. R. L. Clapp, Sec. Lt. G. W. Cormack, Sec. Lt. D. M. Cowan, Sec. Lt. F. Baker Cox, Sec. Lt. M. Crawford, Lt. (Hon. Capt.) F. W. Crosbie, Sec Lt. H. A. Henry, Sec. Lt. J. L. Hunter, Sec. Lt. C. W. King, Sec Lt. W Leith, Sec. Lt W. H. McCardell, Lt. G. T. Miles, Sec. Lt. J. C. Morgan, Sec. Lt. L. J. Mousseau, Sec. Lt. H. P. Mowat, Lt. C. D. Nadeau, Sec. Lt. H. N. Nelson, Sec. Lt. J. H. L. Newby, Sec. Lt. B. J. P. O'Day, Sec. Lt. T. H. O'Connor, M.M., Lt. W. A. E. Pepler, Sec. Lt. R. M. Smith, Sept. 28th; Sec. Lt. C. V. Bradley, Lt. G. F. Bradley, Sec. Lt. R. D. Bradley, Lt. H. Bricker, Sec. Lt. R. E. Brown, Lt. A. M. Clermont, Lt. C. C. Frost, Sec. Lt. E. McC. Moir, Sec. Lt. J. E. Mutty, Sec. Lt. H. F. Nase, Sec. Lt. E. F. Newman, Lt. G. R. Norman, Sec. Lt. C. J. O'Connor, Sec. Lt. J. F. C. Oliver, Sec. Lt. J. A. Pearson, Lt. M. P. Pearson, Sept. 29th; Lt. J. F. P. Kirsten, Oct. 12th; Sec. Lt. R. Langlands, Oct. 13th; Sec. Lt. C. A. Thornton, Oct. 15th (substituted for notification in "Gazette" of Nov. 14th); Lt. H. S. Broughall, M.C., Oct 17th; Sec. Lt. C. A. Goatcher, Oct. 21st; Lt. C. G. Cooper, Sec. Lt. R. E. Parker, Oct. 23rd; Lt. W. Irwin, Oct. 25th (substituted for notification in "Gazette," Nov. 4th, wherein this officer's rank was shown as Sec. Lt.); Lt. J. Fairbairn, Oct. 26th; Sec. Lt. J. B. Corstorphine, Sec. Lt. L. Edwards, Oct. 29th; Lt. J. H. W. Goodall, Nov. 4th; Sec. Lt. D. C. Evemy, Nov. 6th; Sec. Lt. D. P. Conyngham, Nov. 10th; Lt. J. Speaks, D.F.C., Nov. 12th; Sec. Lt. A. A. Boothe, Sec. Lt. D. Buck, Sec. Lt. A. S. Compton, Lt. M. A. O'Callaghan, D.F.C., Sec. Lt. C. W. Pattison, Lt. L. H. Phinney, Sec. Lt. W. G. Sibary, Nov. 13th; Lt. S. C. Goldsmith, Nov. 19th; Sec. Lt. C. A. Stubings, Nov. 22nd; Capt. R. H. Timmis, Nov. 26th; Lt. G. P. Edwards, Nov. 30th; Lt. L. D. Baker, Lt. E. M. Graddon, Lt. A. C. Townend, A.F.C., Dec. 2nd; Capt. S. E. Ball, D.F.C., Lt. G. Eastwood, Dec. 3rd; Capt. (actg. Maj.) E. A. de L. De Ville, Dec. 9th.

Capt. S. E. Adams relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, Dec. 4th.

The following Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank :—S. Scothill (caused by wounds), Aug. 4th (substituted for notification in "Gazette," Aug. 26th); J. J. Lanctot (contracted on active service), Sept. 28th.

Lt. C. W. D. Bell (Lt., P. of Wales Hrs.) resigns his commn., Oct. 1st.

Sec. Lt. G. R. Howard relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain his rank, Dec. 5th.

Sec. Lt. R. Shillinglaw is antedated in his appt. as Sec. Lt. (O.), Aug. 8th, 1918.

The notification in "Gazette," May 31st, 1918, concerning Sec. Lt. H. P. Brumell is cancelled.

The notification in "Gazette," Nov. 5th, 1918, concerning Sec. Lt. E. G. Boyle is cancelled.

The notification in "Gazette," March 11th, concerning Sec. Lt. L. Edwards, M.C., is cancelled.

The notification in "Gazette," June 24th, concerning Capt. N. MacMillan, M.C., is cancelled.

The notification in "Gazette," Sept. 5th, concerning Sec. Lt. (Hon. Capt.) L. R. Hibbert is cancelled.

ADMINISTRATIVE BRANCH.—Pilot Officers to be Flying Officers :—M. W. Taplin, Oct. 1st; A. J. Burge, Nov. 20th.

F. H. Bacque (Capt., Can. E.F.) is granted a temp. commn. as Capt., June 1st, 1918

M. H. Toy (Capt., Can. Militia) is granted a temp. commn. as Capt., Aug. 1st, 1918.

Sec. Lt. E. McM. Spinney (late Gen. List, R.F.C., on prob.) is confirmed in rank as Sec. Lt., and to be secd. to R.E., May 6th, 1918.

The following relinquish their temp. R.A.F. commns. on return to Army duty :—Capt. J. P. Cherry, M.C. (Capt. and Qrmr., Dur. L.I.), April 15th (the notification in "Gazette," May 2nd, is cancelled); Flying Officer F. D. Wright (Lt., S. Lancs. R.), Nov. 7th; Flying Officer G. B. Booth (Lt., Midd'x R.), Nov. 26th; Flying Officer A. Webb (Lt., 5th Dgn. Gds.), Dec. 1st; Flying Officer (actg. Flight Lt.) E. S. C. Brooks (Lt., Cameronians and Sco. Rif.), Dec 3rd.

Transferred to the unempld. list :—Sec. Lt. F. Hind, June 5th; Sec. Lt. C. C. Cornett, Sec. Lt. W. D. Cram, July 12th; Sec. Lt. H. Pitkin, Aug. 3rd; Lt. E. L. Pape, Aug. 11th; Sec. Lt. D. Bright, Sec. Lt. N. R. Craig, Sept. 28th; Lt. J. H. Thompson, Sept. 29th, substituted for notification in "Gazette," Nov. 4th, wherein this officer's rank was shown as Sec. Lt.); Lt. V. N. Bonnes, Sec. Lt. P. H. Brodziak, Oct. 9th; Sec. Lt. W. J. Begley, Lt. C. T. L. Bowley, Lt. T. S. Cowperthwaite, Capt H. C. Jones, Nov. 7th (substituted for notifications concerning the above-named officers in "Gazette," Nov. 21st; Sec. Lt. T. H. Nunn, Nov. 16th; Maj. H. Perry, Sec. Lt. K. M. Vaughan, Dec. 2nd; Sec. Lt. W. T. A. Jacob, Dec. 4th.

Capt. E. P. L. Baker (S. Staffs. R., S.R.) relinquishes his commn. on account of ill-health, and is permitted to retain his rank, Nov. 20th.

Lt. W. J. Banham relinquishes his commn. on account of ill-health (contracted on active service), and is permitted to retain his rank, Dec. 4th.

Sec. Lt. J. G. Le Brun relinquishes his commn. on account of ill-health caused by wounds, and is granted the rank of Lt., Dec. 5th.

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank :—W. J. Cooper (contracted on active service), E. H. McEnery, Dec. 5th.

TECHNICAL BRANCH.—Sec. Lt. L. Hawkins to be Lt., Grade (A), Dec. 23rd, 1918 (this notification does not affect the notification concerning this officer which appeared in "Gazette," Aug. 29th)

Lt. J. H. Ferguson, M.B.E. (Sec. Lt., Extra Reg. Empld. List) resigns his commn., Dec. 13th.

Transferred to the unemployed list :—Capt. F. R. Freeman, March 7th; Sec. Lt. W. Gornall, March 22nd; Lt. V. P. Spurway, April 1st (substituted for notification in "Gazette," June 6th); Lt. E. Harrison, June 17th; Lt. T. F. Morris, Aug. 20th; Sec. Lt. N. L. S. Kilpin, Capt. B. R. Padmore, Sept. 28th; Sec. Lt. W. St. John Miller, Sept. 29th; Lt. B. E. Hobbs, Sec. Lt. (Hon. Lt.) G. H. B. Johnston, Sec. Lt. J. G. Wright, Oct. 9th; Sec. Lt. R. D. Chisholm, Oct. 17th; Maj. H. A. Oxenham, M.C., Nov. 10th; Sec. Lt. S. A. Smith, Nov. 21st; Capt. A. J. Hurst, Lt. J. H. F. Pilling, Dec. 2nd.

The surname of Sec. Lt. B. J. Beech is as now described, and not "Beach," as stated in "Gazette," Feb. 7th.

The notification in "Gazette," Dec. 31st, 1918, concerning Sec. Lt. J. S. Card is cancelled.

The notification in "Gazette," Nov. 25th, concerning Lt. H. D. Patterson is cancelled.

The notification in "Gazette," Dec. 24th, 1918, concerning Sec. Lt. L. Hawkins is cancelled.

PHYSICAL TRAINING BRANCH.—Lt. J. Butterfield relinquishes his commn. on ceasing to be empld., and is granted the rank of Capt., Sept. 28th (substituted for notification in "Gazette," Nov. 7th).

CHAPLAINS BRANCH.—Rev. W. Moffat, R.A.C.D., is granted a temp. commn. as Chaplain, with the relative rank of Capt., and is granted the relative rank of Col. while empld. as Principal Chaplain, March 7th.

The notifications in "Gazettes," Feb. 4th, March 28th, May 9th, May 20th, and June 24th, concerning the Rev. W. Moffat are cancelled.

MEMORANDA.—The following Cadets are granted hon. commns. as Sec. Lts. :—17078 H. J. T. Paige, March 6th; 175074 T. R. H. Nelson, March 23rd; 319291 P. S. West, April 18th; 105102 C. H. Eldridge, May 3rd; 33574 C. E. Proctor, Oct. 19th; 7688 H. C. Roe, Oct. 21st.

Flying Officer W. Myers, M.C., D.C.M. (Lt., North'd Fus.), relinquishes his temp. R.A.F. commn. on return to Army duty, Nov. 20th.

Sqdn. Ldr. (actg. Wing Comdr.) R. Hall, O.B.E. (Capt., R. Welsh Fus.), relinquishes his temp. R.A.F. commn. on return to Army duty,



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Nov. 1st (substituted for notification in the "Gazette" of Nov. 11th, wherein this officer was shown under "Flying Branch")

The following temp. Hon. Lts. relinquish their commns. on ceasing to be empld.:—W. M. Harrison, W. Ramsay, Sept. 16th; W. G. Knight, Oct. 2nd.

Transferred to the unempld. list:—Capt. (actg. Lt.-Col.) F. Cookson, from (S.O.), Dec. 1st; Capt. G. T. Tait, from (S.O.), Dec. 3rd; Capt. (actg Maj.) A. Price-Reed, from (S.O.), Dec. 4th.

AIR MINISTRY, Dec. 16th.

The King has been pleased to approve of recognition being accorded, as indicated below, to Officers and other ranks of the Royal Air Force, for gallantry while Prisoners of War in escaping, or attempting to escape, from captivity, or for valuable services rendered in the Prison Camps of the Enemy:—

BAR TO THE DISTINGUISHED SERVICE ORDER.

Wing Comdr. E. F. Briggs, D.S.O., O.B.E.
Wing Comdr. C. E. H. Rathborne, D.S.O.

MENTIONS.

The following have been mentioned in reports for valuable services while in captivity, and noted accordingly in the Official Records of the Air Ministry:—

Lt. A. T. Adams (Wilts R.); Flying Officer G. C. Atkins.
Lt. A. N. Barlow; Flying Officer C. B. Bird, M.C.; Lt. N. A. Birks; Lt. C. W. Blain, A.F.C. (deceased); Capt. G. K. Blandy; Flight Lt. B. J. W. Brady, D.S.M.; Lt. Sir A. W. Brown, K.B.E. (Manc. R.).
Flying Officer R. S. Capon (L'pool R.); Flying Officer G. L. Carter; Lt. H. K. Cassels; Flying Officer A. C. Collier; Flight Lt. E. J. Cooper, D.S.C.; Lt. A. H. M. Copeland; Lt. H. Cotton (Quebec R.); Lt. A. Couston (Aus. F.C.).
Sec. Lt. V. Dougall (Can. F.C.).
Lt. A. T. Easom; Pilot Officer H. Edwards; Lt. W. B. Ellis (A.S.C., T.F.).
Wing Comdr. P. F. M. Fellowes, D.S.O.; Flying Officer J. J. Fitzgerald (R. Innis. Fus.); Lt. R. J. Fitzgerald (12th Glouc. R.) (deceased); Capt. G. C. Formilli (R.G.A.); Lt. C. E. French (6th Can.); Flying Officer E. J. Fulton (Ind. Army); Lt. E. P. Fulton.
Flying Officer E. H. Garland (N.Z.F.C.); Sec. Lt. A. C. Geen; Lt. R. S. Gilbert; Sqdn. Ldr. (A./W.C.) R. Grey, D.S.O. (Gren. Gds.); Lt. D. Grinnell-Milne (R. Fus.); Flight Lt. J. O. Groves.
Capt. W. L. Haight (R.F.A.); Lt. H. D. Hamilton (N.Z.F.C.); Lt. P. F. Heppell (R.A., T.F.); Flying Officer H. E. Hervey, M.C.; Lt. A. B. Hill; Capt. T. G. Holley (13th Can. R.); Flying Officer F. N. Hudson, M.C. (E. Kent); Lt. E. P. Hyde (6th Ches. R.).
Flying Officer H. Ibbotson
Lt. W. C. Jameson (R.N.V.R.) (deceased).
Lt. M. M. Kaye; Flying Officer H. Kirby; Flying Officer F. R. Knapp; Flying Officer W. E. Knowlden (Bord. R.).
Flight Lt. C. Laurence; Capt. D. Leeson (7th Can. R.); Flight Lt. J. M. D'A. Levy; Lt. V. O. Lonsdale (R.F.A.).
Lt. H. O. Macdonald; Flight Lt. L. D. McKean; Lt. R. R. Macintosh; Lt. G. D. McLeod; Flight Lt. T. G. Mapplebeck (L'pool R.); Capt. F. W. Mardock; Flying Officer M. J. J. G. Mare-Montembault, M.C. (Yeo.); Lt. L. Marsh; Sec. Lt. N. H. Marshall; Lt. H. W. Medlicott (deceased); Lt. H. B. O. Mitchell, M.C. (R. Innis. Fus.).
Lt. L. A. Newbold (Essex R.); Maj. R. W. Nichol; Flying Officer L. G. Nixon
Capt. J. C. F. Owen, M.C. (Can. A.S.C.).
Lt. J. K. Parker (R. Sco. Fus.); Lt. (A./Capt.) R. O. Purry; Capt. Sir R. J. Paul, Bt. (Egyptian C.S.); Flying Officer L. J. Pearson (R.E.); Flight Lt. S. L. Pettit (R. Fus.); Flying Officer A. W. Phillips.
Capt. K. Rawson-Shaw (R.F.A.); Flying Officer C. Reece (4th Ches. R.); Flying Officer W. A. Reeves (E. Surr. R.); Flight Lt. G. H. Reid, D.F.C.; Flying Officer A. R. M. Rickards; Lt. J. G. Robertson (Can. M.R.); Flying Officer J. B. Robinson; Capt. W. L. Robinson, V.C. (Worc.) (deceased).
Lt. N. C. Saward (R.A., T.F.); Lt. A. T. K. Shipwright; Lt. W. C. Short; Sec. Lt. A. S. Sinclair; Flying Officer A. H. Skinner; Lt. S. Smith, D.C.M.; Lt. C. Smythe, M.C. (Can. Fd. Art.); Flying Officer (Hon Flight Lt.) E. J. Strover (3rd Brahmans).
Lt. W. Taylor (R.F.A.); Lt. C. D. Thompson (Hon. A. Co.); Capt. R. J. Tipton (3/W.L. Bde., R.F.A.) (deceased).
Flight Lt. H. C. Vereker.
Lt. (Hon. Capt.) E. G. S. Walker; Flying Officer A. A. Ward (R.A.); Flying Officer R. Watts; Flying Officer (Hon. Flight Lt.) T. R. Wells, M.C. (33rd Punjabis); Capt. T. W. White, D.F.C. (Aus. F.C.); Sec. Lt. B. O. Wilkin (D.C.L.I.); Lt. W. O. B. Winkler (R.G.A.); Lt. D. B. Woolley.
Capt. F. C. C. Yeats-Brown, D.F.C. (Ind. A.).
No. 200449 Sjt.-Obsr. H. Brooks; No. 46448 Actg.-Corpl. O. W. A. Grant; No. 208940 Air-Mech. W. W. Higby; No. 201866 Ldg.-Mech. D. Kennedy; No. 207252 Sjt. E. E. Smith.

FOREIGN DECORATIONS.

The King has granted unrestricted permission for the wearing of the undermentioned decorations, conferred upon the Officers and other ranks indicated for valuable services rendered in connection with the war:—

CONFERRED BY THE PRESIDENT OF THE UNITED STATES.

Distinguished Service Medal.—Air Vice-Marshal Sir G. M. Paine, K.C.B., M.V.O.; Air Commodore A. V. Vyvyan, C.B., D.S.O.; Air Commodore C. L. Lambe, C.B., C.M.G., D.S.O.; Air Commodore R. M. Groves, C.B., D.S.O., A.F.C.; Group Capt. (A./Air Commodore) E. M. Maitland, C.M.G., D.S.O., A.F.C.; Lt.-Col. J. C. Porte, C.M.G. (deceased); Maj. G. C. Neilson.
Navy Cross.—Maj. W. C. Grant.

CONFERRED BY THE KING OF THE HELLENES.

Croix de Guerre, with Bronze Star.—Flight Lt. R. Whitaker, M.B.E. (Rif. Bde.).
Croix de Guerre, with Palme.—Flying Officer C. R. Keary, late 43rd Sqdn.; Observer Officer E. B. C. Betts, D.S.C., D.F.C.

CONFERRED BY THE KING OF ITALY.

Cavalier, Order of the Crown.—Capt. E. Newman (formerly R.A.O.C.).
Bronze Medal for Military Valour.—No. 3203 Sjt. G. A. Prowse, 17th Sqdn.

CONFERRED BY THE KING OF THE HELLENES.

Greek Medal of Military Merit, 2nd Class (with Silver Palm).—Wing Comdr. C. R. J. Randall, C.B.E.
Greek Military Cross, Class 3.—Maj. W. S. Scott, M.C., A.F.C.

CONFERRED BY THE SULTAN OF EGYPT.

The Order of the Nile, 4th Class.—Pilot Officer W. Pightling.

CORRECTIONS.

Actg. Matron-in-Chief Miss J. M. Cruickshank, R.A.F. Nursing Service (formerly attd. Q.A.M.N.S.I.), awarded the Royal Red Cross, 1st Class, in "Gazette" of Oct. 10th, 1919, is now correctly described.
Flying Officer C. A. Bouchier, D.F.C., awarded the Distinguished Flying Cross in "Gazette" of Nov. 18th, 1919, is now correctly described.

No. 214290 Signalman W. H. C. Hazlewood, A.F.M. (subsequently Cadet No. 181167), awarded the Air Force Medal in "Gazette" of Sept 21st, 1918, is now correctly described.

AIR MINISTRY, Dec. 16th.

R.A.F.—The notification in the "Gazette" of Aug 1st, appointing Capt. J. Gilmour, D.S.O., M.C. (A.), to a permanent commn., is cancelled.

The following temp. appt. is made at the Air Ministry:—Staff Officer, 1st Class.—(Q.) Maj. A. L. C. Neame, March 19th, and to be actg. Lt.-Col. till April 30th (substituted for notifications in the "Gazettes" of June 3rd and Nov. 28th).

The following temp. appt. is made:—Staff Officer, 3rd Class.—(P.) Lt. V. Stranders, and to be actg. Capt. whilst so empld., June 11th, 1918, vice Capt. A. E. Hartley (substituted for notification in the "Gazettes" of Aug. 6th, 1918, Oct. 4th, 1918, and Nov. 20th, 1918).

FLYING BRANCH.—Sqdn. Ldr. H. F. A. Gordon, O.B.E., to be Sqdn. Ldr. (A. and S.), from (S.O.), Nov. 1st.

Lt. C. D. Palmer (Lt., Arg. and Suth'd Highrs.) is granted a temp. commn. as Observer Officer on re-seconding from Arg. and Suth'd Highrs., Nov. 24th.

Sec. Lts. to be Lts.:—L. G. Spinney, April 27th, 1918; F. Ibbotson (since demobilised), Oct. 26th, 1918; W. Z. Grandi, Jan. 27th; L. A. West, May 8th; R. M. Guiney, May 30th; R. Tindle, July 5th.

Pilot Officers to be Flying Officers:—J. Duncanson, Aug. 2nd; G. W. Sweney, Aug. 3rd; S. C. Millar, Aug. 7th.

The following relinquish their temp. R.A.F. commns. on return to Army duty:—Flight Lt. H. G. Coeby, M.B.E. (Lt., R. Mun. Fus.), Nov. 10th; Flight Lt. E. D. Drew (Capt., R.W. Surr. R.), Nov. 13th; Flying Officer T. H. R. Riggs (Lt., Lincoln R.), Nov. 14th; Flying Officer G. R. Hunter, M.C. (Lt., Cam'n Highrs.), Flight Lt. H. H. James (Lt., Manchester R.), Nov. 17th; Flight Lt. A. A. A. Knight (Lt., R. Munster Fus.), Nov. 20th; Flying Officer E. Percival (Lt., Norfolk R.), Nov. 27th; Pilot Officer J. P. Stewart-Burton (Lt., Devon. R.), Dec. 4th.

Lt. H. J. Gearing (Lt., Highland L. Inf.) relinquishes his commn. on ceasing to be empld., April 29th.

Transferred to the unempld. list:—Lt. J. G. Tennant, Jan. 1st; Lt. V. F. Toulmin, Jan. 6th; Lt. K. Hall, Jan. 21st; Sec. Lt. I. E. Cameron, Sec. Lt. G. W. Knight, Sec. Lt. A. H. McLean, Sec. Lt. W. F. Matthews, Feb. 1st; Lt. J. Reid, Feb. 10th; Lt. B. MacPherson, March 12th; Capt. T. E. Gorman, March 18th; Sec. Lt. J. Paterson, D.C.M., March 18th; Lt. H. H. Shorter (Dur. L.I.), March 27th; Lt. H. B. Bell, M.C., April 5th; Lt. G. C. Body, April 11th; Sec. Lt. A. R. Webster, April 13th (substituted for notification in the "Gazette" of Oct. 3rd); Capt. A. B. Coupal, Lt. S. C. Farrington, Capt. R. H. B. Ker, Lt. S. S. Moore, Lt. N. R. Norman, Lt. W. M. Paterson, April 19th; Lt. J. A. Parkinson, April 21st; Sec. Lt. J. L. L. Thomson, April 29th; Sec. Lt. L. D. Hamblin, May 4th; Lt. W. G. Robbins, May 7th; Sec. Lt. L. E. Tatton, May 16th; Sec. Lt. K. F. Cleal (substituted for notification in the "Gazette" of May 27th), Sec. Lt. A. M. Davidson, May 20th; Sec. Lt. H. L. Edwards, June 1st; Capt. C. E. Blayney, M.C., June 3rd; Sec. Lt. A. V. Colville, June 13th; Lt. W. Beart, July 11th; Lt. C. A. Burpee, Sec. Lt. J. M. Stevenson, July 12th; Lt. F. V. Bryant, July 29th; Capt. F. H. Bickerton, Aug. 7th; Lt. S. O. Pacey, Aug. 20th; Lt. E. M. Coles, D.F.C., Aug. 22nd; Sec. Lt. R. W. Corner, Aug. 29th; Sec. Lt. L. A. Hooper, Sept. 6th; Capt. F. C. C. Calder, Sept. 12th; Lt. S. S. Jones, M.C. (S. Lancs. R.), Sept. 15th; Lt. G. A. Cooper, Sept. 17th; Sec. Lt. B. A. Heeney, Sept 25th; Sec. Lt. J. V. Coupe, Sec. Lt. M. C. Dawson, Sept. 26th; Sec. Lt. A. J. Ashton, Sec. Lt. R. E. Bolton, Lt. J. M. Brown, Sec. Lt. H. G. Brownell, Sec. Lt. J. W. F. Clake, Sec. Lt. A. B. Corey, Lt. K. J. Oldfield, D.F.C., Sec. Lt. A. M. Perrins, Sec. Lt. S. Playford, Sept. 28th; Sec. Lt. C. Davidson, Lt. J. H. Drewry, Sept. 29th; Sec. Lt. A. W. P. Kieser, Oct. 6th; Lt. R. Key, Sec. Lt. T. M. Pratt, Sec. Lt. W. J. Pridgeon, Oct. 9th; Sec. Lt. H. Clayton, Lt. A. Murchie, Oct. 20th; Sec. Lt. J. P. C. MacLatchy, Oct. 22nd; Sec. Lt. H. P. N. Gubbins (substituted for notification in "Gazette" of Oct. 24th), Sec. Lt. E. V. Lockyer (substituted for notification in "Gazette," Nov. 4th), Oct. 28th; Sec. Lt. T. Burton, Oct. 29th (substituted for notification in "Gazette," Oct. 28th); Lt. T. F. Campbell, Nov. 2nd; Sec. Lt. K. Shanks, Nov. 6th; Lt. (actg. Capt.) F. I. Lord, D.F.C., Sec. Lt. A. E. Marsh, Nov. 11th; Lt. T. W. L. Burke, Sec. Lt. N. S. Morrison, Sec. Lt. G. E. Scott, Sec. Lt. F. B. Shaw, Capt. W. J. Sussan, Nov. 13th; Lt. S. E. Pitts, Nov. 22nd; Sec. Lt. F. W. Brown, Sec. Lt. A. H. Gooch, Lt. S. Jones, D.F.C., Sec. Lt. (Hon. Lt.) C. L. Matson, M.C., Nov. 23rd; Capt. I. M. Matheson, Nov. 24th; Sec. Lt. H. W. Gill, Nov. 25th; Sec. Lt. W. Bailey, Capt. L. F. Hutcheon, A.F.C., Lt. H. A. Pike, Nov. 26th; Lt. H. Brooks, Dec. 2nd; Lt. W. W. Jones, Dec. 3rd; Sec. Lt. L. Smith, Dec. 4th; Sec. Lt. S. J. Mason, Capt. F. G. S. Williams, Dec. 5th; Sec. Lt. F. W. Boswell, Maj. F. W. Gamwell, Sec. Lt. R. T. Scott, Dec. 7th; Lt. H. G. D. McF. Payne, Dec 9th; Capt. C. W. Snook, Maj. D. E. Stodart, D.S.O., D.F.C., Dec. 13th

Capt. J. Gilmour, D.S.O., M.C. (Lt., Arg. and Suth'd Hrs.), resigns his commn., and is permitted to retain rank of Capt., Dec. 17th.

Lt. B. H. Church relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, Dec. 9th.

Lt. W. H. G. Heath (R.A.) relinquishes his commn. on account of ill-health contracted on active service, Dec. 3rd.

Lt. H. Clements-Finnerty (Lt., Lrs.) resigns his commn., Dec. 17th.

The following Sec. Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—J. D. Fitzimmons, Sept. 28th (substituted for notification in "Gazette," Aug. 19th); E. J. McDougall (contracted on active service), Dec. 4th; F. H. Hall (contracted on active service), Dec. 17th.

The surname of Lt. D. M. Murdoch is as now described, and not D. M. "Murdock," as stated in "Gazette," Oct. 17th.

The notification in "Gazette," Nov. 28th, concerning Maj. R. J. F. Barton, O.B.E., is cancelled (the notification in "Gazette," Nov. 7th, to stand).

ADMINISTRATIVE BRANCH.—Sqdn. Ldr. (actg Group Capt.) W. P. Alexander relinquishes the actg. rank of Group Capt. on ceasing to be empld. as Group Capt., Aug. 1st (substituted for notification in "Gazette," Nov. 18th).

Flight Lts. to be Flight Lts., from (S.O.):—H. H. Clarke, Oct. 15th); E. St. Harnett, O.B.E., Oct. 18th.

The following Lts. are graded for purposes of pay and allowances of Capts. whilst empld. as Capts.:—C. Jeffs, from March 25th to July 31st; J. Pell, M.C., from May 1st to Aug. 21st.

Flying Officer L. D. Baker to be Flying Officer, from (A.), Nov. 27th.

Sec. Lts. to be Lts.:—(Hon. Lt.) E. N. Paterson, Nov. 12th, 1918; B. Bear, Dec. 25th, 1918; P. A. Staliard (since demobilised), June 6th.

Sec. Lt. (Hon. Capt.) C. J. P. Copner to be actg. Lt. whilst empld. as Lt., from K.B., July 29th, 1918.

Lt.-Col. F. H. G. Playfair, C.B.E. (Lt.-Col., T.F. Rse.), relinquishes his commn. on ceasing to be empld., and is granted the rank of Col., Nov. 1st (substituted for notification in "Gazette," Nov. 11th).

The following relinquish their temp. R.A.F. commns. on return to

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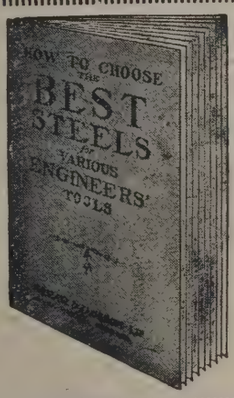
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Army duty :—Flying Officer R. D. H. Draper (Lt., Yorks. L.I.), Dec. 19th, 1918); Flying Officer W O. Hatcher (Lt., Scottish Rif.), Nov. 8th; Flight Lt. J. B. E. Crosbee (Lt., Worc. R.), Nov. 28th; Pilot Officer (Hon. Flying Officer) S. Waring (Lt., Leic. R.), Nov. 30th.

Transferred to the unempld. list :—Sec. Lt. H. L. Godfrey, March 17th; Capt. (actg. Maj.) J. Fowler, April 1st; Lt. E. A. Marsland, April 11th; Sec. Lt. D. T. Davies, Aug. 2nd; Sec. Lt. L. H. Meyer, Sept. 23rd; Sec. Lt. P. D. Box, Sec Lt. G. S. Burns, Sept. 28th; Lt. A. E. T. Robinson, Oct. 11th; Sec. Lt. E. M. Spinney, Nov. 13th; Maj J. B. Batten, D.S.O., Sec. Lt. (Hon. Lt.) A. Nash, Nov 20th; Sec. Lt. (Hon. Lt.) D. A. Childs, Capt. W. J. May, Nov. 24th; Lt. H. J. Axten, M.B.E., Dec. 1st; Lt. E. J. Crowe, Lt J. C. B. P. Seaver, Dec. 4th; Lt. A. E. Marks, Dec. 6th; Capt. W Fergusson, Dec. 9th.

Lt. T. D. S. Purdey (Lt., Argyll and Suth'd Highrs.) resigns his commn., Dec. 17th.

The surname of Lt. T. M. Goldon is as now described, and not "Golding," as stated in the "Gazette" of April 1st.

The notifications in the "Gazettes" of Dec. 31st, 1918, and May 9th, concerning Sec. Lt. (actg. Lt.) (Hon. Capt.) C. J. P. Copner, are cancelled.

The notification in the "Gazette" of July 22nd concerning Lt. (actg. Capt.) F. J. Wood is cancelled. (The notification in the "Gazette" of July 29th to stand.)

TECHNICAL BRANCH.—Lt. W. Bagnall to be actg. Capt. whilst empld. as Capt., Grade (A.), Nov. 1st, 1918 (substituted for notification in the "Gazette" of Feb. 21st).

Flying Officer F. Murphy, M.B.E., relinquishes the grading for pay and allowances as Flight Lt. on ceasing to be empld. as Flight Lt., Grade (A.), Aug. 19th.

Lt. H. E. Crocker to be Lt., Grade (B.), from (A.), April 17th.

Sec. Lts. to be Lts., Grade (A.) :—(Hon. Lt.) J. J. Page, April 2nd, 1918 (substituted for notification in the "Gazette" of July 29th); McL. N. Staight, Dec. 26th, 1918.

Sec. Lt. (Hon. Lt.) W. A. Cockburn to be Lt., Grade (A.), Feb. 6th, without pay and allowances prior to March 24th

Pilot Officers to be Flying Officers, Grade (A.) :—A. E. Davies, Sept. 27th; J. C. W. Fraser, A. Ledgerwood, A. J. Ramsey, V. Rees, Oct. 1st.

Pilot Officer W. O. L. White to be Flying Officer, Grade (B.), Oct. 1st.

Pilot Officer R. A. Sibun to be Flying Officer, without the pay and allowances of that rank, Oct. 1st

Pilot Officer W. J. Coadwell relinquishes the grading for pay and allowances as Flying Officer on ceasing to be empld. as Flying Officer, Grade (A.), Dec. 1st.

The following relinquish their temp. R.A.F. commns. on return to Army duty :—Flying Officer H. S. Royffe (Lt., Midd'x R.), Nov. 17th; Sqdn. Ldr. H. F. T. Blowey, O.B.E. (Capt., R.F.A.), Nov. 22nd, Sqdn. Ldr. E. E. Bush (Lt., W. Rid. R.), Dec. 10th.

Transferred to unempld. list :—Sec. Lt. A. L. Flaws, Feb. 15th; Lt. A. Ross, March 17th; Lt. H. B. Low, March 23rd; Lt. F. E. Glass, April 12th; Lt. A. S. Clark, June 21st; Lt S. J. Hunter, Aug. 10th; Sec. Lt. M. E. Clubine, Aug. 16th, Lt. W. R. Lewis, Aug. 20th; Sec. Lt. (Hon. Lt.) A. N. Pictor (Som. L.I.) (substituted for notification in "Gazette" of Aug. 1st); Lt. W. T. Henry, Oct. 15th (substituted for notification in "Gazette" of Nov. 4th, wherein this officer's rank was shown as Sec. Lt.); Capt. A. C. Day, Oct. 20th; Sec. Lt. H. C. Martin, Nov. 3rd; Lt. J. S. Done, Nov. 7th; Lt. R Frater, Nov. 10th; Lt. H. B. Brown, Lt. A. A. Gillman, Nov. 13th; Capt. J. D. Clarke, Nov. 22nd; Lt. J. W. Gardner, Sec. Lt. P. H. Matthews, Nov. 25th; Capt. H. K. Kennedy-Skipton, Lt. F. G. Murray, Nov. 27th; Sec. Lt. W. H. Lowther, Dec. 1st; Lt. W. C. Bagnall, Dec. 9th.

Lt. F. M. L. Watts, M.B.E. (Lt., Worc. R.), resigns his commn., and is granted rank of Capt., Dec. 17th.

Sec. Lt. W. L. Rennie (Sec. Lt., Ex. Reg. Empld. List) resigns his commn., Dec. 17th.

The notification in "Gazette" of Nov. 4th concerning Lt. A. E. Burton is cancelled (notification in "Gazette" of Nov. 25th to stand).

The notification in "Gazette" of July 15th concerning Capt. A. P. Thurston is cancelled.

MEDICAL BRANCH.—Flying Officer J. Prendergast to be Flight Lt., Nov. 22nd.

Wing Comdr R. H. Mornement, O.B.E. (Surg. Comdr., R.N.), relinquishes his temp. R.A.F. commn. on return to Naval duties, Oct. 30th (substituted for notification in the "Gazette" of Nov. 7th).

Flight Lt. J. D. Bangay (Surg. Lt., R.N.) relinquishes his temp. R.A.F. commn. on return to Naval duties, Dec. 8th.

Flying Officer H. J. Swan relinquishes his temp. R.A.F. commn. on expiration of contract, Dec. 8th.

Transferred to the unempld. list :—Capt. F. C. Morgan, Oct. 25th; Capt. C. L. McDonogh, Nov. 20th; Capt. J. P. Doyle, Nov. 28th; Capt. T. M. Davies, Dec. 7th.

The notification in the "Gazette" of Nov. 21st concerning Capt. L. A. Walker is cancelled

DENTAL BRANCH.—Capt. C. Murray-Shirreff is transferred to the unempld. list, Nov. 26th.

MEMORANDA.—The following Overseas Cadets are granted temp. commns. as Sec. Lts., with effect from Feb. 15th, and relinquish such commns. with permission to retain the rank from the day following termination of the standardised voyage in the case of those claiming immediate repatriation, and from the day following demobilisation in England in all other cases :—779037 F. W. Brown; 2043071 C. E. Chown (substituted for notification in the "Gazette" of June 13th, wherein this Cadet was described as 316244 E. E. Chown); 120556 W. T. Eberwein.

The following Cadets are granted hon. commns. as Sec. Lts. :—250308 G. Tatham, March 3rd; 137186 S. M. Doutbwaite, March 13th; 4650 J. W. Sparrow, April 2nd; 3190 1 R. B. Oliver, May 5th.

The following Proby. Flight Officers are granted hon. commns. as Sec. Lts. :—M. Jarman, Jan. 23rd; H. Cadman, Jan. 24th; O. Entwistle, Jan. 25th; T. H. Hutchison, Feb. 1st; A. A. Goodale, Feb. 8th; L. C. Letts, Feb. 10th; F. W. Halliwell, R. M. Harvey, Feb. 18th; O. V Eales, Feb. 20th; R. H. Kimber, Feb. 28th; C. A. Leggatt, March 5th; J. W. Locke, March 8th; G. N. Dawson, March 9th; R. T. Cunningham, G. D. Haggart, March 22nd; W. H. R. Lukey, April 4th; E. Heron, April 10th; G. E. James, April 12th; J. W. Cross, April 17th; H. J. Greenland, May 7th; D. K. Falkner, Aug. 30th; R. Wincup, Sept. 16th

Lt. C. O. Steel relinquishes his commn. on ceasing to be empld., and is granted the rank of Maj., May 1st.

Transferred to the unempld. list :—Maj. A. B. Ennis, from (S.O.), Nov. 26th; Lt. D. N. Thomson, M.C., from (S.O.), Dec. 3rd; Lt. J. J. Yates, Dec. 7th.

The notification in the "Gazette" of June 6th concerning Lt. C. O. Steel is cancelled.

The notification in the "Gazette" of July 29th concerning Capt. C. W. Wise, M.C., is cancelled.

The notification in the "Gazette" of July 1st concerning 184026 Cadet C. E Jones is cancelled.

The notification in the "Gazette" of Oct. 28th concerning 9438 Cadet T. S Duncannon is cancelled.

PERSONAL NOTICES.

NAVAL.

MARRIAGE.

ALLSOP—HUBBARD.—On Dec. 4th, at the Chapel Royal of the Savoy, Major John William Kidston Allsop, late R.N.A.S., attd. R.A.F., son of the late T. W. Allsop, Esq., and Mrs. Allsop, of Langland Mansions, Hampstead, was married to Frances, daughter of the late C. W. Hubbard, J.P., and Mrs. Hubbard, of Riversdale, Sleaford, and granddaughter of the late W. Bedford, J.P., of Allan House, Boston, Lincs.

MILITARY.

MARRIAGE.

WILSON—BRIDLE.—On Dec. 18th, at Epsom, Capt. George Ferguson Wilson, late of Seaforth Highlanders, attached to R.A.F., was married by licence to Mrs. Wilhelmina Margaret Bridle, younger daughter of Mr. and Mrs. T. O. L. Becker, of "St. Goar," Barnet Wood Lane, Ashtead, Surrey.

AIR FORCE.

DEATH.

COCKMAN.—Lieut. Charles Burton Blenheim Cockman, R.A.F., who was accidentally killed at Ramleh, Palestine, on Dec. 10th, was the son of Commander George Wallace Cockman, D.S.C., R.D., R.N.R. He was 22 years of age.

MARRIAGES.

BELLORD—CARDEW.—On Dec. 9th, at St. James's, Spanish Place, Capt. Cuthbert George Bellord, late R.A.F., elder son of Mrs. E. J. Bellord, Hampstead, was married to Margaret Isabel, elder daughter of Sir Alexander Cardew, K.C.S.I., and Lady Cardew, by Monsignor Smith, D.S.O.

GREENWOOD—FAVREAU.—On Nov. 19th, in the Cathedral, Calcutta, Lieut. Eric M. Greenwood, R.A.F., son of Dr. and Mrs. George Greenwood, of Goswell Road and Harrow, late of Enfield, was married to Jeanne Edith, only daughter of the late M. and Mme. George Favreau, of Rochefort-sur-Mer, France, by the Bishop.

BIRTHS

DICKINSON.—On Dec. 15th, at "Mairyshade," Gerrard's Cross, to Janet, wife of Capt. C. J. Dickinson, late R.A.F.—a daughter.

GILL.—On Dec. 12th, at 38, Portland Street, Leamington Spa, Daisy, the wife of Lieut.-Col. N. J. Gill, R.A.F., of a daughter.



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ON THE PARIS AERO SHOW AND THE FUTURE OF AVIATION.

Indubitably there is a Special Providence which looks after children, drunkards, Englishmen, and other people of obscured intellect. Or else the English are the Chosen People of our epoch. In the days of one's childhood one was always puzzled as to why the Children of Israel were the Chosen People of their day. Their manners and customs as depicted in the Old Testament gave one to think that the choice indicated a lack of taste. Very similarly the English of to-day cause a mild wonder as to why they have been chosen. Yet there is no doubt about their being the elect.

By all the laws of common sense, commercial enterprise and business initiative, we in England should have held an aeronautical exposition late last Autumn—at the close of a highly successful season of pleasure flying and in the full swing of a most promising series of flights between London and Paris, Brussels and Amsterdam. Or we should have arranged to hold one in March next, so that interest could be maintained during the Winter in the designs and trial flights of the aeroplanes and aero-engines of 1920.

Instead of which the Society of British Aircraft Constructors fixed on July of next year as the date for the first British Aero show since the war. And our friends the French led the world, as usual, by organising an impressive and elegant exhibition in Paris at what seemed to be the best possible moment.

A Successful Failure.

As the result of some time spent at the Paris Aero Show one is forced to believe that the Special Providence before mentioned which looks after Englishmen, etc., etc., has again led the Chosen People in the right, albeit the longer path, and that it is an excellently good thing that we did not hold our own aero show earlier than the French show. For, sad to say, there is no doubt that, considered as a business exhibition, the Paris Aero Show is a failure.

Considered as an exposition pure and simple, it has been a great success. The organisation has been of the finest. The arrangement of the stands and of the signs pertaining thereto has been made with that artistic genius which is of the most French. The aeroplanes themselves and the aero-engines are splendid examples of good workmanship and detail design.

But there has been no business doing. The World is not yet ready to buy aeroplanes. The exhibition was premature.

As aeronautical propaganda, as an educative influence, as an indication of the future, the Paris Aero Show has been of very great value. As a means of bringing orders and money to the French Aircraft Industry the Show has been a failure.

It was not surprising to find among one's friends in the French Industry an air of "*Morituri te salutant.*" The general feeling seemed to be that this was the last expiring effort of the French Aircraft Constructors, and that if they had to die they would at least die gloriously.

The Disease of the French Industry.

Personally one is far from believing that the French Industry is on the verge of death. One knows the vitality and the recuperative power of *la belle France* too well to think that the Industry in which she led the World from 1909 to 1914 will die a natural or unnatural death in 1920. The nation which survived Charleville and Maubeuge and revived for the battle of the Marne in 1914 cannot let its Aircraft Industry die. Yet undeniably the French Aircraft Constructors are in a bad way, both for lack of business and for lack of genius, or even talent, among their designers.

Judging from what one saw in Paris, the French Aircraft Industry has suffered more from official interference than has the British Industry. There was hardly a French aeroplane in the exhibition which showed originality in general lay-out or in aero-dynamic design. All the machines were good sound examples of very ordinary design and construction. All were good. Few were striking. And none inspired that admiration for originality which one has felt at earlier shows in Paris.

All originality seems to have been crushed out of the French Aircraft Industry either by commercialism—which has prevented the war-profiteers from spending their profits on experimental designs—or by Chalais-Meudon, the French equivalent of what our Royal Aircraft Factory used to be—which refused during the war to sanction or adopt any new design which threatened to be better than its own products or to contradict its own theories.

The great lesson of the Seventh Aeronautical Exposition in Paris is that we in England have much for which to be thankful.

The Brilliant British Exhibits.

Those British firms which had the pluck and energy, and the financial strength, to exhibit their machines in Paris have not only sown seed from which they will reap a rich harvest in time to come. They have in fact conferred a lasting benefit on British Industry in general and on the British Aircraft Industry in particular. Their exhibits were in fact the best things in the whole show, for they displayed originality of idea as well as excellence of workmanship and aero-dynamic design.

The great "W.8" Handley Page, with its striking placard announcing that it had "made the traject" from London to Paris in 1 hour 50 minutes of "real flight" impressed everybody with the neatness of its design and the luxury of its accommodation, and with the power of its Napier engines. It was the *clou* of the show, and a queue of hundreds of people passed continuously across the stand to gaze into the elaborate interior of the saloon.

The Airco stand, displaying elegance of arrangement

as a whole, exhibited a beautifully finished "Airco 16" with a Napier engine to the best possible advantage.

The Bristol stand, with its Cosmos-engined "Bullet," its Puma-engined "Tourer," and its Siddeley-engined "Babe" had a business-like appearance which was most impressive, and showed well the cleanness of Captain Barnwell's designs.

The Vickers stand, despite the disaster of the Viking smash, showed by means of models of machines designed by Mr. Pierson, by the passenger compartment of a "Commercial Vimy," and by a number of parts and fittings, the capabilities of the great armament firm.

The Westland Co.'s "Limousine," with its Falcon engine, taught a useful lesson in the art of designing a comparatively small machine expressly for passenger-carrying so that it shall be really efficient, and it indicated the high place of Mr. Bruce among aeroplane designers.

And the all-steel Boulton and Paul biplane displayed Mr. North's originality of idea and sound mechanical knowledge in a way which should be a pattern to future exhibitors. Incidentally, so far as one could see, it was the most advanced example of constructional thought in the whole show.

The Detailed Report.

With such exhibits as these the Society of British Aircraft Constructors was thoroughly well represented. One only wished that there had been more of them, so that the superiority of British aircraft over all competitors could have been more fully demonstrated. The British Industry owes these firms a permanent debt of gratitude for thus worthily upholding the honour of British commercial enterprise and engineering ability.

All these machines, together with their French and Italian competitors, will be illustrated and described in detail in this paper in the first weeks of the New Year, for, owing to the duration and effects of the Christmas holidays this year, it has been a mechanical and physical impossibility to get a full report of the Paris Show into print at an earlier date. One believes that the details of the exhibits will be found both educative and entertaining, and those who wish to read of and see them will do well to make sure beforehand of getting examples of this paper, for in these hard times supplies are limited strictly by the demand.

Polyglot Purchasers.

Given that the French Industry is as indicated hereinbefore, it seems worth while to consider the developments of aviation next year as they appear in the light of present knowledge.

There were foreign representatives in plenty at the Show, but they were not buyers. They were there to see what is being done by the more advanced nations, both in the construction and operation of aeroplanes. They will not buy till they see how our own experiments in running air-lines pay us.

There were Chinese, Japanese, Tonkinese, Javanese, Brazilians, Chileans, Peruvians, Colombians, Argentinos, Norwegians, Swedes, Finns, Poles, Jugo-Slavs, Czecho-Slovaks ("and Stumer Czechs," as a cynical Englishman remarked), Roumanians, Transylvanians, Greeks, Hebrews (quantities), Ephesians, Corinthians (and all the other people to whom St. Paul addressed his circular letters), and, in fact, representatives of every nation, self-determined, undetermined, undermined, or indeterminate, of which Prophet Wilson of the League of Nations ever dreamed in his most dyspeptic nightmare. But they were not buying aeroplanes.

Before they buy they will have to be shown that aeroplanes are reliable, that aeroplanes are safe, and that aeroplanes pay. We have already demonstrated all those things to our own satisfaction in this country. But we shall have to demonstrate them abroad before the buying begins.

When we have satisfactory mail lines running between Rio and Buenos Ayres the whole of South America will begin to buy. When we have flying-boat lines running up the great rivers of China, all China will begin to buy. When we have a Cape to Cairo line running, private enterprise will organise air lines all over South and Central Africa. But not till then.

Prospects for 1920-21.

Between now and next June many of these lines should be running with some regularity. And so, by next July, when the British Aero Show is to be held at Olympia, it is possible or even probable that there may be the beginning of a real market in aeroplanes. If so it will mean a slight revival of activity in aeroplane construction during the winter of 1920-21, and quite a busy year's flying in 1921. After which the Aircraft Industry, now in the deepest depths of the worst possible slump, may begin slowly to climb again towards the peak of a new boom.

For one thing we may, at any rate, be thankful, and that is the fact that we have at last finished with the year 1919, a year to which few will look back with any gratitude or pleasure. It has been a year of disillusionment, of exposed scandals, of disappointment, and (to many) of catastrophe. It has been the year in which befell that which Lieut.-Col. Mervyn O'Gorman, two years or so ago, so wittily and so philosophically called "the cataclysm of a devastating peace." Let us hope that the future holds for us war, if only a war of commerce, for by strenuous effort alone can strength come to us.

Perhaps the wish is father to the thought, but that at any rate is how the situation appears when regarded from here. It will be interesting to see how it works out in practice. Meantime, the British Aircraft Industry is in a very much better position than that of any other country. But that is thanks rather to the goodness of our Special Providence than to any special pro-vidence on our own part.—C. G. G.

THE UNDER SECRETARY OF STATE FOR AIR.

It is stated officially that Major G. C. Tryon, M.P., has been appointed Under Secretary for Air in succession to Major-General the Right Hon. J. E. B. Seely, C.B., D.S.O., M.P., resigned.

THE PRIX MICHELIN.

Recently, it was stated that M. André Michelin, whose motor tyre manufactory has brought him wealth, had founded a prize of 500,000 francs (normally £20,000) for certain aeronautical performances. The regulations have now been issued by the Aéro Club de France. They are briefly as follows :—The winner is to be the first aviator who (i) flies from a point within 10 kilometres of the Château de Versailles to Reims Cathedral and circling that building returns to the starting point in less than 1 hr. 15 min., having maintained a speed of not less than 200 kilometres an hour (roughly, 124 miles an hour); (ii) and then without landing flies in one hour at a height of 100 metres (375 ft.) a distance of not more than 10 kilometres (6.2 miles) rigorously following a course which is defined as the interior of the perimeter of an equilateral triangle, each side of which is 3 kilometres 600 metres long. This must be done with the aeroplane in its normal flying position. (iii) The landing at the conclusion of these tests must be made in a space of 5 metres (16 ft. 3 in.) from the time any part of the machine touches ground, and without serious damage to the aeroplane. During the landing the normal flying position must be maintained.

These regulations are not lacking in rigour, and though they may initially rejoice the heart of the undertaker, yet aeroplanes capable of winning the prize will be a great advance on any machine in existence to-day.

The prize is strictly reserved to French aviators. French aviators owe a great deal to M. Michelin for his enlightened support of the science which gives them the right to exist.

THE AIR ESTIMATES—(*Continued.*)

[The following is the continuation of Mr. CHURCHILL'S speech of Dec. 14th, the beginning of which was given last week.]

Everything possible has been done to strengthen the Air Ministry and lend body to the Air Force. The Technical Department of the Ministry of Munitions has been transferred from the Ministry of Munitions to the Royal Air Force. The meteorological research has been assigned definitely to the Air Ministry. Civil aviation has been rescued from the ambitions of the Ministry of Transport or the Board of Trade and definitely assigned to the Air Ministry. It will take, approximately, five years to bring the permanent post-war Air Force into the same kind of running order as were the pre-war Army and Navy.

Estimates have, accordingly, been worked out not for one year only, but for five years, subject, of course, to such modifications as may be found desirable.

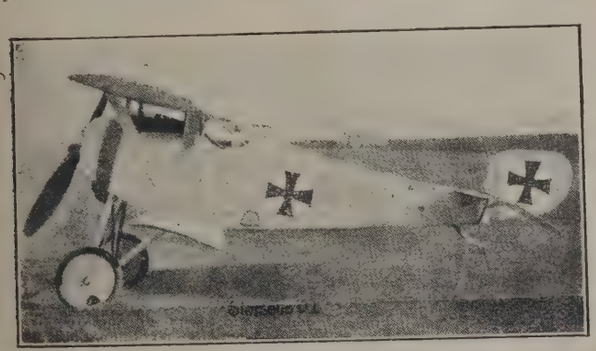
The Royal Air Force is in want of practically every permanent institution of a disciplined service. Therefore, at the outset schools, colleges, training centres, experimental establishments of many different kinds have to be called into being and organised. My right hon. friend (Mr. Lambert) thinks that because the Navy will not be training for the next two years so many officers as it was before the War there will be a certain number of beds vacant at Dartmouth and Osborne, and he thinks that these extra places in the class rooms and the vacant beds in the dormitories may be made the birthplace, the cradle of this great new Air Force of the future.

I do not think my right hon. friend's suggestion is practicable. The Air Force must have establishments of its own. I do not think you will ever build up a proper Air Force if you are to occupy any spare accommodation which may be found from time to time available in buildings at Dartmouth or elsewhere. We have to have these establishments for the Air Force. The cadets have to be trained to be officers, and the officers have to be trained in the different specialised branches of their profession, and those branches involve the studying of the special needs of the Army, the Navy, and the Independent Service. Officers have, further, to be trained to become air staff officers, to understand not only air warfare as such, but air warfare in combination both with the special and general requirements of the Army and the Navy. Mechanics have to be trained from boys upwards in all the different trades, some highly scientific trades, on whose trustworthiness the Air Service depends for its efficiency and the flying men for their lives. At Cranwell we shall have the Air Force Sandhurst. At Halton there will be the Air Force staff. At Halton also there will be the main training establishments for mechanics and artificers, similar to those which the Navy had before the War on board certain ships. The photographic establishments will be at Farnborough, and the main wireless schools at Flowerdown. The gunnery school will be at Eastchurch. There will also be a navigation school. There will be three store depots and two aircraft repairing depots, one at Kidbrook, and the other at Donnibristle. All these establishments exist at the present time.

During the next three years we have to spend a considerable proportion of our limited funds available for maintaining the Air Force on bricks and mortar. That is to say, we have to replace the temporary buildings which can be used at the present time by permanent structures. Practically no new construction of aircraft is required except for experimental purposes. We shall continue repeatedly to experiment in type, each type an improvement upon the other, but we do not require any bulk production in the next two or three years in aircraft. We have left over from the War an enormous accumulation of stores and aircraft.

The £15,000,000, which is the approximate figure, includes £2,000,000 for research and civil aviation. That amount will be provided for in next year's Estimate. We are allocating £500,000 in the present year, and we have spent £329,000 on civil aviation in the present year.

Out of the £15,000,000 we are providing £2,000,000 for research and civil aviation. Here let me deal with those people who say, "It ought to be the other way round. You ought to provide £13,000,000 for research and civil aviation and the other £2,000,000 should be good enough to manage your military affairs." I must remind hon. Members that we have still an Empire to defend. Odd as it may seem on the morrow of unheard victories, we have all those dependencies and possessions in our hands which existed before the War, and in addition we have large promises of new responsibilities to be placed upon us. The first duty of the Royal Air Force is to garrison the British Empire. Out of the twenty-four and a half fighting squadrons which the Trenchard memorandum contemplates forming at once, no fewer than nineteen are abroad, or will be stationed abroad. Eight will be in India, seven in Egypt, three in Mesopotamia, and one is to be split up between the various naval bases. The maintenance of all these forces permanently abroad, the training of officers and men, the regular circulation of the units on the roster between home and abroad—because we intend to preserve the regimental idea very strongly in regard to the fighting squadrons of the Air Force—all these functions in the Air Force as in the Army will be found to absorb the greater part of the modest sum at our disposal. When to these are added the two fighting squadrons which are all we can maintain at home and the two and a half squadrons which will be working with the Navy, and the one which will be working with the Army—I am supposed to be exceptionally favourable towards the Army as against the Navy; but it will be seen that only one squadron is allocated to the military division as against two and a half allocated to the Navy—the rest of the force will be on independent duty abroad.



A Siemens Shuckert D.I Biplane.

When we have considered all those, and the necessary schools and the training and experimental centres and the general establishment charges, the whole of the available sum is absorbed with the exception of these £2,000,000. Necessity has to come first. The Royal Air Force is now reduced to the very minimum in finance which will enable it to discharge its peace-time military functions, and to have an integral independent life as a permanent Service. If, therefore, larger sums are required for civil aviation, as some are inclined to demand, additional money must be voted by Parliament. That must be faced. I do not myself believe that it is the business of the Government to carry civil aviation forward by means of great expenditure of public money. Our business is first of all to do all we can to facilitate the development of civil aviation, to develop the routes and the key aerodromes, to develop the legislation, to assist in all these ways which are open to a Government Department to advertise and push British civil aviation

We have at the head of civil aviation in General Sykes an extremely competent officer, who is throwing a great deal of personal ability into his task, and I feel with great confidence that his treatment of the problem of civil aviation from the Government point of view will be attended by the same measure of success as has attended Sir Hugh Trenchard's treatment of the military. As to the provision for the Navy very satisfactory relations have been established between the Air staff and the Admiralty. Admiral Beatty in particular has shown that he is a sincere friend and well-wisher of the Royal Air Force. I look forward to the most favourable results from his co-operation.

The Admiralty have not got what they asked for. We simply cannot provide the trained mechanics next year, even if the money allowed, to meet all requirements of the Navy any more than we can meet all the requirements of the Army. What we have to do is to get our system established, our training plans at work, to get our establishments in full activity for preparing the personnel of the new force. The scheme which is outlined by the Chief of the Air staff is the most which is physically practicable within the time and limits available. But I give the general assurance that the Air Ministry will do their utmost to study the special needs of the Navy and meet them in every possible way. Those who seem to think that we are immediately on the verge of some enormous development whereby battleships and surface craft will disappear and will be replaced either by a submarine Navy or an Air Force, or a combination of both, must realise that in proportion as such evolution obtains the support of professional opinion, in that very proportion the large funds which are now spent on the construction of a surface Navy will be liberated and be available for the development of additions to the Air Force.

But the task before us is severely practical; we have to find the necessary air garrisons to defend the British Empire, to create a permanent independent Air Force, to offer young officer airmen or mechanics a decent regular life in a good profession to which it is an honour to belong. This is a task which is self-contained and must be discharged quite apart from any theoretical decision either for revolutionising either the art of war or for the combined organisation of the three Services. It would be a great mistake to delay the practical steps which are needed until an entirely new system of defence organisation has been thrashed out and developed. To make it a unit, to make it in a form where it is not only efficient in itself, but will fit into a higher organisation—that is the practical task on which we are engaged. But if the Air Force is to be independent of the other two Services it must also be interdependent upon them. It must be so organised as to fit naturally and easily in peace or war into a combined organisation of defence. It must be that for its own sake, in the interests of the other Services and in the general interests. Take the case of officers of the Air Force, for instance. Every Service must offer a reasonable advancement to young men who enter it, but a boy entering the Air Force ought to have as good a chance as a boy entering the Army or the Navy of making a career for himself. But as the proportion of general officers during the flying period of their lives in the Air Force necessarily exceeds very largely the proportion of higher posts, therefore we have to turn to the two great Services to assist us, and we have to adopt a system of temporary commissions. About 50 per cent. of the Air Force will be composed of its own officers in permanent commission, 40 per cent. will be the short-service commissioned officers, and 10 per cent. will be birds of passage from the two other Services It may be in future years that it will be still further extended.

It is good for us because it reduces *pro tanto* the pressure of candidates on the limited number of higher appointments. It is good for the other two Services because it familiarises them with the air, and later on it will give them the higher officers who know the true value of the air arm. It is good for all because it tends to promote that solidarity and unity with regard to defence organisation which is more and more demanded by those who are thinking out these problems, and it tends to eradicate the absurdity of mere departmental conceptions of war. Meanwhile the Air Force is dependent upon the Army and Navy for certain proportion of the officers who will be flowing through it. There are certain subsidiary services which the Army and the Air Force can have in common. For instance, we have arranged to have the mapping Department in common. The rations are supplied to the Air Force by the Navy and Army and not purchased direct by the Air Force. The Air Force clothing is bought from the Army Clothing Department at Pimlico. The ordnance is supplied by the Army. The Air Force has its own technical supply, but in these more simple forms of supply there is not the slightest reason why purchasing should not be made through the existing organisation of the Army. The medical service is at present entirely separate. The chaplains' department is separate. It requires careful consideration as to whether it is necessary or proper to continue to duplicate any of these services. All this ground has to be very carefully studied in order—first, to secure the independence of the Air Force; second, not to waste money in duplicating organisation; and, third, not to take any steps inconsistent with the future combinations of the three fighting Services on the basis of common departments for common services. There is no doubt that very large economy and simplification would result from the combined treatment of defence problems, instead of having, for instance, two or three organisations. Instead of having two or three organisations for buying meat and bread, you would have one for all. Instead of three finance and contract branches, you would have one for all. Instead of three medical departments, three sets of hospitals, and three chaplains' departments, there would be one. These are very revolutionary ideas, and progress

towards them can only be made gradually; but progress towards them must be continued, and nothing must be done in reconstructing the Air Force which in any way conflicts with the final system to which we will certainly be drawn by logic, by economic and by war efficiency, and, in fact, by everything except existing vested interests, namely, a combined general Imperial War Staff for the three Services, actuating and operating under single control.

I hope that the discussions which are now taking place between the professional heads of the three Services, the First Sea Lord, the Chief of the General Staff, and the Chief of the Air Force, may be productive of real advance in this most urgent and important matter.

Here a word as to the position of the professional head of the fighting Services. I consider that in practice the control of the fighting Services is best exercised through the close co-operation of a Cabinet Minister and the professional head, who should be the principal soldier, the principal sailor, and the principal airman of the day in the fighting Service. As long as that arrangement works well everything works well, and when it breaks down the personality should be changed either in one direction or in another. This close co-operation involves almost daily intercourse between the Minister and the professional heads. It is not possible for the Under Secretary to be the channel of all communications passing between the professional head of the Service and the Minister responsible. It has never been so at the War Office or at the Admiralty. The First Lord must deal with the First Sea Lord; the Secretary of State for War must deal with the Chief of the Imperial General Staff; and, similarly, whoever holds the seals of the Air Ministry must deal with the chief of the Air Staff. It is the chief of the Air Staff who is the one to insist on his right of direct access to the Minister responsible, for otherwise everything would have to be taken once to the Under Secretary and then again to the Minister who had to decide.

I have never reproached my right hon. friend. Having held very high offices, as he has done in the past, and having exercised great responsibilities in peace and in war, it was difficult for him to accept frankly the position of an Under Secretary.

The view I take is this: that the initiative in Service matters must in the main come, and as a general rule comes, from the professional head. He plans, he outlines, he proposes. The Minister examines, criticises, suggests, discusses with his Board or Council, and finally approves. It is not possible for the initiative in such matters to come from the Parliamentary Under Secretary, and it would not be fair to the professional head of the Department, nor would it be wise, nor would it work in practice.

Sir DONALD MACLEAN followed Mr. Churchill, and, after the usual protest against the dual Secretaryship, said:—

The Secretary for War has taken great credit to himself and to his Department that this is the only one of the three great Services which has effected a reduction, and he has told us, with great frankness, that the real reduction is to £60,000,000. What will an anxious public think when with a shock it comes to know that the Air Force was to be maintained during the current year at an expenditure of £66,000,000, and to what extent will it be satisfied when this splendid campaign of economy has reduced the total to £60,000,000? We know that the anticipation is that next year there will be an expenditure of £15,000,000 only. To my mind that very remarkable drop, which we hope will appear next year, shows that during this year, at any rate, there must have been gross mismanagement and gross extravagance.

Mr. CHURCHILL: I must apologise for intervening. I meant to give the figures in my speech. Let us take £15,000,000 as representing a normal year. The difference between that and the present expenditure is £39,000,000. Liquidating war contracts and equipment, apart from the Ministry of Munitions, accounts for £12,000,000; liquidating works, £3,000,000; decrease in maintaining war force above the normal amount accounted for £4,000,000; war gratuities accounted for £5,000,000; the pay of abnormal numbers above what will be maintained next year, due to the military situation, accounts for £12,000,000; minor miscellaneous items account for £3,000,000. That gives a total of £39,000,000, all accountable to pure and definite war charges and war necessities, and not in any way attributable to mismanagement.

The reply did not satisfy Sir DONALD MACLEAN, who concluded his speech on a note of plaintive reproach.

On the vote for Quartering, etc., Captain BENN asked if it was not true that a new uniform had been issued to the W.R.A.F. a few days before its final demobilisation. Mr. CHURCHILL said, in reply, that the demobilisation had been carried out more quickly than was expected, hence it was unavoidable that unnecessary kit had been issued.

Technical and Warlike Stores.

On the vote for Technical and Warlike Stores, Captain BENN again began the attack, and after a few words about necessary checks on the use of mechanical transport, suggested in regard to the item of £25,000 devoted to inventions, that personnel in the Services often thought of small improvements, but there was sometimes difficulty in getting these inventions considered. He wished to know whether these ideas could be forwarded direct to an independent person. [That generally means someone who knows nothing of the Service.—Ed.] He also desired to hear about civil aviation.

Mr. CHURCHILL did not think it desirable that officers in full-time Service should receive monetary rewards for any improvement they may invent in the course of their work. Any great or novel invention would receive adequate reward.

[After all, it is the Service which gives the average officer the knowledge and opportunity to make inventions.—Ed.]

Captain BENN intervened to say that he was not asking for monetary rewards, but for the devising of some scheme by which officers' inventions should achieve due decognition.

The SECRETARY OF STATE said he knew of no disposition to snub officers and men who put forward useful ideas.

With regard to mechanical transport, I am satisfied that the reduction of motor-cars now has gone down to the very minimum compatible with the ordinary carrying on of the duties. Some people have the idea that one of the great ways of achieving economy is to reduce motor-cars and to walk instead, or go by train, and others think that if you can get the use of the telephone reduced or shorthand-writers retrenched you will in that case succeed in effecting great economies. If people who are dealing with matters of great consequence write their letters in their own hands instead of dictating them, walk to their business instead of riding, and send a message instead of speaking through the telephone, some people think economies will result, but, as a matter of fact, very few suggestions are less helpful than these.

So far as the mechanical transport of the Air Force is concerned, I have not yet finally reached a conclusion as to what extent we can pool with the Army. . . .

The mechanical transport Repair Department at Shrewsbury, which is under the control of the Royal Air Force, we hope will be wound up and handed over to Slough, which, although it has been frequently abused in this House and out of it by ignorant persons, is increasingly establishing itself as a paying asset in the State and is vindicating in a most conclusive manner the wisdom and foresight of those concerned in its initiation. As far as civil aviation is concerned, I have the figures here. I said the total was £329,000, and these are the principal items: Meteorology, £25,000; pay (salaries), £39,000; air routes, Cairo to the Cape, £50,000; Karachi to Australia, £40,000; purchase of land, etc., £50,000; minor new works, £25,000.

Major-General Sir NEWTON MOORE: Is there any provision for a route beyond Karachi? Is there any provision for acquiring land at either of the stations that would be required between there and Australia?

Mr. CHURCHILL: Oh, yes. This present flight to Australia has been done along a route which the Civil Aviation Department of the Air Ministry has been prospecting and developing.

Only one machine has so far got through, but the trail has been blazed, not only as far as Karachi, but right away through to Australia. I think the best part of the route will be the Cairo, Baghdad, Karachi route, and there, anyhow, you will have large air establishments for fighting or strategic purposes, and it ought to be possible on a first-class route, with aerodromes and so forth, for large commercial craft to make their way. The Cape to Cairo route, on which £50,000 has been spent, is now practically complete, and I could arrange for hon. Members who might be interested to see a roll or a chart as long as from here to the door, showing them all the stations throughout the whole of that route, where there are landing grounds, with dumps, etc. The present state of the scheme is this, that we want an incentive from South Africa as great as was offered by Australia to induce the civil aviation interests in this country to compete in the Cairo to the Cape flight, and I do think the great millionaires of the Rand might well make the offer of a prize equal to that which was given by the Government of Australia, and so offer an incentive to use this route. The route will be kept up by the different local Governments through which it passes. . .

Sir N. MOORE: Where you pass over Dutch territory, for instance, have any arrangements been made with the Dutch Government? . . .

Mr. CHURCHILL: I can only say that it is for the Controller-General of Civil Aviation to do his best to smooth away the difficulties. . . .

Works, Buildings, and Lands, and Air Ministry

In the discussion on the Works, Buildings, and Lands Vote and Air Ministry Vote, questions were asked by Captain Benn and Lieut.-Commander Kenworthy, none of which were of either general or aeronautical interest.

Miscellaneous Effective Services.

Captain BENN, who this day was filled with the inquisitiveness that endears children to their relatives, asked whether the Meteorological Office was completely under the Air Ministry. He thought it should be, as aviators must know more about the atmosphere than other people. They should, he thought, supply information to the other Services.

Mr. CHURCHILL: The intention is that the meteorological staff and all investigations into that branch shall be brought, in practice, under the Air Ministry. It is said that the eye of the master maketh the horse fat. No one has an interest in meteorology comparable to the Air Ministry. . . . It is following a perfectly logical and defensible principle to confide the charge of that matter entirely to us.

Lieut.-Colonel MOORE-BRABAZON asked why the charge for Meteorology appeared under civil aviation, and was told that "civil aviation this year has not been able to spend the modest sum allotted to it." If money ran short the charge would be transferred to the military side proportionately to the service rendered.

The Second Day.

The Report Stage was taken by the whole House on Dec. 15th, and the resolutions passed at the first sitting were read a second time.

On the first resolution—as to pay of the Royal Air Force—Mr. HOGGE, whose permanent worry in life is the pensions and gratuities of "other ranks" in the Services, said that though the allotment of Service gratuities on discharge amounted in the case of officers to £3,000,000 that for other ranks was only £2,100,000. He said that he understood that there was a larger proportion of men to officers in the Royal Air Force than in the Regular Army. [Here he is entirely wrong.—Ed.] He knew that the basis of officers' gratuities was 124 days' pay for the first year of service and 62 days' pay for every successive year or part of a year. He thought that "other ranks" should receive gratuities on the same basis.

The SECRETARY OF STATE said that the Government had no intention of altering the present system. About £5,000,000 had already been paid to officers demobilised from the Royal Air Force. In reference to the comparative numbers, he said that "in the Army the proportion of officers to men was nothing like so high as in the Air Force. There were nearly 25,000 officers in the Air Force at the conclusion of hostilities. I do not think the number of men exceeded 200,000."

On Captain BENN asking if the Government would state their policy as to the making of more non-commissioned pilots as is the custom abroad, and the use of officers as observers, Mr. CHURCHILL said that he could not intervene, as the House was not in Committee.

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At this point the Irish members began to take a part. As a result of their dissatisfaction at the suppression of the "Freeman's Journal" they endeavoured by means of the time-honoured "talking out" method to delay the proceedings of the House in order to prevent the Irish Education Bill being taken during the day. Hence, it is not one's intention to deal at any length with the Irish speeches save where they accidentally touch on matters of importance to aviation.

After a series of speeches by Mr. KELLY, Mr. DEVLIN, and Captain REDMOND, the questions in which were mostly disallowed by the Speaker, Mr. CHURCHILL, with some courtesy, gave a general reply, in the course of which he said that the W.R.A.F. had been reduced to 200.

On division the House agreed to the resolution.

Supplies and Transport.

The Second Resolution was then read a second time. Mr. KELLY again spoke. He argued that scavenging, sanitary services, etc., should be done by R.A.F. personnel as punishment fatigues in order to save public money passed in payments for civilian labour. He also thought the large clothing charge was due in great part to the frequent changes in uniform made in the past 18 months.

Capt. BENN wished to raise the question of the Medical Services. The medical conditions in the Air Force were essentially different from those prevailing in other services. The French and Italians had done much good work in this direction, and at Padua a large laboratory had been opened for the purpose of instituting accurate tests in respect of people applying for commissions in the aerial arm. He wanted to know if Col. Flack's work was being encouraged.

Mr. HOGGE spoke of houses and clothing, and Mr. DEVLIN was interested in the £1,000 set aside for the purchase and upkeep of horses. Captain REDMOND also showed interest in all these subjects, and in addition wished to know

what is meant in regard to the medical services referred to and the hospital charges in respect to the Army and civil hospitals of £150,000? Has the right hon. gentleman created any new hospitals? Where are these hospitals? Are they in Edinburgh, London, Dublin? All that we are told in this White Paper in relation to the medical services is Item No. 2 Hospital: charges in respect of Army and civil hospitals, £150,000. Is the right hon. gentleman subsidising existing hospitals?

To all of which Mr. CHURCHILL replied.

The £1,000 alluded to here is for horses required in respect of the area commands. There used to be eight area commands of the Flying Force in the United Kingdom in which horses were provided for the officers who had a war staff We have reduced these areas to two—the inland and the sea-board area. The officers have a pretty wide district to cover. They are often equivalent in rank to a general officer and in respect to the duties they have to discharge, and they have to get over a good deal of ground. Horses have been purchased, not mules or asses.

Mr. DEVLIN: The asses are all at the War Office?

Mr. CHURCHILL: I am not quite sure whether the field over which the asses roam is not wider than that. Observations like that carry one back to one's early school-days, when jokes of that kind about the possession of asinine qualities by particular individuals were expected to pass muster. So far as the medical services are concerned, the £150,000 is required to pay the hospitals on account of the disbursements to which they had been put. An airman ill or injured, where there is no other hospital, is taken to the nearest civilian hospital, and, of course, the bill comes in to us in due course.

Captain REDMOND: They are existing hospitals?

Mr. CHURCHILL: We are not building any new hospitals On the contrary, the process this year has been the closing of hospitals on an enormous scale. Then about the clothing. The hon. gentleman was surprised that £45,000 should be spent on clothing for the Women's Royal Air Force. Attention has already been drawn to the fact that this average for 9,000 women only works out at £5 per head, and that does not seem to me to be excessive for the requirements of a considerable number of females.

Mr. KELLY: Is it not £9 a head?

Mr. CHURCHILL: I am not strong at arithmetic, but I think that, as a matter of fact, five nines are 45.

Mr. KELLY: I beg the right hon. gentleman's pardon, I am wrong.

Mr. CHURCHILL: Then a word as to the clothing of the men of the Royal Air Force. In the middle of the war when the Air Force was formed into a separate unit a new uniform of khaki was adopted. Now that the war is over, it has been decided to make another change. It has been thought desirable to have a more modest and a more sober-hued cloth. It shows, however, the distinctive character of its design. This involves no additional expense, because we make the strictest rule that every officer has to wear out his old clothing, even the original khaki, before he adopts the new pattern. It is quite easy for the Air Force to do that, because they can keep their old uniform for the dirty oily work which has to be done in regard to aeroplanes.

In regard to the medical examination of pilots he said:

I have no reason to believe that the apparatus we have for this purpose in the Royal Air Force is in any way inferior to any apparatus in use in any other Air Force in the world. I can quite see that the medical service of the Royal Air Force, even if it should not be separated from the general medical service, must be a highly specialised branch, because the conditions require special aptitude, and we are all acquainted with the effect which flying produces on officers and men, and this makes it necessary that the medical service dealing with them should have had a specialised study of those conditions. Therefore I fully recognise that it must be a special branch of the medical service. . . .

The resolution was agreed to by the House.

Technical and Warlike Stores.

The third resolution was then read a second time.

Lieut.-Com. KENWORTHY was interested in the £25,000 set aside as rewards for inventions. He wished to know whether or not due attention was being paid to the helicopter. The French had done much in this way but he feared that "certain sections in the Air Ministry were lukewarm" in the matter.

[What, for instance, has the Personnel branch to do with helicopters?—Ed.]

In regard to kite balloons, he said:

I noticed in the "Times," under the title of "Naval News," an item to the effect that sloops proceeding to the China station were having their kite balloon winches removed and the old appliances replaced. That appears to me to evidence a very short-sighted policy. Every ship sent to China should be equipped with the latest anti-submarine devices, and certainly with the kite balloon.

Mr. HOGGE, among other points which were not clear to him, wished to know if the £25,000 for inventions was to be spent as awards to aviators or was to make provision within the Air Service for the testing of inventions submitted. If the latter arrangement was intended the sum seemed inadequate.

Capt. REDMOND, with much circumlocution that the business of the House might proceed slowly, asked if the £144,000 asked for was to cover the price of one airship only, and what was being done with the material purchased for other airships and deprecated the waste of the time and money expended on them. He was worried about the expenditure on the construction of aerodromes in Ireland at Tallaght and elsewhere. Why did they lay out aerodromes only to abandon them at a later date?

[Capt. REDMOND should not forget that a state of war existed between this country and certain foreign Powers from 1914 to 1919.—Ed.]

Mr. KELLY also spoke with charm on nothing for fifteen minutes.

Mr. CHURCHILL: As to the £25,000 for inventions, that admittedly is a small sum, but, in the first place, the Inventions and Research Department has only really begun to develop its station during the last few months. It is probable that more expense will be incurred on that account in later years. Also there are several important claims for inventions made during the war which are still *sub judice* and which are likely to mature, not in the current year but in the currency of the next financial year. I made a mistake a few minutes ago in saying that the Appropriations-in-Aid on Vote 1 of £450,000 was in respect of the airship. Of course, it had nothing to do with that at all. In the item "Appropriations-in-Aid, £545,000" on this Vote is contained money received on account of the airship that has been sold. We are endeavouring to dispose of all the airships, with the exception of three, which are reserved for certain purposes. We hope to sell them to a company which will take them over under certain conditions. The Government will participate in any advantages which are gained from their use. . . . .

I was then asked about the helicopter. There is no doubt at all that if civil aviation is to achieve really wide development, it must be through the agency of some quite different kind of aeroplane from that which is used at present. The great speed involved in landing aeroplanes at present, and the length of ground which they require to pull up in, will always invest with an element of peculiar danger that form of travelling. If this invention were successful, it would undoubtedly give us a machine which, if the engines stopped, would descend like a parachute, quietly and gently, and sit down on the ground without anyone being hurt. It would also give us a machine which would rise practically straight from anyone's back garden, and the extraordinary fact is revealed by investigation that it is by no means impossible, scientifically and theoretically, that the helicopter machine would not only rise and descend perpendicularly, but when it progressed laterally it would be capable under certain conditions of developing very great speed. It is true that the inventor, Mr. Brennan, who has been studying this for a very long time—I started him on it when I was at the Ministry of Munitions—does not make the claim in regard to great lateral speed, but some scientists who have worked it out theoretically think it is by no means impossible. However, progress has been disappointingly slow, and indeed we have not yet succeeded in making a machine which will ascend into the air, and the whole field is extremely speculative; but it is certainly a matter of very great interest, which should be pursued with the greatest energy by all who are interested in the future of civil aviation. . . .

The Resolution was agreed to by the House.

Works, Buildings, and Lands.

The fourth resolution on Works, Buildings, etc., was read a second time.

Major BARNES raised the whole question of the attempt to sell Lord Rosebery's land at Turnhouse Farm without consulting him in the matter. He said it was illegal even under D.O.R.A.

Mr. CHURCHILL, replying, said that the matter had been thoroughly thrashed out in the public Press. He held that the Government proceeded within the existing limits of the laws of the land. He proposed to let matters take their course. Tribunals already existed to protect the community from abuse and individuals from injustice.

This reply roused Mr. DEVLIN to make a long speech delivered with perfect elocution, protesting against the scandalous treatment of Lord Rosebery.

Mr. KELLY, tired of listening to others, and mindful of the necessity of obstruction, spoke again on works and buildings, and asked if Sub-head H, showing the incidental expenses of the "Air Ministry Estates," included estates in Ireland held by that department.

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Air Ministry, and a very valuable crop of meadow has been taken off it. I would like the right hon. gentleman to tell me if these lands are let or if they are used directly by the Air Ministry, and if any credits come to the Department from the use of them.

In the course of a further speech Mr. HOGGE said :

I want to ask something about paragraph (B). We sometimes find embedded in these Estimates a rather distinct Empire fact. The phrase used in paragraph (B) is "accommodation at stations on aerial route between Egypt and India, £50,000." What is that aerial route? Is it a route over British territory, or territory over which we have some protection? For what is it designed? Is it an Imperial venture, or has it anything to do with the situation of Egypt and India from the point of view of possible disturbances in either of those countries or in both at the same time? I suppose that the route must have been mapped out. Is it part and parcel of another route?

Mr. CHURCHILL : The hon. Member spoke first of the aerial route from Cairo to India. This £50,000, which is taken in the Vote this year, is only the beginning of the preparation for the aerodromes and accommodation which will be required at Cairo, at Baghdad, and at Karachi, the three main points on the route from Cairo to India. This is the most important section of the route from London to Australia, and it will come into existence as a going concern long before the other parts of the route are perfected. In the first place, it is in clear fine weather, where there are no clouds or disturbances such as affect flying enterprises in these islands. You are able to fly all the year round along that route, and long journeys will be or ought to be made with great certainty and safety there. In the second place, Cairo, Karachi, and Baghdad are all places where we have our garrisons of air force in any case for military purposes, because we expect to hold this Middle East theatre very largely through the instrumentality of the air. They will be a substitute for large bodies of troops, and will supplement the troops which are holding these regions. Therefore, there will be three great air stations at these three centres. There will be, probably, eight or nine squadrons distributed among them. They have to be there in any case as part of our general strategic arrangement. It will be very convenient to let mail flying, passenger flying, and civil flying take place over this route, because we shall have to keep the stations there anyhow. It will mean that you will not have to saddle the mail contract with the burden of all the aerodromes and hangars and the regular plant, because those will be there for military purposes. Of all the places where you can bring civil aviation into effective commercial use this section between Cairo and India is the best It has also the effect of buckling the Empire together in a very remarkable manner, because by the saving of time it ought to be possible to fly in two days, or in three days at the outside, from Cairo to Karachi, and that saves a large part of the eleven or twelve days which would be spent at sea.

With regard to Halton Boys' Training College, I can report that the buildings and estate now belong to the State. They were taken over in the war, but were so much knocked about, both the house and the estate generally, that it was a better investment for the Crown to purchase than to pay money to the owner. We made a good bargain in the interest of the State, and it is now one of the most valuable properties in the possession of the Air Force. We not only propose to put our staff into the house, but we propose to put in the grounds the principal training college for young air mechanics. It is all part of the full scheme which was embodied in the Trenchard Memorandum. Nearly all the mechanics in the Royal Air Force want to go; at any rate, the overwhelming majority want to go, and we should not be able to put any aeroplanes into the air unless we set to work at once with the training of new and trustworthy mechanics. That, of course, takes time. For many months we have had between 3,000 and 4,000 boys in training. It is an imposing sight to see those enormous long walls with their hundreds of lathes, at which the boys are being taught professions which will be of the very greatest utility to them, apart from the Air Force, in their after-life. When you have these boys being trained there it is essential that the conditions should be suitable and provide for their health. At present the buildings are falling to pieces. We are going to replace the huts by a regular system of brick buildings, making the place a great and permanent centre of Air Force training. The sanitary arrangements also are being considered. There will be a gymnasium and a recreation room, and, I think, a cinema. At any rate, there will be all the regular institutions of a small, modern, educational community. With regard to the Appropriations-in-Aid, the principal payment has been made by the United States. Hon. Members will perhaps remember that in the last year of the war we undertook to assemble for the United States an enormous number of aeroplanes that they were not able to assemble themselves. The aeroplanes were brought over to this country in parts, and we fitted them together. Aerodromes were fitted up at considerable expense for this particular work. They have been able to repay us the charge agreed upon, and we have not had to wait, as we have had to do in regard to repayments by all other countries.

The Resolution was agreed to by the House.

On the remaining Resolutions which were finally agreed to Mr. KELLY alone spoke. Nobody intervened and nobody replied.

And so the Air Estimates debate concluded.

THE KING'S SPEECH.

In the course of the King's Speech proroguing the Houses of Parliament on Dec. 23rd, the following passage occurred :

"Great progress has been made during the past year in the gigantic task of demobilising My Navy, Army, and Air Force, impeded as it has been by the uncertainties of the situation in large parts of Europe and Asia."

THE FRENCH CIVIL AVIATION BUDGET FOR 1920.

Civil Aviation in France is governed by the Office de Coordination Générale de l'Aéronautique over which General Duval presides. Grouped under this office are the three different aeronautical sections, the S.N.Aé. (Service de la Navigation Aérienne), the S.T.Aé. (Section Technique de l'Aéronautique), and the S.F.A. (Service des Fabrications Aériennes).

This office has prepared its Budget for 1920, and proposes to ask the Chambers for supplies to the amount of 233,393,000 francs (normally, £9,335,720). This money, if granted, will be allocated as follows :—

	Pay. fr.	Operation of Services. fr.	Construction of Materiel. fr.	Transport of Materiel. fr.	Special Wartime Indemnity. fr.
S.N.Aé.	5,743,920	23,549,603	Aeronautical, 63,350,000 Aviation, 62,470,000 Research, 3,766,000	1,000,800	75,000
S.T.Aé.	890,000	46,155,000	Construction, 4,830,000 Competitions, 16,000,000		
S.F.A.	1,706,700	2,000,000	350,000		

To which should be added a sum of 25,000 fr. allocated in general to the three sections for "charges de famille," whatever that may mean.

The 63,000,000 fr. allotted to the S.N.Aé. for aeronautical construction is to be devoted to the construction of four dirigibles, and to their operation in civil work. 20,000,000 fr. of the vote for S.N.Aé. will go to aerial navigation companies in the form of premiums and subsidies.

THE FUNERAL OF SIR JOHN ALCOCK.

The funeral of Sir John Alcock, K.B.E., D.S.C., took place on Dec. 27th at Manchester, Major-Gen. Swinton, C.B., D.S.O., representing the Royal Air Force, and Squadron Leader E. R. Moon, D.S.O., representing the Secretary of State for War, were present.

H.M. the King and Capt. H.R.H. the Prince Albert, K.C., R.A.F., have sent messages of sympathy to Mr. and Mrs. Alcock. The King's message, forwarded by Lieut.-Colonel Clive Wigram, is as follows :—

"The King desires me to express his deep sympathy with you in the untimely and tragic death of your distinguished son, whose name will ever occupy an honoured place in the roll of British airmen who never spared themselves in order to uphold the honour of their country. It was with pleasure His Majesty recently decorated your son for his great feat in crossing the Atlantic, and the King feels that the early close in the prime of manhood of so valuable a life is an irreparable loss."

The message from Prince Albert, forwarded by Wing Cmdr. Louis Creig, R.A.F., reads :—"I am desired by His Royal Highness Prince Albert to express to you his deep and sincere sympathy for the loss of your gallant son. Your son's services to his country, both in war and peace, will ever be remembered."

THE NEW SECRETARY OF THE R.Ae.S.

Owing to the resignation of Mr. W. Barnard Faraday, LL.B., who has filled the office of Secretary to the Royal Aeronautical Society with such marked success during the past four years, it has been necessary to find a new secretary. The choice of the Council has fallen on Lieut.-Col. W. Lockwood Marsh, late R.A.F.

Colonel Marsh has during the war been concerned with airships, and has made a name for himself as an authority on these craft. It seems well, thus, that the Secretary of the R.Ae.S. should have a personal interest in airship work, as this will prevent him from devoting himself to the heavier-than-air side of aeronautics to the prejudice of lighter-than-air.

Mr. Faraday's departure will be deeply regretted, for his affability and good humour have endeared him to all who have had dealings with the R.Ae.S. The recently-published Glossary of Aeronautical Terms issued by the R.Ae.S. as the result of the work of the Technical Terms Committee will remain as a monument to Mr. Faraday's industry and assiduity during his term of office. All will wish him well in his new work, and all likewise will wish Colonel Marsh success as Secretary of the oldest society in the world concerned with aeronautics.—C. G. G.

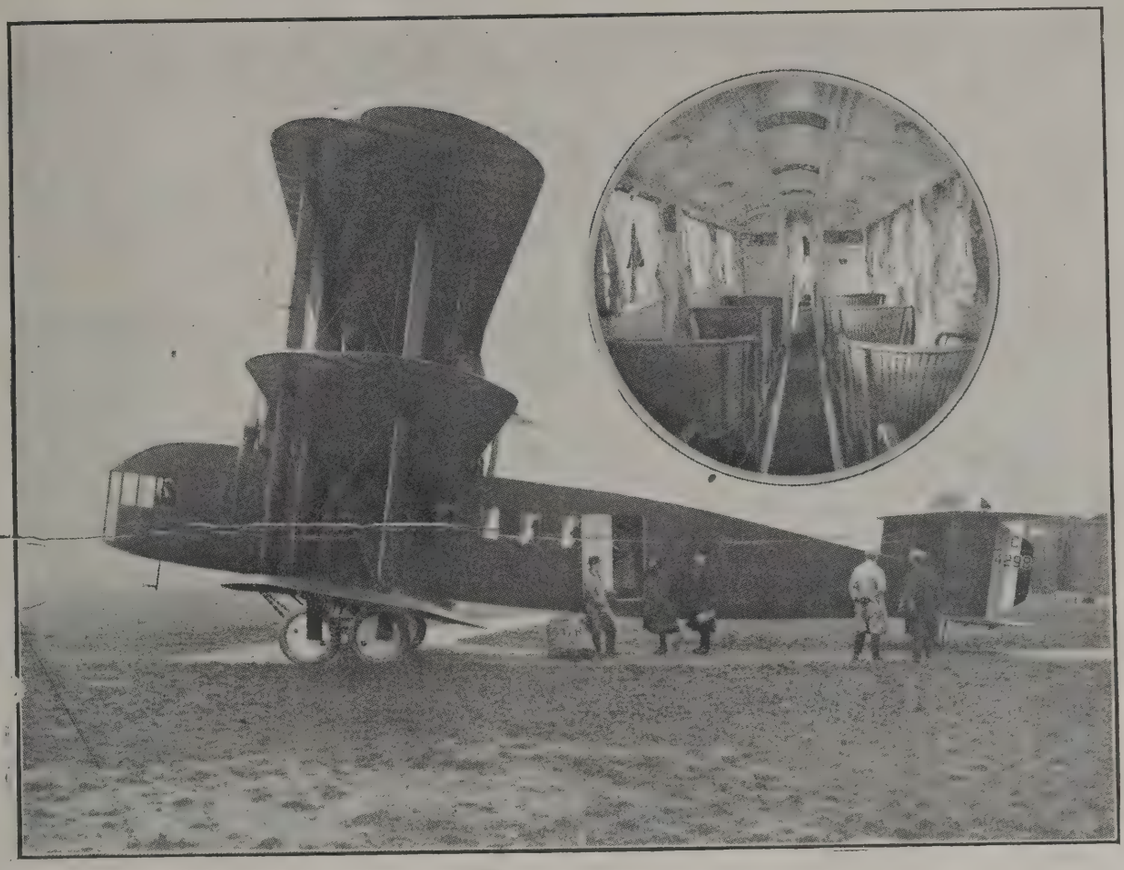
THE ROYAL AERONAUTICAL SOCIETY.

A juvenile lecture to the children of members and friends of the Royal Aeronautical Society, entitled "How Airmen Find Their Way," will be delivered on Thursday, Jan. 8th, 1920, at 3 p.m., at the Royal Society of Arts, by Major H. L. Wimperis, R.A.F. Tickets may be obtained from the Secretary, R.Ae.S., 7, Albemarle Street.

THE AEROPLANE'S PARIS AERO-SHOW REPORTS.

The Reports on the Exhibits at the Paris Aero Show will be published next week and the following week in the "Aeronautical Engineering" Supplement to this paper. The machines will be described and criticised by Captain W. H. Sayers (late Technical Dept., R.A.F.) and Mr. C. G. Grey. Every machine shown will be illustrated by sketches drawn on the spot by Mr. Leonard Bridgman (late Technical Officer, R.A.F.). These reports will be found to be the most complete and illuminative published in any paper. The number of copies available is limited, and those who wish to obtain copies should order them at once from "The Aeroplane" Publishing Department, 61, Carey St., London, W.C.2.

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THE DEATH OF CAPTAIN SIR JOHN ALCOCK, K.B.E., D.S.C.

The death of Sir John Alcock is a severe blow to British Aviation, in that he was naturally much in the public eye, but still more is it a blow to his old friends among those concerned with flying, for his sterling worth, his modesty, and his good heart endeared him to all who knew him. It is the irony of fate that one who had gone through all the perils of the early days of flying, who had made long raids over the worst of enemy country, and who had crossed the Atlantic on a land-going aeroplane, should die in a simple accident.

As to the nature of the accident there can be but little doubt. One who investigated the cause closely the day after the occurrence gives the following particulars :—

As may be seen from the sketch, the machine—which was a Vickers "Viking" amphibian flying-boat, with retractable landing-wheels and a Rolls-Royce engine—struck the ground 80 yards away from a wire fence over which it had passed. The occupants of the farm, shown in the sketch, heard an aeroplane approaching through the mist, which was scarcely a fog. The machine circled round the field, judging by the sound, though it was only seen for a moment.

At the end of the circuit it came round over the farm quite low down and carried away the top branch of a tree. This branch was quite small and would not appear to have been strong enough to affect the progress of such a machine as that on which Sir John was flying. The machine disappeared in the mist, and a few seconds afterwards a crash was heard.

The farm people went over the fence into the field and found the machine standing on its nose. The pilot was still in his seat, with his hands gripping the spade-handles on each side of the control column. Every control was intact and operated freely after the smash.

The surgical examination showed that no bones were broken except his jaw. He had pitched forward into his wind-screen, and the blow on the point of the jaw had jerked his head back and had fractured the base of the skull. Men have been killed in boxing matches by blows on the point of the jaw producing precisely such an effect.

From this it is evident that the force of impact was small, so it is clear that the actual fall can only have been a matter of a few feet. The landing-wheels were down in position to land, but there was no mud or grass on them to show that they had ever touched the ground. Also, the only parts of the machine which hit the ground were the nose of the boat, which was crumpled back, the leading edges of both lower planes, and the noses of both wing-tip floats.

Hence, the only possible assumption is that the machine struck nose-on from a height of a few feet. The only possible deduction, therefore, is that she stalled when very low down.

It would be difficult to imagine so skilled and experienced a pilot as Jack Alcock stalling his machine when landing if one did not perceive the probable cause of his doing so. It will be noticed that it is 90 yards from the line of trees to the wire fence. As the machine actually hit the top of one tree the assumption is that he was gliding down to land and deliberately scraped low over the trees to do so.

In such a case he would be only 30 feet or thereabouts above the ground when crossing the line of trees. As he would be gliding as slowly as possible his angle of descent against the wind would probably be about 1 in 6 or 1 in 7. Thus, in 60 or 70 yards he would be within a few feet of the ground.

It may be assumed that he then saw the wire fence 15 or 20 yards in front of him, and made an effort to lift the machine over it. Whether he opened out his engine to get the necessary lift or not does not seem to matter much. Though the farm people say that they heard the engine running till they heard the crash one cannot rely on this evidence, for their unaccustomed ears may have deceived them.

In either case it seems clear that in trying to lift the machine over the fence it shot up a few feet into the air, carried on for another 40 or 50 yards and then stalled and dived onto its nose.

There is just a possibility that on seeing the fence he opened his engine intending to fly another circuit and land the other side of the fence. In this case he may have stalled with his engine full on, in which case one thinks the crash would have been worse than it was in fact. Or the engine may have choked or faltered at the critical moment and have left him in a stalled position. Or he may have flown over the fence intending to land beyond it, where, owing to the rather sudden fall of the ground towards the corner of the field, and the position of his wind-screen, together or separately, causing him momentarily to lose his horizon, he may have flown straight into the ground at the point indicated. In this case, it is hardly likely that the machine would have struck direct on its nose.

It would seem, therefore, in any case, that the direct cause of the accident was a praiseworthy but wholly lamentable attempt on the part of the pilot to save his machine from injury. If he had landed and run into the fence, or if he had landed on top of it, the big strong boat-hull would simply have swept the fence away, and even if there had been a ditch alongside the fence the keel of the boat would have slid across it. But, no doubt, he was anxious to save the machine from even scratches and tears, in view of the fact that it was to have been exhibited at the Paris Show after alighting on the Seine near the Grand Palais.

His reason for landing was that the mist was so thick at that point that one could only see 50 or 100 yards ahead, and might well have been thicker farther inland. As a matter of fact there was hardly any mist east of Rouen, and near Paris the weather was clear and sunny, with occasional showers. All of which shows how large a part pure luck plays in the fate of man.

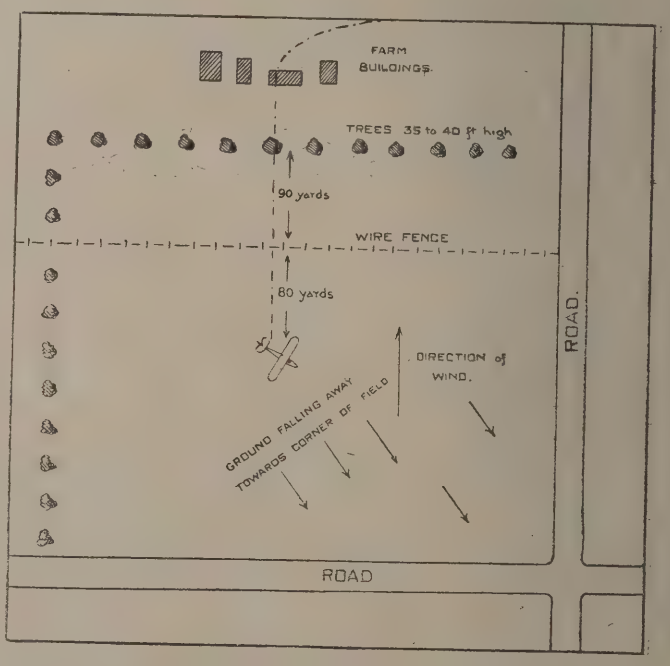
Whether the foregoing be the true explanation of the accident or not the points suggested therein are worthy of consideration by all pilots. The great lesson to be learned from this, as from the deaths of so many other experienced pilots, is that when anything unforeseen occurs a pilot should never attempt to save his machine if he sees that he can alight safely at the expense of a little damage to the aeroplane.

Those of us who knew Jack Alcock, the quiet, unassuming but earnest and confident aviator-mechanic at Brooklands, who later met him as a Warrant Officer pilot, R.N.A.S., who saw him again as a commissioned officer with a D.S.C., and, again, as the hero of the great trans-Atlantic flight, have known him always as one of the salt of the earth. Those under whom he worked and those who worked under him alike esteemed his solid worth and his sound common sense.

He loved flying for flying's sake. He was ambitious to do something big for the sake of flying rather than for any monetary reward it would bring. One remembers a certain letter which he wrote from his prison camp in Turkey telling one that he was well and fit, and adding that after the war he would be ready for "any big stunt." He had his wish. He achieved the biggest "stunt" of all, the direct flight across the Atlantic.

Now he has had the "very great adventure." At the end of it he has found many old friends in that Valhalla where dead aviators meet. But he has met no enemies, nor has he left any enemies behind him, for Jack Alcock had none.

C. G. G.



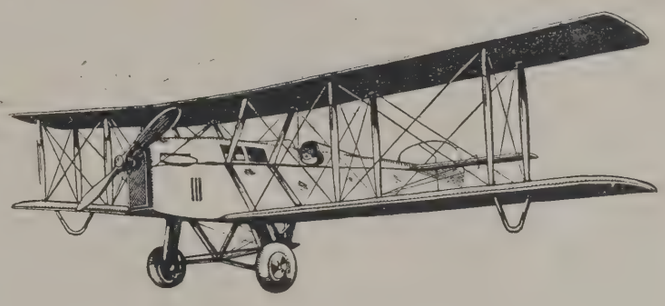
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It has a top speed of 107 M.P.H. and a landing speed of 40 M.P.H., which, combined with a wide tracked oleo undercarriage, renders it capable of being landed almost anywhere. The wings fold for storage purposes, bringing the span down to 15 ft.

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NAVAL & MILITARY AERONAUTICS

[The official "Gazettes" and Personal Notices will be found on page 2213.]

GREAT BRITAIN.

NAVAL.

Movements of Ships.

It is reported that H.M.S. "Ark Royal" left Port Said for Suez and Aden on Dec. 22nd.

MILITARY.

THE CASUALTY LIST.

Reported Dec 29th.

PREVIOUSLY REPORTED MISSING, NOW REPORTED KILLED.—Harel, Lt. L. O., R.F.C.
Pinder, Lt. S. R., R.F.C.

The Afghan War.

On Dec. 17th the Titi Madda and Hassan tribes were again bombed, and have now asked for an extension of time for their decision regarding the peace terms.

On Dec. 18th the Derajat column operating against the Mahsuds advanced from Jandola to Mandannakach. Aeroplanes successfully co-operated.

It was officially announced on Dec. 30th that the Mahsuds have surrendered. Among some telegrams, dealing with the situation, sent from India on Dec. 27th, the following was included :—

Our aeroplanes attacked Katkai on Dec. 25th, which had been a place of hostile concentration for the previous four days.

A Golf Club and R.F.C. Officers.

A correspondent writes :—

On Thursday, Dec. 18th, the Court of Appeal, Lord Justice Atkin (Master of the Rolls) and Lord Justice Younger, heard the appeal of the Wey Manor Golf Club against a decision of Mr. Justice Darling refusing to award compensation to the club on a petition of right against the Crown, founded upon an alleged breach of a contract to board a minimum of 20 R.F.C. officers with the club in 1916 and 1917.

During the war a number of R.F.C. officers stationed at Brooklands Aerodrome were accommodated at the club-house, and the question raised in this appeal was whether a statement in a letter to the Military Authorities from the club secretary dated May 26th, 1916, amounted to a contractual obligation by the War Office, or merely to the expression of an expectation, the fulfilment of which was not intended to be grounded upon obligation. A sum of £500 was spent on furnishing the club-house for the officers.

After Oct. 4th, 1917, no officers had been sent to the club, although Brooklands continued to exist as a military station.

The Court, by a majority, dismissed the appeal.—J. F. S.

AIR FORCE.

A Rescue.

Lieut. Wood, R.A.F., a South African, was seriously injured on Dec. 27th while rescuing a woman from drowning in the Thames. He dived from Hammersmith Bridge, a height of about 30 ft., and apparently his head struck the bottom. He was successful in saving the woman.

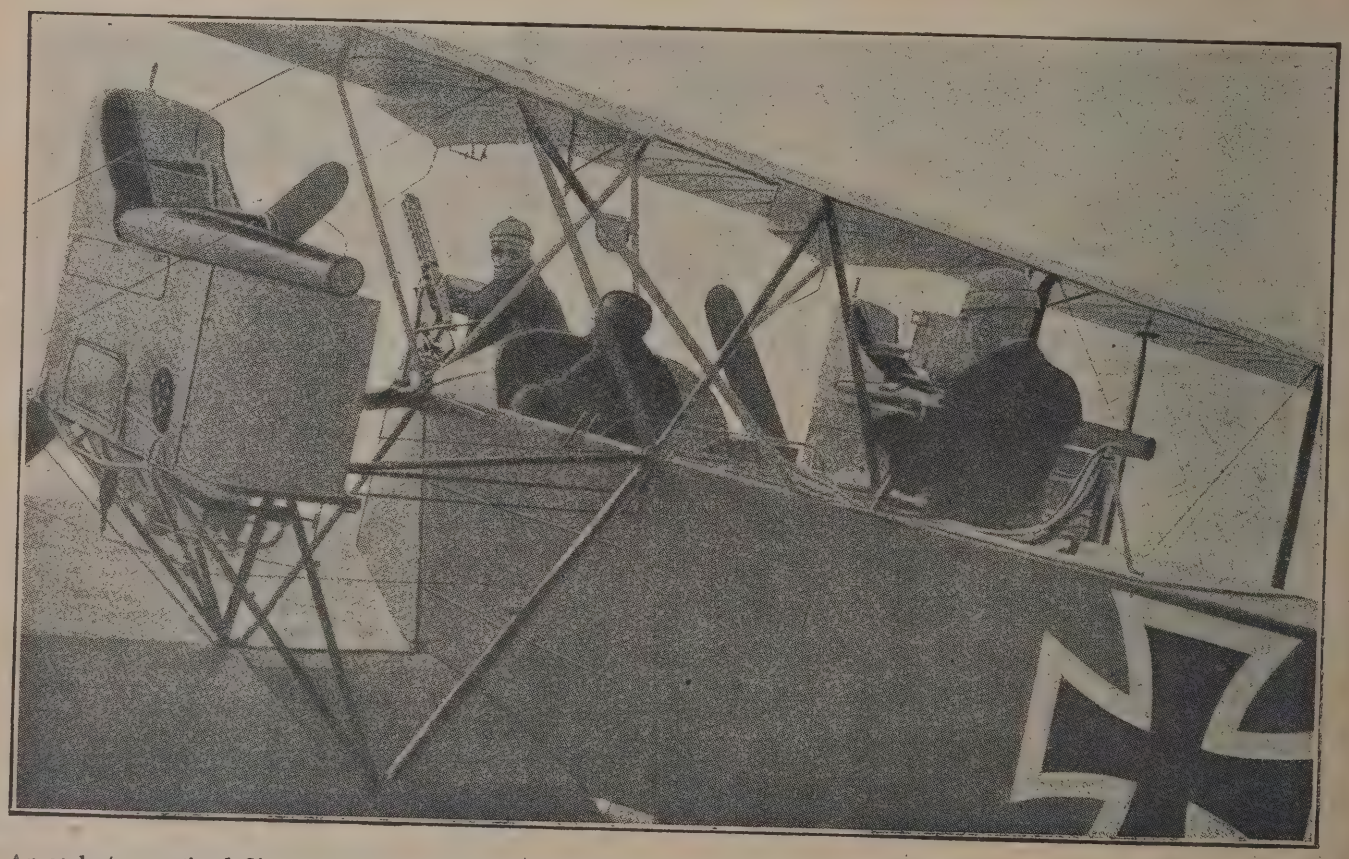
CANADA.

A Death.

Major A. E. McKeever, D.S.O., M.C., a Canadian aviator, died recently at Toronto after an operation necessitated by a motor-car accident.

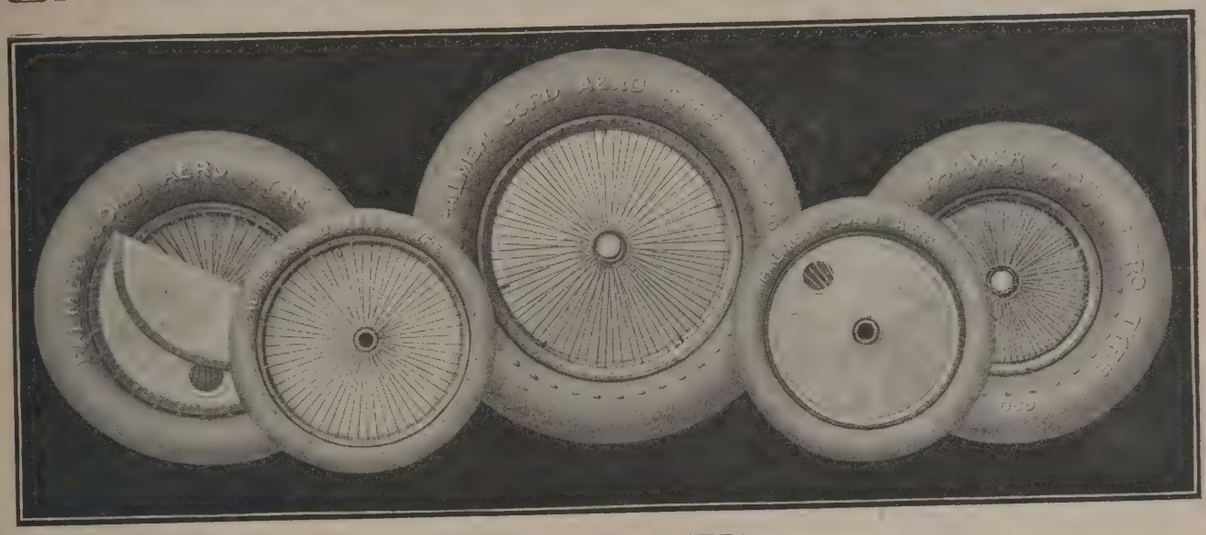
CHINA.

Mr. Tom Gunn, the General Director of Government Aeronautics, Department of Kwongtung, China, recently arrived at San Francisco for a two months' stay in the United States. The purpose of his visit is to complete negotiations for the delivery of aircraft to be used in the preliminary training of Chinese aviators. The Government of China ordered four seaplanes and eight land machines from the Curtiss Aeroplane and Motor Corporation a year ago, and Mr. Gunn will supervise the delivery of these machines.



An early two-engined Siemens-Schuckert Biplane used by the Germans on the Western Front. In the particular example shown the after cock-pit is occupied by a man with a Kinematograph camera who was engaged in taking pictures for the scientific investigation of the machine's behaviour in the air.

PALMER
LANDING WHEELS & TYRES



STANDARD SIZES

Tyre Sizes	Wheel No.	Hub Length	Hub Bore	Track Line
		m/m	m/m	m/m
300×60	16	111.12	25.4	Central
,,	17	72.39	12.7	Central
450×60	30	89.	31.75	Central
,,	138	130.	38.09	Central
575×60	21	160.	28.	Central
,,	34	150.	31.75	104/46
,,	111	150.	38.09	104 46
650×65	78	178.	44.45	132/46
,,	79	178.	44.45	Central
,,	100	178.	38.09	132/46
,,	101	178.	31.75	132/46
600×75	21	160.	28.	Central
,,	34	150.	31.75	104/46
,,	111	150.	38.09	104/46
700×75	78	178.	44.45	132/46
,,	79	178.	44.45	Central

Tyre Sizes	Wheel No.	Hub Length	Hub Bore	Track Line
		m m	m/m	m/m
700×75	100	178.	38.09	132 46
,,	101	178.	31.75	132/46
700×100	77	178.	44.45	132/46
,,	92	185.	55.	135/50
,,	95	185.	55.	Central
,,	96	178.	55.	132/46
,,	99	178.	38.89	132 46
,,	112	150.	38.09	Central
650×125	119	178.	55.	132 46
750×125	77	178.	44.45	132/46
,,	92	185.	55.	135/50
,,	95	185.	55.	Central
,,	96	178.	55.	132 46
,,	99	178.	38.89	132 46
,,	112	150.	38.09	Central
800×150	82	185.	55.	135/50
,,	85	185.	55.	Central
,,	131	220.	66.67	Central

Tyre Sizes	Wheel No.	Hub Length	Hub Bore	Track Line
		m m	m/m	m m
1000×150	102	185.	55.	125/60
,,	141	250.	80.	Central
,,	201	185.	60.32	125/60
,,	209	185.	55.	Central
,,	210	185.	60.32	Central
900×200	107	185.	55.	Central
,,	108	185.	55.	125 60
,,	128	220.	66.67	Central
,,	137	250.	80.	Central
,,	202	185.	60.32	Central
1100×220	134	220.	66.67	Central
,,	136	250.	80.	Central
1250×250	133	250.	80.	Central
1500×300	115	304.8	101.6	Central
,,	126	304.8	152.4	Central
1750×300	139	400.	152.4	Central

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AMSTERDAM: Stadhouderskade 91.

While in San Francisco Mr. Gunn stated in an interview that little progress had been made in military aeronautics in China, but the recent civil war had proved the need for adequate aerial defence. Naval aviation, he said, was favoured by the great expanse of protected water along the sea-coast.

FRANCE.

Meteorological Stations in France.

In 1920 it is hoped that the meteorological organisation in the aerial arm of the French Army will be greatly developed. Thirty-five stations, divided into three groups, will be installed. The categories of the groups are as follows :—

(i) A central station at Le Bourget (already in existence) which receives long-distance meteorological messages from England, Spain, the Azores, etc. This station will co-ordinate the reports from the regional stations.

(ii) Six regional stations, which will collect information from local stations and submit the general results to Le Bourget. From March, 1920, they will, it is hoped, issue daily a précis of meteorological observations at 1 a.m., 7 a.m., 9 a.m., 1 p.m., and 6 p.m. When possible three aerial soundings will be made daily at 8 a.m., 11 a.m., and 5 p.m.

(iii) Principal and secondary stations reporting to the regional stations.

All these stations will be laid out along the following routes, Paris-London, Paris-Brussels, Toulouse-Rabal, Nimes-Nice, and Marseilles-Tunis.

An Atlantic Flight.

Lieut. Lefranc arrived at Las Palmas (Canary Isles) on Dec. 24th, at 3 o'clock, from Agadir, on his St. Raphael-Dakar flight.

The Trans-African Flight.

Major Vuillemin and Lieut. Dagneaux, who are at present in Algeria organising their cross-African flight, will use two Bréguet biplanes—16.B. and N.2 types—for the flight. Wireless stations will be installed along the route and petrol dumps arranged at various places. Large spare parts will be available at Tamanrasset and Timbuctoo.

Two routes, starting from Oran and Algiers respectively, are considered by experts. They follow the same track from 250 miles short of Timbuctoo to the end of the journey at Dakar. The other route, which is not so popular, lies over Ain Sefra, Timmimimun, Akabli, Inziza Bu Gassa, Kidal, and Burrem to Timbuctoo.

The route which probably will be adopted runs from Algiers to Biskra, Inifel, Insalah, Tesnu, Tamanrasset, Tin Zuaten, and Kidal. The route from Timbuctoo to Dakar will be by Bammako. If the last route be chosen the first stage will be 600 miles, and the succeeding stages be 390, 240, and 480 miles. The last stage, Bammako to Dakar, will be 600 miles.

GERMANY.

The following is taken from the U.S. official publication, the Air Service News Letter of Dec. 3rd, 1919.

Casualties in the German Air Service.

According to reports received from Germany the following are losses of German Air Service during the war :—

	Officers.	Enlisted Men.
Battle	2,857 ...	3,047
Training	584 ...	1,378
Total	3,441 ...	4,425

The number of enlisted men named as casualties is due to the fact that German pilots were not all commissioned.

HOLLAND.

The British Government has officially announced that it was by British aircraft that bombs were dropped on Dutch towns in Zeeland between Aug. 25th, 1917, and June 22nd, 1918. The British Government has expressed to the Dutch Government its regret for these mistakes, and has offered indemnification.

This announcement has given satisfaction to those in Holland who were somewhat annoyed and astonished when the British Government at first saw fit to deny all knowledge of these occurrences.

ITALY.

The Italian correspondent of THE AEROPLANE writes :—

Teaching Brazil's Navy.

Flying is now permitted to the instructors at Malpensa in order to get on with the instruction of the Brazilian Naval pilots who are there learning to pilot the Sva and Ballila types of Ansaldo machines, and have lost a long fine spell of autumn weather owing to European misagreements.

In the Red Sea.

An aeronautical section has left for the Colony of Eritrea, in the Red Sea, with several Voisin aeroplanes.

A Move.

A daily paper announces that the Lower Adriatic and Ionian Air Command is transferred from Brindisi to Taranto.

The Rome—Tokio Flight.

The latest model F.I.A.T. B.R. is reported to be at Rome for the Tokio regularity flight. Thus the representatives of Italy's landing aeroplanes are completed. Lt. Ranza is stated to be the pilot, and the machine's capacity is called 1,500 kilometres.

The Caproni triplane which joined the waiting crowd at Rome is a Fiat-engined, tri-motored craft with tank fuel and water capacity of 11 hours. She, like the others, is armed, and has suitable accommodation for all her spares, such as wheels, airscrews, tail planes, etc. This machine is called, I learn, a 600, and carries two pilots and two motormen. She will rely on a Crocco route-indicator of naval fame.—T. S. H.

RUSSIA.

Aerial Activity.

A wireless message from General Denikin's forces states :—Our aviators are making constant raids on the enemy's rear, despite unfavourable atmospheric conditions, causing panic in his ranks. British aviators are taking part in these operations.

Another Bolshevik Capture.

In an official communiqué dated Dec. 21st concerning the capture of Novo Nikolaievsk, the Bolsheviks state that sundry aviation works are included in the assests of the town.

SPAIN.

Some New Military Aerodromes.

Five new military aviation schools are being opened at Madrid, Carthagena, Tarragona, and Seville.

UNITED STATES OF AMERICA.

The American Air Force,

A new Bill has been introduced in Congress by Senator Harry S. New for the establishment of a Department of Aeronautics and for the Development of Civil Aviation.

The Bill is similar to that introduced by Senator New last October, except that it provides for a Department of Aeronautics in place of a Department of Air, increases the salary of the director from 10,000 dollars to 12,000 dollars, and would, in addition to creating a separate air force also have an air force for the Army and an air force for the Navy, each to be operated by the Army and Navy respectively.

The Bill also provides for the establishment of a college for the training of pilots. The Senator hopes that this Bill will meet with the support from the Military and Naval Authorities denied to his former Bill.

In connection with the above it is interesting to note that Senator Wadsworth, the Chairman of the Military Affairs Committee, in demanding a separate department of aeronautics protested on Oct. 28th, against the elimination of the appropriation for 15,000,000 dollars for military aeronautics as made by the conference committee.

Senator Wadsworth claimed that at present the United States could not put three squadrons of aeroplanes in the field against an enemy, and Senator Thomas said that unless something was done shortly they would have an air service which was inferior to that of Mexico.

A Squadron Move.

The 8th Balloon Coy. (1st Lt. Byront Burt, U.S.A. A.S.) has left Brooks Field for Camp Birnie, El Paso, Texas, to organise the first Army airship station on the Mexican border. As soon as the shed is completed it is hoped to carry out various experiments with one of the new twin engined Army airships.

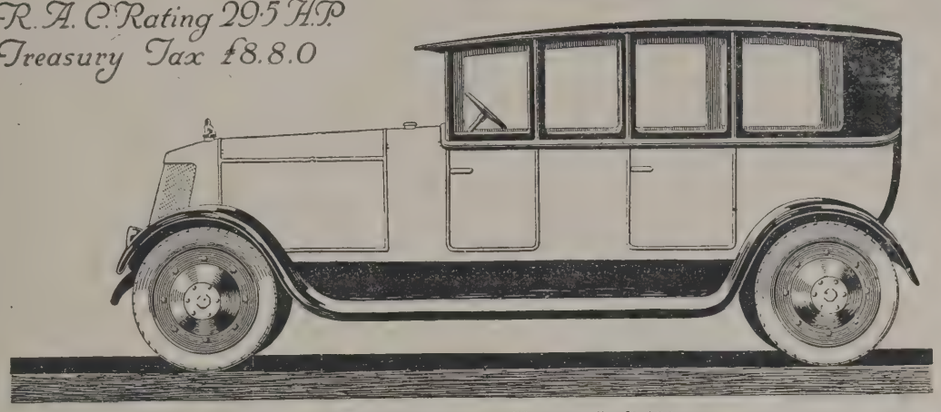
Cavalry and Aircraft.

In a request for better liaison between cavalry and aircraft on the Mexican border, the Air Service News Letter of Dec. 3rd cites the following instance in support of its argument :—

Some Mexicans having procured illegally some horses and mules from the neighbourhood of Fort Hancock, Texas, a strong force of cavalry and one aeroplane were sent in pursuit. The aviator having located the enemy failed to make the cavalry understand his signals, and by the time he had landed—in U.S. territory—borrowed a horse and found the cavalry, the Mexicans had turned the animals loose.

The ARMSTRONG SIDDELEY Six Cylinder Car

R.A.C. Rating 29·5 H.P.
Treasury Tax £8.8.0



Saloon Double Phaeton as illustrated) £1,000.

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GREAT BRITAIN.

Civil Aerodromes.

The Air Ministry announced on Dec. 22nd that the following lists of aerodromes are issued as an addition to or amendment of the lists already published.

List C.—(Stations temporarily retained for Service purposes.)

Amendment.—The following seaplane station has been transferred to List E, and is now published in that list.

Seaplane Station: Westgate (S.) Nearest railway station: Westgate. Nearest town: Westgate-on-Sea.

List D.—List of aerodromes licensed as suitable for Avro 504K. and other similar types only. Except in very few instances accommodation does not exist. The licenses have also in the majority of cases been issued for limited periods only.

Aerodrome: Troon. Location of aerodrome: Ayrshire Polo Club Ground. Nearest large town: Troon.

List E.—Stations no longer in use by the R.A.F.

These stations have been passed to the Government Property Disposal Board. They will be relinquished as soon as the Government property thereon has been disposed of. In many cases the aerodromes are now under cultivation, but it is probable that the sites still form the best emergency landing grounds in the immediate neighbourhood.

Seaplane Station: Westgate (S.) Nearest railway station: Westgate. Nearest town: Westgate-on-Sea.

THE CONTINENTAL AIR SERVICES.

Date.	Type.	Pilot.	Left Hounslow	Arr. Paris.	Left Paris.	Arr. Hounslow.	Pass
Dec. 22nd	DHga.	Lt. Game	12.30 p.m.	2.47 p.m.			1
	DH9.	Lt. Tebbit			12.30 p.m.	Landed Lympne 3.05 p.m.	1
Dec. 23rd	Weather totally unfit for flying.						
Dec. 24th	DH16.	Lt. Campbell-Orde	12.50 p.m.	2.50 p.m.			2
	DH9a.	Lt. Game			12.30 p.m.	3.05 p.m.	0

Dec. 25th—27th—Flying suspended for Christmas holidays.

Each machine carried mail as well as passengers.

On Jan. 1st, 1920, weather permitting, the Airco machines will fly to and from Paris as usual.

On Dec. 22nd two machines arrived at Hounslow from Paris and another from Brussels. Another machine left Hounslow for Brussels, carrying passengers and 154 lb. of freight.

London-Riviera Flights.

Lieut.-Col. G. L. P. Henderson (ex-R.A.F.) and another pilot are going to fly to the Riviera early in January. It is understood that there will be accommodation for four passengers in each machine. Two stops will be made on the journey at Paris and Lyons and hotel accommodation will be reserved at those places by the Lep Aerial Travel Bureau, of Piccadilly Circus, from whom tickets may be obtained.

It is expected that the flights will be completed in two days. The single fare to Monte Carlo, Mentone, or Nice is £50.

On Dec. 22nd 2,000 lb. of patê de foie gras were brought over from Paris in three hours in a Handley Page biplane for Fortnum and Mason, of Piccadilly. A quantity of the paste was sold before Christmas in boxes, with which were given a photograph of a Handley Page machine.

Brooklands.

A correspondent writes:—

The youngest daughter of Mr. W. G. Chapman, of Leatherhead, who has a D.H.6 biplane (90-h.p. Curtiss engine) housed at Brooklands, recently flew in this machine, the pilot being Lieut. Knowles, R.A.F. The young lady, who is only one year and five months old, has probably created a new "record" by her *baptême de l'air*.

The first Martinsyde F.6 was recently tested at Brooklands by Mr. Raynham, and performed exceedingly well. It will be flown to the Paris Aero Exhibition this week. It is almost a two-seater version of the F.4, differing in minor characteristics, which were described in a previous issue of this journal.—J. F. S.

Edinburgh.

A correspondent writes:—

Edinburgh is having her first taste of civilian aviation. Two companies, Berkshire Aviation, Ltd., and the Aerial Photos, Ltd., are at present running a series of passenger flights at one guinea each person.

People in Scotland, and especially in Edinburgh, were inclined to look askance at aviation as a method of travelling, but since the inauguration of the flying meetings on Dec. 22nd hundreds of converts have been made. In the first five days the two companies have given trips to nearly 1,000 persons.

Mr. Alan Cobham is responsible for the piloting of an Avro biplane for the Berkshire Co. at Crewe Toll, Ferry Road, and working with the one machine and flying from ten till dusk he has carried over 500 passengers. In addition to the ordinary flights, Mr. Cobham has been responsible for entertainments in the way of parachute descents and also exhibitions of walking on the wings of the machine whilst in flight. He arranged for the principals from the pantomimes, "Robinson Crusoe" and the "Babes in the Wood," which are appearing in the city, to come to the flying-ground in their pantomime dress, when they were given flights.

Night flying, to give the citizens a chance of seeing the city by night, is to start in two or three days' time, and already bookings have been made.

The Edinburgh "Evening News" and the "Bulletin" have been responsible for the issuing of free flights through the medium of coupons in their papers, and they have been very popular. On Christmas Day, Aerial Photos, Ltd., delivered by aeroplane at their ground at Craigentinny, Portobello, a Santa Claus, who was dressed in the historical garb and who distributed toys and gifts to the children on the ground.

Flying is to continue for another fortnight.—MAC.

THE LATEST MARTINSYDE.—The F.6 two-seater biplane, fitted with a 300-h.p. Hispano-Suiza engine, which has successfully made test flights, and is to be flown to Paris for exhibition purposes this week.



Leatherhead.

Mr. W. G. Chapman, of Leatherhead, whose D.H.6 biplane is one of the few privately owned aircraft in Great Britain, has made a good number of flights lately. On Nov. 30th, with his pilot, he set out from Brooklands for Bournemouth, but at Basingstoke very bad clouds at 1,000 ft. were encountered, so they returned to Leatherhead for lunch.

In the afternoon of Dec. 12th Mr. Chapman flew to Bookham and paid a visit to Gillet Stephens and Co., Ltd. He then continued to Leatherhead, where his eldest and youngest daughters were taken up. The latter was aged 1 year and 5 months.

On Dec. 24th the machine was flown to Leatherhead and trimmed with holly, etc., for a Father Christmas "stunt." Toys for three children were carried by the pilot, complete with red cloak, beard, etc., to Sandown Race Course, where he arrived at 8.30 a.m. The wind was very strong and the machine had to take off down wind between the railings. This was especially difficult as the machine was loaded with a large sack full of parcels for Leatherhead.

A successful landing in the St. John's College grounds was followed immediately by a very heavy rainstorm, but, despite the weather, twenty-four parcels were presented to children. Three more parcels were next delivered at Cherington, and then the machine was flown back to Brooklands.

London.

HOUNSLOW.—The Air Ministry announces that the following Notice to Airmen (No. 3) was issued on Dec. 29th :—

A second experimental aerial lighthouse has been erected at Hounslow Aerodrome to further assist aerial night flying.

This lighthouse is of 70,000 candle-power, and throws a revolving beam that attains its maximum brilliancy once every five seconds.

The light will be in operation every night on and after Monday, Dec. 29th, 1919, and will be exhibited from sunset to sunrise.

AUSTRALIA.

His Majesty's Recognition.

The Air Ministry announced on Dec. 22nd that His Majesty the King has been pleased to confer the dignity of knighthood of the Most Excellent Order of the British Empire, Civil Division, upon Captain Ross Macpherson Smith, M.C., D.F.C., A.F.C., Australian Flying Corps, and also upon Lieut. Keith Macpherson Smith, late Royal Air Force, in recognition of the valuable services rendered to aviation by the recent successful flight from England to Australia.

His Majesty has also conferred a bar to the Air Force Medal on the undermentioned serjeants of the Australian Flying Corps in recognition of their valuable services as mechanics during this flight to Australia : No. 275 Serjt. James Mallett Bennett, A.F.M., and No. 8974 Serjt. Walter Henry Shiers, A.F.M.

The End of the Journey.

Capt. Ross Smith reached Longreach (Queensland) on Dec. 22nd. The place is 1,230 miles from Port Darwin and a little over 1,000 miles from Melbourne. On the journey they were worried by flies and mosquitos which made sleep impossible.

The damage to the airscrew was originally due to a hawk at Calcutta which flew into it and cracked it. The mechanics succeeded in mending the airscrew with only a pocket-knife and broken glass. Pieces of wood were fitted to replace those lost, and the whole was glued and screwed together. The damaged blades were bound with hoop-iron covered with linen fabric.

During the stay at Anthony's Lagoon the temperature averaged 110 deg. There were frequent thunderstorms, when they all hung on to the machine to prevent its being blown over. Since Capt. Ross Smith left Port Darwin he had encountered strong head winds and great heat, which made flying very difficult. Often the machine was thrown about like a cork by the atmospheric disturbances, and the crew were all air-sick.

Capt. Sir Ross Smith, K.B.E., finished his flight at Charleville (Queensland). A part of one of the engines has broken which is irreplacable in Australia, and a Central News message states that the machine is being dismantled. The crew have left the machine and are going south by train.

Charleville is 1,473 miles from Port Darwin and 923 miles from Melbourne.

SOUTH AFRICA.

An Avro at Durban.

The Mayor of Durban christened an Avro biplane "Natalia" on Nov. 10th. He afterwards declined a flight. The machine belongs to South African Aerial Transport, Ltd., and Major Miller of that company stated that it would remain in Durban for another month, and daily flights would be made to accustom the public to aviation.

After the christening ceremony passengers were taken up for two hours.

A Johannesburg-Durban Flight.

On Nov. 15th the Johannesburg "Star" published a special aviation edition, containing many articles about flying generally and descriptions of first flights, etc. Copies of this edition were carried to Durban in a three-seater Avro (110 Le Rhône engine), piloted by Major A. Miller, D.S.O. (ex-R.A.F.), and with a representative of the "Star" as passenger. Stops were made at Newcastle and Maritzburg.

Standerton and Volksrust were also "bombed" quite successfully, but Charlestown was missed by quite a mile on account of the strong wind, and the height at which the machine was flying.

Handley Page, Ltd.

Major H. Meintjes, the South African manager for Handley Page, Ltd., in a letter to the Johannesburg "Star," stated that the first machine, fitted with two 375-h.p. Rolls-Royce engines, had already arrived at Capetown. The fuselage is luxuriously fitted, and contains in all 16 armchairs for passengers. Two of the seats are in the nose of the machine.

Major Meintjes was leaving for Capetown to supervise the erection of the machines. The first flight from Capetown to Johannesburg, with only one stop en route, is hoped for in January.

Muizenberg.

A bishop was one of the passengers taken up at Muizenberg Aerodrome (Capetown) on Nov. 26th. He spent half an hour in the air with Mr. Solomon as pilot in an Avro machine.

CHINA.

The Handley Page machine which was erected in Peking made its first official endurance flight on Dec. 16th with complete success. Carrying 200 lb. of sandbags and fourteen passengers, eleven of whom were Chinese, the aeroplane was in the air for three hours.

As the machine circled down, in token of salute, while passing over the Presidential Palace the stomach of one of the passengers failed him, but the remainder were all delighted with the flight. The selection of the site for this *faillance* suggests a revolutionary movement.

Commercial Developments.

In China, naval aviation is favoured by extensive expanses of protected water along the sea coast, and by long and wide rivers leading into the interior. On the other hand, land aviation is hampered by lack of suitable landing fields, due to the intensive cultivation and terracing of the land, and to the large areas of rice fields.

Six Handley Page biplanes have been received at Shanghai to be placed on an aerial mail route from Pekin across the Gobi Desert to Manchuria and South-Eastern Siberia. Other contemplated routes are from Shanghai to Hongkong, Shanghai to Canton, and Shanghai to Peking.

CZECHO-SLAVAKIA.

The Italian correspondent of THE AEROPLANE writes :—

The Prague Press states that agreements have been signed with a large British aerial transport company whereby that city becomes the centre of the cross-European lines London-Paris-Hamburg-Warsaw and Constantinople. A large factory is to be started there with English material and personnel. Two-thirds of the share money is to be Bohemian, however. —T. S. H.

FRANCE.

The Paris-Melbourne Flight Abandoned.

A Reuter telegram from Rangoon dated Dec. 12th stated that owing to the breaking of a piston rod, M. Poulet had abandoned his proposed flight to Australia. He would remain at Moulmein pending preparations for his return home. His aeroplane was being dismantled and will be sent back to France.

M. Poulet's friends will not, however, allow him to abandon his flight to Australia. On Dec. 26th a new aeroplane, subscribed for by his friends, left the Gare de Lyon (Paris) for Marseilles and Calcutta.

The Speed Record.

In dealing recently with the successful (when homologated by the F.A.I.) attack by M. Sadi Lacointe on the speed record on Dec. 15th, it was stated inadvertently that he was flying a Spad biplane. He had at that date severed his connection with the Spad firm, and his record of 307 kilometres an hour was made on a Nieuport biplane (300-h.p. Hispano-Suiza) at Villacoublay.

A Juvisy Meeting.

The Committee of the Paris Fêtes has arranged an aviation meeting to be held at Juvisy on May 22nd and 23rd, 1920.

The Death of M. Bourgeois.

The chivalry of nations is rarely so well revealed as when death gives the opportunity. The funeral services on M. Bourgeois, who was killed whilst flying a Morane-Saulnier "Parasol" monoplane on the military aerodrome of Amadora, near Lisbon, were carried out at the expense of the Portuguese Government, and were conducted with a seemliness and a respect which did honour to that country. The body was transported to France immediately on the conclusion of the obsequies. The final burial will take place at a village near Maubeuge.

The Compagnie Generale Transaerienne.

The Compagnie Générale Transaérienne, which shares the work of maintaining the London-Paris aerial mail, was originally founded in 1909, and is, therefore, the oldest of all existing aerial navigation companies. In the year of its formation it had dirigibles at Pau, Reims and Nancy, and in the three following years had an airship service at Lucerne and at Brussels.

Hydro-aeroplane services were maintained from 1912 to 1914 at Aix-les-Bains, Monaco, Lucerne, Evian and Mentone, and, as "L'Auto" says, did much to popularise aviation. During the war its aerodromes and *matériel* were of considerable use to the military authorities.

In the past summer the company used airships in a Le Havre-Deauville service and for flights from Saint Cyr round Paris.

It is now engaged on its first regular and officially recognised service, and one hopes that its future will be as brilliant as its past justifies.

The Death of an Old Aeronaut.

At Istres, near Marseilles, on Dec. 21st, M. Mario de Montgaillard, who had died a few days before in his 85th year, was buried. He was one of the last survivors of the 80 aëronauts who piloted from Paris during the siege free balloons laden with mails. On Dec. 7th, 1870, he piloted the "Denis Papin," which, with an ill-fortune symbolic of France in those days, came down in the German lines.

M. Santos-Dumont Amuses Himself.

It is said that M. Santos-Dumont, imbued with the charms of Virgil, has opened a model farm in the State of Minas Geraes, in the one-time Empire of Brazil.

The Presidency of the Aero Club de France.

The Aéro Club de France is meeting shortly to elect a President in the place of the late M. Deutsch de la Meurthe. Among the names of those talked of as possible Presidents are MM. Henri Farman, Bessoneau, Soreau, Loucheur, and Blériot.

The Height Record.

On Dec. 20th Lieut. Roget, with two passengers, reached a height of 19,500 ft. thus breaking the existing height record of pilot with two passengers, provided it is homologated by the F.A.I. On Dec. 24th Lieut. Casale, flying a Spad type S.27 (300 h.p. Hispano-Suiza), with two passengers, exceeded M. Roget's record by 2,420 ft., after a flight of 1 hr. 03 min. at Buc.

The Coupe Deutsch.

It is stated from France that the Royal Aero Club has forwarded the entry of a Martinsyde biplane for the Coupe Deutsch.

M. Levasseur and the Height Record.

According to a statement in the French Press, M. Levasseur intends, after the Salon has closed, to make an attempt on the height record with a Levasseur biplane, fitted with a turbo-compresser and a variable pitch propeller.

ITALY.

The Italian correspondent of THE AEROPLANE writes :—

The Italian Aero Club.

A meeting of the Italian Aero Club, held at the headquarters of the same in Rome—*via* Tor de' Specchi No. 24—on 14th inst., decided to support the International Exhibition to be held in that city in the autumn of 1920, and, if it becomes a possibility, also the show proposed for the spring at Turin. Also, the club fixed to enter Italy for the Belgian meeting in connection with the Olympic Games.

The possibility of the Schneider Cup being flown for at Naples was mentioned.

The Commercial Airships.

M.1, which has been resting after her strenuous joy-ride work during the summer, when 2,000 passengers were introduced to the freedom of the aerial highways, left Rome on the 17th under the command of Maj. Leone and with Ing. Usuelli on board for Venice, where she arrived after seven hours' travelling. Advantage of the clear, cold atmospheric conditions and the moonlight was taken by starting at 4 a.m. The ship is to be stationed at Venice and ply between that place and the ex-Austrian shores opposite.

The "Angelo Berardi" also left Rome one day the same week for Verona *via* Florence, where she discharged cargo and passengers. The journey was held up some hours between Florence and Verona by fog, but the vessel entered her fresh shed late the same night.

Competition.

A new F.I.A.T. power-plant is going, it is hoped, to *épater* the Palais Royal.—T. S. H.

SOUTH AMERICA.

Aeroplanes are to be used in French Guiana for the transport of gold from the mines at St. Laurent du Maroni, which is separated from the coast towns by a 100-miles' belt of almost impenetrable forest. The first trip was made successfully last October. Hitherto the gold has been taken down in canoes and by porters.

UNITED STATES OF AMERICA.

The Aerial Mail.

Assistant Postmaster-General Otto Praeger, the Chief of the Mail Transportation Service, has announced that the aerial mail service from New York to Chicago will be extended to Omaha shortly, thence to Ogden and from there to San Francisco, with a network of aerial lines from San Francisco to coast cities, including Seattle, Portland, Tacoma, Fresno, Los Angeles, and San Diego. The air routes have been mapped out, and the plans for aerial mail depots are practically completed.

A bill was introduced into Congress on Nov. 6th to authorise the Postmaster-General to purchase aeroplanes and operate aerial mail routes between New York and San Francisco, and such additional points between those cities as he might consider necessary.

Several Martin bombers (two 400-h.p. Liberty engines) have lately undergone tests at Cleveland, and are soon to be put into operation on the aerial mail service New York-Chicago. The machines will carry a crew of three and one ton of mails at approximately 90 m.p.h. They will be equipped with either wireless telegraph or telephone.

It is the intention of the postal authorities to have new aeroplanes specially designed for mail use, capable of carrying at least a ton of mail each and making an average speed of 150 m.p.h. When these are constructed it will be possible to deliver New York mail in San Francisco 32 hours after its receipt by the New York office instead of four days later as at present.

The first aerial mail route in the United States was established on May 15th, 1918, between Washington and New York. The service on that route the first year was 92.3 per cent. successful. Over seven and one-half million letters were carried at a cost of 137,900 dols., which included the replacement of 6 per cent.

A second route was established exactly one year later between Cleveland and Chicago. Fourteen thousand letters were carried each way daily. On July 1st, 1919, the aerial mail service was established between New York and Cleveland with connections at Chicago.

The service at present employs 73 pilots, 28 mechanics and 95 helpers. The pilots are paid a base salary of 2,000 dols. a year with an increase of 200 dols. up to 2,800 dols. for each 30 hours of satisfactory flying.

The Boom of Civil Aviation.

In connection with the statements issued by the Special Commission to Organise the First Aerial Derby Round the World, which were published last week, Secretary Wadsworth speaking on civil aviation on Oct. 28th, said :—

"In July of this year just 14 airplanes were made in the whole United States, while in the same month Great Britain produced 2,000. That shows how we are standing still while others are going ahead."

A New Transportation Co.

An air passenger corporation, under the title of California Aerial Transport Co. has been organised recently at Stockton, Cal. The company is said to have several machines already under construction, capable of carrying from six to eight passengers, and expects soon to begin making regular trips between Los Angeles and San Francisco.

A Spare Parts Air Service.

According to "Automotive Industries" of Nov. 6th (published Dec. 5th), the Chandler Motor Car Co., of Cleveland, are employing aeroplanes to deliver parts from Chicago, as the express companies and the mail service proved to be inadequate.

AERONAUTICAL ENGINEERING

SUPPLEMENT TO "THE AEROPLANE"

INCORPORATING AIRCRAFT ENGINEERING, AERODYNAMICS, AIRCRAFT FINANCE AND COMMERCIAL AERONAUTICS AND MATTERS PERTAINING TO THE AERONAUTICAL ENGINEER AND THE AIRCRAFT TRADER.

THE PRODUCTS OF THE BRITISH AIRCRAFT INDUSTRY.—III.

In the two previous issues of this paper there have been described under this heading the aircraft, aero-engines, and accessories manufactured by the British and Colonial Aeroplane Co., Ltd., the Westland Aircraft Works, Wm. Beardmore, Ltd., Austin Motors, Ltd., Martinsyde, Ltd., Parnall & Co., the Aircraft Manufacturing Co., Ltd., Short Bros., Ltd., Rolls-Royce, Ltd., the Cosmos Engineering Co., Ltd., A. V. Roe & Co., Ltd., the British Aerial Transport Co., Ltd., Mann, Egerton & Co., Ltd., Handley Page, Ltd., S. E. Saunders, Ltd., the Supermarine Aviation Works, Ltd., the Central Aircraft Co., Walton Motors, Ltd., Gwynnes, Ltd., Austen Siddeley Motors, Ltd., the Aircraft Steel Construction Co., Ltd., the British Thomson-Houston Co., Ltd., the Steel Wing Co., Ltd., Samuel Osborn & Co., Cellon, Ltd., Edgar Allen & Co., Ltd., Titanine, Ltd., Bruntons, Ltd., British Magnetos, the Triplex Safety Glass Co., Ltd., Swift, Levick & Co., Herbert Terry, Ltd., Hall & Pickles, Ltd., and Brown Bros., Ltd.

A further series of the products of other members of the Industry will be found below.

BOULTON AND PAUL, LTD.

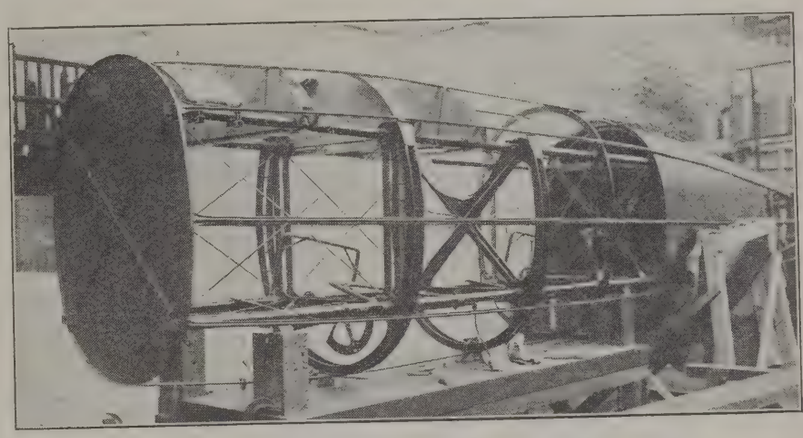
AN ALL-METAL MACHINE.

During the last few years there has been a demand for an all-metal type of aeroplane which can fulfil the following conditions :—

The structure must be fireproof, immune from insect attack in tropical countries, and varying climatic conditions must not produce distortion.

Certain machines have been designed to meet the above-mentioned requirements; generally, however, they have been heavy and expensive to produce, and, with only a few exceptions, the wing structure has not been entirely of metal. If one studies the detail of design of this type of machine, it will be also found that no departure has been made from the type of construction usually associated with aeroplane structures of wood—the only difference being that steel tubes have been substituted for wood members.

For a considerable period Messrs. Boulton and Paul have concentrated on the development of rolled sections made from thin steel strip having high mechanical properties; and as the result of this work, they have produced suitable sections which can be used on aircraft giving the necessary strength for the weight allowed.



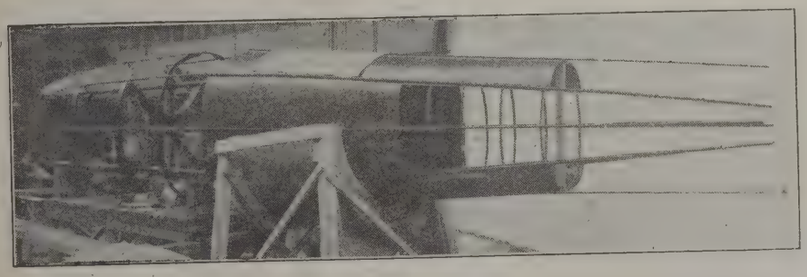
Fore End of the Fuselage of the Boulton and Paul P.10.

With the steel sections available, an actual all-metal machine has been produced—the construction being entirely novel, and meeting all the necessary conditions desirable for aircraft for use in any part of the world.

The machine is similar in size to the firm's standard P.9 model, being a two-seater tractor, and having all the aerodynamical features of this approved design.

Considering the detail construction of the all-metal machine, the fuselage is built up of hoops and longitudinals suitably placed, both being of special rolled steel sections; between the hoops and longitudinals is interposed and riveted a special fibre sheet, a material possessing mechanical properties particularly suitable for this work. The fuselage when complete is very light and gives a good low resistance shape.

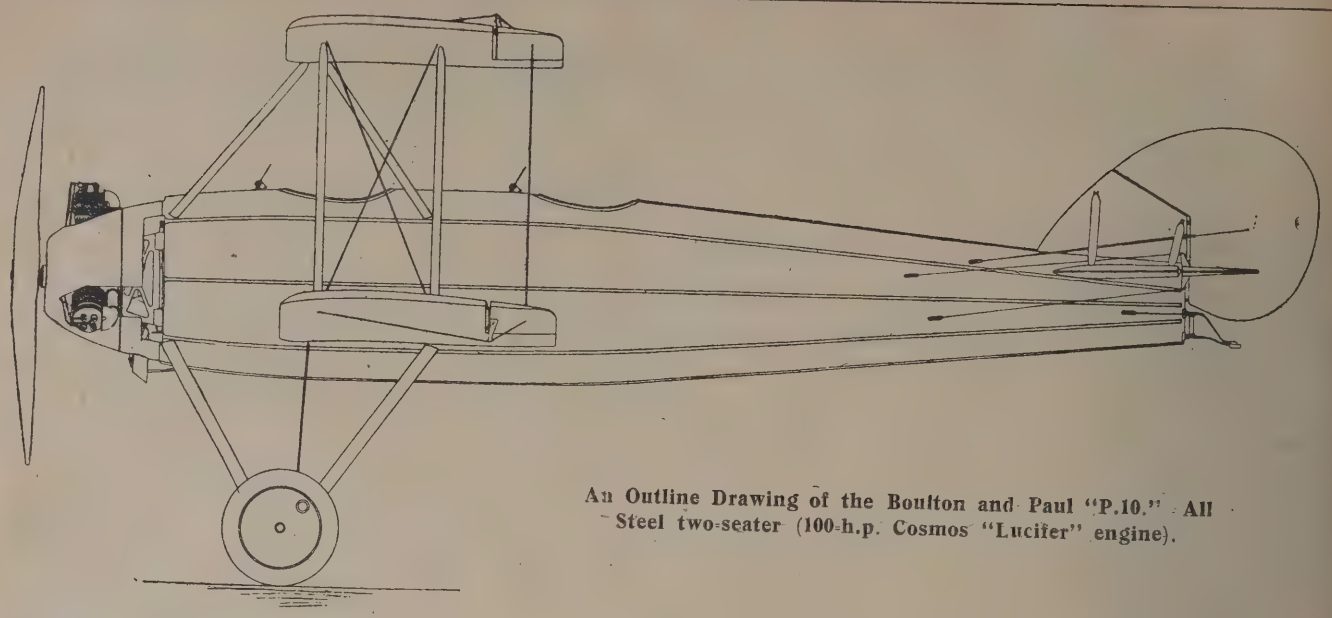
The fin is built integral with the rear portion of the fuselage, the rear fin post carrying the rudder in the usual manner.



The Steel Fuselage of the Boulton and Paul P.10, in course of construction.

The wings, flaps, tail plane, elevator and rudder are constructed from rolled sections, each member being specially designed to fulfil its own particular function; the spar section in particular is that chosen as most suitable after a series of tests had been carried out on different sections, extending over a long period.

The 100-h.p. "Lucifer" engine is fitted as the power unit, and is carried on a mounting so arranged that by removing the vertical hinge pin on one side the whole engine and



An Outline Drawing of the Boulton and Paul "P.10." All Steel two-seater (100-h.p. Cosmos "Lucifer" engine).

mounting may be swung about the opposite vertical hinge, thus allowing easy access to the back of engine for inspection, and for making any necessary adjustments. With this arrangement, the controls, pipe lines, etc., are so designed that they do not require disconnecting when swinging the engine mounting.

The complete machine is undoubtedly an entirely new departure from standard practice, and it is claimed that it fulfils all the functions required of an all-metal machine, giving a high factor of strength combined with lightness, which has hitherto been unobtainable in this class of aeroplane.

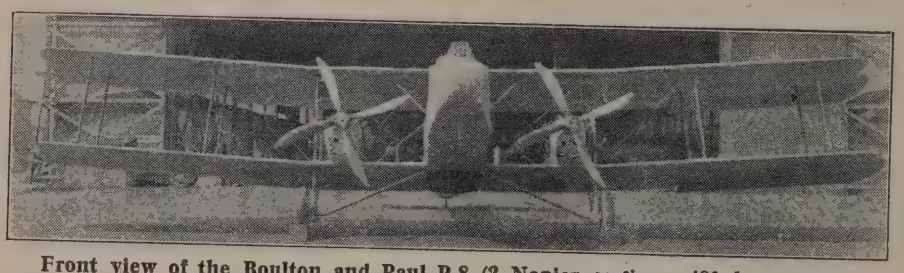
SPECIFICATION.

Engine—	
Cosmos "Lucifer" type	100 h.p.
Air-cooled, fitted with four-bladed airscrew	7 ft. 6¼ in. dia.
Performance—	
Speed, fully loaded, 104 m.p.h. at	1,000 ft.
Climb, fully loaded, to 5,000 ft.	8 min.
Ceiling	14,000 ft.
Weight—	
Machine empty	1,104 lb.
Useful load (crew, fuel, and luggage)	596 lb.
Total weight, fully loaded	1,700 lb.
Load, per sq. ft.	5.5 lb.
Weight per b.h.p.	17 lb.
Duration—	
At 3,000 ft. and 100 m.p.h. is	3¾ hr.
At 3,000 ft. and 90 m.p.h. is	5 hr.
Fuel—	
Petrol	26 gall.
Oil	3 gall.
Principal Dimensions—	
Span of wings	30 ft.
Length	26 ft.
Height	12 ft.
Gap of wings	5 ft. 6 in.
Chord of wings	5 ft. 6 in.

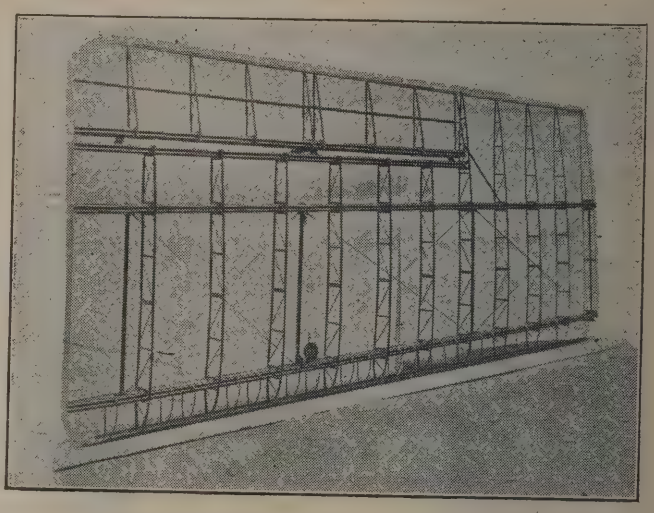
THE BOULTON AND PAUL "P.8."

The Boulton and Paul P.8 was originally designed for the Atlantic flight and is more or less a peace-time and improved version of the Boulton and Paul "Bourges" twin-engined bomber and fighter. As the only erected machine stands, at present, there is no definite accommodation for passengers and goods, as it is the actual machine built for the Atlantic flight, but Boulton and Paul, Ltd., propose to fly and test the machine as it stands before definitely arranging the interior accommodation.

Constructionally the machine follows general practice. The fuselage is built up in the usual way, having four longerons, cross-strutted and braced with standard tie-rods. Tubular rivets are used throughout instead of the ordinary threaded bolts. From the top longeron, which is level when the machine is in flying position, a series of bridges and runners carry the fairing right up so that the gap between the planes is entirely filled. Under the centre-section of the planes, and in the fuselage is carried the main petrol tank, which has a capacity of 210 gallons, the feed to the engines being by gravity from the main tank.



Front view of the Boulton and Paul P.8 (2 Napier engines, 480 h.p. each).



One of the All-Steel Wings of the Boulton and Paul "P.10."

The nose of the machine, which is finished off by a circular nose-piece made of veneer and fabric, carries the pilot. In rear of the pilot, and in front of the main tanks there is accommodation for three passengers. Behind the main tanks and aft the main planes four passengers can be carried. Above the pilot's head is a wind screen arrangement which can be opened or closed at will. Owing to the shape of the nose there is absolutely no draught felt at all when the pilot is flying without a wind screen, the protection being provided more or less for comfort in so far as the temperature of the atmosphere is concerned.

Control is normally by wheel and rudder-bar, but it is possible by an ingenious arrangement to lock the lateral and longitudinal control surfaces and steer entirely by means of the wheel control. This is a great advantage, especially for long-distance flights.

On the left-hand side of the pilot is a wheel for lowering and raising the radiator, on the right-hand side are two wheels, the rear one for setting the auxiliary fins on the elevators in order to offset the unequal pull and the consequent loss of directional control should one engine cut out, and the other for controlling the angle of inci-



THE COMMAND OF THE AIR.—A skilfully arranged Official Photograph, showing a formation of Bristol Fighters over the Italian Alps.

dence of the tail-plane. On the left-hand side are the two sets of engine controls, the rear pair being for ordinary adjustment, whereas the front pair are for altitude control.

In addition to the ordinary instruments carried, are two electrical revolution counters, the main mechanism for which is carried in the engine housing—the connection to the indicators in the cockpit being by ordinary electric cable. In the event of these instruments failing two supplementary dials of large size are carried on a board, one above each engine housing, which can easily be seen from the pilot's cockpit. Two oil pressure gauges are also carried on each board, which is covered by a hood and fitted with an electric bulb for night flying.



The Boulton and Paul P.8 Machine (two Napier engines, 450 h.p. each).

The two Napier engines are carried on bearers of light but strong construction resting on the lower plane. The bearers are made of a wooden framework covered with plywood, the engine feet being carried on steel channel bearers. The engines are coverd in with a neat cowling of aluminium in the rear of which are carried the main oil tanks. A self-starting magneto is also carried in the rear of each engine.

The engine beds are braced to the fuselage by diagonal tubes which, with the wire bracing, form a perfect triangulation.

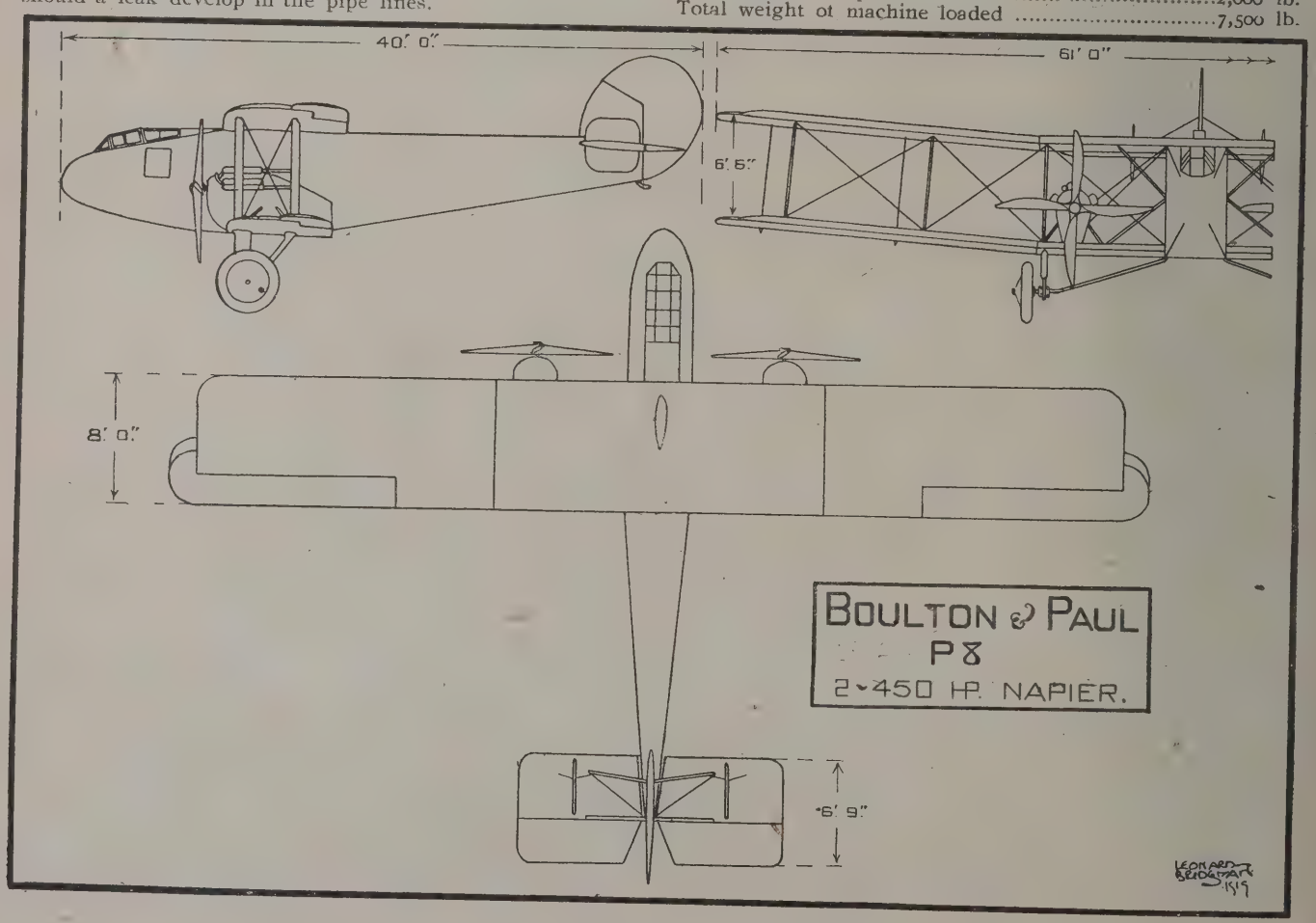
The engines are fitted with exhaust manifolds of Boulton and Paul's own design, each manifold consisting of four aluminium castings which have cooling fins cast on them, the joints being sealed with asbestos washers. A pipe with a closed end, but slotted throughout its length, is fitted on the rear of this manifold, and almost completely silences the engines. The main planes are of equal span, and all four planes are fitted with balanced ailerons. The tail unit consists of a large balanced rudder and fin, a rectangular tail plane and unbalanced elevators together with the two controllable fins carried on the tail plane as already mentioned.

The undercarriage consists of two Vees, one under each first set of interplane struts. The cross axle is hinged at the centre to the two bottom longerons of the fuselage and carries at each end one large size Palmer aero wheel. The springing is partly by rubber cord and partly oleo-pneumatic.

The main radiator is carried under the fuselage and is controlled from the pilot's cockpit. Although the one radiator takes the cooling water for both engines, it is possible, by means of a series of four valves to cut out one side completely should a leak develop in the pipe lines.

Specification.

Type of machine	Twin-engined Tractor Biplane.
Purpose for which intended	Passenger and Commercial.
Span	59 ft.
Gap	6 ft. 6 in.
Overall length	40 ft.
Maximum height	12 ft. 4 in.
Chord	top plane, 8 ft.; bottom plane, 6 ft. 6 in.
Total surface of wings	770 sq. ft.
Span of tail	16 ft.
Total area of tail	96 sq. ft.
Area of elevators	96 sq. ft.
Area of rudder	21 sq. ft.
Area of fin	14 sq. ft.
Area of ailerons	27 sq. ft.
Engine type and h.p.	two 450 h.p. Napier "Lion."
Airscrew, diameter and revs.	9 ft. 6 in.; 1,450
Weight of machine empty	4,000 lb.
Load per sq. ft.	9.75 lb.
Weight per h.p.	8.34 lb.
Tank capacity in hours	4 hr.
Tank capacity in gallons	210 gall.
Performance—	
Speed at 10,000 ft.	149 m.p.h.
Speed at 15,000 ft.	142 m.p.h.
Landing speed	54 m.p.h.
Climb—	
To 10,000 ft. in min.	8 min.
To 15,000 ft. in min.	15 min.
Disposable load apart from fuel	2,000 lb.
Total weight of machine loaded	7,500 lb.



WESTLAND



If you are visiting the Paris Aeronautical Exhibition we shall be pleased to show you the Westland "Limousine" on Stand 20.

We shall also have another machine at Le Bourget Aerodrome for giving demonstration flights.

Above is illustrated the model we intend to exhibit. The first machine, which has been flying since last July, has proved an ideal machine for mail carrying or passenger transport-de-luxe.

For full particulars and arrangements as to trial flights apply to our London Representative, **Lieut.-Colonel C. H. MEARES,** c/o MESSRS. PETTERS LIMITED, 6, DEAN'S YARD, WESTMINSTER, LONDON, S.W.1.

WESTLAND AIRCRAFT WORKS

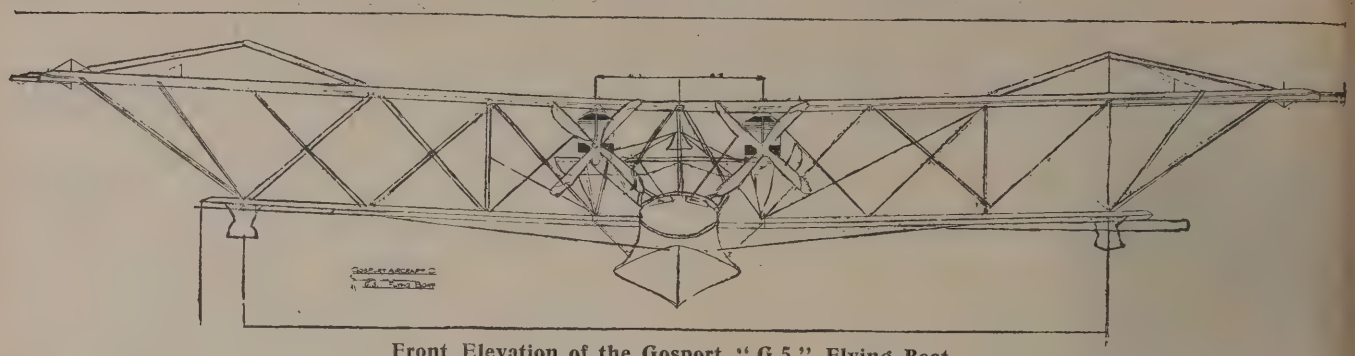
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THE GOSPORT AIRCRAFT COMPANY.



Front Elevation of the Gosport "G.5" Flying Boat.

The flying-boat programme of the Gosport Aircraft Co. for the year 1920 was arranged in conjunction with the late Col. J. C. Porte, C.M.G., who joined the staff early in August, 1919. Several new designs were produced, and the types which had proved so successful during the late war were considerably improved and modified to suit commercial requirements.

In this way four types were evolved, consisting of a large, a medium, and two smaller flying-boats.

It is unnecessary to describe in detail each type, as the general features are similar in all models. It is proposed, therefore, to describe briefly the medium sized flying-boat known as the "G.5," and then to indicate any particular features or departures in the other types.

THE GOSPORT "G.5."

This flying boat was designed to fulfil the requirements of two quite distinct specifications in which moderately high speed was common to both. Owing to the roomy hull it will be realised that the same boat may be used for a variety of purposes, provided the same aerodynamic qualities are retained throughout.

Such being the case this flying-boat was designed either as a carrier of passengers, mail and cargo, or either alone or alternately as a machine to operate in Canada or in U.S.A. for the purpose of locating forest fires and carrying personnel and fire-fighting appliances to the conflagration in the shortest possible time.

The utility of a flying-boat in a country which is densely wooded, but where there are numerous lakes and fairly broad rivers, is easily understood.

GENERAL.—The "G.5" is a twin-engined biplane, generally fitted with two 360-h.p. Rolls-Royce "Eagle VIII" engines, but either 450-h.p. Napier "Lions" or 500-h.p. Cosmos "Jupiters" may be fitted.

The top plane is of larger span than the lower plane, and is built up in five parts—a centre section, inner planes, and extensions.

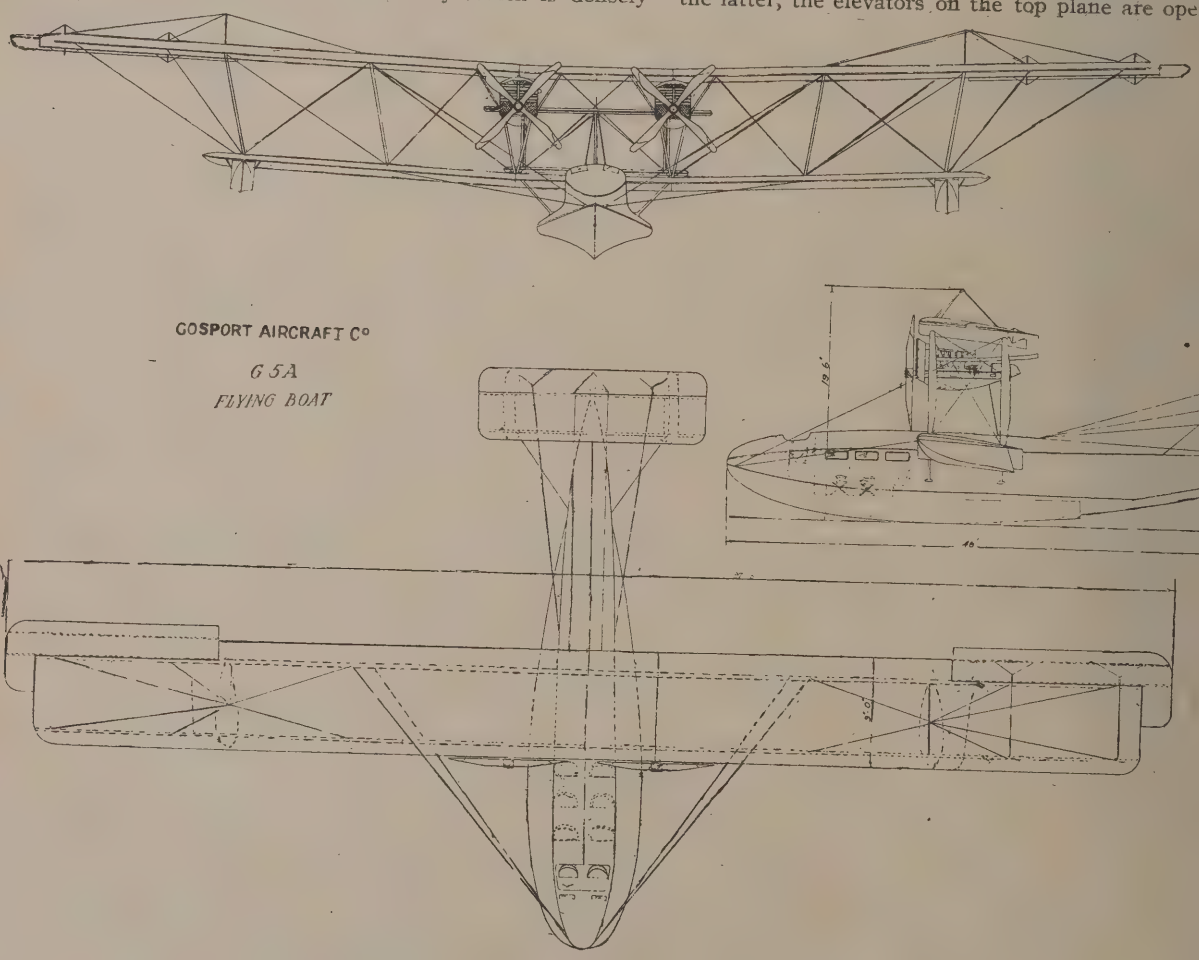
The lower plane consists of two portions—a port and a starboard plane, attached to the hull at the wing roots. To the lower plane are fixed the wing tip floats, which are of boat type construction, double diagonal planking on the bottom and Saunders' Consuta plywood on sides.

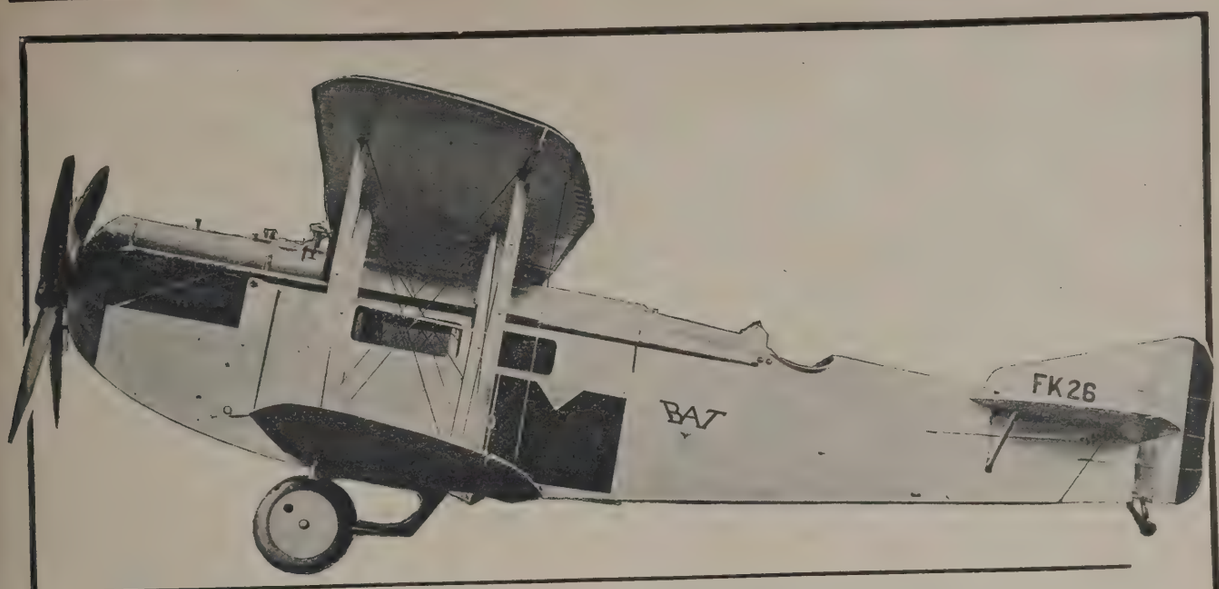
The two engines are mounted between the planes in the usual manner.

The whole wing structure is secured to the hull transverse bracing unit, which is continuous from port to starboard and integral with the main fore and aft hull structure. This is a feature of all these type hulls, and possesses great advantages over any other type so far built. This point will be described in more detail later on.

In one model the wing sections immediately above the engines are removable without disturbing the main structure, thus greatly facilitating removal of the engines for overhauling, etc.

The tail unit may either be of monoplane or biplane type; if the latter, the elevators on the top plane are operated by the





THE IDEAL COMMERCIAL AEROPLANE

The machine here illustrated is the B.A.T—F.K.26—universally acknowledged to be the most practical and efficient commercial aeroplane yet produced. Although a relatively small machine—only 34 feet in over-all length—it possesses surprisingly commodious cabin and cargo accommodation. Four passengers can be carried comfortably, with ample room for personal luggage, or, alternatively, parcels or mails to the extent of 1,000 lbs. in weight and *150 cubic feet in capacity.*

Here are some additional interesting points concerning the machine :—

ENGINE :— 375 *Rolls-Royce Eagle VIII.*

SPEED :—45-120 *m.p.h.*

CABIN :—*Is clear of any transverse cross bracings or other obstruction, and measures 8 ft. by 3 ft. 3 ins. by 6 ft.—this in a machine of 34 feet over-all length. Direct entry off ground through ordinary door.*

LOAD :—*With 600 mile range of fuel*—1,000 *lbs.*

FUEL COST AT FULL LOAD: —7.2 *pence per mile.*

CHASSIS :—*A sturdy job, sprung by an unique combination of oleo and rubber shock absorbers.*

TAIL :—*Can be trimmed in flight from pilot's seat—steerable and practically unbreakable tail skid.*

GENERAL CONSTRUCTION : —*Straightforward — simple to repair and recondition.*



An impression of the interior of the cabin of the F.K.26.

The B.A.T. F.K.26 as a commercial machine has so many natural advantages, and is so moderate in first cost, that it is really *the ideal machine* to employ in inaugurating air transport services.

A demonstration flight can be arranged and all particulars obtained on application to :—

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38, CONDUIT STREET,
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Mayfair 637 and 638.

Telegrams :
Batigram, Reg, London.

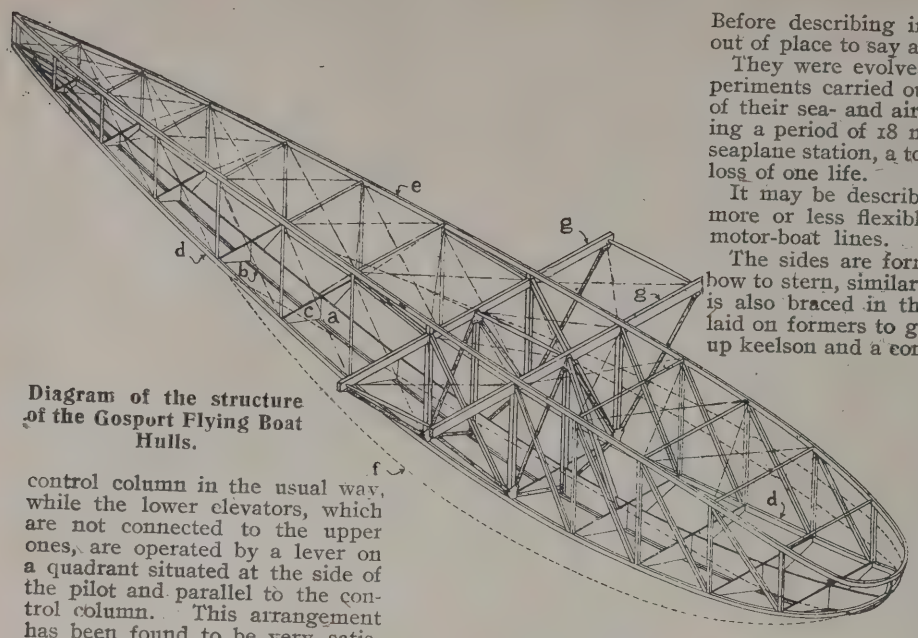


Diagram of the structure of the Gosport Flying Boat Hulls.

control column in the usual way, while the lower elevators, which are not connected to the upper ones, are operated by a lever on a quadrant situated at the side of the pilot and parallel to the control column. This arrangement has been found to be very satisfactory, the lower elevators being used for trimming in the same manner as an adjustable tail.

All flight controls, which are of the usual type, are balanced, with the exception of elevators. The use of servo motors has been found unnecessary.

Power Installation.—The engines are mounted on spruce bearers capped with ash, which in turn are supported by V struts between top and bottom plane spars.

The radiators are situated in front of engines and supported by the same bearers. They are fitted with shutters and thermometers, both connected up to the engineer's cockpit.

Inside the hull is carried a reserve water tank of ten gallons capacity, from which make up water is circulated to each radiator separately by means of a small hand rotary pump. The overflow from the radiators is led by a pipe therefrom to an open funnel leading to the above tank. This renders the amount of overflow clearly visible to the engineer.

A ten-gallon oil tank is fitted behind each engine.

The petrol system is positive feed from main tanks by means of two centrifugal pumps to gravity tank situated in the top plane, thence by gravity to engines. In the event of failure of this system, petrol may be fed direct to engines from main tanks. A hand pump of the semi-rotary type is fitted as a standby. The petrol overflow pipe from the gravity tank is led into the main petrol tank filling system and is selective, that is, it may be led into any tank at will, thus assisting to keep the machine trimmed.

The tanks are filled from a connection on the outside of the boat, thus keeping hull free from petrol.

The two centrifugal pumps are incorporated in one casting which also forms a combined filter and change-over cock. The pumps, which are situated about two feet from bottom of tanks, are driven by a wind propeller through two sets of bevel gearing, thus doing away with a large suction head on the pump, and so minimising risk of air leakage into the suction side of the system. The filters, two in number, are so arranged that either may be removed in turn and cleaned without disturbing the flow through the pumps.

A pipe leads from the bottom of each tank to a combined pump and distributor box, thence through non-return valves to the pumps, via filters.

Hull.

The hull, which is of the latest "Porte" type construction, forms perhaps the most important feature of these flying-boats. Before describing in detail the construction, it may not be out of place to say a few words about them generally.

They were evolved as the result of extensive full-scale experiments carried out during the past five years As a proof of their sea- and air-worthiness it may be remarked that during a period of 18 months' operation of these boats from one seaplane station, a total of 198,600 sea miles were flown without loss of one life.

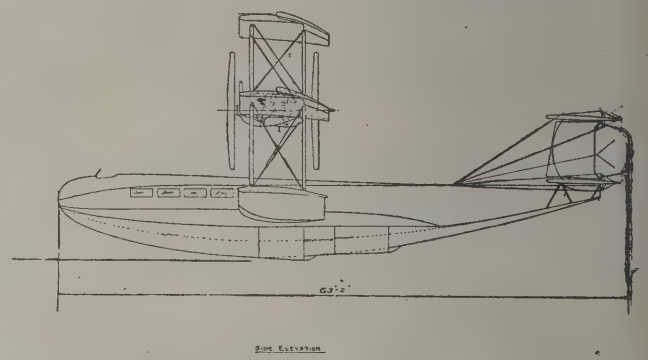
It may be described as a rigid compounded with the usual more or less flexible construction which follows high-speed motor-boat lines.

The sides are formed by two braced girders running from bow to stern, similar to the ordinary braced fuselage. The top is also braced in the same way, and is covered with fabric laid on formers to give a good streamline form. A deep built up keelson and a continuous keel run from bow to stern in the usual manner. Built-up floors connect up the keel to the two bottom longerons.

Timbers spaced about 9 in. apart run without a break from top longeron on one side, over keel to top longeron on the other side. The planking, which is double diagonal, runs from keel to top longeron on either side and is continuous round the fin chine, thus eliminating two joints which are always troublesome to keep water-tight. The steps, two in number, are detachable without interfering with hull planking, and are supported on fore and aft ash bearers.

At the wing roots there is a complete transverse bracing unit under each spar connecting up port and starboard lower planes.

Two great advantages result from this construction. Firstly, all flight loads are directly coupled up in one complete structure, thus ensuring the machine keeping in truth—this applies especially to the angle between tail plane and main planes. Secondly, the resultant weight of the complete boat passes through the keel, thus avoiding distortion and local stresses when on the trolley.



Side Elevation.

Side Elevation of the Gosport "G.9."

Apart from the structural side of the design, the general lay-out is the result of full scale experiments, and has been found to be very satisfactory.

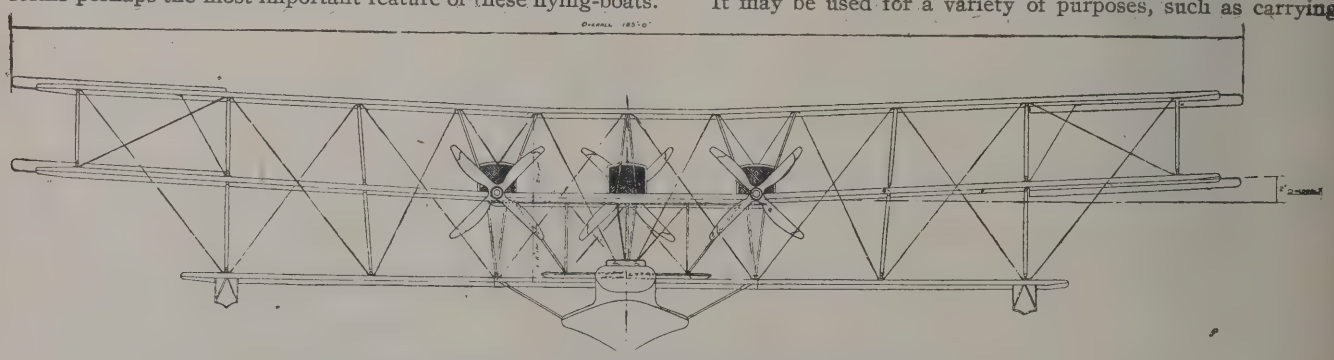
As in all engineering problems a compromise has to be made, and in this design it is believed the best has been attained.

Great care has been taken with detail design, resulting in maximum strength with a minimum of weight. A factor of loading of four is obtained throughout.

THE GOSPORT "G.8."

The "G.8" was produced to meet the demand for a small, handy, reliable flying-boat, in which a high speed was not essential. It has a very low-landing and getting-off speed, and owing to the fairly large hull is dry and seaworthy.

It may be used for a variety of purposes, such as carrying



Front Elevation of the Gosport "G.9" Triplane Flying Boat.

LEARN TO FLY

ON A



100 h.p. "CENTAUR 4."

THE TRAINING MACHINE

OF THE FUTURE.

The last 6 Pupils have obtained their R.A.C. Pilot Certificates in the amazingly short times of:

4 hrs. 45 minutes	— —	MISS MCMAUGH.
3 hrs. 30 minutes	— —	MR. M. TANNER.
3 hrs. 15 minutes	— —	MR. W. POOL.
2 hrs. 5 minutes	— —	MR. E. C. GODSIL.
1 hr. 40 minutes	— —	MR. T. RUSSELL.
*** 1 hr. 30 minutes**	— —	**Mr. R. G. COMANS.**

*** WORLD'S RECORD**

at

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NORTHOLT AERODROME.

Write for full particulars of Combined Practical and Theoretical Course, and Illustrated Handbook to :—

THE CENTRAL AIRCRAFT COMPANY,

179, High Road, Kilburn, London, England.

'Phone : Hampstead 4403, 4404. *Cables : Aviduction, London.*

small quantities of mails and cargo, and for police and patrol duties. It also makes an ideal training machine.

It is a pusher biplane fitted with one 270-h.p. Rolls-Royce "Falcon" engine.

The hull construction and lines are similar to the "G.5" already described.

The super-structure calls for no particular comment, apart from the centre section.

As with the "G.5," the top centre plane is quickly removable without disturbing the main planes, thus rendering the engine very accessible.

Otherwise, the machine is of very robust construction, and has a factor of loading of six throughout.

THE GOSPORT "G.8A."

The "G.8a," with exception of super-structure and engine, is identical with the "G.8." It was produced to fulfil the demand for a small fast flying-boat.

It may be fitted with either a 360-h.p. Rolls-Royce "Eagle VIII" engine, or a Napier "Lion," or a Cosmos "Jupiter."

THE GOSPORT "G.9."

This flying-boat was designed primarily to carry mails and valuable cargo long distances over the sea.

It is a triplane, and fitted with three 600-h.p. Rolls-Royce "Condor" engines, or two 1,000-h.p. Cosmos "Hercules" engines.

The general design is similar to the "G.5," and is designed to a factor of loading of four throughout.

Particulars of Gosport Flying Boats.

	G5.	G5A.	G8.	G8A.	G9.
Area of Main Planes	1,410 sq. ft.	1,440 sq. ft.	910 sq. ft.	700 sq. ft.	3,180 sq. ft.
Area of Tail Plane & Elevators	178 sq. ft.	190 sq. ft.	109 sq. ft.	109 sq. ft.	378 sq. ft.
Area of Fin	41 sq. ft.	33 sq. ft.	21 sq. ft.	21 sq. ft.	86 sq. ft.
Area of Rudder	33 sq. ft.	33 sq. ft.	20 sq. ft.	20 sq. ft.	58 sq. ft.
Span of Upper Plane	103 ft.	97 ft. 6 ins.	79 ft.	61 ft.	123 ft.
Span of Lower Plane	74 ft.	65 ft.	51 ft.	40 ft.	(Triplane)
Chord	8 ft.	9 ft.	7 ft. 3 ins.	7 ft. 3 ins.	10 ft.
Gap	8 ft. 6 ins.	8 ft. 6 ins.	8 ft. 6 ins.	8 ft. 6 ins.	8 ft. 6 ins. & 8 ft. 6 ins.
Weight Fully Loaded	12,500 lbs.	12,500 lbs.	4,850 lbs.	5,250 lbs.	28,800 lbs.
Passengers	6	6	3	3	10
Crew	2	2	1	1	3
Weight of Passengers & Crew	1,440 lbs.	1,440 lbs.	720 lbs.	720 lbs.	2,340 lbs.
Cargo	1,200 lbs.	1,250 lbs.	140 lbs.	270 lbs.	4,000 lbs.
Fuel & Oil	2,340 lbs.	2,340 lbs.	570 lbs.	660 lbs.	6,500 lbs.
Total Useful Load	4,980 lbs.	5,030 lbs.	1,390 lbs.	1,650 lbs.	12,840 lbs.
Top Speed	87 knots	88 knots	74 knots	87 knots	95 knots
Cruising Speed	78 knots	78 knots	65 knots	74 knots	80 knots
Landing Speed	45 knots	45 knots	36 knots	45 knots	45 knots
Duration	500 sea miles	500 sea miles	320 sea miles	330 sea miles	900 sea miles
Engines	2 Eagle Rolls-Royce	2 Eagle Rolls-Royce	1 Falcon Rolls-Royce	1 Eagle Rolls-Royce	3 Condor Rolls-Royce

THE BLACKBURN AEROPLANE AND MOTOR CO., LTD.

Mr. Robert Blackburn designed, built, and flew his first machine in 1909—a 28-ft. span monoplane with a 35-h.p. Green engine. Capt. Hucks took his ticket on the second Blackburn machine in February, 1911. Two Blackburn monoplanes took part in the "Circuit of Britain" with Capt. Hucks and Brig.-Gen. Conway Jenkins as pilots. Thereafter Capt. Hucks toured the West Country as a propaganda effort, and with great success. In the winter, 1911, the first all-metal Blackburn was built. The 80 Gnome type of the "West Country" tour was also flown by numerous well-known pre-war pilots, including Lieut.-Col. Blackburn, Mr. Pickles, and Lieut.-Col. Spenser Grey.

In the spring of 1914, the first War Office order was obtained—for B.E.s—and the present company was formed to deal with it. Simultaneously a seaplane (130-h.p. Salmson) was built for the "Round Britain" race.

During the war the Olympia works expanded rapidly to handle War Office contracts for B.Es. and the technical department grew simultaneously to cope with Admiralty experimental work.

An experimental triplane was followed by a series of experimental sea-going machines. The first of these was a twin fuselage all-purposes seaplane with twin 130-h.p. Clergets, and this was followed by the twin "Sunbeam G.P." type, later



Three-quarter Front View of the Blackburn Torpedo-carrying "Blackburd" (350-h.p. "Eagle" Rolls-Royce Engine.)

THE FAIREY AVIATION CO., LTD.,

Contractors to the Admiralty,
War Office and Air Ministry.

Head Office, HAYES, MIDDLESEX.
London Office, 175, PICCADILLY, W.1.
Works, Hayes, Middlesex, and Hamble, near Southampton.

Designers and manufacturers of Seaplanes, Flying Boats and Aeroplanes.

Patentees of the Fairey Patent Variable Camber Gear for Aircraft.

Sole Licensees of the Linton Hope Patent Hull for Flying Boats.

Designers, by special request of the British Government, of the "Atalanta" type Flying Boat, the largest of its kind constructed.

The following types of Fairey Seaplanes designed for the British Government have been put into production for Service use:—Fairey Campania, Hamble Baby—type IIIA, type IIIB, type IIIC.

Telephone—19 Hayes, Middlesex.

Telegrams—"Airily, Hayes, Middlesex."
Code—A.B.C. 5th Edition.

converted to Rolls-Royce "Falcons," and finally developed into the "Kangaroo" land machine, used for long-range anti-submarine patrol work.

Parallel with this, a series of experiments on torpedo carriers took place. The production side of the firm was building "Baby" seaplanes, and thence rose the Air Board's request to take over and develop the "Cuckoo" torpedo carrier. This was followed by the "Blackburd," and a further development, the "Kingfisher," was in hand at the time of the armistice, which also found a small flying-boat, the "Nib," well under way.

The end of the war found the firm with a large up-to-date works at Olympia, organised for rapid production and high-grade workmanship; an experimental depot and seaplane base at Brough, near Hull; a highly skilled technical staff with wide design experience, and a large number of skilled workmen. In addition to its reputation for excellent design and construction, the firm had won a name for manufacture of standard fittings and accessories, and an associated company, Blackburn Aircarft Products, had been formed to handle this branch of activity.



A Blackburn "Kangaroo" at the E.L.T.A. Exhibition (Amsterdam).

Since the war the firm has adopted the definite policy of remaining in the Aircraft Industry, whilst adopting non-aircraft work to employ its surplus facilities. The Olympia works have been diverted to automobile work on a production basis, thus enabling the retention of the high-skilled staff on the aircraft side. The Brough depot has been allocated to experimental aircraft work and the technical staff is fully engaged on the new problems of peace aviation. It is not expected that the aircraft side of the firm can be run at a profit for some while, but it is believed that such work is necessary and will in the long run prove wise, and that without such work the technical and commercial peculiarities of peace flying cannot be properly met. The choice of automobile work as a subsidiary line of business was, it may be stated, guided by the fact that such work enables a continuity of factory organisation and easy re-diversion to aircraft work at need.

POST-WAR ACHIEVEMENTS.

The reorganisation of the Olympia works has naturally occupied a large share of the firm's activities during the past year, but a certain amount of aircraft work has been carried on with success. Conversion for commercial duties has been planned and executed on the "Kangaroo," "G.P." seaplane, and "Blackburd" types. The "Kangaroos" have been flown with much success by the North Sea Aerial and General Transport, Ltd., with whom the Blackburn Aero and Motor Co. have been associated to a considerable extent. This flying will be dealt with below. In addition a "Kangaroo" has been selected by one of the parties competing in the flight to Australia and has up to the present date achieved a distance of 1,300 miles without any defect arising in the machine. A model of the commercial pattern "Kangaroo" will be on exhibition in the Paris Show.

Work in hand at Brough includes among other items a certain amount of experimental construction for the Air Board, some private experimental work of great promise which may very appreciably simplify the "ton-miles per shilling" problem, and the design and construction of a further development of the "Kangaroo" for the use of the Cope Antarctic Expedition.

The work in which the Blackburn Aero Co. have been associated with the North Sea Aerial and General Transport, Ltd., of which the manager is Major Veal, comprises a considerable amount of general flying and two successful passenger-carrying seasons—at Scarboro' and the E.L.T.A., Amsterdam. The bulk of this flying has been made with a small fleet of commercial Kangaroos. One of these machines acted as mail carrier on the London-Glasgow route during the railway strike.

Three of them were at the E.L.T.A., and there carried over 1,000 paying passengers without the least mishap, and received excellent notices for their commercial capabilities. Statistics based on this season at Amsterdam show that the "Kangaroo's" running costs were very reasonable, even for such uneconomical work as "flipping." The North Sea Aerial and General Transport, Ltd., are making arrangements for the institution in the near future of regular services across the North Sea and propose to employ "Kangaroos" for this work.

A schedule of data for present Blackburn models is given below :—

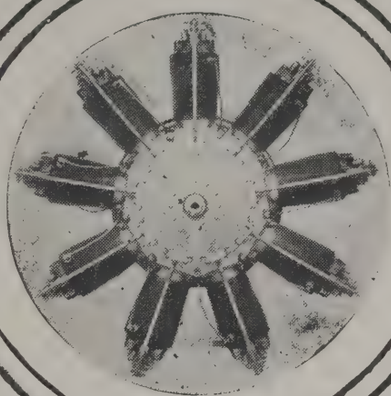
SPECIFICATION OF BLACKBURN AIRCRAFT.

Type.	Kangaroo bomber. Twin engine, 3-seater.	Kangaroo Passenger Carrier. Twin engine. 9-seater.	Kangaroo Mail Carrier. Twin Engine.	Blackburd Torpedoplane Single seater.	Blackburd Commercial type. 3 seater.	Sidecar Passenger Carrier. Tractor monoplane. 2-seater.	'Nib' Sporting Flying Boat. Single seater.	G.P. Seaplane Twin engine, 3-seater.	G.P. Seaplane Passenger Carrier. Twin engine 8-seater.	G.P. Seaplane Twin engine.
Purpose.	Long range bombing & patrol.		Mail carrier.	Torpedo ship aeroplane.	Mail and goods carrier.		Sporting.	Bombing and patrol.		Mail Carrier.
Span open.	74 ft. 10¼ in.	74 ft. 10¼ in.	74 ft. 10¼ in.	52 ft. 6 in.	52 ft. 6 in.	27 ft. 3 in.	34 ft. 10 in.	74 ft. 10¼ in.	74 ft. 10¼ in.	74 ft. 10¼ in.
folded.	27 ft. 9⅓ in.	27 ft. 9⅓ in.	27 ft. 9⅓ in.	17 ft. 0 in.	17 ft. 0 in.			27 ft. 9⅓ in.	27 ft. 9⅓ in.	27 ft. 9⅓ in.
Gap.	7 ft. 3 in.	7 ft. 3 in.	7 ft. 3 in.	7 ft. 0 in.	7 ft. 0 in.		6 ft. 9 in.	7 ft. 3 in.	7 ft. 3 in.	7 ft. 3 in.
Length, open.	44 ft. 2 in.	44 ft. 2 in.	44 ft. 2 in.	34 ft. 10 in.	34 ft. 10 in.	21 ft. 6 in.	28 ft. 6 in.	44 ft. 2 in.	44 ft. 2 in.	44 ft. 2 in.
,, folded.	46 ft. 0 in.	46 ft. 0 in.	46 ft. 0 in.	34 ft. 10 in.	34 ft. 10 in.			46 ft. 0 in.	46 ft. 0 in.	46 ft. 0 in.
Maximum height.	15 ft. 9 in.	15 ft. 9 in.	15 ft. 9 in.	12 ft. 4⅛ in.	12 ft. 4⅛ in.	6 ft. 3 in.	10 ft. 6 in.	16 ft. 10 in.	16 ft. 10 in.	16 ft. 10 in.
Chord.	7 ft. 3 in.	7 ft. 3 in.	7 ft. 3 in.	7 ft. 0 in.	7 ft. 0 in.	5 ft. 0 in.	5 ft. 6 in.	7 ft. 3 in.	7 ft. 3 in.	7 ft. 3 in.
Wings, Area.	880 sq. ft.	880 sq. ft.	880 sq. ft.	709 sq. ft.	709 sq. ft.	123 sq. ft.	314 sq. ft.	880 sq. ft.	880 sq. ft.	880 sq. ft.
Span, Tail.	17 ft. 6 in	17 ft. 6 in.	17 ft. 6 in.	17 ft. 0 in.	17 ft. 0 in.	7 ft. 1 in.	11 ft. 0 in.	17 ft. 6 in.	17 ft. 6 in.	17 ft. 6 in.
Area, Tail.	143.5 sq. ft.	143.5 sq. ft.	143.5 sq. ft.	82 sq. oft.	88 sq. ft.	13.2 sq. ft.	51.7 sq. ft.	143.5 sq. ft.	143.5 sq. ft.	143.5 sq. ft.
Area, Elevators.	63.5 sq. ft.	63 5 sq. ft.	6 35 sq. ft.	34 sq. ft.	34 sq ft.		23 7 sq. ft.	63.5 sq. ft.	63.5 sq. ft.	63.5 sq. ft.
Area, Rudder.	22.5 sq. ft.	22.5 sq. ft.	22.5 sq. ft.	9 sq. ft.	9 sq. ft.	4 sq. ft.	8.75 sq. ft.	22.5 sq. ft.	22.5 sq. ft.	22.5 sq. ft.
Area, Fin.	25 sq. ft.	25 sq. ft.	25 sq. ft.	18 sq. ft.	18 sq. ft.		11.25 sq. ft.	25 sq. ft.	25 sq. ft.	25 sq. ft.
Total area, Aileron.	166.5 sq. ft.	166.5 sq. ft.	166 5 sq. ft.	85 sq. ft.	85 sq. ft.	14 sq. ft.	83 sq. ft.	166.5 sq. ft.	166.5 sq. ft.	166.5 sq. ft.
Engine.	2 x 250 h.p. Falcon, Rolls-Royce.	2 x 250 h.p. Falcon, Rolls-Royce.	2 x 250 h.p. Falcon, Rolls-Royce.	350 h.p. Eagle, Rolls-Royce.	350 h.p. Eagle, Rolls-Royce.	ABC Gnat.	200 h.p Hispano.	2 x 250 h p. Falcon, Rolls-Royce.	2 x 250 h.p. Falcon, Rolls-Royce.	2 x 250 h.p. Falcon, Rolls-Royce.
Weight empty.	5150 lbs.	5300 lbs.	5150 lbs.	3083 lbs.	3080 lbs.		1503 lbs.	5840 lbs.	5840 lbs.	5840 lbs.
Load per sq. foot.	9 21 lbs.	8.75 lbs.	8.78 lbs.	7.53 lbs.	7.53 lbs.		7.61 lbs.	9 78 lbs.	9.78 lbs.	9.78 lbs.
Weight per H.P.	16.2 lbs.	15 4 lbs.	15.4 lbs.	15.3 lbs.	15.3 lbs		11.95 lbs.	17.2 lbs.	17.2 lbs.	17.2 lbs.
Tank capacity, Hours.	6	5 (cruising).	6	3	6	4	3	4½	5	6
Range, Miles.	580	410	580	276	550	324	342	435	485	580
Top speed.	98 m.p.h.	95 m p.h.	98 m.p.h.	92 m.p.h.	92 m.p.h.	83 m.p.h.	114 m.p.h.	97 m.p.h.	97 m.p.h.	97 m.p.h.
Landing speed	50 m.p.h.	50 m.p.h.	50 m.p.h.	49 m.p.h.	49 m.p.h.	48 m.p.h.	45 m.p.h.	52 m.p.h.	52 m.p.h.	52 m.p.h.
Getting off speed.	56 m.p.h.	56 m.p.h.	56 m.p h.	53 m.p.h.	53 m.p.h.	50 m p.h.		56 m.p.h.	56 m.p.h.	56 m p.h.
Disposable load.	1710 lbs.	1700 lbs.	1400 lbs.	1680 lbs.	600 lbs.	385 lbs.	470 lbs.	1710 lbs.	1540 lbs.	1300 lbs.
Total weight loaded.	8500 lbs.	8100 lbs.	8100 lbs.	5340 lbs.	5340 lbs.		2390 lbs.	8600 lbs.	8600 lbs.	8600 lbs.

POWER

—an outstanding point in "the most efficient Aero Engine in the world"

ABC



The Engine illustrated is the DRAGONFLY—340 h.p.—9 cyl. (Static Radial).

WALTON MOTORS, Ltd.
Walton-on-Thames.

Telephone:
ESHER 306 and 307.

Telegrams:
"MOTORS, WALTON-ON-THAMES."

THE FAIREY AVIATION CO., LTD.

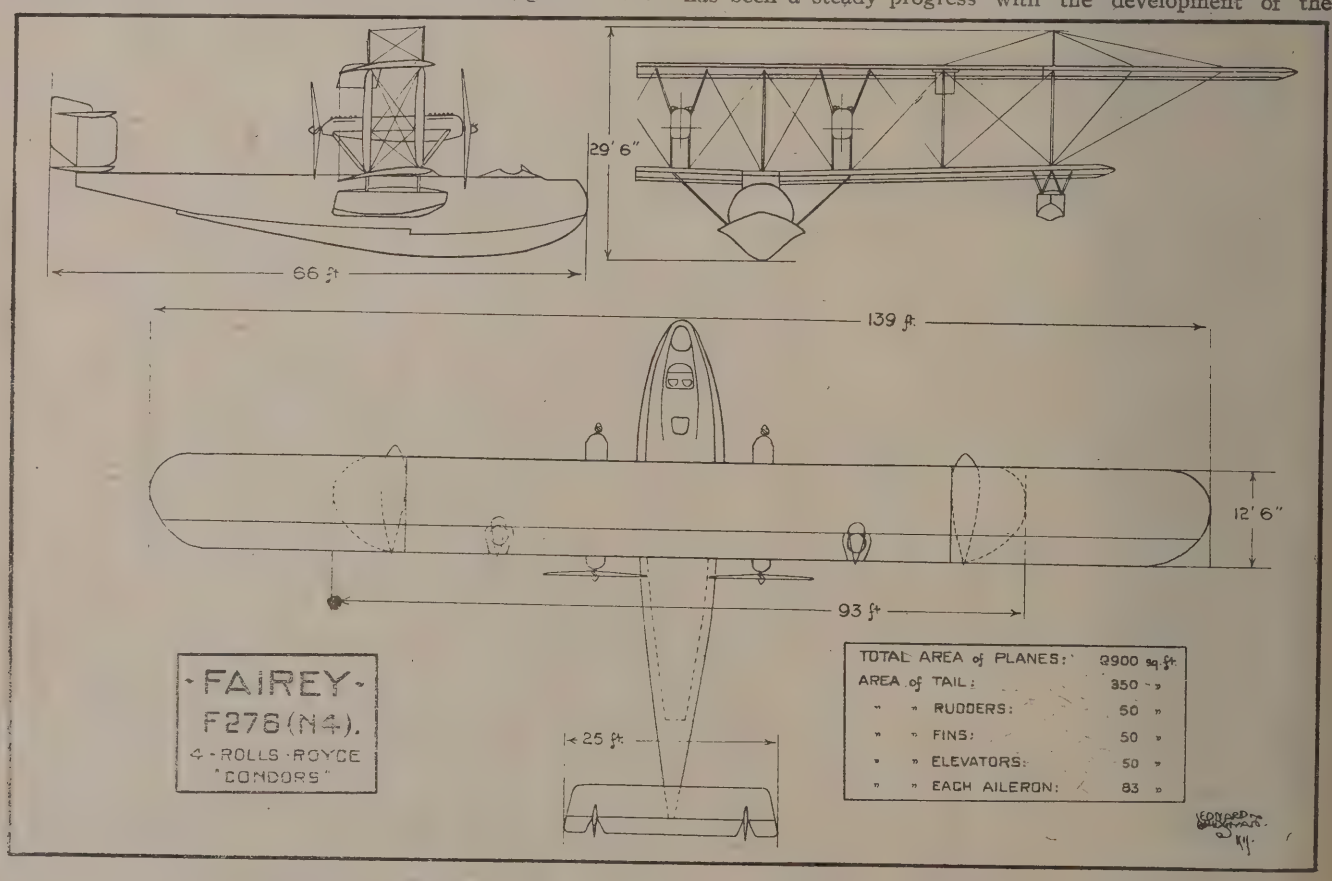


On the Left two Views of the Fairey Machine entered for the Schneider Cup Contest. On the Right the same Machine fitted with the Standard Type 3 Wings. A Napier engine is used.

Founded in 1915 by Mr. C. R. Fairey, the Fairey Aviation Co. have since then shown themselves to be in the front rank of British aircraft constructors.

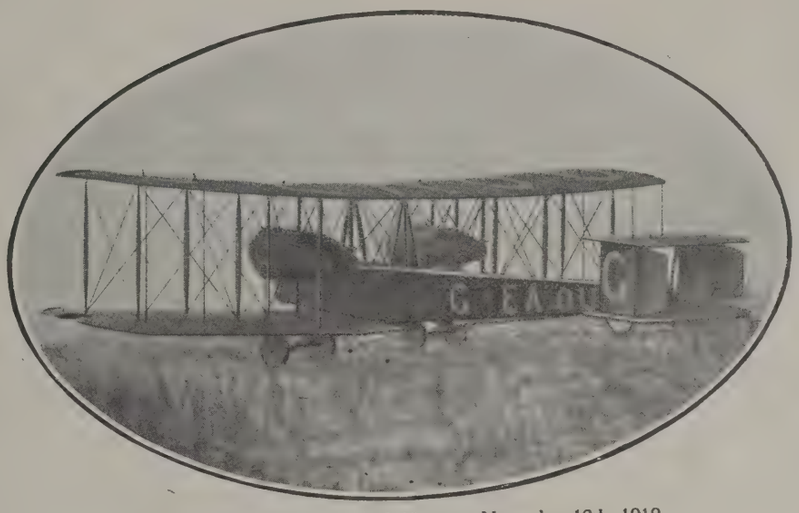
Generally speaking, the Fairey Company have been associated with the manufacture of seaplanes, but it must not be forgotten that one of their earliest successful designs was the Fairey "Fighter"—one of the first of the large twin engine type of aeroplane to be successfully flown and to perform.

Mr. Fairey's earlier design efforts were more or less designed on "high lift" wing lines, from which position there has been a steady progress with the development of the



VICKERS
LIMITED.

"VICKERS - VIMY - ROLLS."



The Start from Hounslow. 9.10 a.m. November 12th, 1919.

The FIRST FLIGHT from ENGLAND to AUSTRALIA

Nov. 12th to Dec. 10th, 1919.

TIME—27 days, 20 hrs. 20 mins. DISTANCE—Approx. 11,500 miles.

THE WORLD'S LONGEST FLIGHT.

The FIRST DIRECT TRANS-ATLANTIC FLIGHT

June 14th—15th, 1919.

TIME—15 hrs. 57 mins. · DISTANCE—1,890 miles.

THE WORLD'S LONGEST NON-STOP AEROPLANE FLIGHT.

Telegraphic Address:
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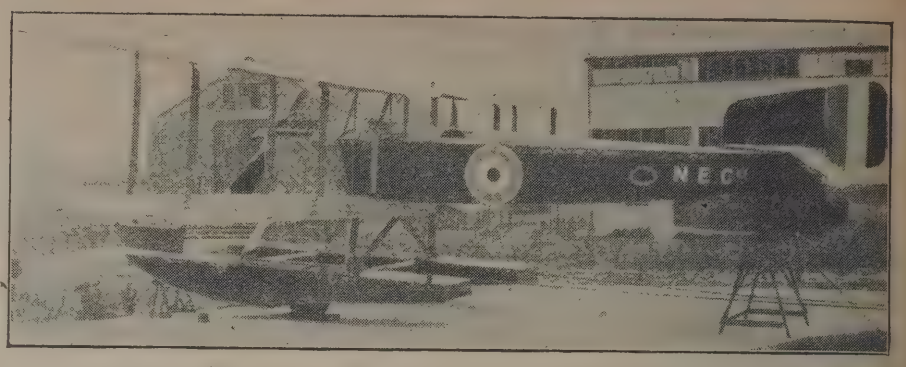
Telephone:
Kensington 6520 (4 lines).

Aviation Department,
IMPERIAL COURT, BASIL ST., KNIGHTSBRIDGE, S.W.3.

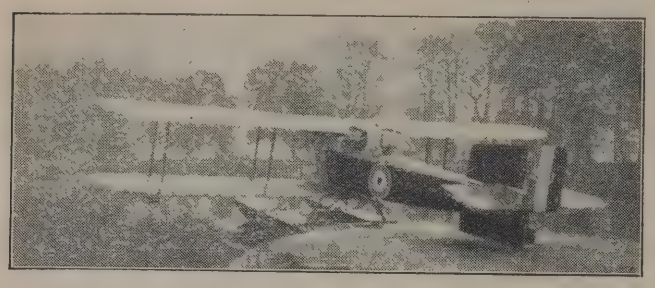
Fairey patent variable camber gear, which enables the low landing and high climbing speed of the high lift wing to be used while retaining the high speed of the low resistance type of wing.

The value of this development is shown by the fact that with a standard seaplane of very robust construction, loaded to 11 lb. per sq. ft. and to 15 lb. per h.p., a speed of 112 miles per hour, and a climb to 5,000 ft. in 6½ min. has been reached with a Fairey machine.

The Fairey seaplanes of the two-float type are machines of sturdy build. One of them, N.10 was delivered to the R.N.A.S. in April, 1917, and was repurchased by the Fairey Co., fitted with a Napier engine, and was flown in the Schneider Cup Competition with the original parts, even to the floats.



A Standard Fairey Type 3 Seaplane, fitted with an amphibian undercarriage.



A Fairey Seaplane about to get off the Thames at Isleworth.

These seaplanes have been developed on the lines of an interchangeable series—i.e., a standard fuselage may be fitted with any one of certainly three sets of wings, two float undercarriages, and two sizes of float suited to use as a fast two-seater or as a moderate speed load carrier, or either a wheel undercarriage or one fitted with skids and flotation gear for use from ships' decks. Practically all the components of the different wings or undercarriages are interchangeable—with an immense reduction in the number of spares necessary for running machines on different types of service.

Beside the range of machines referred to above, the Fairey Aviation Co. have been responsible for the design of the N4 flying-boat to Royal Air Force specification, intended for work with the fleet at sea. Two of the machines—fitted with four Rolls "Condor" engines of 640 h.p. each—are being built by the English Electrical Company, Ltd., one being ready for the engines, and a third has just been ordered from the Fairey Company.

THE SOPWITH AVIATION AND ENGINEERING CO., LTD.



The Sopwith "Wallaby"—a Special Version of the Transport Type built for the Australian Flight.

The Sopwith Aviation Co. were, during the war, probably responsible for more divers types of aircraft than any other firm. Their experience as that of pioneer designer-constructors covers all types of heavier-than-air craft from flying-boats and seaplanes to land machines.

Furthermore, they have built, and have standardised, everything from bombers and torpedo-carriers to high-speed scouts, and in every type they have attained eminence.

With the passing of the war and the transition to peace the enormous war output of fighting aircraft is no longer required. The Sopwith Co. is by no means disposed to rest on its laurels, and testimony to this effect is furnished by the introduction of three new commercial types of aircraft: the "Dove," the "Gnu," and the "Transport."

Nor is there any reduction of energy in the immediate future. The company's design and experimental department is being maintained at its full strength and is as busy as ever. Some interesting developments are likely to be heard of in the near future.

THE "TRANSPORT."

The "Transport" is an ordinary single-engined tractor biplane and can be adapted for use either as a cargo machine or for the purpose of conveying passengers. In the former case accommodation is provided for one pilot and passenger, with 1,500 lb. of cargo; and in the latter arrangements are made for carrying five passengers and one pilot, four passengers being carried in the centre of the machine and one in the pilot's cockpit, behind the wings.

Petrol is carried for six hours at a cruising speed of 90 miles per hour in the case of the passenger-carrier, and when adapted for use as a cargo machine fuel is provided for eight hours at a cruising speed of 90 miles per hour.

It is of interest to note that the "Transport" is practically identical with the machine upon which the Atlantic Flight was attempted last May, and is also very similar to the "Wallaby" upon which Capt. Matthews started to fly to Australia.

The following particulars are common to both passenger and cargo types:—

Engine	"Eagle 8" Rolls-Royce.
Speed	115 m.p.h.
Weight of machine fully loaded	5,500 lb.
Factor of safety	6.5
Ratio of useful load to total weight	46 p.c.
Span	46 ft. 6 in.
Height	12 ft.
Overall length	28 ft.
Chord	6 ft. 3 in.
Stagger	3 in.
Area of main planes	547 sq. ft.
Dihedral	2½ deg.

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to provide the necessary accommodation for the

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On JANUARY 14th, 15th, 16th, 1920,

THE EXTENSIVE VALUABLE AND NEARLY NEW

SURPLUS PLANT, STORES,

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COMPRISING

TIMBER SECTION

About 100 STANDARDS OREGON PINE. 5,000 THREE-PLY BOARDS of Extra Aircraft Quality, ⅛ in. to ¼ in., passed A.I.D. 50 STANDARDS ENGLISH ASH. 500 cubic feet WALNUT, MAHOGANY PANELS. Several Hundred TRESTLES, BENCHES, RACKS, CASES, and large quantities of Useful TIMBER.

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14 Sensitive, Bench, and other DRILLING MACHINES, by Burton Griffiths, Monninger, Churchill, Baines, and others. 4 TOOL GRINDING MACHINES, by Lindley, Holbrook, Goodall, Platt and others. 1 TWIST DRILL GRINDING MACHINE, 1 UNIVERSAL ditto. BUFFING MACHINE, by Canning. 10 S.S. and S.C., CAPSTAN, TURRET, and other LATHES, by Holbrook and others. 1 AUTOMATIC, by Flather. 2 SHAPING MACHINES, 2 POWER HACKSAWS, 2 PUNCHING and SHEARING MACHINES, 1 WOOD BORING ditto. NIBBLING MACHINE, by Burton Griffiths. COKE BREAKING MACHINE, CENTERING MACHINE. C.I. POWER FRAME. MILLING MACHINE, by Holbrook. 1 R.A.F. WIRE ROLLING MILL, by Herring and Son. 1 BAND SAW for METAL. HARVEY FROST VULCANISER. SINGER'S SEWING MACHINE.

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20 tons HEXAGON and ROUND STEEL, in standard sizes; 100,000 feet STEEL TUBES, A.I.D. APPROVED, assorted sizes; 1 ton DURALUMIN RODS, TUBES, and SHEETS; 6 tons BRASS and COPPER RODS and TUBES, 3/16 in. to 2 in.; 5 tons ALUMINIUM CASTINGS; 5 cwt. RIVETS.

VARNISH & PAINT SECTION

Several tons ready mixed WHITE and other PAINTS, by well-known makers; 1,000 gallons VARNISHES, DOPE; 25 cwt. LIQUID GLUE (Croid).

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Large Quantities of PROPELLERS, WINGS, AILERONS, CENTRE SECTIONS, AIR PUMPS, COCKS, NIPPLES, BUSHES. 182 Large LANDING WHEELS (with 900 x 200 Palmer Tyres), SCREENS, SHUTTERS, STREAMLINE WIRES, RENAULT CHAINS, TURNBUCKLES, PETROL TANKS up to 140 Gallons, TIE RODS, 150 RADIATORS, SHUTTERS, STEERING WHEELS, 600 SKEFFKO BALL BEARINGS, 1 ton FLEXIBLE STEEL CABLE, 13 STEEL NACELLES, several tons BOLTS and NUTS, WASHERS, SPROCKETS, SOCKETS, SHEET CELLULOID, RUBBER CONNECTIONS, ROTAX HOSE CLIPS, and an enormous assortment of STAMPINGS and CASTINGS in ALUMINIUM, STEEL, GUN METAL, and various ALLOYS.

GENERAL

2 cwt. SCOTCH GLUE, 50 GLUE POTS (assorted). 20,000 gross NETTLEFOLD'S SCREWS in Brass, N.P., and Iron (assorted). TUCKER'S ELECTRIC SWITCHES. Several tons ALUMINIUM, COPPER, BRASS, CAST and WROUGHT IRON SCRAP. 20,000 gross ASSORTED LINEN and EGYPTIAN TAPES. ELASTIC SHOCK-ABSORBER CORD, and an extensive miscellaneous assortment of Materials and Stores as used in Aircraft and Carriage Manufacturing.

On View Two Days preceding and Mornings of Sale.

CATALOGUES, when ready, 1s. each, and all information from Henry Butcher & Co., Auctioneers and Valuers to the Engineering and Allied Trades, 63 and 64, Chancery Lane, London, W.C.2. 'Phone: Holborn 2295 (5 lines). Telegrams—Penetran Holborn, London.

THE "DOVE."

The "Dove" is a two-seater version of the famous "Pup," one of the most delightful of Service machines as far as ease of flying is concerned.

Generally speaking, all dimensions are practically the same in both machines. In the "Dove" the span is cut down by 1½ ft. and the overall length is increased by a few inches.

This machine produced as a sporting two-seater should prove a great favourite for general utility and stunt flying.

SPECIFICATION.

Purpose .....Sporting two-seater.
Engine .....80-h.p. Le Rhône.
Speed .....100 m.p.h.
Speed variation .....60 m.p.h.
Climb .....5,000 ft. in 7½ min.
Range .....Full throttle, 200 miles, cruising speed, 250 miles.
Maximum safe load .....665 lb. (normal load, 365 lb.).
Weight of machine fully loaded .....1,430 lb.
Factor of safety 6
Ratio of useful load to total weight .....27.6 p.c.
Span .....25 ft.
Height .....9 ft. 6 in.
Overall length .....19 ft. 6 in.
Chord .....5 ft. 1½ in.
Gap .....4 ft. 6 in.
Stagger .....1 ft. 4 in.
Dihedral .....3 deg. (both planes).
Loading .....6.7 lb. per sq. ft.



The Sopwith two-seater "Dove" (80 Le Rhône engine).

THE "GNU."

The "Gnu" is a larger version of the "Dove" and is furnished with enclosed accommodation for the two passengers who are carried in rear of the main planes. The pilot is situated well forward under the centre section which is provided with a large opening for easy ingress and egress to the pilot's cockpit. Two sets of struts are fitted either side of the fuselage.

The construction and general arrangement of the machine is on normal and accepted lines. Either a 200-h.p. B.R.2 or an 110-h.p. Le Rhône engine can be fitted.



The Sopwith "Gnu," enclosed three-seater (B.R.2 engine).

SPECIFICATION.

Purpose.....Light high-performance goods or passenger machine.
Engine.....200-h.p. Bentley rotary.
Speed .....110 m.p.h.
Speed variation .....65 m.p.h.
Climb—
5,000 ft. in 5½ min.
Range .....Full throttle, 200 miles; cruising speed, 250 miles.
Maximum safe load .....820 lb.
Weight of machine fully loaded .....2,400 lb.
Factor of safety 6
Ratio of useful load to total weight .....34.1 p.c.
Span .....38 ft.
Height .....10 ft.
Overall length .....25 ft. 6 in.
Chord .....5 ft. 6 in.
Gap .....5 ft.
Stagger .....11 in.
Dihedral .....Both planes 2½ deg.
Loading .....6.85 lb.

SPECIFICATION (WITH 110-H.P. LE RHONE).

Purpose...light high-performance goods or passenger machine.
Engine .....110 h.p. Le Rhône.
Speed .....93 m.p.h.
Speed variation .....53 m.p.h.
Climb .....5,000 ft. in 7¾ min.
Range.....full throttle, 220 miles; cruising speed, 300 miles.
Maximum safe load.....1,202 lb. (normal load, 845 lb.)
Weight of machine fully loaded 2,160 lb.
Factor of safety 6
Ratio of useful load to total weight 39.1 p.c.
Loading.....6.1 lb. per sq. ft.

The Schneider Cup Machine.

The following are particulars of the machine built by the Sopwith Aviation Co. for this year's Schneider Cup competition, and which has now been fitted with a land undercarriage of the customary type :—

Engine ...Cosmos "Mercury," 450 h.p.
Chord .....5 ft. 1½ in.
Span .....24 ft.
Gap .....4 ft. 6 in.



The Sopwith Schneider Cup Seaplane (450-h.p. "Jupiter" Cosmos engine).

Total length over floats .....22 ft.
Backward stagger .....2½ in.
Floats .....Plain longitudinal without step.
Estimated speed (as a land machine).....170-175 m.p.h.
Weight .....Approx. 2,200 lb.

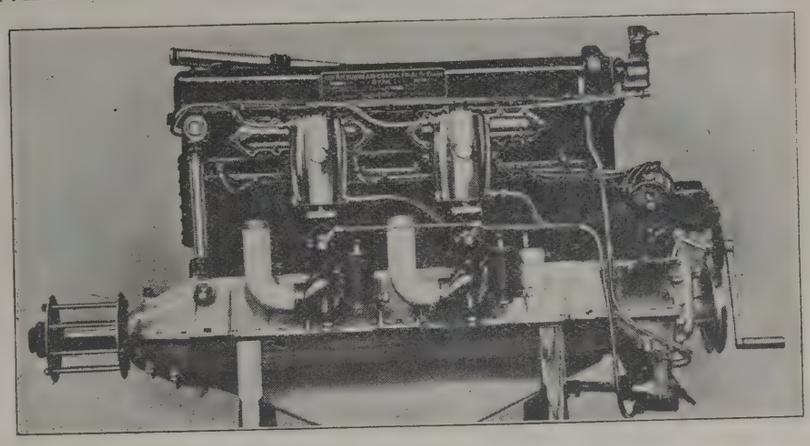
It is believed that the above machine will prove to be the fastest in the world when "tried out" as a land machine.

THE SUNBEAM MOTOR CAR CO., LTD.

The four engines to be exhibited by the Sunbeam Company at the Paris Show have many similar characteristics, but differ in important details other than those of size and power. To take the first of all those points in which the engines are similar will perhaps be the best plan. The four engines in question bear the usual tribal names of Sunbeam-Coatalen aircraft engines and are of the following range of horse-power :

"Dyak" ..... 100 h.p.
"Manitou" ..... 300 h.p.
"Matabele" ..... 420 h.p.
"Sikh" ..... 800 h.p.

All these engines are composed of similar materials for similar parts, with one exception, which will be noted later. The crankshafts are of nickel chrome steel, the pistons being of aluminium. The valves are of high chrome steel, of a special form and designed to withstand heat and prevent distortion, and the valve gearing is of self-hardened nickel chrome steel. The cylinder blocks, with the exception of the "Sikh" engine, are of aluminium casting with very large water circulation spaces and inspection covers. The cylinders are fitted with steel liners and the valve seats are of bronze. In the case of the "Sikh" engine, however, the cylinders are composed of steel throughout, and are welded together with their jackets.



The Sunbeam "Dyak" Engine (100 h.p.)

The crankcases are in each case of aluminium casting and are of a patent form, designed to give greater strength and to allow the bearing caps to take a large share of the side load imposed on the crankshaft under the usual working stresses.

All these engines are of the water-cooled type, the circulation being in each case by centrifugal pump designed to give a specially large output. Lubrication in all types is by gear wheel pumps, three of these being employed :—

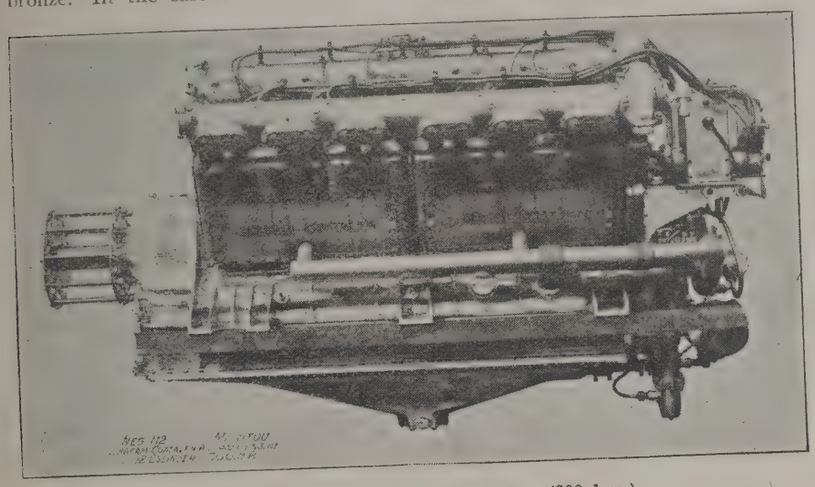
(a) A scavenger pump which draws the oil from the sump and returns it to the oil tank;

(b) The main force pump which forces oil through the drilled crankshafts and ducts in the crankwebs to the main bearings, drawing direct from the oil tank;

(c) The auxiliary oil circuit pump which forms a portion of the main force pump and is arranged to deliver the necessary quantity of oil at a very low pressure to the camshaft bearings and all auxiliary bearings.

Carburation is effected by Claudel-Hobson carburetters of diffuser type working under a head of pressure of 4 lb. per square inch.

Ignition is by high tension magnetos, and particulars as to the number of these are given in the details of each engine. The magneto drive is by a coupling formed of laminated spring blades giving great flexibility and ensuring a long life for the magneto.



The Sunbeam "Manitou" Engine (300 h.p.)

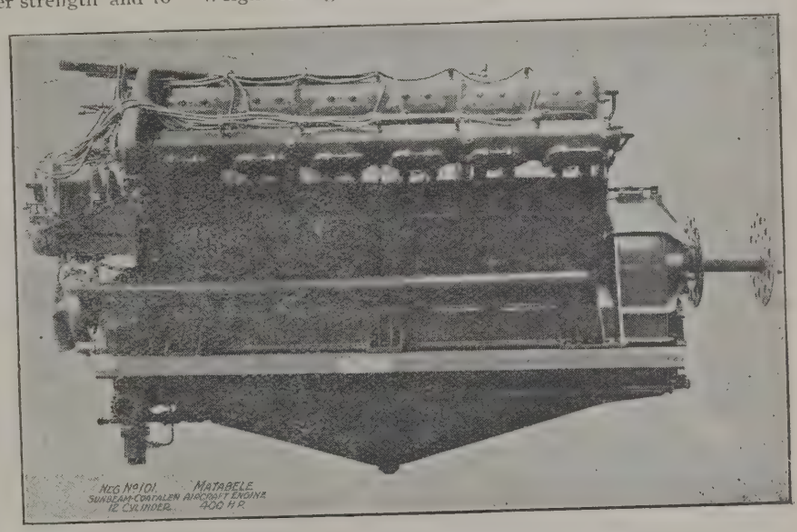
The "Dyak," "Manitou" and "Matabele" engines are each fitted with two sparking plugs per cylinder, the "Sikh" engine being fitted with four plugs per cylinder.

THE 100-H.P. "DYAK."

In the case of the "Dyak" 100 h.p. the engine is of the vertical type, the six cylinders being cast *en bloc* in aluminium, this casting being made in the Sunbeam company's own foundry and being one of the largest, if not the largest, yet made in this material. There are two valves to each cylinder, operated by one overhead camshaft, which is driven direct by bevel gearing to the crankshaft. This is carried on seven die cast white metal bearings, and drives the propeller direct, the thrust bearing being mounted on an extension of the crankcase. The carburetter is of the B.Z.S. 38 type, and is arranged for gravity feed. The starting of this engine is effected by hand.

The chief dimensions are as follows—

Bore ..... 120 mm.
Stroke ..... 130 mm.
Total stroke volume of cylinders ..... 8,820.5 cc.
Normal speed of engine ..... 1,200 r.p.m.
Fuel consumption ..... 0.54 pint per b.h.p. hour
Weight of engine "dry" ..... 390 lb.



The Sunbeam "Matabele" Engine (400 h.p.)

THE 300-h.p. "MANITOU."

The "Manitou" 300 h.p. is a 12-cylinder engine, the cylinders being cast in blocks of three and disposed on the crankcase in two rows of six each, the angle of inclination being 60 degrees. There are two inlets and two exhaust valves actuated by overhead camshafts, these being driven by trains of gears from the crankshaft. The connecting rods are of the usual "H" section and of the articulated pattern. The hollow crankshaft is carried on eight die cast white metal bearings, and the propeller is driven indirectly by gearing to the propeller shaft, which, with the thrust bearing, is mounted on an extension of the crankcase cast on the engine.

Carburation is by two Claudel-Hobson H.C.7 carburetters arranged for gravity feed and set in the centre of the "Vee." The magnetos employed are two of the B.T.H. A.V.12 type, driven from the trains of gears at one and a half times engine speed. Both electric and hand starters are fitted to this engine.

The chief dimensions are as follows :

Bore	110 mm.
Stroke	135 mm.
Total stroke volume	15,395 cc.
Normal speed of engine	2,000 r.p.m.
Fuel consumption	0.54 pint per b.h.p. hour
Ratio of reduction	1.57 to 1
Weight of engine "dry"	845 lb.

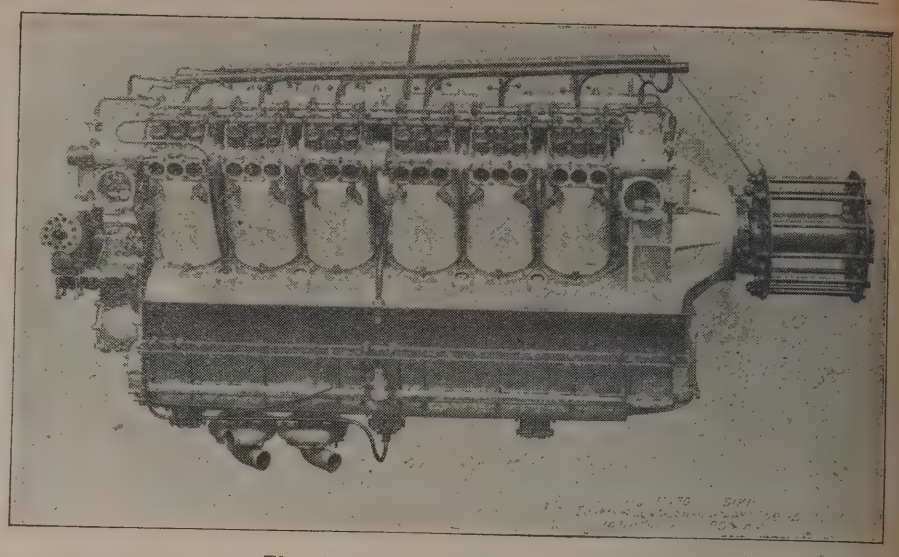
THE 400-h.p. "MATABELE."

The "Matabele" 400 h.p. engine is similar to the "Manitou" with regard to the general lay out, the cylinders being similarly cast and disposed on the crankcase. The valves are likewise four in number (two inlet and two exhaust), and the valve gearing is exactly similar to that of the above-mentioned engine.

The propeller drive is indirect, the gear reduction, ratio being in this case 1.63 to 1. Carburation is by means of two Claudel Hobson H.C.7 (twin type) carburetters arranged for gravity feed, and ignition is effected by means of four P.M.6 magnetos driven from the trains of gears. In this engine the starting is either by compressed air or by the hand starter.

The chief dimensions are :—

Bore	122 mm.
Stroke	160 mm.
Total stroke volume	22,429 cc.
Normal revolutions	2,000 r.p.m.
Fuel consumption	0.54 pint per b.h.p. hour
Weight of engine "dry"	1,000 lb.



The Sunbeam "Sikh" (800 h.p.)

THE 800-h.p. "SIKH."

The "Sikh" engine differs considerably from the other three. It has twelve separate steel cylinders, machined all over, and welded together with their jackets, the disposition on the crankcase being the same as in the smaller twelve-cylinder types. There are three inlet and three exhaust valves to each cylinder.

The valves are operated by push rods and rockers, actuated by a single central camshaft, driven, as usual, from the trains of gears. Eight die cast white metal bearings carry the hollow crankshaft, and the propeller shaft is driven indirectly by spur gear, the thrust bearing being mounted on an extension of the crankcase cast on the engine.

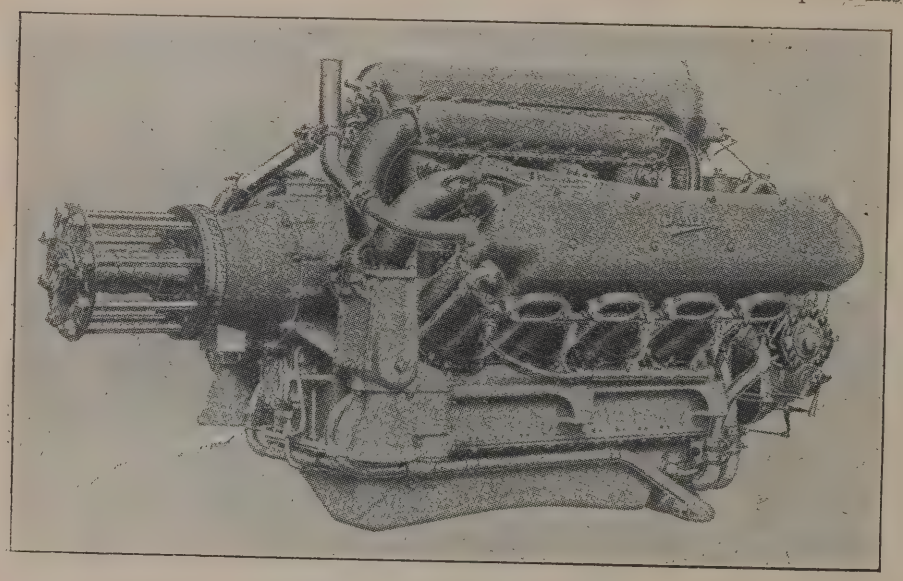
Carburation is effected by means of four Sunbeam Claudel carburetters of special form, two being situated at each end of the engine. Ignition is by four twelve-cylinder magnetos driven by skew gear and fitted with Vernier type coupling to allow of fine adjustment. Both hand and electric starters are fitted to this engine.

The chief dimensions are as follows :—

Bore	180 mm.
Stroke	210 mm.
Total stroke volume	64,113.6 cc.
Normal speed of engine	1,400 r.p.m.
Fuel consumption	0.51 pint per b.h.p. hour
Ratio of reduction	1.526 to 1
Weight of engine "dry"	1,952 lb.

D. NAPIER AND SON, LTD.

The Napier aero engine made its appearance too late in the history of the war to have any effect on the war in the air—though this fact was in no sense the fault of the designing firm, but was rather due to the operations of those in authority over aircraft engine production.



The 450-h.p. Napier Aero Engine.

Since peace has allowed it to display its capacity, it has shown itself to be in the very front rank of the world's aircraft power plants, and it will doubtless play an important part in the development of commercial aviation. It has already to its credit many very fine performances, Capt. Lang's well-known ascent with a passenger to some height not yet officially certified, but in the neighbourhood of 30,000 ft., the winning of the Aerial Derby, the establishment of 18 British speed records in one day are amongst them.

As is probably well known by this time, the engine is a three-row, broad arrow type, with 12 cylinders, giving 450 h.p. at 2,000 r.p.m., a speed which is brought down to 1,320 r.p.m. at the airscrew shaft by a reduction gear. The cylinders, each $5\frac{1}{2}$ in. bore by $5\frac{1}{8}$ in. stroke, are steel forgings, machined all over, with sheet steel water jackets attached thereto. The cylinder heads are of aluminium, the four heads of each row being cast in one piece, carrying valve seatings and the supports for the overhead camshafts, of which there are two—one for inlet valves and one for exhaust valves—to each row of cylinders.



GWYNNES
LIMITED.

CONTRACTORS TO H.M. GOVERNMENT

MANUFACTURERS AND SOLE LICENSEES IN THE BRITISH EMPIRE

"CLERGET" PATENT AERO ENGINES

ENGINEERS, LONDON.

"GWYNNE, LONDON." "HAMMERSMITH 1910."

The pistons are of aluminium alloy and are fitted with two gas rings and one scraper ring.

The connecting rods are machined from special high grade steel. The master rods are coupled to the pistons of the vertical block of cylinders, and have lugs on either side to which are attached the auxiliary rods from the right and left blocks of cylinders.

The crankshaft is machined from a solid steel forging, and has the four throws in one plane. It is carried in five roller bearings with one large plain bearing at the forward end.

The propeller shaft is carried on two roller bearings and is fitted with a large double thrust ball bearing.

The crankcase is of aluminium and carries at its front end the reduction gear for the propeller shaft, together with the shaft and its bearings.

To the rear is bolted the case containing the two scavenger oil pumps, the pressure oil pump, the camshaft drive, and the drive for the magnetos, water and oil pumps.

A twin and a single carburetter on the Napier system are fitted. The gas inlet pipes are of steel and are water-jacketed. Altitude control cocks are fitted and an arrangement is provided to secure equal distribution of the gas to the three cylinder blocks.

Lubrication is by pressure throughout, and an adjustable pressure relief valve and a pressure gauge are incorporated in the system.

The Napier patent air-petrol starter is provided by which explosive mixture is pumped into the cylinders and ignited by a hand-starting magneto operated through the special distributor rotors of the engine magnetos. The starter comprises a hand-operated air pump, petrol vaporiser, air distributing cock, and a simple mechanism for opening the valves on each block of cylinders by hand.

THE BEARDMORE AERO ENGINE, LTD.

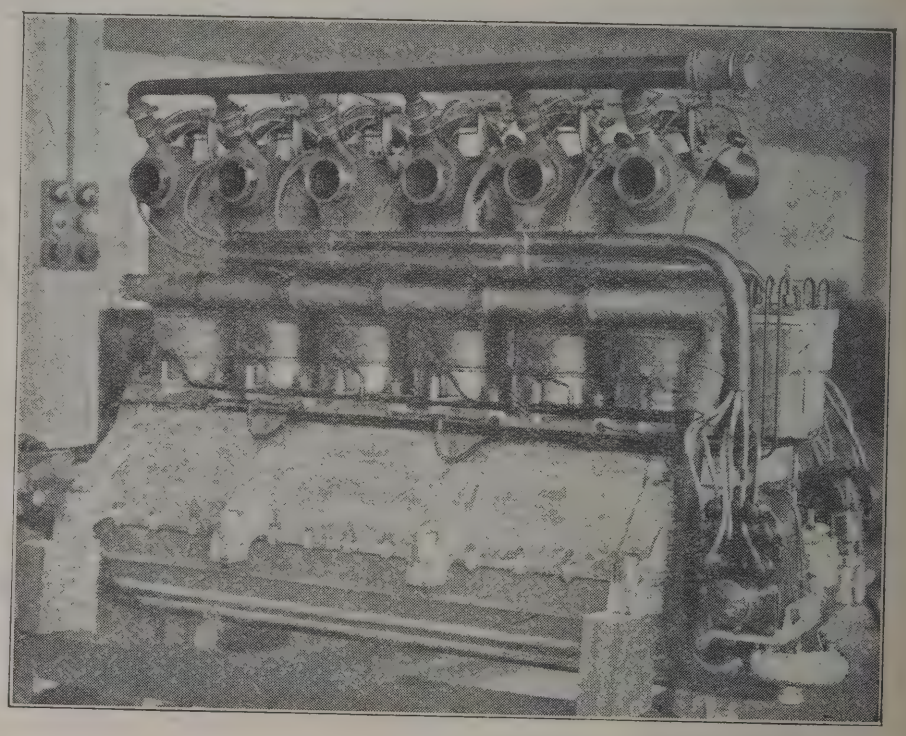
The 160-h.p. Beardmore aero engine gained for itself a deservedly great reputation during the war for its extreme reliability, a reputation to which it has distinctly added since Civil Aviation has once more come into being.

It is, therefore, comforting to know that the Beardmore Aero Engine, Ltd., are in a position to offer immediate delivery of this type of engine, which now develops over 200 h.p., and to supply spare parts for it. All such engines are sold with a guarantee which ensures to the purchaser that the manufacturers will continue to take a direct interest in the engine after the sale and at prices and upon terms which will be found extremely attractive by all aircraft manufacturers who need a reliable engine for commercial machines.

The Beardmore 160-h.p. aero engine is of the six-cylinder vertical type, water-cooled, with overhead valves, push-rod operated.

The main dimensions and particulars thereof are :—

Bore, 142 mm.
Stroke, 175 m.
Normal r.p m., 1,280.
Weight complete, dry, 600 lb.



The 160-h.p. Beardmore Aero Engine.

ELECTRICAL EQUIPMENT FOR AIRCRAFT FACTORIES.



G.E.C. Motors Driving Machine Tools in a Manchester Aero-engine Factory

Manchester is a very busy centre of the Aircraft Industry, and the General Electric Co., Ltd., have secured a considerable number of contracts for driving various factories there. One firm in particular has undertakings which include an important motor car factory, considerably extended to accommodate the manufacture of aero-engines, and further, a new aeroplane factory which ranks as one of the largest in this country. The complete equipment for these works has been supplied by the G.E.C. and can be taken as an example of the best practice in electric light and power installations. Incidentally the factories have been laid out for working night and day.

The motor car and aero-engine factories are supplied with three-phase power at 6,600 volts, 50 cycles. This power is brought into a sub-station where the G.E.C. have provided three 500 kw. oil-insulated air-cooled transformers. From the low tension side of the transformers three sets of 420 volt cables pass to the G.E.C. main switchboard through isolating switches which enable the board to be made dead when required. The main switchboard comprises twelve enamelled slate panels of which one controls the incoming power to the board : of the remainder, eight are power and two are lighting distributing panels, whilst there is one spare.

From seven of the power panels mentioned lead-covered and armoured "Pirelli-General" paper-insulated cables run to various G.E.C. staggered type Home Office pattern ironclad distribution boards. Vulcanised rubber cables pass from these boards in heavy gauge screwed and welded G.E.C. conduits to

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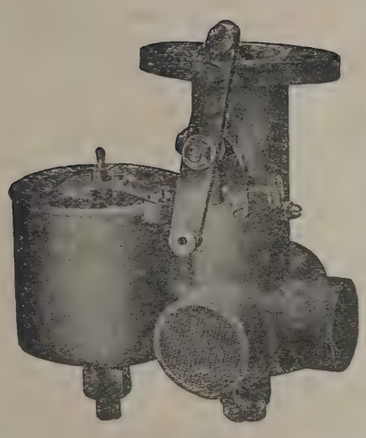
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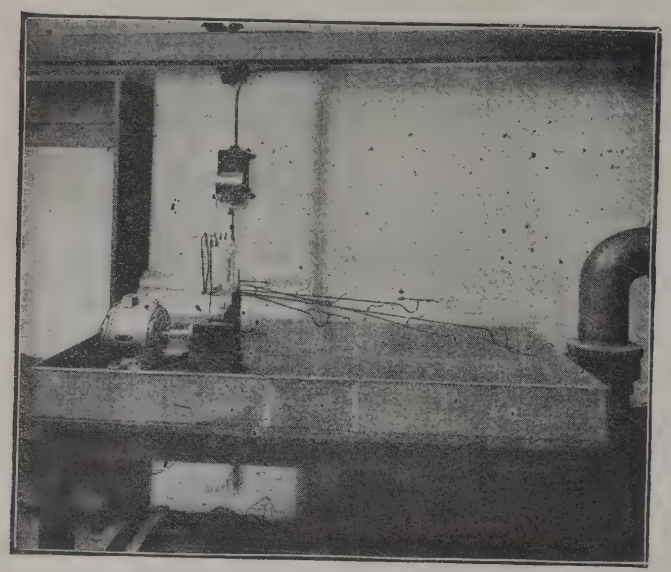
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40-42, Newman Street, Oxford Street, London, W.1.
Telephone: Regent 4812 - 4813

KINDLY MENTION "THE AEROPLANE" WHEN CORRESPONDING WITH ADVERTISERS.

the various motors. From the eighth power panel cables run to a motor-generator. The function of this motor-generator is to supply continuous current to a number of machines from which adjustable speed is required. These machines include several 4 h.p. adjustable speed "Witton" motors, driving gear quietening machines.

Cables are also taken from the main switchboard to four 45 k.v.a and one 20 k.v. a oil-immersed air-cooled transformers for lighting, as well as to motor-generators of two and three kw. capacity which are utilised for charging ignition and starting batteries for the motor cars, and for providing current for magnetic tables, clutches and similar devices.

The motor-generators mentioned provide a solution of the problem feared by some engineers as to how adjustable speed machines should be run from an alternating current supply.



G.E.C. Electro Motor used for testing the Oil Pumps and Lubricating System of Aero-engines.

Parenthetically it may be said that this problem for large machines can readily be solved by utilising alternating current motors of special design, but for very small outputs it is easy to adopt the solution decided upon in these works, and to put in continuous current machines designed for adjustable speed work, and to supply them from a special motor-generator.

For starting the aero-engines on their test benches a 40 h.p. G.E.C. "Witton" motor has been laid down, driving a line shafting to which the engines can be connected.

The "Witton-Kramer" electric drill has been extensively adopted, there being at present about 50 in use.

The whole of the lighting throughout the works is carried out on the direct system, there being over six hundred 18-inch vitreous enamelled G.E.C. "Munition" reflectors for Osram lamps (Atmos type) of various candle powers, which are supported from the roofs by means of light link chains. In the offices the semi-indirect system of lighting has been selected and 18-inch "Equiluxo" bowls are used for this purpose.

PALMER AERO WHEELS.

The exhibit of the Palmer Tyre, Ltd., at Paris will comprise a full range of Palmer aeroplane landing-wheels and tyres from 300 by 60 mm. to 1,750 by 350 mm., and for the first time a new series of broad-tread tyres will be shown in sizes varying from 700 by 100 mm. to 1,500 by 300 mm.

With the development of cross-country flying in Europe the demand for the latter class of cover to meet the conditions at some of the newer flying-grounds is increasing. More interest is now being taken in France and Italy in the proper fairing of aeroplane landing-wheels, and the type of Palmer wheel shield known as the "Full-streamline" is likely to interest Continental designers. It is well known that the Palmer Tyre, Ltd., supplied the landing-wheel equipment of all British fighting and bombing aeroplanes during the whole course of the war, but it is not so generally known that they also equipped a very considerable proportion of the larger French machines.

English visitors will find that, in conformity with the standardisation scheme of the French Military Aviation Service, most of the larger Palmer wheels are fitted with hubs to suit axles of larger diameter than are usually employed with similar dimensioned tyres on British machines. It is a question whether this standardisation is not being carried a little too far in the direction of the smaller dimensions of the big tyre series in that it tends to make the wheel unduly heavy by comparison with those used on this side for similar duty.

Several types of pneumatic tyre landing-wheels as used on seaplane deck trolleys will also be exhibited.

Many people commented on the absence of the well-known Palmer cord laying machine from the recent Paris Automobile Show. This was due to the contractor responsible for the hoisting of the machine into position in the gallery not allowing any factor of safety in the hoisting tackle, with the result that when an attempt was made to swing the machine clear of the gallery at some 30 ft. from the ground the extra strain caused the lashing of the lifting tackle to snap and the machine was reduced to scrap iron. A duplicate machine, however, is being installed at the Grande Palais and will be in operation demonstrating the construction of Palmer cord aeroplane tyres, and will doubtless prove as attractive as ever.

The recent successful conclusion of the London-Australia Flight will give added interest to the exhibit of the Palmer No. 108 (900 by 200) landing-wheel as used by Capt. Ross Smith and also by Capt. Sir John Alcock on the Vickers "Vimy" that accomplished the Atlantic Flight.

AIRSHIPS, LTD.

Upon the stand of the Aircraft Manufacturing Co. at Paris will be found an exhibit by Messrs. Airships, Ltd., which will include the aeroplane flotation gear upon which this company is specialising, and also a model of one of their small non-rigid airships, or "Aerial Yachts."

M-L MAGNETOS.

It has always been the desire of S. Smith and Sons (M.A.), Ltd., to provide the most complete range of motor accessories, and with this end in view, they recently acquired a controlling interest in the M-L Magneto Syndicate, Ltd., of Coventry, and will handle the distribution and sales arrangements for these magnetos at their London office.

During the war, out of a total of approximately a hundred thousand magnetos produced at Coventry fully a half were taken by the Air Services. These magnetos were required to work under the most exacting conditions, and the experience acquired in meeting these condtions has resulted in the production of M-L commercial models, not only lighter and more efficient than the pre-war models, but also capable of operating at higher speeds and running for longer periods without attention.

The range of post-war magnetos consists of the following models: Type K.1 for single-cylinder motor-cycles of 3½-6 h.p., also single-cylinder stationary or marine engines using petrol, paraffin, or gas.

Types K.2 and K.V. for twin-cylinder engines, either horizontally opposed or Vee-twin up to 60 deg. Type K.-S., for slow speed petrol, paraffin, or gas engines. Types G.3, 4, and 6 for 3-, 4-, and 6-cylinder engines. Types 2F.1, 2B.6, and 2F.6 for aeroplane engines, the first being for rotary engines and the last two suitable for either 6-cylinder in line or 12-cylinder Vee type aero engines.

Ninety per cent. of the magnetos used for the rotary engines fitted in the light fighting scouts were of M-L manufacture, these being of the type P.L.R. The 2F.1 is a slightly modified version of this well-known type, being fitted with spigot fixing instead of base-fixing.

THE BRITISH EMAILLITE CO., LTD.

For post-war aircraft the Emaillite Co., Ltd., have three doping schemes available.

Scheme X gives a covering which is durable in all climates, impervious to heat, cold, rain and snow, is water, oil, petrol and fire-proof, and is claimed to be of the very highest efficiency, and yet one of the cheapest methods of treating aeroplane fabric. In this scheme three to four coats of Emaillite are succeeded by either a pigmented oil varnish, a pigmented nitro covering or a transparent oil varnish.

In addition to the doping materials, identification colours in the form of oil varnishes for use over oil varnish protection, or "nitro" colours for use over the nitro protective coverings, are supplied in red, white, blue, and black.

The Emaillite Co. supply also Emaillite Dope remover, varnish remover, and dope and varnish brush washes, and a whole range of varnishes and enamels suitable for all purposes, as well as the whole series of protective varnishes and enamels for aircraft generally, which are covered by the British Engineering Standards Association Specifications X1, X2, X4, X5, X6, X7, X10, and X11.

The all-white Handley Page machine at the Paris Show is entirely doped on the Emaillite Scheme X, and its appearance gives an excellent idea of the finish which can be secured thereby.

BRIGHT STEEL BARS AND STRIP

FOR ALL PURPOSES.

W. WESSON & CO., LTD.,

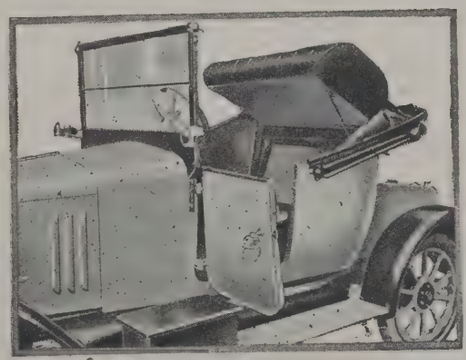
Iron & Steel Manufacturers,

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The All British **Standard** Light Cars

"SPECIALLY DESIGNED FOR THE OWNER DRIVER"

HIS Standard of Comfort, Stability, Easy Control, Economy and Ample Power.



Note the method of packing away the patent side curtains (which open with the door) behind the back cushion.

The Standard Motor Co., Ltd., Coventry.
London Showrooms: 49, Pall Mall, S.W.1.

Godbold's

THE VICKERS COMMERCIAL TYPE "VIMY" MACHINE.



A Commercial Vickers-Vimy at the E.L.T.A., Amsterdam.

This aeroplane is a modification of the Vickers "Vimy" bomber, which is being supplied in great numbers. It is necessary to mention this in order to emphasise :—

(1) That this aeroplane has been flown under stringent war conditions.

(2) The obvious advantage of an aeroplane that can be used either for war or commercial purposes by the rapid interchangeability of the respective fuselages.

It is of interest to note that the fuselages constitute the sole difference between the "Vimy" bomber, and the "Vimy" commercial, and the "Vimy-Rolls" trans-Atlantic aeroplane.

In dealing, then, with the "Vimy" commercial, those who already know the bomber will have a fair idea of its general appearance.

The fuselage is constructed on the "Monocoque" principle, the "shell" of the cabin being attached to oval wooden rings of box section.

These rings are built up of three-ply, are light, and have immense strength. The cover of the cabin is made under the "Consuta" patent, manufactured by S. E. Saunders, Ltd., of Cowes, who are allied with the Vickers Company.

Consuta is constructed of thin layers of selected wood, with the grain placed diagonally, glued and sewn together with rows of stitching running in parallel lines about 1½ in. apart. The strength of this material is very great, it gives a high factor of safety to the whole construction of the cabin, and entirely dispenses with any cross-bracing wires in any direction. The doors in the fuselage are watertight, and the machine will float in a normal position on water.

Two pilots are carried side by side in the cockpit, placed high up in the "nose," giving a wide range of vision, and dual controls are provided throughout.

All the spars are of box section of spruce and three-ply wood bound with fabric; the interplane struts are of hollow spruce, except in the engine bay, where the struts are of round steel tube, reinforced where necessary and fitted with wooden fairings; the ribs are of spruce. The engine mounts are carried on four struts each side, and the chassis is attached below the engine mountings, thus minimising the load in the anti-lift wires.

The after part of the fuselage is of wood and swaged tie rod construction, the longerons being made under Vickers-Ryan patents.

Throughout the machine, streamline steel tie rods are used in external bracing, and round steel rods in all internal bracing; looped wires and ferrules are not used in any important part.

Two Rolls-Royce "Eagle" Mark VIII are installed, giving a total of 750 h.p. Should one engine fail completely, the machine can fly on the other engine alone at a speed of 70 miles per hour.

The petrol supply is maintained by fan-driven petrol pumps with regulating valves to maintain a constant flow to a service tank with overflow return to main tanks.

Sufficient petrol is carried for a continuous flight of five hours. Should a greater endurance be required, extra tanks can be fitted.

All flying controls are remarkably light in operation, as balanced control surfaces are used where necessary.

In no part has strength and solidity of construction been sacrificed to lightness, a factor of safety of 4½ being provided throughout the machine.

The cabin is totally enclosed, and has a seating capacity for 10 passengers in separate armchairs. A gangway runs down the centre of the car, and there is ample space between the chairs. Cupboards are provided at the end of the cabin



A Vickers "Vimy" Commercial Machine in the Air at the E.L.T.A. Exhibition.

TRADE MARK.



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for the storage of light hand luggage. A separate window is placed at the side of each person, and both height and speed indicators are fitted for those who are interested in the new conditions of travelling. Telephonic conversation can be carried on between the pilot and the passengers, and the ventilation and heating can be adjusted as desired to suit any temperature conditions. Noise has been reduced to a minimum, and vibration entirely abolished.

The seats in the cabin can be detached in a few minutes, giving a floor area of 53 sq. ft., and a volumetric capacity of 300 cub. ft. for freight, which can be kept at an even temperature and dry. The maximum weight which can be carried is 2,500 lb.

When mail-carrying, sorting-boxes are fitted, and the process of sorting can be carried out on similar lines to the arrangements now in operation on the mail trains.

The following table gives the plain particulars of the machine :—

SPECIFICATION.

Type of machine	Twin-engined tractor biplane.
Name or type No. of machine	Vickers "Vimy."
Purpose for which intended	Commercial.
Span	67 ft.
Gap, maximum and minimum	10 ft.
Overall length	42 ft. 8 in.
Maximum height	15 ft. 3 in.
Chord	10 ft. 6 in.
Total surface of wings	1,330 sq. ft.
Span of tail	16 ft.
Engine type and h.p.	Two 375 h.p. "Eagle" Rolls-Royce.
Weight of machine empty	7,292 lb.
Load per sq. ft.	8.4 lb.
Weight per h.p.	16.4 lb.
Tank capacity in hours	5 hr.
PERFORMANCE—	
Speed low down	110 m.p.h.
Speed at 6,000 ft.	103 m.p.h.
Speed at 10,000 ft.	99 m.p.h.
Landing speed	45 m.p.h.
Climb—	
To 6,000 ft. in minutes	17 min.
To 10,000 ft. in minutes	48 min.
Disposable load	2,308 lb.
Total weight of machine loaded	11,120 lb.

THE ALLIANCE AEROPLANE CO.

The following descriptive matter has been received from the Alliance Aeroplane Co., Ltd. :—

The Alliance Aeroplane Co., Ltd., of which Sir S. J. Waring is chairman, was formed by Messrs. Waring and Gillow, Ltd., early in the war to carry out their Government aircraft contracts and is, therefore, one of the group of aircraft and aircraft engine firms controlled by Sir Samuel Waring.

In addition to converting their Hammersmith factory into a well-equipped aeroplane works, Messrs. Waring and Gillow acquired the well-known School of Flying Instruction and the large private aerodrome at Acton from Messrs. Ruffy, Arnell, and Baumann Aviation Co., where many hundreds of Service pilots were trained during the war, including such famous men as Capt. Ball, V.C., D.S.O., M.C., etc.

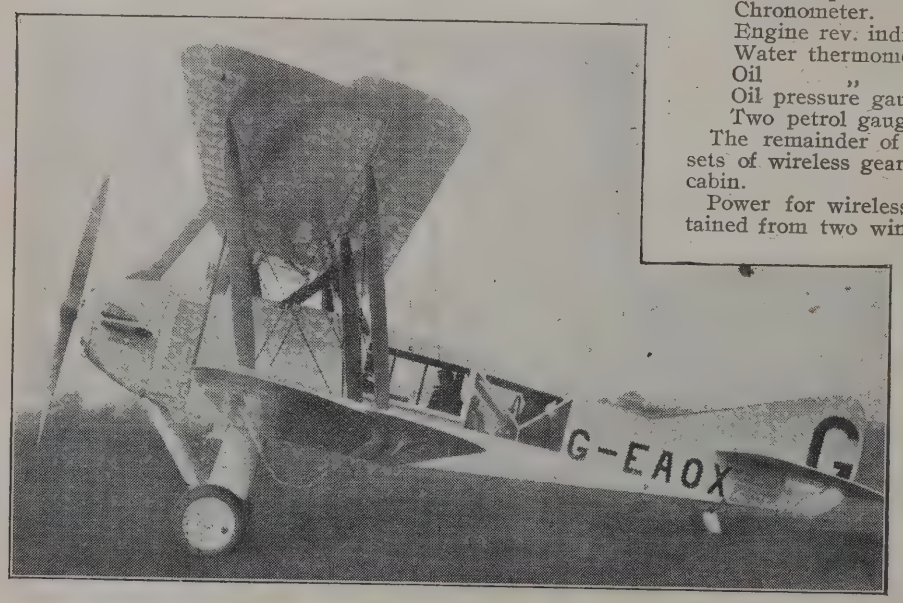
At Acton Aerodrome the final erection and flying tests of the war machines were carried out. Huge hangars were put in hand at Acton, each bay being of the size of 220 ft. by 160 ft., the doors giving a clear opening 160 ft. wide by 40 ft. high. These hangars are now almost completed, and the fact that the firm intends to make use of them as hangars may be taken as some clue to their future policy.

Soon after the Armistice, the Government announcement that no further aircraft contracts would be issued led the firm, in order that their great experience gained under the stress of war-time production might not be wasted, to turn their attention to civil aviation.

To this end the Alliance Aeroplane Company engaged the services of Mr. J. A. Peters, consulting engineer to Messrs. Ruffy, Arnell, and Baumann, and designer of their latest type of fuselage tractor biplane for advanced instruction.

Mr. Peters has been engaged on technical work in connection with aircraft since 1909, and was engaged with several well-known pre-war firms as senior or chief draughtsman on their designing staffs.

The first machine produced was designed for the "owner-driver" for cross-country flying or for use as an aerodrome hack. It can be landed in and taken off from a very small field; it lands at a very low speed and pulls up in 25 yards, while it can get away in 70 yards. The simplicity of its detail renders it cheap to produce and to keep in repair, while its robust construction allows the machine to be stunted and badly landed without any need for constant trueing up. A point of value to owners, particularly those in the Colonies, is that the whole structure consists of ordinary commercial timber, mild steel sheet, cables and hard steel wire, thereby keeping the necessary stock of special materials down to an absolute minimum.



An Alliance Biplane, Napier Engine.

The fuel cost is extremely low (about 3½d. per mile) owing to the installation of an 80 h.p. Renault engine.

The second machine designed by Mr. Peters was the one he intended to pilot in the attempt to fly the Atlantic.

This machine is a biplane fitted with a single 450 h.p. Napier engine, 500 gallons of petrol and 50 gallons of oil giving a range of over 3,000 miles non-stop.

The portion of the fuselage between the wings is entirely filled by the 500 gallon petrol tank.

The crew are stationed in an entirely enclosed cabin, directly aft of the main tank, which, when the windows are closed, cuts out almost all of the engine roar.

The whole of the front end of the cabin is taken up by the dashboard, which has been described by a member of a well-known instrument firm as the most complete he has ever seen. The attached photograph gives some idea of the many instruments fitted, of which the following is a list :—

Air speed indicator.
Air density gauge, for correcting above for height and temperature.
Altitude indicator.
Inclinometer.
Recording air speed indicator, marking the air speed, corrected for height and temperature, on a chart.
Two compasses.
Chronometer.
Engine rev. indicator.
Water thermometer.
Oil " "
Oil pressure gauges.
Two petrol gauges.

The remainder of the dashboard is covered with the four sets of wireless gear, which overflow round the sides of the cabin.

Power for wireless, lighting, and battery charging is obtained from two wind-driven generators, one giving 12 volts and the other 1,200 volts. The machine controls consist of a wheel for the pilot, which can be thrown out of gear and tipped forward out of the way during his "watch below," a detachable "stick" for the navigator, and a rudder bar each.

Other contents of the cabin include the pilot's personal kit, fire extinguisher, charts and a chart board for the navigator, and last, but not least, the rations. Sandwiches, acid drops, chewing gum, and chocolate are carried in a locker for the period of flying, while four quart thermos flasks of coffee stand in a rack. For such a flight as the Atlantic, emergency rations were also provided.



ENGLAND
TO
AUSTRALIA.

The "VICKERS-VIMY-ROLLS" which accomplished this wonderful flight had

McGRUER HOLLOW SPARS

FITTED AS LONGERONS AND FUSELAGE STRUTS.

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We undertake full responsibility for the accuracy and quality of our castings from the time our Pattern Shops receive the drawings until you receive the castings. We have our own Laboratory and Physical Testing Plant. All alloys are made under the control of a Head Chemist. Analyses and tests are taken daily, thus ensuring regularity and uniformity in our castings.

We have the latest equipment in Moulding Machines for any size casting, and can quote very favourably for repetition work. We invite your enquiries.

CAST IRON

Motor Cylinders, Water and Air Cooled.

WM. MILLS LTD.
Aluminium and Iron Founders,
Atlas Works, Grove Street,
BIRMINGHAM.

No effort has been spared to provide for all possible contingencies. In the event of any failure of machine or engine necessitating a forced landing, the navigator's first care, if the machine is heavily loaded, is, while the pilot is selecting his landing ground, to empty or partially empty the petrol tank through the large jettison cock. This greatly assists landing on bad ground, and in the case of a forced descent into the sea the empty tank will provide sufficient buoyancy to support the whole machine. Additional flotation is provided by air bags in the rear of the fuselage and by the main planes, which are made air-tight, without the usual eyelets, and are all coupled up to the same air vent cock as the air bags. This, of course, is to prevent the planes from bursting at height due to the variation in density, the cock being only closed when "ditching" is imminent.

A kite is stowed on the top of the fuselage which, by lifting the wireless aerial, enables communication to be established when on the ground or floating on the sea.

The machine has a top speed of 135 m.p.h., a range of 3,000 miles non-stop, a landing speed of under 50 m.p.h., and pulls up in 80 yards on an average aerodrome.

On July 31st Messrs. Peters and Curtis flew this machine to Madrid to inaugurate an inter-communication service between the various houses of Messrs. Waring and Gillow, Ltd. This flight was the first and is so far the only non-stop flight between London and Madrid, being a record flight of approximately 900 miles in 7¾ hours.

The second machine was almost identical with the first and was intended for the Australian flight.

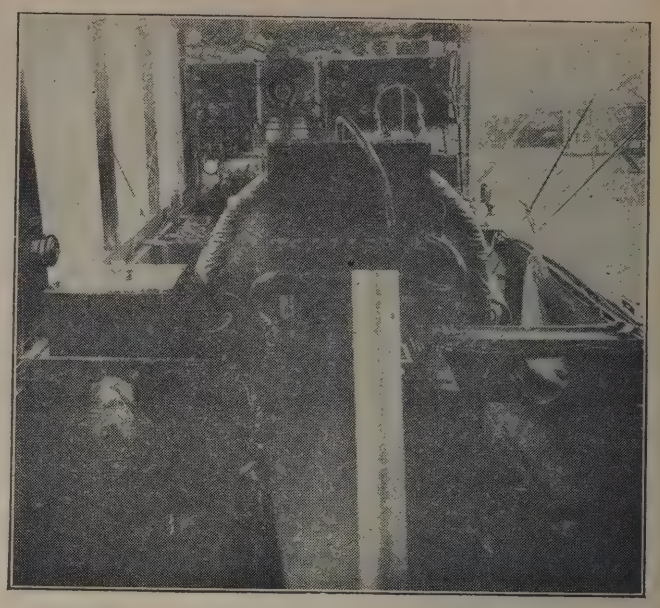
Lieut. Douglas, M.C., D.C.M., A.F.C., flew the second machine for about fifteen hours and was very emphatic in his statement that it was the finest machine he had ever flown.

Unfortunately, this machine was crashed shortly after starting on the Australian flight and Lieuts. Douglas and Ross were killed.

A modified type of this machine is now in course of construction, with a cabin fitted up to accommodate eight passengers or to carry about a ton of goods or mails. This machine has an oleo undercarriage with a very wide track.

The next machine to be designed was a five-seater biplane fitted with a 200-h.p. Hispano engine and fuel for a flight of 800 miles. The passengers are accommodated in an enclosed cabin between the wings with the pilot immediately behind them in the normal position. The wings are designed to fold so that the machine can be garaged in a small shed and an oleo undercarriage is provided, having a very wide track. With full load this machine has a top speed of 117 m.p.h. and a landing speed of 45 m.p.h. The fuel cost is 4¾d. per mile.

A twin-engine machine is at present being detailed, but it is not proposed to describe this at the moment.



View from the pilot's seat of the Alliance Biplane.

LUKE TURNER AND CO.

An interesting item of the lecture given by Mr. J. D. North on undercarriages at the Royal Aeronautical Society's meeting was a description of an improved type of rubber shock-absorber.

The Luke Turner patent endless shock absorber ring undoubtedly possesses considerable advantages over the shock absorber cord to specification F.16 which was the sole material available to designers during the war.

This ring is constructed in a similar manner to the original cord, but is formed of only one single thread of rubber wound into a coil of the required thickness and diameter, when the beginning and end of the thread are secured by one knot.

The material is then braided with two or more coverings of cotton by a patented process which provides a ring capable of carrying extremely high loads.

Mr. Turner, of Luke Turner and Co., Leicester, the patentees and manufacturers, states that such a ring of ⅞-in. cord section can be supplied which will carry a load of 3,000 lb. at 75 per cent. extension.

He also claims that besides their ease of fitting (which is obvious) and the economy of replacing a single ring instead of a complete length of cord should it become damaged, they offer a decided saving in weight and cost over any other form of shock absorber.

Designers who have felt that some improvement is required upon the somewhat slip-shod and unmechanical war-time method of springing undercarriages with elastic cord would be well advised to get into touch with the manufacturers and inquire into the possibilities of this new patent shock absorber ring, which is already in use upon several of the best known types of machine.

LODGE AERO PLUGS.

As the result of the unique experience gained during the war in the design and construction of the sparking plug for practically every type of aero-engine, the Lodge Sparking Plug Co., Ltd., of Rugby, are concentrating on the production of three post-war aero plugs. Extreme care is taken with the manufacture of these plugs, and, coupled with the stringent tests that are applied during construction, practically guarantees them to stand up to the severe conditions appertaining to aircraft engines. The three types are :—

Type K.R.3 for aero engines, with stationary cylinders, more particularly of the air-cooled type. This pattern has also been used very successfully on racing air-cooled motor-cycle engines. Type D.13 for aero engines, with stationary cylinders of the water-cooled type. Type R.F. for aero engines of the rotary type. The plug is as light as possible, consistent with electrical and mechanical strength, and the peculiar type of spark gap has been found to give the best results against the effect of centrifugal force, and the flooding of lubricating oil that is liable to occur.

HENRY HUGHES AND SON, LTD.

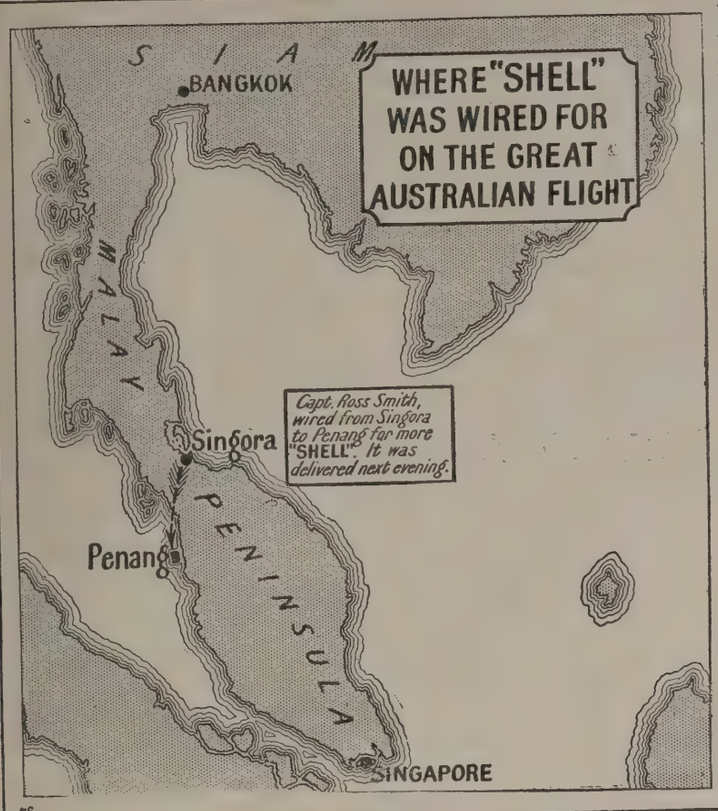
The manufacture of aeronautical instruments, like the whole industry pertaining to aviation, has entered a new phase with the re-establishment of peace conditions. During the war it necessarily received a huge impetus, demonstrating beyond question the absolute supremacy of British productions.

When the need for instruments for aviation first arose it was only natural that the manufacture of such essentially accurate and reliable accessories should receive attention from firms already engaged on similar mathematically correct articles. Famous for generations in the "service of the world's navigators," Henry Hughes and Son, Ltd., of 59, Fenchurch Street, and Ilford, have devoted much study to the new science of aeronautical instruments. Their productions in this class of work soon became an important part of their business, and with the outbreak of war, few houses were able so rapidly to respond to the country's urgent need.

An official letter from the War Office ran : "You may congratulate yourselves on the present splendid output of aeroplane compasses, without which, I am afraid, our position would be very desperate, as no other firm has managed to rise to the occasion to anything like the same extent." Further recognition of the service of his firm was the order of "Officer of the British Empire" conferred on Mr. A. J. Hughes.

Undoubtedly, the secret of the firm's great output is the system adopted by which mass production is secured on lines of standardised machine-made goods. Standardisation brought Germany much of the world's pre-war trade—standardisation is now bringing back the trade to this country. Britain has ever held paramount position for work of supreme reliability, and the modern methods of production as instituted in the works of Messrs. Hughes, will maintain and increase her commercial prestige.

One of the best known is the "Husun" type 253 Aero Compass, designed for long-distance flights. It is a specimen of work that tells more than any words how this firm is re-asserting British supremacy. The splendid finish, no less than the extreme accuracy of this compass is typical of the wide range of instruments bearing the well-known mark of "Husun."



76

MOST THRILLING PAGES in Capt. Ross Smith's Diary of the Great Australian Flight

DECEMBER 2.—"Left Bangkok 7.0 and arrived at Singora at 1 . . . met heavy monsoon; . . . Almost blinded with rain but country impossible for landing . . . Worst flying conditions ever encountered . . . The Aerodrome at Singora is bad and stumpy. Had to land in a cross wind on a small dry patch. Safely down with luck. Later taxi-ing the machine, tail-skid caught root and broke fitting; not serious . . . Decided that, owing to weather we could not reach Singapore without more petrol. Wired Asiatic Petroleum Company,* Penang, to send urgently. During night heavy squalls, crew held machine all night . . .

DECEMBER 3.—Torrential rain with wind. Repaired skid, crew wet through, working on machine all day cheerfully. Petrol arrived evening; raining too hard to put in."

Proprietors of "Shell" Motor Spirit.

"SHELL AVIATION"

MOTOR SPIRIT

"SHELL" MARKETING CO., LTD.
Parker Street, Kingsway, London, W.C.2.

NIGHT-LANDING LIGHTS.

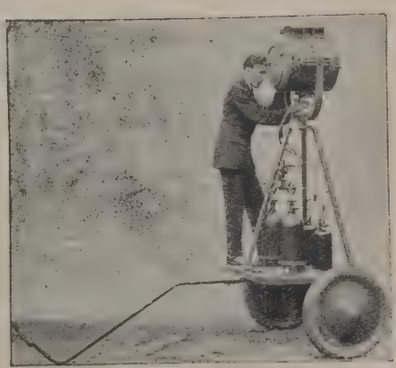


Ground view of Aeroplane Landing at Night.

AS ADOPTED BY AIR MINISTRY.

ORDERS NOW UNDERTAKEN FOR COMMERCIAL PURPOSES

SEND FOR FREE BOOKLET.



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Specialists in Oxy-Acetylene Apparatus,

123, VICTORIA STREET, LONDON, S.W.1.

Telephone: VICTORIA 3540 (3 lines). Telegrams: "EDIBRAC, 'PHONE, LONDON."

THOS. FIRTH AND SONS, LTD., SHEFFIELD.

The well-known firm of Sheffield steel makers, Thos. Firth and Sons, Ltd., has been especially closely associated with the aircraft industry since its very early days. They were the first specialists in high-grade steels to foresee the immense future of aircraft, and with characteristic enterprise set to work to anticipate the demand which they felt assured would soon arise for steels to be used in their manufacture.

While aeroplanes were still in a highly experimental stage, Thos. Firth and Sons, Ltd., after considerable research and experiment, produced a range of steels in sheet and bar form specially adapted for aircraft construction. It thus happened that when the war broke out and an unexpected demand for aircraft suddenly arose, there were already available excellent and standardised steels for the purpose. It is undoubtedly due to the pioneer work of this firm that the production of aircraft in large quantities was greatly facilitated.

An important item in the wartime output of Thos. Firth and Sons was stainless steel, a material the future prospects of which are very great. Although the most interesting property of this steel is its resistance to rust, its value for the purposes of aircraft has been due to another peculiarity, that of resisting the action of heat and of retaining a high tensile strength at high temperatures. These virtues made it of particular value for valves, and very large quantities of stainless steel valves were used in aero engines in the war.

Now that unrestricted development of this steel can proceed, its appearance may be shortly expected in many applications where its properties of resisting rust and corrosion, freedom from scaling at high temperatures, and high tensile strength render it almost indispensable.

In addition to stainless steel, Thos. Firth and Sons are manufacturing a standardised range of carbon and alloy steels, designed to comply with a higher standard than that imposed by the specifications of the Air Ministry and Engineering Standards Committee. Among these steels will be found a suitable quality for every purpose involved in the manufacture of aircraft and their engines.

Apart from their more standardised lines of manufacture, the firm intends to continue its policy of progress, and its research laboratory is equipped for the investigation of problems concerned with the development of steels with which to keep pace with the advancing requirements of aircraft industry.

In addition to the manufacture of constructional steels for the aircraft, automobile and allied trades, Thos. Firth and Sons are well known as specialists in high-speed and other tool steels, and in drills and other engineers' tools. The post-war demand for the various grades of their Speedicut high-speed steel is very great, and a large part of their modern factory at Tinsley is devoted to its production.

Their engineers' small tool plant has been largely increased in size to cope with the growing market for its products, and its output is being so organised that a representative stock is constantly held of a very wide range of all the high-speed drills, reamers, and milling cutters likely to be required for urgent delivery.

RUBERY, OWEN AND CO.

Rubery, Owen and Co., of Darlaston, Staffordshire, have catered for the needs of British aircraft manufacturers in such matters as pressed steel work and in the manufacture of turnbuckles, eyebolts, bolts and nuts, etc., from the beginning.

Their work has always been excellent, and, during the period of hostilities, their output must have been enormous.

They are still open to undertake any work of this class, and they have in hand a stock of various sizes of bolts and nuts and turnbuckles from which they can give immediate delivery.

"K.L.G." SPARKING PLUGS.

The "K.L.G." plug owes its inception to Mr. Kenelm Lee-Guinness, who discovered that there was not a plug in the world that would stand up to the work of racing-car engines just prior to the war. Exhaustive and protracted tests resulted in the development of a plug that was considered to be up to the standard for racing-car engines of the time. These plugs were fitted to the Sunbeam car driven by Mr. K. Lee-Guinness in the 1914 International T.T. race.

At the time these plugs were not produced commercially, but on the outbreak of war the demand for plugs of this nature led the Air Board to urge Mr. Lee-Guinness to extend his personal work to meet national needs.

From this time until the present day K.L.G. plugs have been produced in ever-increasing quantities and it is sufficient to show the high opinion that the authorities held of these plugs, that, in spite of the continuous expansion of the factory, it was never able to satisfy the demands of the Air Ministry, although they were being produced at the rate of two million plugs per year.

The unique experience gained during the war is now being concentrated on the post-war editions of this famous spark producer. It is interesting to note that K.L.G. plugs were used on all the British machines entered for the Atlantic flight, on the Sunbeam engines of the R.34, on the double Atlantic crossing, on all the competitors entered for the Aerial Derby, on the Napier engine of the Alliance "Seabird" that flew from London to Madrid non-stop, etc., etc.

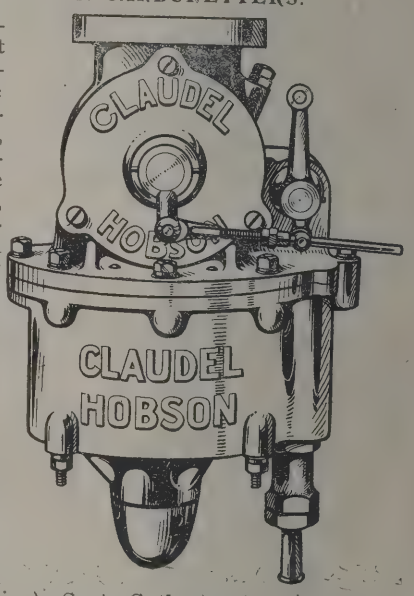
WAKEFIELD'S CASTROL.

Messrs. C. C. Wakefield and Co., Ltd., of Wakefield House, Cheapside, London, E.C., who have recently opened an office in Paris at 21 Rue du Mont Thabor, are known all over the world as the manufacturers of "Castrol R," the aero-engine lubricant, which has been foremost ever since the beginning of aviation. Its unique properties have established for it a reputation of the highest class, and the best tribute to its value is the fact that Castrol R. was selected by every competitor for the flight across the Atlantic, and also by all those who started on the recent historic journey to Australia.

Practically every flying record of every kind in Great Britain since 1909 has been accomplished with the aid of this lubricant. It has earned countless testimonials, prominent among them being one received from the Air Council—which we believe to be the first testimonial ever given to any firm for publication by this Council—regarding its performance on the Sunbeam motors "R.34."

The principal features of this oil are its absence of carbon deposit, its remarkable resistance to extreme cold, and its high viscosity at high temperatures. During the greatest flight of all, that by Captain Ross-Smith, from London to Australia, the oil met with every kind of climatic condition, but carried the Vickers-Vimy Rolls-Royce motors through triumphantly.

CLAUDEL-HOBSON CARBURETTERS.



It is sufficiently well-known to what extent Claudel-Hobson carburetters were used in the Air Services of the Allies during the war, and taking into consideration the esteem they then won, it is only natural, perhaps, to hear that in practically all the big things done in this country since the Armistice, such as the first direct flight across the Atlantic by Capt. Sir John Alcock on the Vickers-"Vimy"-Rolls, the England-America-England flight of H.M.A. "R.34" (Sunbeam Coatalen engines), the London-Madrid non-stop flight of the Alliance "Seabird" (Napier Aero engine), Capt. Gathergood's little bunch of speed records from 5-400 kilometres on the Airco D.H.9R. (Napier Aero engine), the England to Australia flight of Capt. Ross Smith on the Vickers "Vimy-Rolls," etc., have all been done with the aid of the Claudel-Hobson carburetter.

ACCLES AND POLLOCK, LTD.

During the war many firms whose productive plant was capable of producing aircraft parts of any kind were kept fully occupied in turning out large quantities of parts and fittings to standard specification. With the conclusion of the war, and the public clamour for economy, huge contracts for aircraft were cancelled, with the result that any amount of material in all stages of manufacture were left on the hands of the manufacturer for him to dispose as he thought fit and profitable. Accles and Pollock, Ltd., the well-known makers and workers of weldless steel tube, were engaged in making aircraft fittings during the war, but, with the signing of the Armistice, the lack of demand, corresponding with the cancellation of contracts, has caused them to concentrate solely on the manufacture and manipulation of steel tubing, and, as such, offer their assistance to the Aircraft manufacturers in general. Fortunately, their factory is fully occupied on the production of tubing for all manner of work, but it is not too fully occupied for them to deal with anything that may be required by the Aircraft Industry.

Accles and Pollock, Ltd., at present, have on hand a surplus stock of fittings and parts to the value of about £6,000, and only the lack of spare labour prevents them from clearing it out of the shops and passing it into the melting-pot. They point out that should any of their tools or any of this surplus stock of parts be of any use to any aircraft firm, they would be most willing to meet them.



EXPRESS TRAVEL BY AIR

The remarkable reliability of the Airco machines which are running the Daily Air Service between London and Paris is shown by the following summary of flights and mileages :—

1. THE NEW AIRCO 16.

45 Flights were made during the first twelve weeks, with a total approximate mileage of 11,400 miles.

2. AIRCO 9B

37 Flights have been accomplished by this machine, covering an approximate total of 9,250 miles.

3. AIRCO 4A.

This well-known machine has successfully made no fewer than 95 flights between London and Paris during the first 12 weeks, covering a total distance of approximately 23,750 miles.

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HOW TO PRACTISE PARACHUTING.

By Lt.-Col. H. S. Holt, C.B.E.

(All rights reserved.)

A TRAINING MACHINE.

Since the writer's last article appeared it has been officially stated in the Press that the authorities have definitely decided to make life-saving parachutes an integral part of the equipment of their Service machines. The carrying out of this decision not only entails a large expenditure, but greatly affects the safety of aviators in the future. It becomes, then, of great interest to know what general principles are guiding the Technical Committee in their selection of the type of parachute to be adopted.

Some months ago a curious article appeared in the Technical Press. Published anonymously, the writer happens to know that it actually emanated from official quarters. Purporting to be advice to parachute inventors as to what direction their activities should take and as to what was or was not likely to be acceptable to the Parachute Committee, it opens with this remarkable dictum :—

"The principal object in equipping aircraft with parachutes is to inspire confidence in those who use aircraft."

Some simple-minded persons, like the present writer, have hitherto been under the impression that the principal object of a life-saving parachute was to save life and that its value was proportionate to its ability to do this under any conceivable conditions. Apparently it doesn't matter what the parachute is or does if only the authorities can camouflage it to an appearance of safety and reliability. If this article really represents the considered opinion of the Parachute Committee, it will hardly tend to "inspire confidence" in the judgment of that body.

Once upon a time a lofty factory was erected with two wings. Each was equipped with a different type of fire escape.

No. 1 was a regular iron staircase with balustrade and all. Everyone was delighted with the iron staircase, and when the company ordained a weekly fire-drill the employees voted it good fun running down the staircase. No. 2 was merely a seemingly rickety iron ladder which swayed and shook in the wind, and only one or two venturesome spirits would trust themselves on it.

Then one day the factory caught fire. The iron staircase proved too heavy; the heat quickly loosened the cement fixings, and when the employees crowded onto it the whole crashed to the ground In the other wing there was only the iron ladder, and the employees had to choose between this and being burnt alive. No one bothered their heads then as to whether it shook or swayed, they clambered down it and all escaped.

Just so there are two general types of life-saving parachutes :—

No. 1 type is apparently simple and certain in action when used from aircraft flying normally and under complete control and doubtless inspires confidence in those who make descents for pleasure or practice or advertisement, but which, in the opinion of some of us, will merely prove a broken reed in the hour of need.

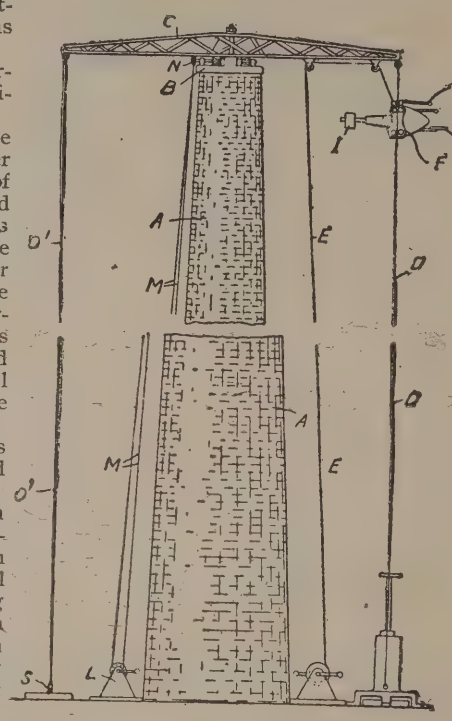
No. 2 type may seem less positive and certain in action, and parachutists would very likely feel less confidence in using it for practice descents. But if No. 1 would prove useless in the majority of peace-time accidents, while No. 2 would afford at least a sporting chance of escape in almost any conceivable circumstances, it seems obvious that No. 2 type should be given exhaustive trials instead of being condemned off-hand, merely because it does not "inspire confidence."

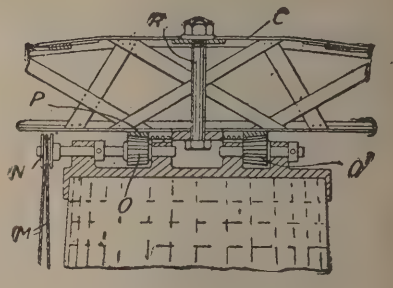
The writer is very far from wishing to minimise the importance of the passengers feeling confidence in their parachutes, but surely the right way to obtain this confidence is by making practice descents. A Service airman undergoes a severe training in everything affecting his duties with the single exception of parachuting. Then when disaster comes to his machine, he is expected to make his escape by parachute necessarily hurriedly and possibly under difficult conditions without previous training and experience.

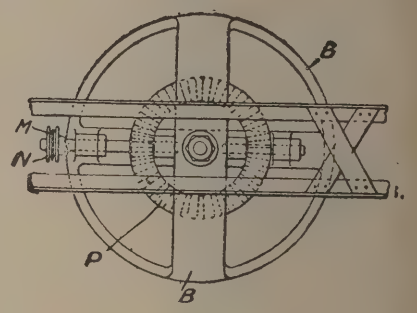
It may be objected that parachute practice involves risk and it is for this reason that the writer ventures to describe a machine he has devised for practising parachute descents with little, if any, more risk than attends the use of an ordinary lift.

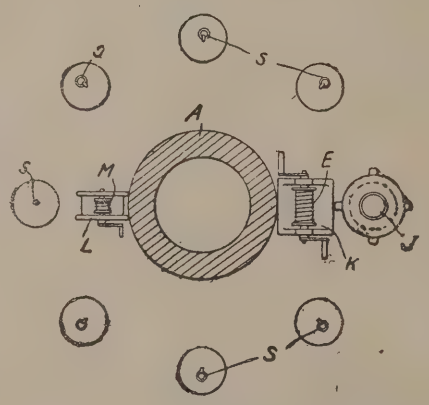
Any derelict factory chimney of sufficient height, such, for instance, as the destructor chimney at Aldershot, could be easily and inexpensively adapted for the purpose.

The machine consists essentially of a carriage travelling freely on a vertical or nearly vertical cable. In the first instance the writer proposed to employ a balloon to support the upper end of the cable, the lower end being secured to the ground, but though this would have been a cheap and simple way of carrying out his purpose, the writer came to the conclusion that there were too many practical obstacles to its successful working. In its present simplest form the cable may be









attached by means of brackets to any sufficiently lofty building. But for obvious reasons a tall factory chimney is the most suitable and convenient erection for the purpose.

The diagrammatic drawing appended shows the general arrangement. The main cable "D" is secured at one end to one of the rings "S" set into cement, thence it travels over pulleys attached to the arm "C" and descends again to another of the rings "S." Means are provided for straining this cable. The arm "C" is a light lattice steel frame, pivoted at its centre and capable of being rotated in a horizontal plane by means of the cord "M" passing over the pulley "N."

The object of this rotating arm and series of rings "S" is to allow of the position of the main cable "D" being varied according to the direction of the wind at the time. A light bamboo carriage "F" is mounted to run freely on the cable "D." It is fitted with a long arm carrying an adjustable counter weight "I" to balance the weight of the passenger. The passenger stands on the platform "A," an arm being provided for him to hold on to. The carriage "F" is hoisted by means of the elevating cable "E" and the windlass "K." The latter is fitted with a brake so that the descent of the

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RECORD on RECORD

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will have a dominating influence on the coming era.

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Works - - Parkhead Steel Works, Glasgow.

AeroEngines

carriage can be checked or stopped instantaneously; and as an additional precaution a screw or lever brake "H" is attached to the carriage which may further be fitted with an automatic check brake which comes into action only when the carriage is nearing the ground. A pneumatic buffer "J" may also be employed, but the need for it is doubtful.

The *modus operandi* is as follows:—The arm must first be rotated into such a position that the main cable is on the lee side of the chimney, and the two ends of the cable are then made fast to opposite rings "S.S."

If one of the ordinary single parachute systems such as the Spencer or Calthrop is to be used, the passenger will take this with him on the carriage. He will then be hoisted up to the top of the main cable, in which position he can attach the parachute receptacle to the arm "C." The parachute cord will be attached to his harness in the ordinary way. As soon as all is ready he signals to the operator at the windlass who takes off the brake allowing the carriage to fall. As the passenger falls with the carriage the parachute is withdrawn from its case, and the cable being on the lee side the parachute is blown away from the chimney. As soon as the parachute is sufficiently inflated, but not before, it lifts the passenger from the carriage. Should the parachute fail to inflate, the operator at the windlass will check the fall of the carriage, or it may be checked by the automatic check brake, so that passenger and carriage reach the ground at a safe speed.

When a passenger is having his first lesson, it will be well on the first two or three trials to reduce the rate of fall of the carriage to such a slow speed that the parachute does not open or not enough to lift the passenger off the carriage.

If one of the parachute systems is used in which the parachute is carried on the passenger's back, the *modus operandi* will be essentially the same; the cord for withdrawing the parachute being attached to the rotating arm. If the Autochute or any similar compound system is being used, the passenger will hold the pilot parachute in his hand and release it the instant the carriage begins to fall.

When the passenger has made a few descents and acquired confidence in his parachute, he need not wait to be pulled off the carriage, but he can jump off as soon as he sees the parachute commencing to inflate.

Anyone practising occasionally on this machine must acquire a coolness and confidence in his parachute which may stand him in good stead when the hour of need comes. If this appliance was used for testing parachutes with dummies, it would mean a great saving of time compared with the usual method of employing kite balloons or aeroplanes as well as saving of petrol or hydrogen.

Given the necessary chimney, such, for instance, as the old destructor chimney at Aldershot already referred to, the actual apparatus need not cost more than £200 or £300.

When will the Air Council, and more especially the Civil Aviation Department, come down from the clouds and realise basic facts?

So far their propaganda activities mostly take the form of glowing accounts describing official aircraft trips. But the man-in-the-street, even the problematic "business-man-in-a hurry" who was to fly from London to Manchester for ten minutes' business talk, remains cold.

It is, of course, pleasing and gratifying to read of luxurious trips (at the public expense) made by distinguished officers with printing presses and brass bedsteads, chefs and hot dinners as accessories in the picture, but the civilian of ordinary intelligence knows that one spark from a boot-heel might send the whole bag of tricks crashing to earth, bedsteads and all.

This form of propaganda must be very costly, and the same amount of money spent on subsidising the P.O. to initiate one or two express letter and parcel services from London to the North of England would do much more to impress the business man. Meanwhile, for want of other work, aircraft manufacturers are turning out boot-jacks and milking-stools and such like. But when the shortage in these articles, due to the war, is made up the trade will naturally revert to pre-war makers.

Then the trouble will come. Pioneers always suffer, as witness the fate of early electrical engineering, safety bicycle, tyre and motor-car companies. But it will be as nothing to the casualties that will await aerial enterprises. Let us look facts in the face. Airships and aeroplanes are now made as safe and reliable as they are likely to be for some time, unless some epoch-making invention appears. Still the public remains cold. Why? Because aviation is too uncertain, too risky and too costly: but first and all the time *too risky*.

"Accidents will happen"—and do happen every month. What is the remedy? The great Atlantic liners, immeasurably safer than any aircraft, carry lifeboats for all. Similarly, every airship or plane should carry lifeboats for all the occupants. The only aerial lifeboat known up to now is the parachute. But it is not enough merely to make parachutes compulsory and to inform the passengers that they are carried. The public, or at any rate the potential flying public, must have facilities for seeing them in actual use and for trying and practising with them themselves. This means public demonstration grounds and some device to enable practice descents to be made without any risk. The writer has thought it worth while to describe his own device; but there will no doubt be better ones forthcoming soon.

Once convince the civilian that he has a really reliable means of escape even in case of the worst accident to his machine, and you will go far towards making him regard aviation in a new light.

GNOME AND LE RHONE ENGINES.

The Gnôme and the Le Rhône engines at the Paris Show, naturally enough, will be under the ægis of the Société des Moteurs Gnôme et Rhône.

It should be noted that the sole licensees for these engines in Britain and the British Colonies are Peter Hooker, Ltd., Walthamstow, who are associated with the Gnôme and Le Rhône Engine Co., of 27, Buckingham Gate, London, S.W.

A BUSINESS OPPORTUNITY.

The proprietors of a successful wholesale motor accessories business in London announce that it is for sale, and suggest that it would be a good investment for a little private syndicate of demobilised officers.

This business was employed in manufacturing aeroplane sundries during the War, and at the end of last year when the demand more or less ceased, the factory was closed and new premises were opened in the West End to supply motor accessories.

The business has been running about a year and the turnover has reached about £2,000 a month. There are 800 customers on the books, and the business employs six travellers and agents, besides a manager and four or five clerks at the offices and warehouse.

As the owners were not formerly interested in this class of trade, and wish to return to their own business, they are open to sell the one in question. They are gradually reducing their stock, and are not making further purchases, and stock at present stands roughly at £1,200. It can be bought or not, as desired, at valuation.

The premises, which comprise three offices and a basement warehouse, are held on a three-years' lease at a rental of £250 per annum. About £250 has been spent in structural alterations and fittings, and the owners are open to dispose of the lease to anyone interested for this figure. They are asking about £300 for goodwill, and as they have established the nucleus of a sound business, and have already a large number of customers on the books, they think this appears to be a very favourable opportunity for anyone to acquire the business on good terms.

NEW COMPANIES.

Lodge Plugs, Ltd.—Private company. Registered Nov. 22nd. Capital, £300,000 in £1 shares. To take over the business of manufacturers of and dealers in sparking plugs and electric appliances and apparatus carried on at Rugby by the Lodge Sparking Plug Co., Ltd. (now in liquidation), and to enter into an agreement with the said old company, and F. B. Lodge, the liquidator thereof. The subscribers (each with one share) are:—B. Hopps, St. Peters Road, Rugby (engineer); A. M. Lodge, St. Peters Road, Rugby (engineer).

The first directors are to be divided into Group "A," representing the holders of shares numbered 1 to 125,000, Group "B," representing holders of shares 125,001 to 250,000. The "A" and "B" directors may appoint one other director to be classed as "C." The first directors are: J. A. Hopps and B. Hopps (Group "A") and F. B. Lodge and A. M. Lodge (Group "B"). There are certain restrictions on transfers of shares which "shall remain in operation during the lifetime of any of the lineal descendants of His late Majesty King Edward VII living at the date of registration of the Company and for 21 years after the death of the last survivor of such descendants but not subsequent thereto. Solicitors: Pinsent and Co., Birmingham.

IF "THE AEROPLANE" WERE RUN BY THE AIR MINISTRY.

BY "THE SNIPE."

The Editor of THE AEROPLANE clicked smartly to attention and saluted the Director-General of Technical Aeronautical Publications, who had commandeered the Guildhall in order to form a new branch of the Air Ministry which had been manned in order that peace might be waged efficiently.

The Editor seemed ill at ease; the D.G.T.A.P. looked grim. Above his throne Gog and Magog looked down. They were clothed in barathea cloth of different shades, for another change in R.A.F. uniform was under consideration and it had been found convenient to use them as dummies for the inspection of the vast committee that would shortly throng the historic hall.

Gog looked rakish in a steel helmet fringed with gold lace; Magog appeared less warlike in a Tam-o'-Shanter adorned with the R.A.F. badge and osprey plumes.

The D.G.T.A.P. selected with great care a cigar from a lordly case, desired a Staff Captain to present his compliments to the Adjutant and to ask him to be so kind as to give instructions to the Orderly Officer to order the Orderly Serjeant to detail an Airman to bring the Ministerial cigar-cutter, and then turned to the Editor.

"You are aware," he said, "that in accordance with the absolute power conferred upon us by the amended Defence of the Realm Act for the Prosecution of Peace this great department has been formed. Now that we are no longer distracted by war, and have practically succeeded in destroying the aircraft industry, work in which we have been ably assisted by Parliament, we propose to assume entire control over the technical Press, and we have no doubt that our efforts will be as successful as they have been in guiding a great industry to its present state of happy stagnation."

He paused as an Airman, in an experimental uniform of blue and khaki tartan, saluted and placed before him the Ministerial cigar-cutter.

Having cut and lighted his cigar, he continued:

"I have sent for you to-day because I am informed that the technical publication known as THE AEROPLANE is at present not being conducted upon the recognised lines laid down for transacting business in great Government Departments. For example, I am informed that, though you have up to the present been allowed to continue to hold the position of Commanding Editor, you perform menial tasks, such as the writing of what I believe you call leading articles, and such subordinate duties. Your staff is undisciplined and undrilled. Working hours are devoted entirely to the production of the publication instead of being apportioned to healthy physical training, manly and womanly sports, such as lawn tennis, to warm the blood when summer sets in with its usual severity, and less violent pastimes for the temperate days of winter. It is with regret that I have been driven to the conclusion that you have shown no capacity to command. Your unit has caused no passionate comments either in Parliament or in the Press which is as yet uncontrolled. Unless something spectacular is done the public will not know how its money is being spent."

He relit his cigar, which had ceased to glow during the speech, and made a fresh start.

"The allied unit which undertakes the printing of the publication is in the same state of undisciplined devotion to its work. It merely prints as it did before the Peace, whereas it should by this time have produced posters in colour that would show the public the reasons for raising the next National Loan.

"I have already drafted a few catch-phrases for posters which will show what we are doing, and will attract the kind of recruits we require when we raise the establishments of the units. Here are a few rough notes. The pictorial work will, of course, be carried out by the new Poster Ministry which is being formed."

The D.G.T.A.P. displayed large sheets of fine vellum upon which had been scrawled:

"YOU'LL ONLY PLAY AND NEVER WORK,
SO JOIN UP AND BE PAID TO SHIRK."
"SPLENDID FUN! JAZZ DANCES!! PRETTY WRAFS!!!
TICKLE-TOE AT THE EXPENSE OF YOUR COUNTRY."
"CAN YOU PLAY THE BANJO?
YOU CAN BANJE IN THE R.A.F.
QUICK PROMOTION FOR JAZZ MUSICIANS."

"Rather neat, I think," said the D.G.T.A.P. complacently. "No damn silliness about your King and Country needing you. Just a human appeal to the type of person we want.

"But to resume," he said, raising his eyes from the sheets of vellum and frowning at the Commanding Editor, "it is obvious that you have shown no capacity to carry on your duties. With regard to your present staff, are they competent to perform the menial tasks of producing the publication?"

"The most highly trained and efficient staff obtainable," said the Editor loyally.

"Good. That leaves my hands entirely free. I can appoint to the higher commands officials who are not hampered by technical knowledge, and who can consequently devote their energies to disciplinary and administrative duties. You will return to your unit and carry on until such time as the higher appointments have been made. You may go."

"I prefer to resign, Sir," said the Editor.

"Resign in the face of the fiercest peace in history! It cannot be allowed. You may go."

The Editor saluted. He felt that his thoughts might be more forcibly expressed when he had left the Presence.

. . . . . .

The next few weeks were like a feverish dream. A Marshal of THE AEROPLANE was appointed with a Staff of senior officers whose names required a special issue of the "London Gazette." All the other tenants in 175, Piccadilly were evicted and Burlington House opposite was requisitioned.

The entire country was rainbow-hued with recruiting posters, and each day the recruits were drilled in the courtyard of the Royal Academy. A portion of Hyde Park had been railed off, and thousands of carpenters were erecting huts for the newly enlisted Airmen (who were distinguished by the new badge showing a pen and ink-eraser crossed) and hostels for the W.W.R.A.F. (Women Writers, Royal Air Force).

At the printing works in Chancery Lane similar activities were taking place. All the buildings between Rolls Passage and the Record Office had been taken over and were being redecorated.

"The time is now ripe," said the officer in charge of the Civil Transport Department, T.A.P.T.D.17, which occupied the entire upper floor of Burlington House. "We must blaze the trail from Piccadilly to Chancery Lane."

"How do you blaze a trail?" asked the second in command.

"Oh, you just make blazes along it, don't you know. What?" replied his chief.

"We've already burnt all the new machines we have in stock," said his junior regretfully. "Shall I ring up Supplies to order some more?"

"Please. And say it's urgent. In the meantime we will begin blazing with mechanical transport."

"It's all sold," said the second in command.

"Nonsense! Borrow a few thousands of Sappers or Miners, I forget which kind dig. Probably the Miners are on strike, anyhow, so you had better indent for Sappers. Set them to work to excavate in any of the abandoned M.T. Parks, and if they go deep enough into the mud they will find plenty of lorries for the purpose. The mining rights in these Parks are to be put up for auction shortly, so we are only just in time. See to it."

"It shall be done, Sir. We'll make a blaze in England that will never be put out."

For weeks the peace was waged relentlessly by thousands inspired by the Will to Win promotion. The first lorry to be disinterred was discovered just above the old red sandstone stratum, and was towed to Burlington House by a tank. So great was the energy displayed that it was found that within a month, during which a new chassis, engine, and body had been fitted, it would run under its own power. The O.i/C of T.A.P.T.D.17 had it loaded with petrol, the Marshal of THE AEROPLANE took his seat beside the driver, distinguished representatives of the Admiralty and War Office sat on the petrol tins behind, and, after waiting for the Press photographers to do their work, started amidst ringing cheers on the great pioneer enterprise of blazing the trail to Chancery Lane.

The deathless story of that journey is written in letters of fire in the annals of the Force. It will be remembered that the old petrol tank, the only part of the lorry to be retained, had been found in a leaky condition. The leak had been stopped with chewing-gum by an ingenious mechanic, but the gum is supposed to have become hard and brittle, possibly due to having been insufficiently masticated. Whatever the cause, we know that it fell off in Piccadilly Circus and that a broad stream of best aviation spirit gushed into the road.

We know that the lorry proceeded to Leicester Square without the distinguished pioneers being aware of the mishap, as they thought the shouts of the vulgar mob were plaudits and were busy saluting to right and left.

The collision in Leicester Square with a W.D. lorry that was conveying anti-aircraft ammunition to a secret dump precipitated matters. It will be remembered that both

lorries caught fire and that the explosion of the ammunition burst open the petrol tins, so that rivers of flame poured down the streets and into the basements of the adjacent houses. For days the West End of London was a raging furnace, and when at last the fire was quelled, by the old process of blowing up threatened buildings before the flames could reach them, it was found that a broad tract of devastated territory lay between the H.Q. in Piccadilly and Charing Cross, so that the first part of the route to Chancery Lane had been cleared and the trains of lorries that would shortly carry "copy" to the printers could pass on their way unimpeded.

All this is public knowledge, but the Editor of THE AEROPLANE saw behind the scenes.

"It's magnificent, but it is not Peace," the Marshal, who was one of the few survivors, had said. "However, we must steel our hearts. The trail must be blazed. Next time we will begin at Charing Cross. But I would like one of our latest bombers to be in that offensive. The M.T. section have got all the decorations out of this one."

Historic words that will be remembered while the Ministry lasts.

But while these events were taking place other departments were not idle. A permanent Committee composed of many hundreds of high officials, with power to call cubist artists, theatrical costumiers, and other experts, had been sitting for weeks to decide upon the next uniform cover for THE AEROPLANE.

It was this Committee that finally obtained powers to take over the editorial offices in which the Editor and Sub-Editors of THE AEROPLANE were still allowed to toil. There came a cold November day when they found themselves homeless. Sentries guarded the door of the building from which they had been evicted by the Committee. Their papers, files, their priceless records of aviation had been destroyed.

. . . . . .

At nightfall, when cold November rain was falling and dim lamps were throwing long reflections on the roadway of deserted Piccadilly, the Editor of THE AEROPLANE sat on the cold kerb in front of what had once been his office. Broken hearted, he could not restrain the not unmanly tears that dimmed his sight so that he had to remove his monocle. The eye-glass slipped from his unnerved hand and was shattered on the pavement. It was the last straw. With a groan he rose and hurled himself prone in front of an approaching three-ton lorry. He felt the front near wheel of the lumbering vehicle touch him. . . .

. . . . . .

He woke to find a Royal Aero Club waiter shaking his shoulder gently. All the other members had gone home and most of the lights had been turned out.

"But it would be worse than that, really," he said, as he made his way towards the hall.

INTELLIGENCE IN THE R.A.F.

During the war, in a certain very exclusive and recherché part of the Thames Valley there existed an R.A.F. training centre for the purpose of instructing all manner of people, from almost every walk of life, in all that there was worth knowing in the administrative and technical branches of the Air Force. This super Clark's College, in the short period of two months, turned out numbers of people who, as the result of an examination, were deemed qualified by the high authorities at the Hotel Bolo (née Cecil) to assume the responsibilities of Sec. Lieuts. (Ad.) and Sec. Lieuts. (T.).

Among each course, perhaps 40 per cent. were Service men, the majority of whom were N.C.O's in the R.F.C. and R.A.F., men who, having served in the ranks of the R.F.C. and worked their way up to N.C.O's on sheer merit, were eminently suited to hold commissioned rank in the R.A.F.

The remainder of the Service element was composed of crocked infantrymen and other medical misfits who were adjudged by a stringent selection board as being qualified to take a commission in the R.A.F. as Sec. Lieuts. (A. or T.) by their pre-war experience and knowledge, at the same time being sufficiently old or war-worn to be of no further use for active service.

All these men took the course in the rank held at the time of being summoned to report at the school, feeding in their respective mess-rooms and drawing their ordinaty pay. They were housed in empty billets and were not allowed fires except under the M.O.'s orders, no lights after 10 p.m. and very few facilities for working in the evening. There was half an hour's drill before breakfast and no forms of organised exercise for all to take part, the football, cricket, or rowing teams consisting principally of the instructors and some of the privileged officers.

The remainder of the course consisted of a few officers transferred from the Army owing to unfitness, a few crashed pilots and a large number of civilians, many of unknown origin and quite unfitted by their social and educational standard to hold His Majesty's commission. These people were gazetted as Sec. Lieuts. on entering the school and therefore entitled to the privileges of the officers' mess, with its numerous customs and comforts, though many of them were not sufficiently well born to appreciate them.

The high standard of intelligence shown by some verged on the extraordinary, of which the following is a fair sample. During the course of a lecture by a long-suffering and underpaid N.C.O. instructor, the class was being told of the various causes of tail and nose-heaviness. The instructor gave all causes and remedies, at the same time mentioning that some machines, owing to the extreme heaviness of the engine, etc., had lead placed in the tail end of the fuselage to counteract this. He also recalled that sometimes it had been discovered that careless mechanics had been known to leave spanners and other articles in the fuselage during an overhaul.

He then asked a particularly bright member of the class to define tail-heaviness and suggest a remedy. The cause was duly given with much prompting, together with the following remedy:—"Strip the fuselage to ascertain if any careless mechanics have left any lumps of lead, spanners, or other heavy articles in the fuselage." This "officer" passed the final exam.!

Perhaps the unkindest cut of all in connection with this school was the fact that a man who was previously in the ranks was not gazetted until he passed the final exam., whereas a civilian was gazetted on joining the school. Therefore, on passing out, the civilian always had two months' seniority over the mere soldier.

Again, should an N.C.O. or a "ranker" fail twice he was returned to his unit as useless for commissioned rank in the R.A.F., and therefore blighted of any further chances of applying for a commission anywhere, whereas if the civilian "officer" failed he was sent to Blandford as an officer in the R.A.F. either for draft conducting purposes or for disposal to fill up any new "hot-air departments" formed at Bolo, or elsewhere. Now one knows how the R.A.F. maintained its supply of trousers polishers during the war.

As for the peace-time R.A.F. it is comforting to know that such a state of affairs cannot exist when once the Force begins to feel its feet, although it is a well-known fact at the present time that in the wild orgy of demobilisation large numbers of the right stamp of man are being placed on the unemployed list, whereas a fair number of these "unwinged" officers are being retained owing to the fact that they are so firmly rooted in the mire that they themselves have carefully prepared.—L. L. B.

TO ALL THOSE WHO HAVE NOT YET SPENT THEIR GRATUITIES.

He was such a nice man.

He had features like a good-natured Mephistopheles, and he spoke American. He drank cocktails most graciously, and it was a pleasure to give him lunch. He seemed to cast an atmosphere of mysterious prosperity over the club lounge.

Then he got going.

He said that, of course, it was only because he was speaking to a friend, and a friend whom he could trust, that he mentioned his great scheme. It was a glorious scheme, both ennobling and advantageous. He proposed to feed the starving population of Europe from great stores of food he had accumulated in America; and he needed really smart Continental managers to make a success of it.

The trivial part of the whole matter was, that he required only £100 from each prospective manager as a guarantee of good faith.

He waved a bunch of papers in his right hand, and produced a gold cigarette-case with his left. He said that anyone could go through the papers, but he put them away and offered a Gold Flake.

It was very good of him to take the cheque for £100. Somehow, one felt it was more than good of him; it was positively splendid. He said he was leaving for the Continent to arrange matters.

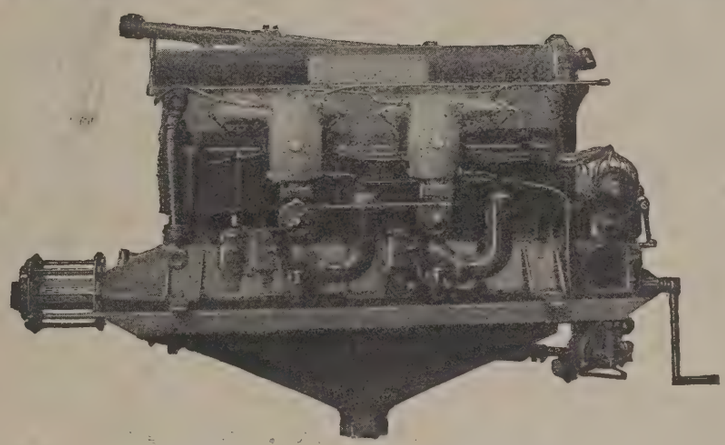
He is still there, but the American Continent is rather a large place in which to find him.

Oh! you gratuity-splashers, if you meet anyone like that, hit him with a hatchet, quick.

This appeal is issued by the Society for the Protection of Young Airmen. The Society consists of one. I've been bitten already.

BILL.

SUNBEAM-COATALEN AIRCRAFT ENGINES



SUNBEAM - COATALEN "DYAK"
100 H.P. AERO ENGINE.

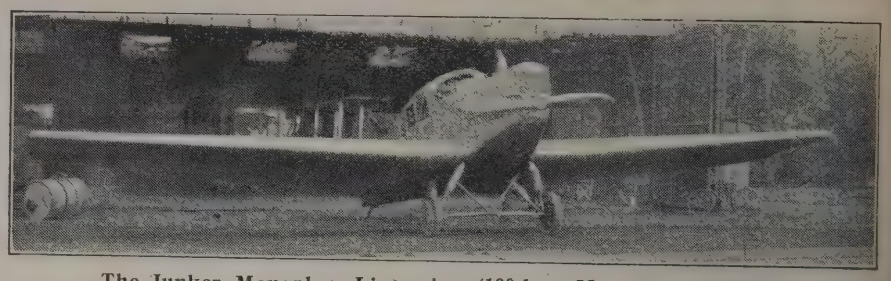
This engine is on exhibition at the Paris Aero Show

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THE SUNBEAM MOTOR CAR CO., Ltd.
MOORFIELD WORKS, WOLVERHAMPTON.

A GERMAN AEROPLANE IN LITHUANIA.

The Lithuanian military authorities have lately come into possession of a remarkable German aeroplane, in quite exceptional circumstances. This machine is a monoplane which, owing to darkness and bad weather, landed at Abeli, close to the Bolshevik front line near Dvinsk, on October 15th, while en route from Berlin to Moscow, with its pilot, a mechanic and three passengers, viz., a Russian and two Turks. The monoplane was seized by the Lithuanians and flown to Kovno by its pilot under Lithuanian escort.



The Junker Monoplane-Limousine (160-h.p. Mercédès engine).

The monoplane represents something quite new in the technique of aviation. It is an all-metal eight-seater machine, fitted with a 160 h.p. Mercédès engine. The metal consists of thin corrugated duralumin plates, or some similar composition. The weight of the monoplane is 1,015 kilogrammes; its useful load is 625 kilogrammes, to which can be added an extra load of 130 kilogrammes, making a total weight of 1,770 kilogrammes. The builders are the Junkers Flugzeugwerke A.G., of Dessau, who have already produced a second model of the kind. The internal construction of fuselage and wings is on a system of aluminium tubes and girders, which gives extraordinary stiffness, combined with remarkable lightness.

The pilot, a demobilised Oberleutnant, Hans Hesse, told me that this construction is similar to that of the new Junkers all-metal war machine. He also stated that the present monoplane had recently created a world's record for altitude, with eight passengers, of 7,000 metres, but he said that the climb was slow. He further described the machine as not very easy to fly, and as having a high landing speed. The cabin, the position of which is clearly shown in the accompanying photographs, is most comfortably fitted for six passengers, very much after the style of a luxurious motor-car. The wings are remarkably thick, and, being hollow, are used for carrying two spare propellers, the petrol tank, a spare set of wheels, and other parts.

The front view of the monoplane is shown in one of the accompanying photographs.

Apart from the technical interest attaching to the aeroplane itself, the circumstances surrounding its capture, and the events leading up to the same are little less than sensational. Readers of THE AEROPLANE may, therefore, feel curious to know a little more about them. The three passengers comprise one Abraham Frankl, a Russian Jew, an engineer in the employ of the Junkers firm, who states that he was being taken on the trip as interpreter; Dr. Dmitri Nicola, alias Sayd Emin, a Christian Turk, and Mohammed Ali Sami, a Turkish subject. The two latter described themselves as in the service of the Turkish Red Cross. They purported to be on their way to Russia in order to enter into negotiations with the Soviet Government for the return of Turkish prisoners of war. Nicola also said that the German Government had verbally asked him to try to make arrangements for the return of some German hostages in exchange for the notorious Radek. Nicola had 80,000 roubles with him, ostensibly as expenses for the pilot and mechanic during the trip, the purchase of petrol, etc.

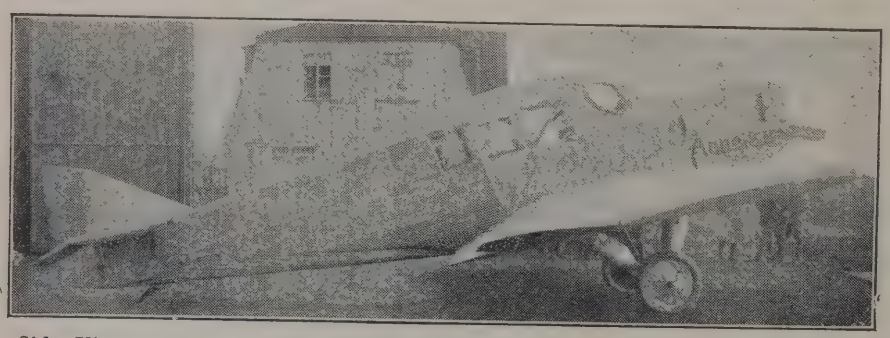
According to the pilot, Hesse, he was simply commissioned by his firm to fly this aeroplane to Moscow in order to make inquiries as to the possibility of selling the patent and establishing a factory in Russia for the manufacture of machines of this type. For the rest, he disclaimed all knowledge of the purpose for which his passengers were travelling to Soviet Land.

The itinerary of the monoplane was briefly as follows: On Oct. 2nd the Berlin Ministry of War arranged for the aeroplane to fly to von der Goltz with an important letter. The aeroplane, however, was not quite ready then, and by the 8th the German Government had changed its plans. Instead of flying to Mitau, the monoplane left Berlin on Oct. 10th bound for Moscow, with its passengers, as already described. It reached Konigsberg on the 13th, having made two forced landings en route owing to minor defects. It left Konigsberg on the 15th and landed at Shavli, a place in Lithuania in Russo-German occupation, between noon and 3 p.m. Here the pilot and his companions were cordially received by both German and Russian officers, and were treated to a good meal. When the Russian officers heard the monoplane's destination they confided numerous letters to the pilot for ultimate delivery in Moscow and Petrograd.

It is significant that although the Russo-Germans profess to be out for a fight to the death with the Bolsheviks, they took no steps whatever to prevent Hesse from completing his journey. From this fact it is naturally inferred that Hesse also carried papers of considerable importance to the Russo-German troops, though, of course, Hesse remains silent on this head. Soon after 3 p.m. the monoplane again took the air, proceeding in the direction of Russia, but at 4 p.m. on the 15th, it landed at Abeli, where, together with its occupants, it was taken in charge by the Lithuanian military authorities. The pilot and mechanic, with their Lithuanian escort, flew to Kovno, but the three passengers were brought here by train.

The facts of the case were immediately reported to the British Military and Political Missions, which, in their turn, telegraphed to their Home Governments for instructions regarding disposal of the machine and its occupants, who, in the interim, were detained.

Since then, however, there has been an astounding sequel to the foregoing, in the shape of the escape of the two Turks by aerial route, but not in the same machine. The leading rôle in this romantic episode was played by a young, well-known German aviator, named Rotter, hitherto in the employ of the Lithuanian aviation corps. Early in the afternoon on the day of the escape, Rotter went up to the aerodrome, and suggested to one of his pupils that they should go for a flip over to one of the forts, take a few photographs and return. One of the regular L.V.G. biplanes was requisitioned for the purpose. On landing near the fort, the aeroplane was approached by two respectably dressed civilians, under escort of an armed Lithuanian private. No sooner had the pupil alighted than Rotter produced two Mausers, one of which he deftly tossed down to the civilians, whose identity needs no amplification, while, with the other, he threatened the pupil with an unpleasant death if he made the slightest attempt to interfere. One of the Turks similarly covered the guard, who appeared to be paralysed with terror, for he stood supine while the two Turks clambered into the aeroplane. Under threat of death the pupil was compelled to restart the propeller, and Rotter, with his passengers, flew merrily away, either back to Germany, or in the direction of Shavli—his objective has not yet been ascertained. The unfortunate pupil had to walk all the way back to the aerodrome, in a state bordering upon nervous breakdown.



Side View of the Junker-Limousine (160-h.p. Mercédès engine), which flew from Berlin to Shavli, Lithuania.

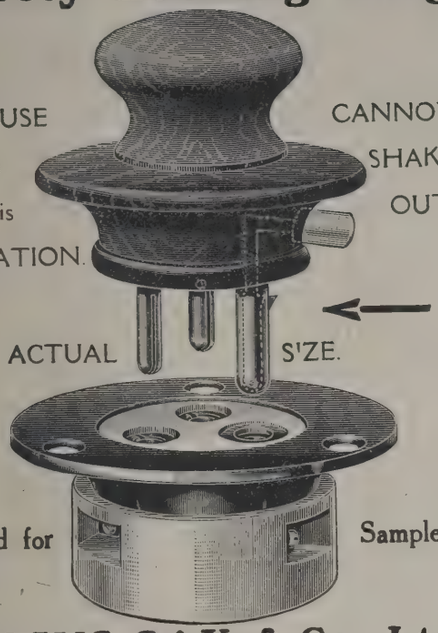
It remains to be discovered by what means Rotter managed to communicate with the two Turks, and why they were allowed to wander so far afield in the charge of a solitary soldier. That such methods should be resorted to in order to effect their removal from Lithuanian custody bears out the surmise that they were persons of consideration charged with a mission of no small importance to the Soviet Republic. In lieu of the escaped Turks the Lithuanian Government gets a brand new German monoplane which, in the circumstances, is clearly forfeit.

—E. J. H.

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AVIATION DEVELOPMENTS IN AUSTRALIA.

The Australian Press have made much of the fact that eight flying squadrons returned to Australia without a single aeroplane. The only machines in the country appear to be a few D.H.6 and Maurice Farman Shorthorns, and yet there can be few places with better flying prospects than that particular "God's own country."

A reason was given that there are no hangars in Australia and that it was no use taking the machines out there only to rot in the open all day and all night. France is dotted with Bessonaux, unused and rotting, their use given to any farmers who require them. It is said not to be worth the expense of bringing them to England, where there is no sale for them. It would be worth while shipping them to Australia before they collapse, torn to shreds by the weather.

Already there are five registered Australian aviation companies: Aerial Transport, Ltd., Aerial Company, Ltd., Aerial Services, Ltd., the Australian Aircraft and Engineering Co., and the Larkin-Sopwith Aviation Co., Ltd. There are also several smaller firms composed of collections of ex-Air Force or Aus. F. Corps pilots. These concerns mostly have one or two D.H.6 machines and are simply out to give short flights with passengers.

Aerial Transport, Ltd.

A company under the above name was formed and registered in the spring of this year by Major Lee Murray (ex-R.A.F.) and Mr. H. Sleeman. The ambitious programme of this company, which includes the linking up of all the large cities in Australia by aerial services, was given in the issue of The Aeroplane dated Sept. 24th.

Major Murray completed a survey of the Melbourne-Adelaide route on July 22nd by motor-car. Five landing-sites were selected. On July 29th he started on a survey of the Melbourne-Sydney route.

Sydney was reached on Aug. 10th, and an official welcome was given by the New South Wales Section of the Australian Aero Club. The return journey to Melbourne was started on Aug. 19th, and the survey was completed on Aug. 23rd.

Aerial Company, Ltd.

This company was registered at Sydney on April 16th of this year. It has adopted the shorter title of A.C.L. and is capitalised at £20,000 in £1 shares. Some of the objects of the company as detailed in its prospectus are:—

(1) To give pleasure, commercial, advertising and exhibition flights; (2) to establish an instructional school in aviation to be conducted on lines similar to the military aviation school at Hendon; (3) to establish branches in country centres.

The whole of the capital has been subscribed privately. The managing director is Lieut.-Col. Percy Woods, D.S.O., M.C., and the chairman of the directors is Mr. H. C. Macfie, F.C.P.A., F.C.I.S.

Two D.H.6 machines were bought from the Central Flying School, Point Cook, Victoria, after the auction sale. These machines were piloted by Capt. P. G. Taylor, M.C., R.A.F., and Flight-Lieut. R. F. Oakes, A.F.C., from the Central Flying School to Sydney. The actual flying time of one of the machines was only 9¾ hours, but they started on March 31st and did not reach Victoria Park, Sydney, until April 8th.

The reasons for the length of time taken on the flight were that those D.H.6 machines had only petrol capacity for two hours, and that they carried a totally inadequate tool kit, with no spare parts of any description. Great difficulty was encountered at times in gaining sufficient height to cross the ranges of mountains; adverse winds were encountered, and in one part of the trip the machines only travelled a distance of four miles in 25 minutes. The engines also gave trouble and had to be overhauled and repaired several times on the journey.

On Aug. 6th a flight was made on one of the D.H.6 machines from Richmond to Bathurst. The pilot was Lieut. C. V. Ryrie, who was accompanied by Lieut. N. P. H. Neal, M.C., M.M. The pilot considers a flight across the mountains very difficult and should not be attempted at a height less than 10,000 ft.

Mr. H. C. Macfie, the chairman of the Aerial Company, Ltd., sailed for England late in August. He is at present in England and buying machines to take back with him to Australia.

Aerial Services, Ltd.

The object of this company is to create aerial services between London and Sydney. A survey party left Sydney on Sept. 31st last on motor-cycles and crossed the Continent of Australia from south to north. No real hardships were suffered, as the arrangements for the trip had been very well made.

Addresses were given at most of the centres en route where the pathfinders were entertained. The occupants of the various towns visited were greatly impressed by the thought that they would have an aerial service which would bring them nearer to civilisation.

A series of land relay and fuel stations have been mapped out at suitable distances, and contracts have been completed and partly completed for ten of these stations. Four stations are in Queensland and six in the northern territory.

The survey is being continued across the Malay Archipelago. The company is to confine itself to long-distance flying.

The Australian Aircraft and Engineering Co.

The Australian agency for the products of A. V. Roe and Co., Ltd., has been acquired by Lieut. Nigel B. Love, A.F.C., R.A.F., of the Sydney firm of John Bridge and Co. His associates in the company are Lieut. W. J. Warneford and Mr. H. E. Broadsmith, F.R.Ae.S., who was the chief engineer and designer to A. V. Roe and Co., Ltd.

Mr. Broadsmith took over to Australia a fleet of Avro biplanes and a number of Avro seaplanes fitted with Bentley rotary engines, destined for Melbourne and Sydney.

Registration for the title of the Australian Aircraft and Engineering Co. was applied for early in July, and by that name the company will probably be known. Lieut. Warneford was expected to reach Sydney in September in charge of the first shipment from England. Four demonstration machines were to arrive, in addition to twenty two-seaters, mostly of the standard Avro K504 type. Erecting workshops were to be established in Sydney, where the machines were to be reassembled.

Lieut. Love has stated that the object of the company is to establish aviation on a commercial basis in Australia, and that the programme would include short passenger flights. Operations were due to start in October and were to be confined to New South Wales, Victoria, and Tasmania. It was proposed to lay out aerodromes at Sydney and Melbourne and probably a third at Hobart.

The Larkin-Sopwith Aviation Co., Ltd.

Capt. Herbert J. Larkin, D.F.C. (ex-R.A.F.), the general manager of the above-named Australasian company, reached Melbourne from Great Britain by steamship on July 25th. The object of the company is to assist aerial transport companies in the formation and maintenance of their passenger services. All spares and accessories for aviation will be stocked. They are producing a light portable hangar which can be carried in a single-seater machine.

Several Sopwith machines have been or are to be shipped to Australia, including a "Dove," a "Gnu," a "Transport," and an instructional machine. The headquarters of the company are at Melbourne. A London office has been opened at No. 4, St. Mary Axe, E.C.

Smaller Aviation Concerns.

Two of the D.H.6 aeroplanes offered for sale at the Central School of Flying were purchased jointly by three returned officers of the Australian Flying Corps—Capt. E. J. Jones, M.C., D.F.C., Capt. R. W. McKenzie, M.C., and Capt. S. G. Brearley, D.F.C. The machines were overhauled at the flying school and were to be flown to Hamilton, Victoria, the headquarters of the owners. They were to be used for short passenger and advertising flights over the western district.

A commercial flight from Melbourne to Bendigo was made on July 18th in one of the six 80-h.p Maurice Farman Shorthorns recently bought at the Central Flying School by the Carey-Fenton Syndicate. Mr. Grahame Carey piloted the machine and carried as passenger the foreign sales representative of the Dodge Automobile Co., Ltd. The return journey of 202 miles was completed in 187 minutes.

Another D.H.6 was purchased from the same source by Lieut. H. Treloar, A.F.C. This machine will be similarly employed over the territory north of the Victoria railway line between Serviceton and Arrarat. Lieut. Treloar's headquarters will be at Bendigo. Arrangements have been made with the Jones-McKenzie partnership whereby the "territory" will be equally divided between the two concerns. Lieut. Treloar has been piloting a Maurice Farman Shorthorn owned by the Carey-Fenton "Joy-riding" Syndicate.

Major Norman Brearley, D.S.O., M.C., A.F.C. (ex-R.A.F.), returned to Australia in July. Before leaving England he purchased two Avro aeroplanes, which were landed in August at Fremantle and were erected near by. The machines were used for passenger carrying and exhibition flights. The first was made on Aug. 2nd, when the Mayor of Perth was taken up.

Ten-minute flights over the city of Perth were advertised at a cost of £5 per head, and so keen was the competition that it was decided to sell the first flight by auction. Despite occasional heavy falls of rain, some 4,000 spectators gathered on the Cricket Ground to see the flights on the first day. Many passengers were carried, and exhibition flights were given by Major Brearley.

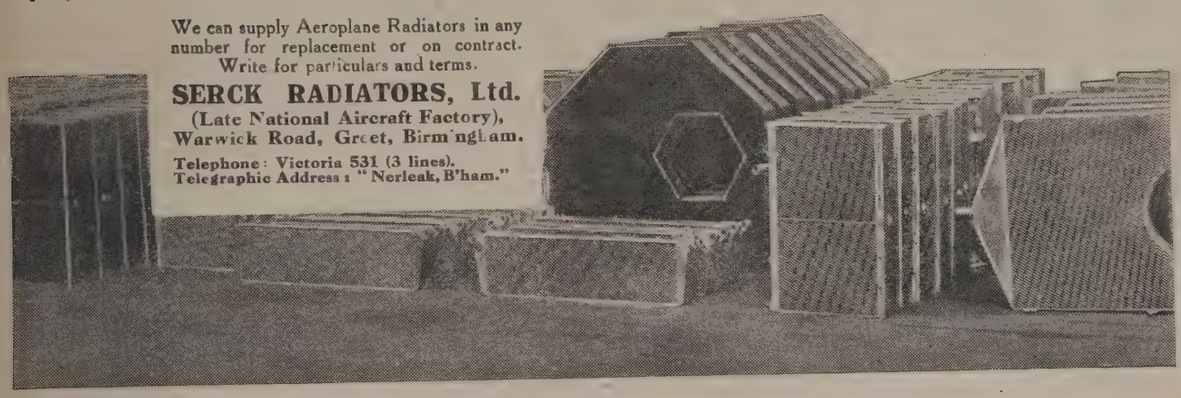
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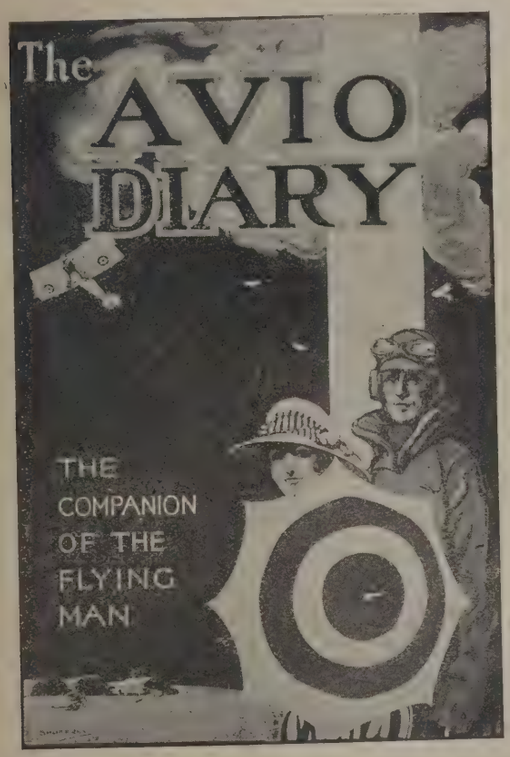
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A second exhibition of flying was given on Aug. 4th, when leaflets were dropped. Five passengers were taken up on Aug. 7th, and fourteen more on the following day. More flights were made on Aug. 9th and 16th.

Major Brearley proposes to establish a passenger and mail service between Perth and Kalgoorlie. He is also going to teach flying.

Captain H. G. Butler, A.F.C. (ex-R.A.F.), is the agent in Australia for Cellon, Ltd. His first exhibition flight on returning to South Australia was held at Unley Oval on July 23rd, in aid of the Repatriation Fund. His machine was a Bristol monoplane (110-h.p. Le Rhone engine).

On Aug. 6th he flew from Adelaide to his home in Minlaton on the York Peninsular. About a thousand spectators managed to find Conrad's Estate in the Enfield district, from where the flight started, although the locality had not been divulged. His Excellency the Governor (Sir Henry Galway) and the Chief Justice (Sir George Murray) were present.

The machine left the ground at 10.40 p.m. in good weather, with a fresh westerly wind, and carried some 4,000 postcards and many papers. On arrival at Minlaton, he circled round for a while and then landed 60 minutes after he had left Adelaide, 65 miles away. About 35 miles of the journey was over the sea.

On Sept. 16th Capt. Butler gave an aviation display over Port Adelaide, Glenelg and district, dropping Peace Loan messages for the opening of the Peace Loan Campaign.

THE AUSTRALIAN AERO CLUB.

At a general meeting held in Sydney on July 15th a letter was read from the hon. sec. of the club at Melbourne stating that a resolution had been passed that the Melbourne Club in future should be known as the Australian Aero Club, Victoria Section, and that the branch formed in Sydney should be known as the Australian Aero Club, New South Wales Section.

A Central Committee, consisting of the general secretary and two members of each State Committee, will govern all sections of the club. The following were appointed office-bearers :—

General Secretary.—Mr. Hector Sleeman.

Victorian Members.—Major W. J. Sheldon, commanding the Central Flying School, Point Cook; Capt. F. H. McNamara, V.C.

New South Wales Members.—Capt. H. Gilles Watson, D.F.C., and Mr. Edward J. Hart.

The honorary secretary, who is the managing editor of the Australian monthly magazine, "Sea, Land, and Air," said that he would go to Melbourne for the purpose of interviewing Major-Gen J. G. Legge, C.M.G., C.B.

A general meeting of the New South Wales section was held at Sydney on Aug. 18th, Mr. H. C. Macfie presiding.

Mr. Reginald Lloyd, the managing director of Aerial Services, Ltd., detailed his survey from Sydney to Darwin. Major Lee Murray urged that the State Governments should be worried until they ratified the Air Navigation Regulations.

Mr. Hector Sleeman, the managing director of Aerial Transport Ltd., opposed the proposed duty of 20 per cent. on imported aero engines. Capt. P. G. Taylor, M.C. (ex-R.A.F.), described his flight from Melbourne to Sydney.

Mr. V. B. Madden of the Vacuum Oil Company stated that an aviation spirit was to be put on the Australian market very shortly. Mr. W. E. Hart said he had been instrumental, eight years ago, in getting the Customs Duty on imported aircraft removed.

It was resolved that in future the general meeting be held on the third Monday of each month.

THE AUSTRALIAN AIR FORCE.

Regarding the selection of returned officers and men for the Australian Air Force, the undermentioned wing and squadron commanders of the Australian Flying Corps have been invited to form a Selection Committee for the Australian Air Force :—

Lieut.-Col. W. Oswald Watt, O.B.E.; Major W. H. Anderson,, D.F.C.; Major A. H. Jones, M.C., D.F.C.; Major R. S. Brown; Major A. W. L. Ellis, M.C.; Major S. W. Addison; Major R. C. Phillipps, M.C., D.F.C; and Major W. J. Sheldon.

CIVIL FLYING IN CANADA.

Very little civil flying has ever been done in Canada. The majority of the inhabitants of that vast country have never seen an aeroplane. Although regular flying services have been proposed, planned or started in every large civilised country in the world during this year, nothing has been heard of any flying being done on a large scale in Canada by Canadians.

An aeroplane survey was taken of the Labrador forests and yielded very good results. Two American training machines have been taking up passengers for short flights over Vancouver Island. An ex-R.A.F. officer hopes to start pleasure flying to the Thousand Islands next year. The machines entered for the Transatlantic flight congregated at Newfoundland, but that is no credit to Canada; they were only assembled there because it was the nearest point to Great Britain and Ireland.

There is a Canadian Aero Club, so why this terrible stagnation in a country which would be very insulted if called backward, behind the times, regressive? The Canadian Aero Club appears to have done very little, in fact nothing. Of course, it is allied to the Royal Aero Club of this country. Sleeping partners!

It is said that the Canadian Aero Club is greatly influenced by American financial magnates. If so, where are the Yankee "hustle" methods? Or have they taken control merely to block pro-British aeronautical propaganda?

The R.A.F. pilots and observers who have returned to Canada are in proportion to the population of one to every thousand—by far the highest proportion of any country in the world—and yet they can do little with aviation, because there is none. And so they have drifted and are drifting back to commonplace civil life.

At last some of the most distinguished aviators in Canada, being entirely dissatisfied with the Aero Club, have made a move in the right direction.

In Toronto, on Oct. 2nd, some eighty flying-men met together at the Central Y.M.C.A. for a dinner, and decided to form an association to be known as the "Canadian Flying Club."

The following is extracted from the Toronto "Globe" of Oct. 3rd: Among the number present were Lieut.-Col. Barker, V.C., Major A. M. Shook, Major E. G. Joy, and others of the most distinguished aviators in the Canadian or British Service.

The objects of the new association will be to give information on everything connected with flying to returned aviators, to help them keep in touch with civilian flying, and to give the member an opportunity, as far as possible, "to keep his hand in," and thus constitute a national Air Force Reserve. The promoters of the society hope in the near future that they will, as a club, be able to obtain an aerodrome. Machines will be available for the use of the members, many of whom otherwise would not be able to keep in training. The general idea of the founders is that in this way they can best further aviation interests in Canada.

Major Shook presided, and in the course of his remarks the Aero Club came in for sharp criticism for its alleged failure to meet the requirements of the returned fliers.

A committee of sixteen was elected to draw up a constitution.

From the members of the committee Col. Barker was elected president and Capt. A. G. Mackay treasurer.

A SECLUDED LIFE.

The English would hardly think of looking for the most advantageous position for a villa in an impenetrable jujngle "connecting up low land containing water," but apparently Americans like seclusion and find that aeroplanes help them to find inaccessible places in which to build their villas. This explains the following :—

"William Van Alen, of the firm of Severance and Van Alen, New York architects, and Pentz, Van Alen and Durkee, makers of the Pentz airplane compass, while at his office in Palm Beach, this past season, was called upon by a client to select the most advantageous position for the location of a new villa.

"The property, extending from the Ocean to Lake Worth, comprises some twenty acres, and at the present time is practically impenetrable on account of the jungle which runs through it, connecting up some low land containing water, which requires filling in. The contract road bisects the property, and the runways through the jungle not far distant from the property did not afford a sufficient point of advantage to determine the contour of the property, which had to be obtained before Mr. Van Alen could start on the layout of the architectural features.

"His experience recently in connection with certain war work required him to make several flights in airplanes, and in consequence the advantage of using an airplane for the obtaining of this information appealed to him at once. He immediately crossed the lake to West Palm Beach and succeeded in having Mr. Kantner, the pilot at the aerodrome, take him up, and they flew together over the property until Mr. Van Alen had obtained the information he sought."

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AVIATION IN EGYPT.

FROM THE "EGYPTIAN MAIL,"

In may parts of the Empire where the climatic conditions are suitable, it is possible to introduce services that could operate successfully and regularly as soon as the machines and the ground organisation are available. It would seem advisable from an aeroplane point of view to develop services over land routes, leaving long-distance trans-ocean traffic to the rigid airship. While it is impossible for a Government to develop a long-distance service as, for example, to Australia, it is practically outside the region of possibilities for a private firm to undertake at present a service of this nature as a profitable venture.

THE INITIAL COST.

The cost of transit of the necessary oil, petrol, consumable stores, spare parts, and the provision of sheds, aerodromes, machinery and mechanics at the necessary intervals would be a costly work. If, however, Egypt, India, and Australia developed commercial aviation within their own borders on such a scale that aeronautical supplies could be largely dealt in as articles of commerce in those countries, then the maintenance of the stations between those countries becomes much more simple and less costly and brings it within the range of possibility for private enterprise to operate an air service.

It would therefore seem that we should help, by all the means in our power at the present time, the local development of commercial aeroplanes in these overseas countries. Very many war-type machines, with slight modification, are suitable for this pioneer work. While this local work is proceeding we can push on with the construction of types that will be suitable to link up these great Dependencies with practically regular air services.

THE FLIGHT HABIT.

Our aim should be to make it easy for people in those overseas countries to acquire the "flight habit." It is this "flight habit" that will create the demand for local flying, and that demand will soon grow into a call for longer distance services as the public realise the speed and time saving possibilities of air travel. Both India and Egypt offer very wide possibilities for aeronautical development, the East is particularly suitable for flying from a climate point of view, and the existing land and sea communications both internally and externally leave much to be desired. An investigation into railway time-table speeds show how great would be the saving of time which the aeroplane could achieve for urgent needs.

The Governments of these countries could greatly assist matters by seriously tackling the transportation of mails by air. This action would be of immense value in speeding-up aerial development in these countries and focus the attention of business men on the future possibilities of the air. During the recent disturbances in Egypt seaplanes constructed for war service were successfully used daily for three or four weeks over distances of 100 or more miles to maintain communications when the existing railway and telephone services had been broken. The machines operated successfully throughout the periods of distress, running regularly to scheduled time, proving the inestimable value of air communications; and the Egyptian and Indian Governments would be well advised to take in hand seriously the movement by air of fast mail matter.

In England the growth of the flight habit has already commenced. During the recent spell of fine weather flying has taken place daily without intermission for three weeks at Blackpool and Southport, over a thousand flights per week being given, and a steady demand for long-distance flights was immediately noted. A Manchester-Blackpool service has been running twice daily, despite heavy mists at Manchester on several occasions.

AERIAL MAIL SERVICE.

As an indication of the possibilities of using aeroplanes for mail-carrying, it is reported that the two war squadrons operating the Air Ministry mail service between Folkestone and Cologne, a distance of about three hundred miles, carried between March 1st and April 26th last more than 1,600 bags of mails. During that time the weather on ten days was too bad for flying, the inclement conditions during March being exceptional even for England. During the remaining 47 days of the period, these squadrons made 289 flights, regularity of service that is of great credit to the Air Ministry and the squadrons concerned. One may add that the service is continual and regular during the spells of favourable weather now being experienced. With such suitable climatic conditions existing in many of our overseas Dominions, and given a similar excellent organisation as effected by the Air Ministry in this Folkestone-Cologne service, regular mail services could be instituted in these overseas countries.

GOVERNMENT AID.

The Government hold vast stocks of aeroplanes that could readily be made suitable for this work, and it was suggested that on the declaration of peace, the Government would be well advised to dispose of their surplus machines, in addition to those already promised as gifts, at a nominal figure for home services, and for those great Dependencies who provided the Mother Country with such excellent fighting men. There are some hundreds of thoroughly trained and efficient overseas air pilots, who would be magnificent material to man these air mail services.

It is understood that the Air Ministry are organising an air service between Cairo and Karachi. This is probably the most difficult part of the England-to-Australia route to organise from the ground and supply point of view, and the Ministry are to be congratulated in attacking the hardest part of the problem. It must be remembered, however, that the amount voted by Parliament for civil aviation is not considerable, and in view of the national financial position the Ministry will, of necessity, be very greatly reduced in comparison with its size and activities in the past. It can, however, by disposing of its surplus machines in the direction indicated, at a nominal figure, make it possible for the "flight habit" to be acquired by people who will, by reason of their knowledge of air flying, create a demand that will enable private enterprise to provide the long-distance services. With the exception of a few obsolete single-seater types, suitable for fighting only, it should not be necessary for the Government to break up any machines.

TO FLYING-BOAT ENTHUSIATS.

Those who are at all interested in flying-boats, and especially those who have served with the big-boat squadrons on the East Coast, will probably be glad to know that an extraordinarily fine autotype engraving has been published of Mr. C. E. Turner's Academy picture, "The Channel Patrol: An F.2 Flying-Boat Taking Off."

The drawing of the boat is almost photographic in its accuracy. The picture is full of life and gives one a splendid impression of one of these huge boats crashing through the tops of the waves just before leaving the water.

The reproduction is splendidly done and the print—which measures 15 in. by 8½ in. without the mount—is in itself a work of art. The prints are published at one guinea each by the Autotype Fine Art Co., Ltd., 74, New Oxford Street, W.C.

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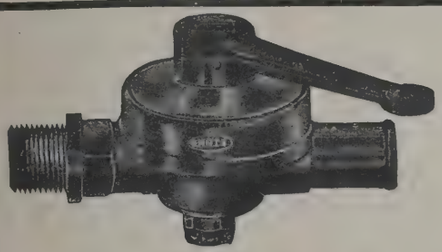
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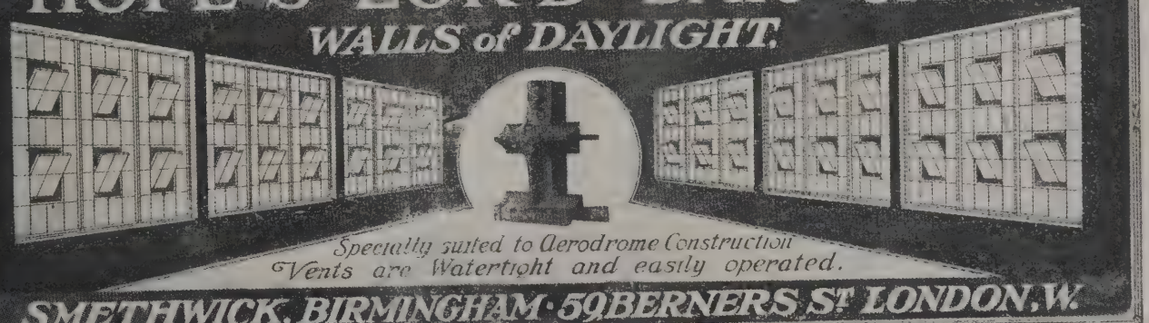
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AIRCRAFT IN PARLIAMENT

Dec 18th—The following written answer was given :—

KENLEY AERODROME.

Sir STUART COATS asked the Under Secretary of State to the Air Ministry whether, in view of the danger to aviators landing at the Kenley Aerodrome on account of its exceptional altitude and liability to be enveloped in clouds and fog, as instanced by the recent fatal accident near Caterham, and also in view of the annoyance caused to the residents of the district by the noise of arriving and departing aeroplanes, he will consider the permanent abandonment of the site and the restoration of the common, so far as may be possible, to its original condition?

Mr. CHURCHILL: The situation of this aerodrome, on which a large amount of money has been spent, renders it of great importance in connection with the Air Defences of London, and it is considered desirable that it should, therefore, be retained as a permanent station by the Royal Air Force. The advantages and disadvantages of the prevailing atmospheric conditions at Kenley were fully considered at the time when this decision was taken.

* * *

Dec. 22nd :—The following oral answers were given :—

AIRSHIPS (COMMERCIAL PURPOSES).

Major Sir B. FALLE asked the Prime Minister if he was aware that the R.34 and R.39, the two latest rigid airships, are to be sold for commercial purposes; and if he will allow one of them to be retained for the use of the Indian Government on the North-West Frontier of India.

Mr. BONAR LAW: The answer to the first part of the question is in the negative. I am making inquiries in regard to the suggestion in the last part of the question.

DOUGLAS-PENNANT INQUIRY.

Sir J. BUTCHER asked the Prime Minister whether he would reconsider the present system under which the House of Lords were able to appoint Committees of Inquiry against the wishes of the Government and of the House of Commons, as in the Douglas-Pennant case, and thereby to incur large expenditure and throw heavy burdens on the public purse.

Mr. BONAR LAW: As I stated on Dec. 10th last this raises a very big constitutional question, and I do not think it is possible to deal with it by question and answer.

* * *

Dec. 23rd :—

AIR ESTIMATES.

Before the adjournment of the House Major Glynn asked a question of the Leader of the House in view of the importance of a reply which he received from the Secretary of State for War.

The question was :—"To ask the Secretary of State for War whether the memorandum by the Chief of the Air Staff issued with the Air Estimates had received detailed consideration by and the approval of the Board of Admiralty and the Army Council; and whether it is intended to supplement the Chief of the Air Staff's memorandum with any comments passed on it by the Admiralty and the War Office in so far as those Departments are affected by the proposals contained in it."

The reply was :—"No, Sir, it was stated in the memoranda that the organisation proposed was provisional. I was anxious that it should be published in order that the House might be informed at the earliest possible moment of the general outline of the proposed permanent organisation of the Royal Air Force. Discussions are now proceeding between the Departments concerned. The financial limits of the scheme must be taken as definitely settled by the Cabinet."

Major GLYNN said that that reply showed that there was no co-ordination between the technical heads of the Air Ministry, the War Office, and the Admiralty, and asked if the terms of the memorandum by the Chief of the Air Staff would remain the policy of the Government, or if fresh proposals would be considered by the Committee of Imperial Defence or the recognised experts of the Navy and Army before they were presented to the House as the settled policy of the Government.

Mr. BONAR LAW said he could not give an answer to the question without notice. The Cabinet approved of the Trenchard scheme on general grounds. The formation of a Joint Imperial Staff is receiving the attention of the Cabinet.

* * *

The following written answers were given :—

DISORDER AT HENLOW.

Mr. W. THORNE asked the Secretary of State for War if he was aware that on Sunday night, Nov 2nd last, there was an outbreak of disorder among the Royal Air Force men at Henlow station; that whilst the disturbance was being dealt with by the non-commissioned officers a number of men concerned entered hut No. 21 whilst the proper occupants were in bed and asleep; that following the occurrence a number of the latter were picked out and charged with inciting to mutiny and other counts, and without their defence being considered were sentenced to detention at Wandsworth and loss of grade; that such punishment has caused indignation and discontent; and if he will order an inquiry into the matter with a view to justice being done to innocent men?

Captain GUEST: The answer to the first part of the hon. gentleman's question is in the affirmative; to the second part, that the men who caused the disorder were rounded up in hut No. 21; to the third part, that these men were brought before the commanding officer, and that none of them were dealt with without their defence being considered. Four men were tried by general court martial, 11 elected to be tried by district court martial and have already been brought to trial, and the remainder were dealt with summarily. I am not aware that indignation and discontent has been caused by the way in which this outbreak has been dealt with. If the hon. Member has any reason to believe some or any of the men who were in bed and asleep have been punished unjustly and will furnish me with the names, I will have *that* matter inquired into.

AEROPLANE DURABILITY.

Mr. MURCHISON asked the Secretary of State for War whether he can state the average life in flying hours under peace conditions of two-engined aeroplanes capable of carrying 20 to 30 passengers and single-engined aeroplanes carrying up to four passengers?

Captain GUEST: The period that has elapsed since civil flying under peace conditions commenced has been insufficient to allow such reliable data to be obtained as would enable a useful answer to be given to this question. The necessary data are being collected. It may, however, be observed in this connection that if the proper replacements, both of engine and aeroplane parts, are made during the periodical overhauls, there is no reason why any aeroplane should ever wear out, as after 200 hours' flying there will probably be very little of the original machine left.

OFFICERS (RANK).

Viscount WOLMER asked the Under Secretary of State to the Air Ministry whether officers of the Royal Air Force promoted to the substantive rank of major for distinguished service rendered in the war by His Majesty in the New Year Honour List have been now instructed to vacate their position in the Royal Air Force as majors, to relinquish this rank, and to report back to their old unit.

Major TRYON: Promotion in the Royal Air Force is given in respect of an officer's Royal Air Force commission and is not Army rank. The number of Air Force officers has been reduced from, approximately, 30,000 at the date of the Armistice, to about 4,000 at the present date, and consequently a large number of officers seconded to the Air Force from the Army have been returned to their units. Promotions in the Royal Air Force conferred as rewards for good service in the Air Force on officers seconded from the Army must necessarily become inoperative during the subsequent service of these officers in the Army unless they have attained equivalent rank in their parent service. The question of allowing officers, who have not then attained Army rank equivalent to their Royal Air Force rank, when they finally leave the Army to reassume their Royal Air Force rank will again be considered.

A NOVEL OF THE AIR.

OVER AND ABOVE. By J. E. Gurdon. London: Wm. Collins, Sons, and Co., Ltd. Pp. vi + 250. Price 7s. 6d.

There are some books which, while not in themselves masterpieces, bear in them the true impress of life. Each incident is related with an intimacy which seems as though it could only have been acquired by personal experience. Few of the many hundreds of war books published in the past five years have any trace of this quality or indicate with any degree of truth the mental altitude of those who had to take an active part in the recent hostilities.

"Over and Above" has this quality of truth. It is not possible to discover whether the author has himself any personal experience of the incidents he describes, but it is hard to realise how he could have written in so convincing a manner unless he had served with a flying unit.

The book describes the life of a pilot from the days of preliminary training, through the usual experiences of bombing and fighting, to the days when, having received promotion and due honours, he returns to England for other duties. The characterisation is excellent, and it is possible that the squadron whose deeds are told might be recognised by those who have a catholic knowledge of personalities in the R.F.C. and R.A.F.

The weariness of life in "Dud Weather" is well described, and there is a vivid realism in the description of an aerial fight in the chapter on the "First Hun."

The book is uniform in construction, and it is not possible to select *purpuriae panni* without doing an injustice to the rest of the work. It does not achieve greatness, but it is well above the average of war novels.

A NEW FRENCH ENTERPRISE.

The administrative and editorial departments of the new French monthly aeronautical review, "L'Air," has recently been removed to 5, Rue de l'Isly, Paris. The telephone number of the paper is Louvre 4756.

"L'Air" is striking out an entirely new line in French journalism. It has long been the lamentable custom of French papers to demand payment for editorial notices, with the result that, even in such important matters as show reports, firms which do not pay for the editorial notices of their products are either left unnoticed or, if so important that they cannot be ignored, are given only very insignificant space. "L'Air" has adopted the method prevailing among all reputable British papers in that it reviews the products of manufacturers and the doings of their products quite impartially, irrespective of whether the firms advertise or not, and under no circumstances does it ask or receive payment for matter contained in its editorial columns.

Under the presidency of M. Laurent Eynac, Parliamentary Deputy, Vice-President of the Parliamentary Aviation Group, and under the technical direction of M. Roche d'Estrez, "L'Air," is rapidly taking a foremost place among French technical journals, and its new method of doing business is bound to win it the respect and appreciation of all concerned with the French Aircraft Industry.

THE DAILY DRUDGERY OF PLEASURE.

A correspondent in Bradford writes :—

The Berkshire Aviation Company performed here during the week ending Nov. 23rd on Avros. They flitted very pleasantly over the works on several occasions and on each occasion a number of hard-worked sons of toil might have been observed gazing Heavenwards with a vacant expression, having apparently left their dearly loved work for the express purpose. However, anything which takes their minds away from the daily drudgery of backing horses and running up the cost of living is probably for their mental good.

EXTRACTS FROM "THE LONDON GAZETTE."

GREAT BRITAIN.

NAVAL.

ADMIRALTY APPOINTMENTS.

ADMIRALTY, Dec. 15th.

R.M.L.I.—Maj. P. Owen returns to Corps. Duty from Secd. List (R.A.F.), and will be borne supy. to estbt. until absorbed, Dec. 15th.

ADMIRALTY, Dec. 17th.

Lt. to be Lt.-Cmdr.:—C. J. L'Estrange Malone, M.P., Dec. 15th.

MILITARY.

WAR OFFICE, Dec. 18th.

REGULAR FORCES.—MEMORANDA.—The following Ormrs. and Capts. resign their commns. on being appointed to permanent commns. in the R.A.F.:—A. Fletcher, C.M.G., C.B.E., M.C., A. H. Measures, O.B.E., W. J. Ryan, C.B.E., A. Levick, O.B.E., F. H. Unwin, O.B.E., H. W. Stration, O.B.E., Aug. 1st.

The following Ormrs. and Lts. resign their commns. on being appointed to permanent commns. in the R.A.F.:—J. Mead, C.B.E., M.C., W. Thomas, M.C., Aug. 1st.

TERRITORIAL FORCE.—INFANTRY.—13th Bn., Lond. R.—Ormr. and Capt. A. Ridley resigns his commn. on transfer to R.A.F., May 23rd, 1918 (substituted for the notification which appeared in "Gazette," Oct. 9th).

WAR OFFICE, Dec. 22nd.

TERRITORIAL FORCE.—INFANTRY.—4th Bn., Suff. R.—Sec. Lt. J. C. Clark to be Lt., and to remain secd. (R.A.F.), Oct. 26th, 1918.

4th Bn., York and Lanc. R.—Sec. Lt. B. S. B. Baylis to be Lt., and to remain secd. (R.A.F.), Sept. 28th, 1918.

WAR OFFICE, Dec. 23rd.

REGULAR FORCES.—R.A.S.C.—Temp. Capt. H. F. Melville, R.A.F., to be temp. Lt., Sept. 25th.

AIR FORCE.

AIR MINISTRY, Dec. 19th.

R.A.F.—The following officers have been granted short service commns. in the ranks stated, with effect from Dec. 19th. They will retain their seny. in the substantive rank last held by them prior to the grant of the short service commn.

In the case of officers now gazetted Flying Officer or Observer Officer from Pilot Officer, seny. will date from the date of "Gazette":—

Flight Lt.—F. J. Watts (A.).

Flying Officers.—J. L. Bernard (A.), E. J. A. Burke (A.), R. J. Copley (T.), J. S. Griffith, D.F.C. (A.), H. L. P. Lester (A.), H. E. Ranson (A.), C. B. Waters (A.).

Observer Officers.—D. Craik, J. E. Truss.

Flying Officers (from Pilot Officers).—R. B. Dormor (T.), H. J. Gye (A.), S. J. Mason (A.), C. McC. Vincent (A.), S. N. Webster (A.), L. Whitfield (A.).

Observer Officers (from Pilot Officers).—E. Cuthbert, S. P. B de Moyse-Bucknall, M. St. J. Ross, J. S. F. Watson.

The notifications appearing in the London "Gazettes" of the dates indicated below, appointing the following officers to short service commissions, are cancelled:—Flying Officer J. M. Russell (Ad.); Flying Officer R. L. G. Wright (A.), Sept. 12th; Flying Officer S. S. Flook, D.F.C. (A.); Flying Officer G. A. Morgan, A.F.C. (A.); Flying Officer I. C. R. Mackenzie (A.); Flying Officer F. J. W. Mellersh, A.F.C. (A.); Flying Officer G. A. Morgan, A.F.C. (A.), Oct. 24th; Flight Lt. F. J. Powell, M.C. (A.); Flying Officer J. L. Montgomery (A.), Dec. 12th.

R.A.F.—The classification of Maj. W. J. Shields is "(T.)" and not "(Ad.)" as stated in the "Gazette" of Aug. 1st.

The notification in the "Gazette" of Aug. 1st appointing the following officers to permanent commns. is cancelled:—Maj. R. H. Howell (S.O.), Capt. W. B. Lawson (A. and S.), Lt. C. M. Eastley (A.).

The notification in the "Gazette" of Aug. 22nd appointing Capt. A. S. C. MacLaren, M.C., A.F.C. (A.), to a permanent commn. is cancelled.

The notification in the "Gazette" of Oct. 28th appointing Flying Officer I. H. P. McEwen (A.) to a permanent commn. is cancelled

The following temp. appointment is made:—

Staff Officer, 3rd Class.—(Q.) Flight Lt. T. G. Gordon, M.B.E., Dec. 12th.

FLYING BRANCH.—Sec. Lt. L. Harrison to be Lt., May 27th.

The following Cadets are granted temp. commns. as Sec. Lts. (O.):—175646 E. N. Howes, 176063 H. A. Thompson, Aug. 26th, 1918; 144746 J. C. Cook, 9438 T. S. Duncanson, 176676 L. W. Jones, 176685 P. H. Lewis, 177075 F. Silver, Sept. 9th, 1918.

The following relinquish their temp. R.A.F. commns. on return to Army duty:—Flying Officer K. A. Seth-Smith (Lt., Northd. Fus.), Nov. 17th; Pilot Officer (Hon. Flying Officer) E. M. Harris (Lt., R.F.A.), Dec. 1st; Flying Officer D. Hodson (Lt., 116th Mahrattas), Dec. 11th.

Sec. Lt. E. H. Fry relinquishes his commn. on ceasing to be empld., and is permitted to retain his rank, July 4th.

Lt. H. F. Nicholls, D.F.C., relinquishes his commn. on ceasing to be empld., Sept. 7th.

Transferred to unempld. list:—Sec. Lt. N. Abram, Jan. 6th (substituted for notification in "Gazette," Jan. 24th, wherein this officer's name was described as Abrams); Lt. J. O. Barclay, Jan. 8th (substituted for notification in "Gazette," Jan. 21st, wherein initials of this officer were described as J. B.); Sec. Lt. J. C. Cook, Jan. 21st; Lt. A. B. Paton, Jan. 25th; Lt. E. Wilson, Jan. 28th; Sec. Lt. V. H. Mayers, Sec. Lt. D. M. Rohrer, Sec. Lt. H. M. Ross, Feb. 1st; Sec. Lt. E. N. Howes, Feb. 5th; Sec. Lt. R. G. Sparey, Feb. 15th; Sec. Lt. A. Taylor, Feb. 16th; Sec. Lt. L. W. Jones, March 8th; Lt. B. H. Garrett, March 24th; Lt. F. G. Solis, Capt. A. Y. Wilks, March 15th; Sec. Lt. F. Silver, March 16th; Lt. R. Sykes, March 17th (substituted for notification in "Gazette," Nov. 7th); Lt. W. N. Fox, March 20th; Capt. F. C. Henderson, April 1st; Sec. Lt. P. H. Lewis, April 8th; Lt. H. A. Hewitt, April 10th; Lt. C. L. Hilborn, April 25th; Lt. M. B. Watson, May 1st; Sec. Lt. H. A. Thompson, May 6th; Sec. Lt. L. J. Murray, May 8th; Sec. Lt. J. H. Parry, May 13th; Sec. Lt. T. S. Duncanson, May 20th; Lt. C. J. Smith, June 8th; Lt. O. Green, June 9th; Sec. Lt. J. E. P. Levyns, June 14th; Lt. G. G. Williams, June 22nd (substituted for notification in "Gazette," Sept. 5th); Maj. T. D. Hallam, D.S.C., July 12th; Sec. Lt. W. R. Allin, Sept. 6th; Sec. Lt. H. F. Fisher, Sept. 9th; Sec. Lt. E. C. Brown, Sept. 12th; Lt. H. A. Cole, Lt. J. B. Dunlop, Sept. 28th; Lt. A. H. Allingham (substituted for notification in "Gazette" of Oct. 17th, wherein this officer's rank was shown as Sec. Lt.); Lt. E. A. Burn, D.F.C., Lt. G. Swannell, Sept. 29th; Sec. Lt. L. F. Copeland, Oct. 9th; Sec. Lt. F. B. Candy, Oct. 13th; Sec. Lt. C. H. Bridge, Oct. 22nd; Lt. T. L. Coates, D.F.C., Oct. 28th (substituted for notification in "Gazette" of Oct. 28th); Capt. R. Forbes-Bentley, D.S.C., Oct. 29th; Capt. J. B. Elliott, O.B.E., Nov. 4th; Sec. Lt. K. S. Eagles, Nov. 6th; Lt. J. L. Waugh, Nov 7th; Sec. Lt. N. G. Forester, Lt. W. G. Freel, Nov. 13th; Lt. G. W. Bellin, Sec. Lt. S. C. Capes, Lt. G. C. Grundy, Nov. 18th (substituted for notification in "Gazette" of Nov. 25th); Sec. Lt. N. Main, Nov. 24th; Lt. R. G. H. Davis, Sec. Lt. G. S. Smith, Nov. 25th; Sec. Lt. T. A. Clarke, Lt. R. E. S. Ferguson, Sec. Lt. F. T. Stott, D.F.C., Lt. W. T. B. Tasker, Nov. 26th; Sec. Lt. G. R. Allport, Sec. Lt. W. Todd, Nov. 27th; Sec. Lt. S. M. Fairey, Nov. 28th; Lt. M. H. Ely, Nov. 29th; Sec. Lt. A. Birch, Lt. C. J. Thomson, Dec. 1st; Sec. Lt. E. Baden-Owen, Lt. (Hon. Capt.) P. H. Flood-Page, Dec. 2nd; Lt. J. W. Blake, Capt. J. C. Croft, Lt. G. D. Machin, D.F.C., Dec. 3rd; Sec. Lt. C. H. Alvord, Lt. I. P. Anderson, Sec. Lt. J. H. Cunningham, Sec. Lt. O. P. Gosling, Lt. W. T. Jourdan, Sec. Lt. U. Macfarlane, Sec. Lt. L. Rolland, Sec. Lt. J. G. Stitt, Lt. A. L. M. Van-der-Byl, Sec. Lt. H. Wilton-Clark, Dec. 4th; Lt. C. W. Bishenden, Sec. Lt. J. D. Bosman, Dec. 7th; Sec. Lt. L. Hollingsworth, Sec. Lt. A. J. Marshall, Dec. 9th; Sec. Lt. W. H. Little, Dec. 10th; Sec. Lt. L. F. Mead, Dec. 15th.

The following Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank:—C. Channing (contracted on active service), Dec. 10th; A. C. Pickett (caused by wounds), Dec. 11th.

The initials of Lt. A. R. Gurney, M.C., are as now described, and not A. W., as stated in "Gazette" of April 8th.

The notification in "Gazette" of March 25th concerning Sec. Lt. A. Henderson is cancelled.

The notification in "Gazette" of June 6th concerning Lt. H. J. Gearing is cancelled.

The notification in "Gazette" of July 4th concerning Sec. Lt. E. H. Fry is cancelled.

The notification in "Gazette" of Oct. 7th concerning Lt. H. F. Nicholls, D.F.C., is cancelled.

The notification in "Gazette" of Oct. 28th concerning Lt. D. P. Davidson is cancelled (notification in "Gazette" of Dec. 2nd to stand).

The notification in "Gazette" of Dec. 9th concerning ex-Flight Lt. K. H Riversdale-Elliott (Lt., Sco. Rif.) is cancelled.

ADMINISTRATIVE BRANCH.—Sec. Lt. S. A. Hipple to be Lt., June 20th.

Pilot Officer H. Silvester to be Flying Officer, Oct. 1st.

The following relinquish their temp. R.A.F. commns. on return to Army duty:—Wing Comdr. D. Powell, C.B.E. (Maj. (Bt. Lt.-Col.), R. Welsh Fus.), Aug. 19th; Sec. Lt. (Hon. Lt.) H. Cooper, M.C. (Lt. (temp. Capt.), R. Fus.), Oct. 20th (substituted for notification in "Gazette" of Nov. 4th); Sqdn. Ldr. P. Owen (Maj., R. Marines) relinquishes his temp. R.A.F. commn. on return to Royal Marines, Dec. 15th.

Transferred to unempld. list:—Sec. Lt. A. Henderson, Feb. 19th (substituted for notification in "Gazette," March 25th, wherein this officer was shown under Technical Branch); Lt. (Hon. Capt.) (actg. Maj.) R. E. C. Knight-Bruce, Feb. 23rd (substituted for notification in "Gazette," March 11th, wherein this officer's name was described as R. E. C. Bruce-Knight); Lt. W. H. Williams, May 9th (substituted for notification in "Gazette," Nov. 11th, wherein this officer's rank was shown as Sec. Lt.); Sec. Lt. R. H. Sheldrick, May 20th; Capt. C. I. Casey, M.C., Lt. A. E. N. Jansen, May 30th (substituted for notification in "Gazette," March 28th); Sec. Lt. G. H. Davis, Aug. 16th; Lt. (Hon. Capt.) G. H. Hill, Sept. 28th; Capt. J. W. Carter, Oct. 11th; Sec. Lt. (actg. Capt.) N. Bucknall, Oct. 24th; Capt. H. S. Edgar, Nov. 13th; Lt. (actg. Capt.) C. Hodgkinson-Smith, Nov. 22nd; Lt. J. W. C. Dick, Capt. (actg. Maj.) C. Hodgkinson-Smith, Nov. 22nd; Sec. Lt. A. J. Tutton, Nov. 24th; Sec. Lt. (Hon. Capt.) R. Alston, Sec. Lt. R. L. Raymond, Sec. Lt. E. A. Williams, Nov. 29th; Sec. Lt. L. Collins, Sec. Lt. F. McKeown, Lt. C. Ridsdale, Nov. 30th; Sec. Lt. E. Bell, Sec. Lt. F. L. Carter, Sec. Lt. W. Macpherson, Dec. 1st; Lt. A. Baird, Sec. Lt. F. C. Matten, Capt. (actg. Maj.) J. L. Walshe, Dec. 5th; Lt. F. J. Deane, Dec. 7th; Lt. I. B. Finch, Dec. 9th.

Lt. A. D. Whitehead (R. War. R.) relinquishes his commn. on account of ill-health caused by wounds, Dec. 11th.

The initials of Lt. J. V. L. Hall are as now described, and not "T." V. L., as stated in "Gazette," Oct. 15th, 1918.

The initials of Flight Lt. E. St. C. Harnett, O.B.E., are as now described, and not E. St. Harnett, as stated in "Gazette," Dec. 16th.

The notification in "Gazette," Feb. 21st, concerning Lt. (actg. Capt.) S. Ransom is cancelled.

TECHNICAL BRANCH.—Flying Officer W. J. Standish is graded for purposes of pay and allowances as Flight Lt. whilst empld. as Flight Lt., Grade (A.), from Aug. 8th to Sept. 11th (substituted for notification in "Gazette," Oct. 17th).

Transferred to the unempld. list:—Maj. F. T. Ashford, Feb. 27th (substituted for notification in "Gazette," April 8th, wherein this officer was shown as Lt.); Capt. J. Brown, M.B.E., M.C., Oct. 20th; Lt. H. W. Baylis, Nov. 4th; Sec. Lt. A. A. Greenwood, Nov. 5th; Sec. Lt. R. E. F. L. Bristow, Capt. H. O'Hagan, Nov. 13th; Capt. G. H. Brooke, Nov. 15th; Sec. Lt. P. V. Davies, Capt. W. Wade, O.B.E., Nov. 21st; Maj. A. R. Earle, Nov. 23rd; Sec. Lt. H. J. G. Male, Lt. A. Stocks, Nov. 24th; Sec. Lt. (Hon. Lt.) S. A. Alder, Lt. P. F. W. Bush, Nov. 25th; Lt. H. S. Lewin, Lt. R. E. Reid, Sec. Lt. F. W. Turner, Nov. 30th; Capt. W. H. Bedford, Lt. B. W. H. Carter, Sec. Lt. A. Matthews, Dec. 1st; Lt. C. L. Brown, Lt. C. F. Bushnell, Dec. 2nd; Lt. G. E. Lane, Dec. 5th; Maj. H. L. Templer, Dec. 7th.

The notification in "Gazette" of Feb. 18th concerning Lt. W. J. Walford is cancelled (notification in "Gazette" of March 28th to stand).

The notification in "Gazette" of Nov. 21st concerning Lt. E. F. L. Taylor is cancelled (notification in "Gazette" of Oct. 14th to stand).

MEDICAL BRANCH.—Transferred to the unempld. list:—Lt. A. Henderson, March 11th (substituted for notification in "Gazette" of April 8th, wherein this officer was shown under Flying Branch); Capt. H. J. Orr-Ewing, April 26th.

The initials of Flight Lt. W. F. Shell are as now described, and not W. "E.," as stated in "Gazette" of Dec. 6th.

CHAPLAINS BRANCH.—Transferred to the unempld. list:—Rev. K. B. Somerville, B.A., Nov. 25th; Rev. D. H. A. Williams, B.A., Dec. 4th.

W.R.A.F.—Mrs. F. Day relinquishes her appt. on completion of service, Oct. 18th (substituted for notification in "Gazette" of Dec. 5th).

MEMORANDA.—Sec. Lt. D. R. Gunn to be Lt., July 16th.

Capt. C. W. Wise, O.B.E., M.C. (Capt., R.A.S.C., S.R.), relinquishes his commn. on ceasing to be empld., May 6th.

The following temp. Hon. Lts. relinquish their commns. on ceasing to be empld.:—T. B. Ringwood, March 25th; A. H. Simmonds, Sept. 16th; W. Williamson, Oct. 16th.

Transferred to the unempld. list:—Lt. (actg. Capt.) T. Jones, from (S.O.), Feb. 13th; Lt. C. G. Turpin, from (S.O.), Nov. 30th; Lt. R. W. Ward, from (S.O.), Dec. 2nd; Sec. Lt. M. B. Baker, from (S.O.), Dec. 4th; Capt. C. J. Marchant, M.C., from (S.O.), Dec. 11th.

The notification in the "Gazette" of Nov. 28th concerning Temp Hon. Lt. L. J. Hill is cancelled.

AIR MINISTRY, Dec. 22nd.

The King has given orders for the following appointments in recognition of distinguished services rendered during the war:—

C.B. (MILITARY DIVISION).

Wing Comdr. (actg. Group Capt.) B. H. C. Armstrong, C.M.G., R.A.F. (R.E.).

C.M.G.

Wing Comdr. F. W. Bowhill, D.S.O., R.A.F. (S. Russia).

C.B.E. (MILITARY DIVISION).

Sqdn. Ldr. (actg. Wing Comdr.) R. J. Bone, D.S.O. (N. Russia).

O.B.E. (MILITARY DIVISION)

Miss R. Balmer, M.B., Hon. Capt., R.A.F.M.S.; Flying Officer (A./Sqdn. Ldr.) A. D. Carey (N. Russia); Mrs. J. Christmas, Asst. Adminr. (A./Dep. Adminr.), W.R.A.F.; Flt. Lt. E. A. de Lossy de Ville (S. Russia); Flt. Lt. A. S. C. MacLaren, M.C., A.F.C.; Flt. Lt. R. E. Roe, M.B. (R.A.M.C.) (Mediterranean Area).

M.B.E. (MILITARY DIVISION).

Flying Officer W. Batcheldor (T.F., Gen. List) (France); P.O. (A./Flt. Lt.) W. Borland (S. Russia); Flying Officer N. G. Fraser, A.F.C., and Flying Officer S. J. Gardiner (N. Russia); Flying Officer W. H. Hoile (S. Russia); Pilot Officer A. Jukes and Flying Officer A. F. Lang (N. Russia); Sec. Lt. G. Moore (I. Force) (France); P.O. (A./Flt. Lt.) J. W. Tattersall (N. Russia); Flt. Lt. A. M. Thomas (Can. F.A.) (France and Canada); Flying Officer G. G. Tomling, M.C., Sec. Lt. D. E. Williams, and Flying Officer J. W. Young (S. Russia).

The King has approved of the following rewards to officers and other ranks of the R.A.F. in recognition of distinguished services rendered during the war and since the close of hostilities. (See footnote) :—

DISTINGUISHED SERVICE ORDER.

Sqdn. Ldr. L. Tomkinson, A.F.C. (N. Russia).

BAR TO DISTINGUISHED FLYING CROSS.

Flying Officer O. R. Gayford, D.F.C., Flt. Lt. J. W. B. Grigson, D.F.C., and Flying Officer B. G. H. Keymer, D.F.C. (S. Russia); Flying Officer T. M. Williams, M.C., D.F.C. (Baltic).

DISTINGUISHED FLYING CROSS.

Flt. Lt. W. R. D. Acland, A.F.C. (Baltic); Pilot Officer A. F. Adams (N. Russia); Pilot Officer J. L. Airey and Flying Officer F. R. Bicknell (S. Russia); Flying Officer H. C. E. Bockett-Pugh (N. Russia); Flt. Lt. D. G. Donald, A.F.C. (Baltic); Flt. Lt. D. S. Earp and Pilot Officer F. W. Foster, D.S.M. (N. Russia); Pilot Officer M. Goddard (S. Russia); Flying Officer L. M. Hilton and Pilot Officer J. S. Hunt (N. Russia); Pilot Officer W. W. Langdon and Flying Officer M. J. Langley (S. Russia); Pilot Officer G. Lansdowne (N. Russia); Lt. W. S. Philcox (France); Pilot Officer J. W. Ravenscroft (S. Russia); Pilot Officer A. J. Redman and Pilot Officer (Hon. Flt. Officer) G. G. Ross-Smith (N. Russia); Pilot Officer H. G. Thompson (S. Russia); Pilot Officer L. Timmons and Flt. Officer (A./Flt. Lt.) G. N. Trace (N. Russia); Observer Officer F. A. Whippey (Baltic).

AIR FORCE CROSS.

Flying Officer F. L. Barnard; Lt. A. C. Campbell-Orde; Lt. H. W. Chattaway; Wing Comdr. G. W. P. Dawes, D.S.O. (R. Berks R.); Pilot Officer R. F. Durrant; Maj. E. L. M. Leveson-Gower; Flying Officer R. Halley, D.F.C.; Flying Officer (A./Flt. Lt.) W. R. S. Humphreys (N. Russia); Flt. Lt. (A./Sqdn. Ldr.) J. E. M. Pritchard, O.B.E.; Flying Officer P. D. Robins; Wing Comdr. C. W. Wilson, M.C.

ROYAL RED CROSS (CLASS I).

Chief Sect. Ldr. Miss A. Pounder, W.R.A.F. (Nursing Serv.).

DISTINGUISHED FLYING MEDAL.

204181 Actg. Serjt. E. O'N. Bearden, A.F.M. (S. Russia)

AIR FORCE MEDAL.

122685 Serjt. T. Brown (Rigger); 213571 Actg. Serjt. W. A. Crockett (Fitter); 634 Flt. Serjt. A. E. Smith (Fitter).

MERITORIOUS SERVICE MEDAL.

219490 L.A.C. J. E. Alcock (S. Russia); 405620 A./M.2 R. C. Ashton (N. Russia); 26805 Serjt. H. C. Ashwell (Palestine); 402380 Serjt. C. E. Barker; 314127 Ldg. Mech. O. Bridger; 202020 S./M. 2 J. T. Brown and 212659 Serjt. J. Calderwood (N. Russia); 207122 Serjt. E. A. Cambridge (S. Russia); 253969 Cpl. H. Coulson; 165587 A./Cpl. H. J. Cox; 211401 Flt. Serjt. W. T. David; 277178 A./C. 1 (A./Cpl.) D. Duckworth; 39537 L.A.C. E. Eldridge; 208168 Cpl. W. G. Funnell; 406533 Cpl. G. L. Harris; 200091 Serjt. A. Hellinger, 242438 A./C. 2 (A./Cpl.) C. A. Kay; 206375 Flt. Serjt. A. S. Knight; 78259 A./S. C. F. Mann; 52215 L.A.C. A. L. Millard; 264628 Cpl. (A./Serjt.) F. D. Moulang; 25131 Serjt. S. H. Muir; 186965 Cpl. C. New; 161230 A.C. 1 R. J. Pullen and 200730 Serjt. W. H. W. Quantrell (N. Russia); 212187 Serjt. W. Tickle (S. Russia); 204128 Serjt. F. Tilley; 203615 Serjt. C. H. Winchester; and 461 Ch./M. Mech. J. Young (N. Russia)

MENTIONED IN DISPATCHES.

The following officers and other ranks of the R.A.F. have been mentioned in Dispatches and Reports for distinguished services overseas :—

Sqdn. Ldr. (A./Wing Comdr.) R. J. Bone, D.S.O.; Pilot Officer B. G. Blampied, Observer Officer C. G. Bloomer, and Pilot Officer C. S. Booth (N. Russia); Pilot Officer (Observer) L. J. Booth and Flt. Lt. C. Boumphrey (Baltic); Wing Comdr. F. W. Bowhill, D.S.O. (S. Russia); Pilot Officer W. G. Boyd (N. Russia); Flying Officer E. Brewerton (Baltic); Pilot Officer C. H. Bridge (N. Russia); Pilot Officer F. Buchanan and Pilot Officer T. Burton (S. Russia); Pilot Officer C. M. Byham (N. Russia).

Pilot Officer (Observer) L. J. Chandler (Baltic), Flying Officer W. R. Collins, and Flying Officer W. S. J. H. Coney (D.C.I.I.) (N. Russia).

Flying (Officer V.M. C. B. De Sarigny and Pilot Officer H. D. Diggle (N. Russia).

Flt. Lt. A. W. Fletcher, A.F.C., and Flying Officer J. MacG. Fairweather (Baltic); Pilot Officer L. Freeborn, M.B.E. (S. Russia).

Flt. Lt. E. S. Goodwin, A.F.C. (N. Russia); Flt. Lt. K. B. S. Greig (S. Russia); Sqdn. Ldr. (A./Wing Comdr.) R. Grey, D.S.O. (Capt., Gren. Gds.) (N. Russia).

Pilot Officer (Hon. Flt. Lt.) H. M. P. Hewett (1st Dgns.) (Baltic); Flying Officer L. C. Hooton, M.C. (N. Russia); Flying Officer J. W. Hoskings, M.B.E. (S. Russia).

Flying Officer J. C. A. Jenks (N. Russia); Pilot Officer (Observer) F. C. Jenner (Baltic); Pilot Officer W. H. Jinman (N. Russia); Pilot Officer T. P. T. Jones (N. Russia).

Pilot Officer L. H. Kemp (S. Russia); Flying Officer L. D. Kirk (7th Seaf. Highrs.) Pilot 100th Sqdn., Indept. Force (France); Flt. Lt. W. C. Knight (K. Bns.) (S. Russia).

Flt. Lt. G. E. Livock, D.F.C. (N. Russia); Pilot Officer (Observer) A. Lees (Baltic); Flying Officer N. S. Lott (N. Russia).

Flt. Lt. A. W. MacIlwaine, Flt. Lt. J. A. McNab, Flying Officer L. Martin, and Pilot Officer M. M. Miln (N. Russia); Pilot Officer R. G. K. Morrison (S. Russia).

Pilot Officer J. Noonan, D.S.M. (N. Russia).

Flying Officer H. N. O'Donnell (N. Russia).

Flt. Lt. E. Parker (S. Russia); Pilot Officer (Hon. Flt. Officer) W. D. Potter (N. Russia); Flying Officer H. G. Pratt and Flying Officer N. G. Pring (S. Russia); Pilot Officer J. S. Prowse (N. Russia); Flt. Lt. E. P. Punch (N. Russia—Med. Officer).

Pilot Officer L. Radford (N. Russia); Flt. Lt. A. C. Randall, D.F.C. (Baltic); Observer Officer W. Richards, 100th Sqdn., I. Force (France); Flying Officer N. M. S. Russell (N. Russia)

Flt. Lt. J. A. Sadler (S. Russia); Flying Officer W. Sanderson, A.F.C., Sec. Lt. J. Sewell, Pilot Officer (Hon. Flt. Officer) D. Sinclair, Pilot Officer E. Smith, Pilot Officer J. G. Smithson, Flt. Lt. N. G. Stewart-Dawson, D.S.O. (N. Russia).

Flying Officer J. T. Thursfield, Sqdn. Ldr. L. Tomkinson, A.F.C., Flying Officer R. M. Trevethan, M.C., and Flying Officer J. T. M. Tylden-Wright (3rd Hrs.) (N. Russia).

Pilot Officer (Observer) W. S. J. Waine (Baltic); Flt. Officer (Hon. Flt. Lt.) C. L. Wauchope (Northants R.) (N. Russia).

59452 Serjt. F. S. Anstey (N. Russia); 283763 A./C. 2 J. Ashbridge (S. Russia).

211587 Serjt. J. Bailey (S. Russia); 1357 Actg. S./M. J. Barrett, A.F.M. (N. Russia); 208103 Cpl. J. Bennett (S. Russia); 237295 L.A.C. C. H. Bosworth, 160089 A./C. 2 M. Bowley, 82659 A./C. 2 W. T. Burniston (N. Russia).

193789 A./M. 3 J. E. S. Cameron, 6882 S./M. 1 R. J. Campkin, 22839 Cpl. R. T. M. Clayton, 5092 Serjt. L. Coldrick, and 329888 A./Cpl. J. P. Curry (N. Russia).

242543 Cpl. R. H. Dealtry (S. Russia).

193765 A./M. 3 A. F. Emerson (N. Russia).

110500 L.A.C. L. Gale, 401912 Cpl. R. Gardiner, 202159 Q.M./Serjt. R. J. Glen, 187527 A./C. 2 W. R. Gouge (N. Russia).

401432 L.A.C. F. J. Hamm (N. Russia); 103338 A./M. 2 R. D. Harmer (S. Russia)

40447 A./C. 1 C. Jeavons (N. Russia).

235684 Cpl. L. J. Keen (S. Russia).

89809 A./C. 2 H. S. Meech (N. Russia).

248581 Cpl. F. R. Rodgers, 200362 S./M. S. Ryan, and 1659 Serjt. H. A. Sargent (N. Russia); 242320 Cpl. F. H. J. Sheail (S. Russia); 207995 Cpl. E. F. Shephard (N. Russia); 168404 A./C. 1 J. W. Smith, and 329900 Serjt. J. J. Smith (S. Russia).

329955 Serjt. F. W. P. Taylor (N. Russia).

65080 A./C. 2 H. T. Walters, 314428 Cpl. W. G. P. Watling, and 236178 L.A.C. S. O. White (N. Russia).

NOTE.—No further rewards will be granted to R.A.F. personnel in connection with the war, except in special cases of services overseas at the present time, in localities where a state of warfare exists.

FOREIGN DECORATION.

Major C. W. Wise, O.B.E., M.C. (R.A.S.C.), has been granted unrestricted permission to wear the 4th Class Order of the White Eagle, with swords, conferred on July 22nd by the King of Serbia for services in connection with the war.

CORRECTION.

Flt. Lt. H. Edwards (formerly R.N.A.S.) is the correct description of the officer designated "Pilot Officer Harry Edwards" in "Gazette" of Dec. 16th. (Mentioned for services whilst a prisoner of war.)

AIR MINISTRY, Dec. 23rd.

R.A.F.—The classification of Flt. Lt. D. F. Massy is "(S.O.)," and "(T.)" as stated in "Gazette" of Nov. 25th.

The notification in "Gazette" of Aug. 1st appointing Capt. L. E. Palmer (T.) to a permanent commn. is cancelled.

The following temp. appointment is made :—Staff Officer, 4th Class.—(Q.)—Flying Officer P. J. Murphy, Dec. 9th.

FLYING BRANCH.—H. Ward (late Lt. (Hon. Capt.), R.A.F.) is granted a temp. commn. as Lt. (A.), and to be Hon. Capt., June 1st.

Flying Officer C. D. Bennett to be Flying Officer (A.), from unempld. list April 30th, prec. next below Flying Officer G. C. Body.

The following Flight Cadets are granted temp. commns. as Sec. Lts. (A.) :—D. Semmer, P. J. K. Pinel, J. M. Miller, A. C. Symon, Oct. 17th, 1918.

The following relinquish their temp. R.A.F. commns. on return to Army duty :—Flying Officer W. J. Murphy (Lt., Border R.), Dec. 11th, 191; Flying Officer D. K. Paris, M.C. (Lt., R.F.A.), April 14th; Pilot Officer F. C. Lyall (Lt., R. Fus.); Flying Officer M. F. J. R. Mahony (Lt., R.I. Rif.), Nov. 7th; Flying Officer R. M. Roberts (Lt., York. L.I.), Nov. 10th; Pilot Officer C. H. W. Clarke (Lt., R. Fus.), Nov. 14th; Flying Officer W. R. Bucknall (Lt., Black Watch), Nov. 15th; Wing Comdr. C. Bovill, O.B.E. (Maj., R.G.A.), Nov. 20th; Flying Officer W. E. Knowlden (Lt., Border R.), Nov. 24th; Flying Officer C. C. L. Dowdall (Lt., R. Berks R.); Pilot Officer T. H. Langrishe (Sec. Lt., Ir. Gds.), Nov. 28th; Sqdn. Ldr. R. E. Lewis (Capt., W. Indies R.), Nov. 29th; Sqdn. Ldr. M. W. Noel, A.F.C. (Capt., L'pool R.), Dec. 1st; Flying Officer (Hon. Flt. Lt.) J. E. Hallonquist, D.F.C. (Capt., Sask. R.), Dec. 2nd; Sqdn. Ldr. L. Dawes (Capt., Midd'x R.), Dec. 6th; Sqdn. Ldr. F. B. Binney (Maj., R.F.A.), Dec. 7th.

Wing Comdr. W. Briggs (Eng.-Comdr., R.N.) relinquishes his temp. R.A.F. commn. on return to Naval duties, Dec. 16th.

Sec. Lt. A. T. Bower relinquishes his commn. on ceasing to be empld., Jan. 28th.

The following are transferred to unempld. list :—Sec. Lt. W. H. A. Rickett, Jan. 11th; Sec. Lt. (Hon. Lt.) S. W. Taylor, Jan. 13th; Sec. Lt. R. H. Stanbridge, Jan. 23rd; Lt. V. L. Dowling, Jan. 31st; Sec. Lt. J. W. Smith, Feb. 1st; Lt. D. D. Richardson, Feb. 3rd; Lt. A. Scott, M.C., March 19th; Capt. G. L. Elliott, April 1st; Lt. E. N. Ruffle, April 11th; Sec. Lt. H. H. Weeks, April 13th (substituted for notification in "Gazette" of Oct. 17th); Sec. Lt. W. L. Martin, April 16th; Lt. S. B. Lee, April 19th; Sec. Lt. A. McWilliam, April 21st; Lt. H. W. Smith, May 10th; Sec. Lt. V. R. Homersham, May 18th; Sec. Lt. H. A. Hoth, Sec. Lt. J. J. H. Hyde, May 20th; Lt. F. A. Pumphrey, May 21st; (substituted for notification in "Gazette" of May 13th); Lt. A. H. Gearing, June 1st; Sec. Lt. G. J. Hoffmeyr, Sec. Lt. W. Hornby, June 14th; Sec. Lt. H. R. Humphreys, Sec. Lt. J. Mellor, July 10th; Sec. Lt. N. G. Holtby, Sec. Lt. W. G. Howse, July 11th; Sec. Lt. G. A. Hogdetts, Sec. Lt. G. W. Hopkins, Sec. Lt. W. W. McCharles, July 12th; Sec. Lt. C. E. Irving, July 17th; Lt. P. F. C. Howe, July 29th; Lt. A. McD. Hyslop, Aug. 16th; Lt. P. Hotine, Lt. S. L. Russell, Aug. 22nd; Lt. C. H. Holcombe, Aug. 29th; Sec. Lt. R. G. H. Hopley, Sec. Lt. E. Hughes, Sept. 9th; Sec. Lt. (Hon. Lt.) J. H. L. Farfan, Sec. Lt. S. D. Horne, Sept. 20th; Lt. F. L. Hale, D.F.C., Sept. 26th; Sec. Lt. E. S. Clark, Sec. Lt. H. C. Ingram, Sec. Lt. M. F. Johnstone, Lt. G. W. Sweney, Sept. 28th; Lt. A. B. Holden, Sec. Lt. N. E. Horton, Sec. Lt. A. F. Inch, Capt. K. G. MacDonald, Lt. J. H. K. Roughsedge, Lt. A. G. Spencer, Sept. 29th; Lt. R. McIntosh, Oct. 2nd; Sec. Lt. G. P. Hendrickze, Oct. 6th; Lt. J. C. A. Jenks, Oct. 14th; Lt. J. H. S. Broughall, Oct. 17th; Sec. Lt. G. C. Fenton, Oct. 25th; Sec. Lt. R. F. Preedy, Nov. 6th; Sec. Lt. J. S. Morton, Nov. 10th; Lt. G. V. De Boissiere, Nov. 12th; Sec. Lt. W. C. Ingram, Nov. 13th; Sec. Lt. C. H. Stephens, Nov. 13th (substituted for notification in "Gazette" of Oct. 24th); Lt. L. M. Gerson, Nov. 21st; Capt. C. A. Hooper, Sec. Lt. G. S. Turner, Nov. 27th; Sec. Lt. R. A. Rowberry, Nov. 29th; Sec. Lt. (Hon. Lt.) J. P. Jones, Sec. Lt. J. Stopford, Lt. E. J. Suter, Nov. 30th; Sec. Lt. O. L. Canton, Sec. Lt. L. C. Holliday, Lt. M. Minter, Dec. 1st; Lt. H. R. Carson, Lt. D. N. Harland, Sec. Lt. L. A. Hill, Dec. 2nd; Capt. C. O. B. Beale, D.S.O., Sec. Lt. E. A. Siegrist, Capt. G. F. Smylie, D.S.C., Dec. 3rd; Lt. L. A.

A. Bernard, Sec. Lt. C. L. Gall, Sec. Lt. G. Hughes, Lt. F. T. S. Sehl, Sec. Lt. C. H. Stockwell, Sec. Lt. G. Williams, Lt. H. L. Woolison, Dec. 4th; Sec. Lt. E. S. Housley, Dec. 5th; Lt. M. Lee, Sec. Lt. M. J. MacKessack, Dec. 8th; Lt. T. J. Carroll, Capt. C. MacLaurin, D.S.C., Lt. T. J. West, M.C., Dec. 10th; Lt. L. W. Timmis, Dec. 11th; Sec. Lt. F. J. Brunton, Sec. Lt. W. Jeffries, Lt. A. L. Sinclair, Dec. 12th; Sec. Lt. P. J. O'Brien, Dec. 16th; Lt. K. W. Jones, Dec. 20th; Sec. Lt. W. A. Bartlett, Dec. 22nd.

Maj. C. H. Dixon, M.C., D.F.C. (Lt., K.O.Y.L.I.), resigns his commn. and is permitted to retain rank of Maj., Dec. 24th.

The following Lts. relinquish their commns. on account of ill-health, and are permitted to retain their rank :—P. D. P. Hamilton (contracted on active service), April 16th; L. M. Whittington (caused by wounds), Dec. 13th; C. M. Eastley (Lt., R.F.A., T.F.) (contracted on active service), Dec. 17th.

Lt. E. A. Westall, A.F.C. (Lt., Cameronians (Sco. Rif.)), relinquishes his commn. on account of ill-health contracted on active service, Dec. 16th.

Lt. H. G. Ross (Devon R.E., T.F.) relinquishes his commn. on account of ill-health, April 13th (substituted for notification in "Gazette" of Dec. 31st, 1918).

Lt. N. S. Dewey, M.C. (Lt., R.H. and R.F.A.) relinquishes his temp. R.A.F. commn. on retirement from Army, Dec. 13th.

Sec. Lts. relinquish their commns. on account of ill-health contracted on active service and are permitted to retain their rank :—G. H. Whitehead, Dec. 12th; Wm. Hall, Dec. 13th.

The surname of Sec. Lt. J. W. Lyell is as now described, and not "Lyrell" as stated in "Gazette" of Aug. 6th, 1918.

The notification in "Gazette" of May 9th concerning Lt. H. J. Walkerdine, M.C., is cancelled.

The notification in "Gazette" of June 13th concerning Sec. Lt. A. T. Bower is cancelled.

The notification in "Gazette" of Oct. 28th concerning Lt. F. Wood is cancelled.

The notification in "Gazette" of Nov. 7th concerning Lt. J. R. Field is cancelled. (Notification in "Gazette" of Oct. 24th to stand.)

The notification in "Gazette" of Nov. 25th concerning Lt. C. N. L. Lomax is cancelled.

ADMINISTRATIVE BRANCH.—Lt. A. Shelley is graded for purposes of pay and allowances of Capt. whilst empld. as Capt., from Feb. 4th to Aug. 1st.

Pilot Officer G. P. Abbott is graded for purposes of pay and allowances of Flt. Lt. whilst empld. as Flt. Lt., Sept. 23rd.

Flying Officer M. J. Norton to be Flying Officer, from (S.O.), Nov. 11th.

Sec. Lt. E. H. McEnery to be Lt., June 20th

The following relinquish their temp. R.A.F. commns. on return to Army duty :—Flt. Lt. D. G. F. Darley (Capt., 4th Drag. Gds.), May 24th (substituted for notification in "Gazette" of July 1st); Flying Officer M. Jacks (Lt., E. Lancs. R.), Nov. 3rd; Flt. Lt. C. E. Dalton (Capt., R. War. R.), Dec. 4th.

The following are transferred to unempld. list :—Lt. R. W. Rea, Jan. 15th; Sec. Lt. L. R. P. de C. Le Merle, March 18th; Lt. N. A. Holmes, June 25th; Lt. A. R. Porter, Sept. 13th; Lt. J. W. Ferguson, Sept. 28th; Lt. E. Higgs, Oct. 21st (substituted for notification in "Gazette" of Nov. 4th, wherein this officer was shown as Sec. Lt.).

Capt. H. C. Jones, Nov. 7th (substituted for notification in "Gazette" of Nov. 21st); Lt. J. Sims, Nov. 27th; Lt. H. H. C. Lamb, Nov. 28th; Lt. R. G. Green, Lt. G. Heard, Nov. 29th; Sec. Lt. J. E. Sankey, Sec. Lt. J. K. Small, Nov. 30th; Capt. C. V. Mercer, Dec. 1st; Maj. C. S. Danby, M.C., Dec. 2nd; Sec. Lt. A. H. R. Gowie, Capt. M. W. L. Hawkes, M.C., Sec. Lt. R. Pringle, Dec. 4th; Sec. Lt. J. L. Green, Dec. 5th.

Sec. Lt. W. T. Leonard relinquishes his commn. on account of ill-health contracted on active service, and is permitted to retain his rank, May 1st (substituted for notification in "Gazette," May 16th, wherein this officer was shown under "Flying Branch").

The surname of Lt. F. F. Norris is as now described, and not Morris as stated in "Gazette" of May 9th.

The initials of Lt. W. M. Paterson are as now described, and not H. M., as stated in "Gazette" of May 2nd,

The notification in "Gazette" of Sept. 16th concerning Sec. Lt. J. Mellor is cancelled.

The notification in "Gazette" of May 13th concerning Sec. Lt. S. D. Connolly is cancelled.

The notification in "Gazette" of Nov 18th concerning Sec. Lt. C. O. D. Kidd is cancelled.

TECHNICAL BRANCH.—Lt. T. A. Ellis to be actg. Capt whilst empld as Capt., Grade (A.), April 1st, 1918.

Flt. Lt. P. J. H. Sumner to be Flt. Lt., Grade (B), from (H.O.), Sept. 10th (substituted for notification in "Gazette" of Sept. 26th).

Pilot Officer G. H. Brown to be Pilot Officer, Grade (A.), from (S.O.), and is graded for purposes of pay and allowances as Flt. Lt. whilst empld. as Flt. Lt., Grade (A.), Dec. 1st.

The following Lts. are graded for purposes of pay and allowances of Capts. whilst empld. as Capts., Grade (B.) :—W. A. Kingston, May 1st; F. Petch, M.B.E., May 1st to Oct. 10th.

Lt. H. G. Baker is graded for purposes of pay and allowances of Lt. whilst empld. as Lt., Grade (A.), April 16th.

The following Sec. Lts. are graded for purposes of pay and allowances of Lt. whilst empld. as Lt., Grade (A.) :—(Hon. Lt.) R. E. Moore, H. P. Strong, May 1st.

Sec. Lt. C. Rawdon-Schofield (since relinquished his commn.) to be Lt., Grade (B.), April 2nd, 1918.

The following relinquish their temp. R.A.F. commns. on return to Army duty :—Sqdn. Ldr. H. R. Vagg (Lt., Som. L.I.), Dec. 4th; Flying Officer (Hon. Flt. Lt.) E. J. Iangridge (Adjt. and Capt., N. Staff. R.), Dec. 8th.

The following are transferred to unempld. list :—Lt. H. Linfield, Jan. 26th; Lt. F. W. Poat, Feb. 25th; Lt. E. G. Thompson, July 1st; Sec. Lt. S. G. G. Ashley, Aug. 12th; Lt. E. N. Gregory, Aug. 22nd; Sec. Lt. A. H. Jackson, Sept. 29th; Lt. G. F. Kennedy, Oct. 6th; Sec. Lt. C. H. N. Nunn, Oct. 14th; Lt. T. B. Jones, Nov. 8th; Lt. A. N. Greg, Nov. 11th (substituted for notification in "Gazette" of Nov. 28th); Sec. Lt. W. E. Hunt, Nov. 22nd; Capt. E. V. King-Hall, Nov. 29th; Lt. E. C. F. O'Connor Fenton, Lt. R. Macfarlane, Lt. H. J. Skingle, Nov. 30th; Lt. J. M. Patten, Dec. 1st; Lt. F. G. H. Hooper, Dec. 2nd; Sec. Lt. A. Gillingham, Sec. Lt. J. Ireland-Low, Dec. 4th; Sec. Lt. J. H. Furniss, M.B.E., Sec. Lt. A. V. Stanier, Dec. 10th; Capt. L. G. Fenner, Dec. 14th.

Capt. A. Belton, O.B.E. (Lancs. Fus.), relinquishes his commn. on account of ill-health caused by wounds, and is granted the rank of Maj., Nov. 4th (substituted for notification in "Gazette" of Nov. 14th).

Sec. Lt. (Hon. Lt.) C. D. Jackman (Lt., Norf. R.) relinquishes his commn. on account of ill-health caused by wounds, and is permitted to retain the rank of Lt., Nov. 11th (substituted for notification in "Gazette" of Nov. 25th).

MEDICAL BRANCH.—The following Flying Officers to be Flt. Lts. :—T. J. X. Canton, Nov. 25th; P. McDiarmid, Nov. 30th.

Capt. A. Kirkhope is transferred to the unempld. list, Nov. 30th.

The notification in "Gazette" of Aug. 19th concerning Flying Officer L. C. Broughton-Head is canceled.

W.R.A.F.—The following officers relinquish their appointments at their own request :—

Administrator.—Mrs. H. Simeon (D.A.C.), Dec. 13th.

Asst. Administrator.—C. Brothers, Dec. 2nd.

The following officers relinquish their appointments on completion of service :—Administrators.—Mrs. A. Rathbun (D.A.C.), Nov. 15th; I. Waistell, Dec. 4th.

Deputy Administrators.—M. M. Cottrill, Nov. 4th; Mrs. J. C. Paterson, Nov. 8th; Mrs. M. Gerard, Nov. 22nd; A. M. MacKintosh (actg. Adm. D.A.C.), Nov. 30th.

Asst. Administrators.—M. Cunninghame (actg. Dep. Adm.), Oct. 11th; E. Ingram (actg. Dep. Adm.), Oct. 14th; E. M. Lovat Fraser (actg. Dep. Adm.), Oct. 17th; G. P. Cassidy, J. M. Morton, Oct. 30th; E. G. Hamer, G. M. Master, M. H. Bell, Nov. 4th; E. J. Henderson, Nov. 8th; D. G. Negus, Nov. 18th; F. E. Dunn, L. M. Goddard, Nov. 22nd; M. Smith, F. E. Ball, Nov. 24th; M. C. Grantham (actg. Dep. Adm.), Nov. 25th; M. H. Grant, Nov. 27th; Mrs. J. Christmas (actg. Dep. Adm.), Nov. 28th; M. Peppercorn (actg. Dep. Adm.), D. Copland (actg. Dep. Adm.), Nov. 29th; J. I. C. Aitken (actg. Dep. Adm.), G. M. F. Bradley (actg. Dep. Adm.), Dec. 3rd.

MEMORANDA.—The following Overseas Cadet is granted an hon. commn. as Sec. Lt. :—152903 A. E. O'Carroll, Nov. 7th.

The following Proby. Flt. Officers are granted hon. commns. as Sec. Lts. :—A. F. Long, R. G. H Stone, March 7th; N. M. Hunter, April 2nd.

The following Cadets are granted hon. commns. as Sec. Lts. :—103150 G. Hampson, May 1st; M2/021532 L. E. Washer, May 6th; 39086 W. J. Sorrell, Nov. 30th.

Temp. Hon. Capt. R. E. Rollings relinquishes his commn on ceasing to be empld., Dec. 16th

The following relinquish their temp. R.A.F. commns. on return to Army duty :—Flying Officer J. H. Truscott (Lt. (Devon R.), Dec. 8th; Flt. Lt. A. Smith (Hamps. R.), Dec. 11th

The notification in "Gazette" of June 13th concerning No. 177075 F. Silver is cancelled.

The notification in "Gazette" of July 1st concerning 184038 Cadet S. M. McDonald is cancelled.

PERSONAL NOTICES.

NAVAL.

MARRIAGE.

SMYTH-PIGOTT—FEILDING.—The marriage took place on Dec. 22nd (instead of Dec. 30th, as previously arranged), at Newnham Paddox, Lutterworth, of Wing Comdr. R. Smyth-Pigott, D.S.O., R.A.F. (late R.N.A.S.), and Lady Clare Feilding. Owing to the recent death of the Countess of Denbigh, the bride's mother, the ceremony was very quiet, only immediate relatives of the bride being present. Father van Dillen officiated.

MILITARY.

DEATH.

EVERSDEN.—Capt. Robert E. Eversden, R.A.F., who was killed in the aerodrome at Ekaterinodar, South Russia, on Aug. 15th, was 24 years of age. Capt. Eversden, with one or two other English officers, were living in a railway carriage, but slept in a tent at some distance away. About midnight Capt. Eversden left the tent to get something out of his kit when he was shot dead by a sentinel. A report of the official inquiry into the circumstances of his death has been promised by Mr. Churchill.

Capt. Eversden, after serving in the Yeomanry and in the 19th Hussars, received a commission in the Suffolk Yeomanry and went to Gallipoli in September, 1915. After Gallipoli he served in German East Africa and was seconded for the R.F.C. in Egypt in November, 1918. From Egypt, where he was an instructor in aviation at Aboukir, he served in Palestine and did remarkable work in Allenby's campaign. He was made captain in the Suffolk Yeomany in June, 1916, and in the R.A.F. in April, 1917.

BIRTH.

RYDON.—On Dec. 21st, at Sandgate, Queensland, the wife of Capt. H. E. Rydon, R.A.F., of a son.

AIR FORCE.

DEATH.

BRADLEY.—Lieut. Stanley Blackall Bradley, late R.A.F., who died, aged 32, as a result of the aeroplane accident at Caterham on Dec. 11th, was privately educated at Cranleigh, subsequently training for four years in the Crewe Works of the L.N.W. Railway Co. He then entered Caius College, Cambridge, where he remained three years and read engineering. On leaving the University in 1913, he joined the Engineering Works of Craddocks, Wakefield, subsequently passing on to the house in India. He joined No. 110 Squadron, T.F., R.A.F., during the latter part of the war. When the war came to an end Mr. Bradley joined the staff of the Aircraft Travel and Transport Company. On the firm's behalf he visited Brazil, and on his return became one of the pilots on the London—Paris Service

Mr. Bradley was the fourth son of Rev. Walter Bradley, late Vicar of Birchfield, Birmingham.

MARRIAGES.

BELLORD—CARDEW.—The marriage of Captain Cuthbert G. Bellord, late R.A.F., eldest son of Mr. E. J. Bellord, and Margaret Isabel, elder daughter of Sir Alexander Cardew,

K.C.S.I., and Lady Cardew, C.B.E., took place quietly on Dec. 9th at St. James's Church, Spanish Place.

MACNAB—RADCLIFFE.—On Dec. 12th, at St. Margaret's, Westminster, Capt. J. Alexander Macnab, R.A.F., only son of the late J. A. Macnab and Mrs. Macnab, of Harrogate, was married to Irene Marguerite Campbell, only daughter of Commander C. A. Radcliffe, R.N., and Mrs. Radcliffe by the Rev. C. Whincup, of Heaton, uncle of the bridegroom.

MARSHALL—MITCHELL.—On Dec. 23rd, at the Church of St. Mary, Beddington, Surrey, Capt. Gerald S. Marshall, O.B.E., R.A.F. (Med.), was married to Kathleen Mitchell, late Deputy Administrator, W.R.A.F.

SOUTHALL—TOMPKINS.—On Dec. 22nd, at St. Edburg's Church, Bicester, Mr. A. W. Southall, R.A.F., son of Mr. and Mrs. Southall, of Bridge Gate, Retford, was married to Marjorie Mary, only daughter of the late Mr. W. Tompkins and Mrs. Tompkins, of Bicester.

ENGAGEMENTS.

DUTSON—HUDLESTON.—The engagement is announced between Jack Dutson (late Captain, R.A.F.), only son of Mr. and Mrs. William Dutson, of Bristol, to Dorothy, younger daughter of Mr. and Mrs. R. J. Hudleston, of Portishead.

JAMES—SADDINGTON.—The engagement is announced of Lieut. D. Brodie James (late R.A.F.), younger and only surviving son of Mr. and Mrs. A. F. Brodie James, of Kensington, W., and Miss Margaret Saddington, only daughter of Mr. and Mrs. H. Saddington, 15, Brunswick Square, Hove.

WAGHORN—SINGLETON-WISE.—The engagement is announced between Capt. Hugh Colin Waghorn, O.B.E., R.A.F., only son of Hugh Waghorn, of Wandsworth Common, S.W., and Miss Marjorie Agnes Janet Singleton-Wise eldest daughter of Ernest Singleton-Wise, of Bexhill, and Deepcove, British Columbia.

BIRTHS.

HAMERSLEY.—On Dec. 25th, at 62, Portsmouth Road, Woolston, Clarice (née Lees), the wife of Capt. H. A. Hamersley, M.C., late A.I.F. and R.A.F., of a son.

POWER.—On Dec. 8th, at Whoberley, Wendover, Bucks, the wife of Captain D'Arcy Power, R.A.F. Med. Ser., of a daughter.

PRESTON.—On Dec. 21st, at Cairo, the wife of Lieut. R. Chevallier Preston, R.A.F., of a son.

QUICK.—On Wednesday, Dec. 17th, at Torquay, the wife of Capt. J. T. Quick, late R.A.F.—of a daughter.

RABAGLIATI.—On Dec. 8th, at Velindre, Woburn Sands, Bucks, the wife of H. Victor Rabagliati, barrister-at-law, late Captain R.A.F., of a son.

TOMKINSON.—On Dec. 20th, at The Glen, Brook Lane, Felixstowe, to the wife of Squadron Leader Lancelot Tomkinson, A.F.C., R.A.F.—a daughter.

ROYAL AERO CLUB NOTICES.

THE FLYING SERVICES FUND COMMITTEE.

A meeting of the Flying Services Fund Committee was held on Monday, Dec. 15th, 1919, when there were present:—Group Capt. C. R. Samson, C.M.G., D.S.O., R.A.F., in the chair; Mr. Chester Fox; Sqdn. Leader T. O'B. Hubbard, M.C., R.A.F.; and the Secretary.

APPLICATIONS FOR ASSISTANCE.—Twenty-seven applications for assistance were considered, and grants and allowances were voted amounting to £290.

HOUSE COMMITTEE.

A meeting of the House Committee was held on Tuesday, Dec. 16th, 1919, when there were present:—Mr. Ernest C. Bucknall in the chair, Mr. Henry Knox, Mr. J. Stewart Mallam, and the Secretary.

SPECIAL COMMITTEE MEETING.

A special meeting of the Committee was held on Wednesday, Dec. 17th, 1919, when there were present:—Brig.-Gen. Sir Capel Holden, K.C.B., F.R.S., in the chair; Mr. Ernest C. Bucknall; Lieut.-Col. Spenser, D. A. Grey, D.S.O.; Sqdn. Leasder T. O'B. Hubbard, M.C., R.A.F.; Lieut.-Col. Mervyn O'Gorman, C.B.; Group Capt. C. R. Samson, C.M.G., D.S.O., R.A.F.; and the Secretary.

ELECTION OF MEMBERS.—The following new members were elected:—Percy Arthur Brooksbank, Flt. Lt. Leonard Herbert Cockey, R.A.F.; Capt. Alexander Paul Davidson, R.A.F. and H.L.I., Flt. Lt. Joseph Stewart Temple Fall, D.S.C., R.A.F.; Major Frederick Whittington Gamwell, R.A.F., Capt. John Osborn Groves (late R.A.F.), Capt. Geoffrey Herbert Hooper (late R.A.F.), Flt. Lt. Gerald Edward Livock, R.A.F., Hon. Sec. Lt. Douglas Marsh Mackay (King's Liverpool Regiment), Flt. Lt. Thomas Henry Newton, R.A.F., Lieut. Cuthbert Hanson Oliver (S.), Charles Osenton.

TEMPORARY HONORARY MEMBERSHIP.—Lieut. W. Coppens (Belgian Air Attaché), Capt. Gilbert de la Ferrière (Assistant French Air Attaché).

FLYING SERVICES FUND.—The report of the meeting of the Flying Services Fund Committee held on Dec. 15th, 1919, was received and adopted.

HOUSE COMMITTEE.—The reports of the meetings of the House Committee held on Dec. 2nd and 16th, 1919, were received and adopted.

FEDERATION AERONAUTIQUE INTERNATIONALE.—The following were appointed to represent the Club at the meeting of the Bureau of the Federation Aeronautique Internationale to be held in Paris on Tuesday, Jan. 6th, 1920, at 10 a.m.:—Lieut.-Col. Mervyn O'Gorman, C.B., Mr. Harold E. Perrin (secretary).

BRITISH RECORDS.—On the motion of the Chairman, it was unanimously resolved that the following British records be granted:—

Pilot: Capt. G. W. Gathergood. Machine: Airco 9R. (Aircraft Manufacturing Co., Ltd.). Motor: 450 h.p. Napier "Lion" (D. Napier and Son, Ltd.). Date: Dec. 6th, 1919.

DISTANCE IN A GIVEN TIME: CLOSED CIRCUIT.

Aviator and One Passenger.

Time.	Distance.	K.P.H.	M.P.H.
¼ hr.	57.29 kil. (35.60 miles)	229.16	142.40
½ hr.	115.60 kil. (71.83 miles)	231.20	143.66

SPEED: CLOSED CIRCUIT WITHOUT ALIGHTING.

Aviator and One Passenger

Distance.	Time.	K.P.H.	M.P.H.
50 kil.	13 min. 7 sec.	228.72	142.12
100 kil.	26 min. 1 sec.	230.62	143.30
150 kil.	38 min. 47 sec.	232.05	144.19

GREAT BRITAIN-AUSTRALIA FLIGHT.—The following cablegram to the Prime Minister of Australia was confirmed:—

Subject to verification of machine, Capt. Ross Smith has fulfilled the conditions laid down by Australian Government for £10,000 prize for flight from Great Britain to Australia. The Royal Aero Club, under whose competition rules and auspices the flight was made, will award prizes to Captain Ross Smith Royal Aero Club tenders its heartiest congratulations to the Prime Minister and all Australians on the successful accomplishment of this epoch-making flight.

The following message from Rear-Admiral H. S. Knapp, United States Navy, dated Dec. 11th, 1919, was read:—

Permit me to congratulate you upon the successful completion of the England to Australia flight. The indomitable pluck and perseverance of Captain Smith and his crew is typical of the spirit of British airmen, and their accomplishment adds another glorious page to the history of aviation achievements.

"DAILY EXPRESS" £10,000 PRIZE.—The regulations for this prize were approved.

FACILITIES FOR TOURING.—Group Captain C. R. Samson, C.M.G., D.S.O., R.A.F., and Lieut.-Colonel Spenser D. A. Grey, D.S.O., were appointed a Sub-Committee to consider what steps the Club should take regarding the publication of aerial routes and maps for touring.

THE FLYING SERVICES' FUND.

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Committee: H.R.H. Prince Albert, K.G. (Chairman); Mr. Chester Fox; Sqdn. Leader T. O'B. Hubbard, M.C., R.A.F.; Sqdn. Leader C. E. Maude, R.A.F.; Group Capt. C. R. Samson, C.M.G., D.S.O., R.A.F.

Secretary: H. E. Perrin.

Bankers: Messrs. Barclays Bank, Ltd., 4, Pall Mall East, London, S.W.1.

Total subscriptions received to Dec. 1st, 1919, £16,796 15s. 7d.

W. M. Lester, £5 5s.; J. E. Rosen, £1 1s.; Mrs. H. G. E. W. P. Consett, £2; Anonymous, £2; Capt. Leonard Miller (being instalment of the profits from the "Chronicles of 55 Squadron, R.F.C. and R.A.F."), £4; Right Hon. the Earl of Moray, £20; Rolls-Royce, Ltd., £105; Mrs. V. C. Johnson, £26 5s. Total, Dec. 20th, 1919, £16,962 6s. 7d.

ACROSS AUSTRALIA.

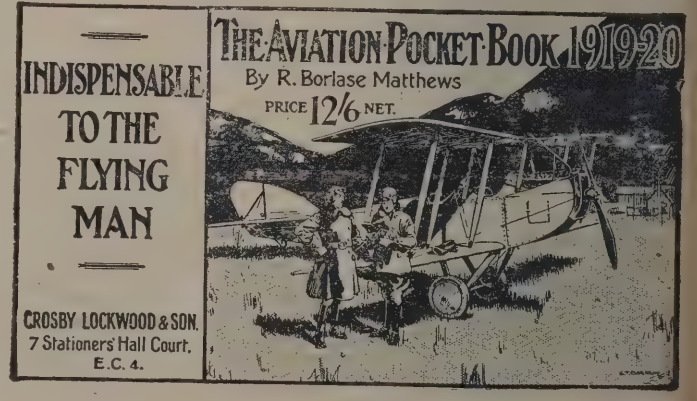
It is now known that the machine used by Capt. Wrigley on his flight from Melbourne to Port Darwin, which was reported recently, was a B.E.2e biplane. 90 h.p. R.A.F. engine, built by the British and Colonial Aeroplane Company, Ltd., in 1915.

THE BANGKOK AERODROME.

Capt. Ross Smith stated, with regard to his flight to Australia, that the first real aerodrome he encountered after leaving London was that outside Bangkok. This aerodrome was designed and erected by Barrow Brown and Co., Ltd., of Bangkok, with material supplied through their London agents, John Birch and Co., Ltd., 2, London Wall Buildings, E.C. The structural steel work was by E. Wood and Co., of Manchester.

LUBRICATION ON THE AUSTRALIAN FLIGHT.

Messrs. C. C. Wakefield and Co. had supplies of Castrol "R" at every stopping place on the route to Australia, and Captain Ross Smith was thus enabled to replenish without delay. Wakefield's have every reason to feel proud of their association with the latest and greatest feat in aviation.



SPECIAL S.B.A.C. ISSUE

THE AEROPLANE

Edited by C. Grey

WEDNESDAY, DEC 31, 1919.

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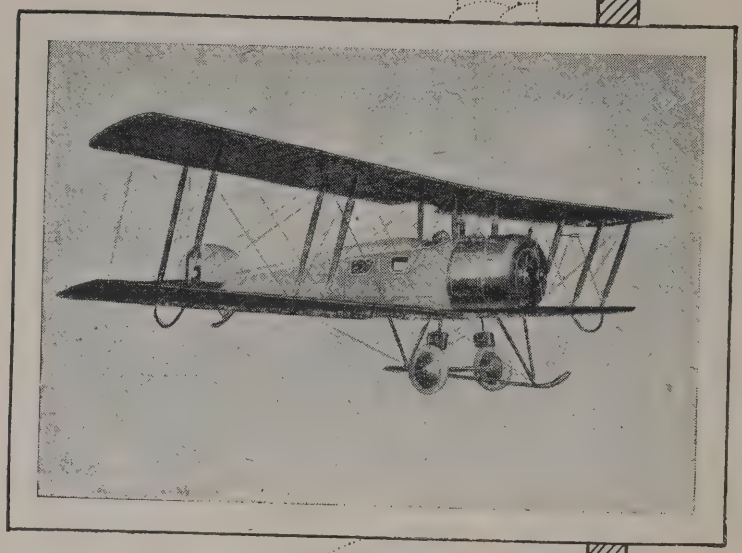
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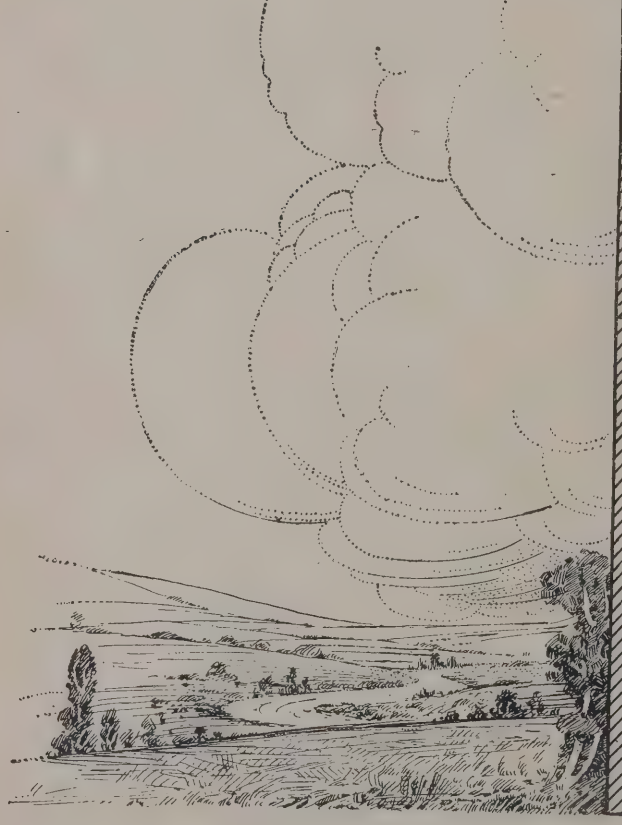
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By arrangement with the British and French Post Offices an express air-mail is now carried daily on this route. The fee is 2s. 6d. an ounce, over and above the usual rates of postage, and letters which are handed in during the morning in London, up to the times indicated, and at the Post Offices specified below, will be delivered in Paris by about 4 p.m. the same afternoon.

G.P.O., King Edward's Buildings, 11 a.m.; Threadneedle Street, 10.45 a.m.; Lombard Street, 10.45 a.m.; Parliament Street, 10.45 a.m.; Charing Cross 10.50 a.m.; W.C. District Office, 11.10 a.m.; W. District, 11.15 a.m.; S.W. District Office, 10.40 a.m.

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The rate for parcels is 5s. 1b., but in the case of parcels weighing more than 2 lbs., or for regular consignments, much lower rates can be quoted If handed in up to 10 a.m. at the agents specified below, parcels will reach Paris the same afternoon; whereas by land and sea, even if a special "Grand Vitesse" fee is paid, a parcel is several days, and perhaps a week, in reaching its destination.

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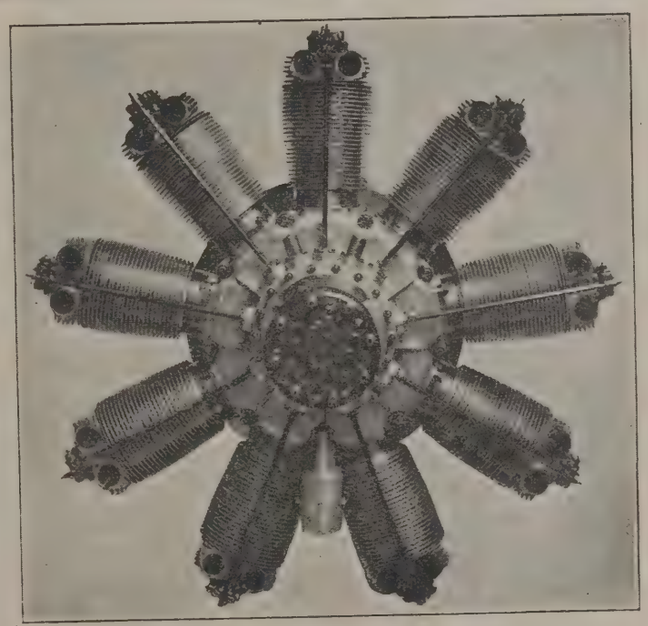
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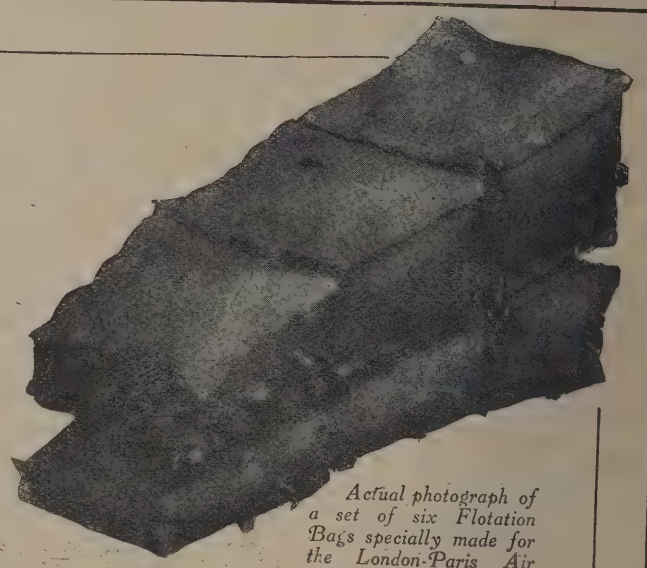
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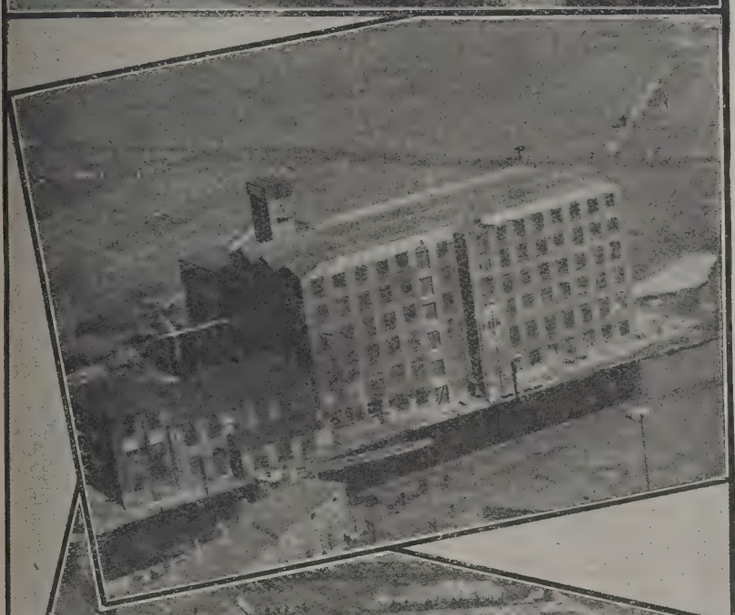
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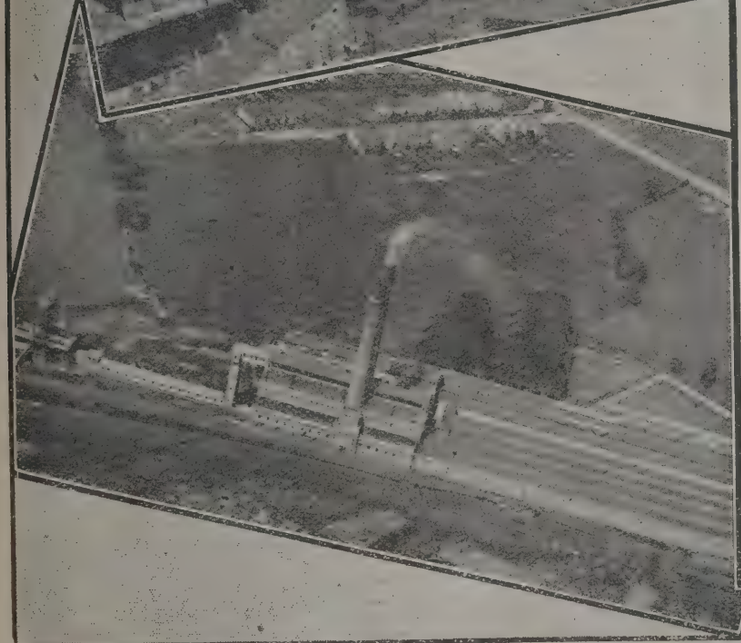
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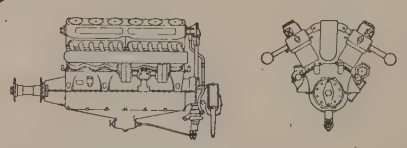
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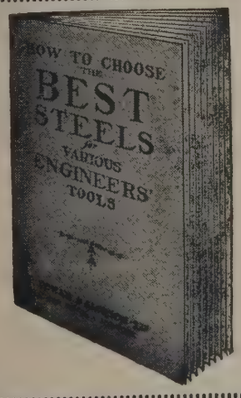
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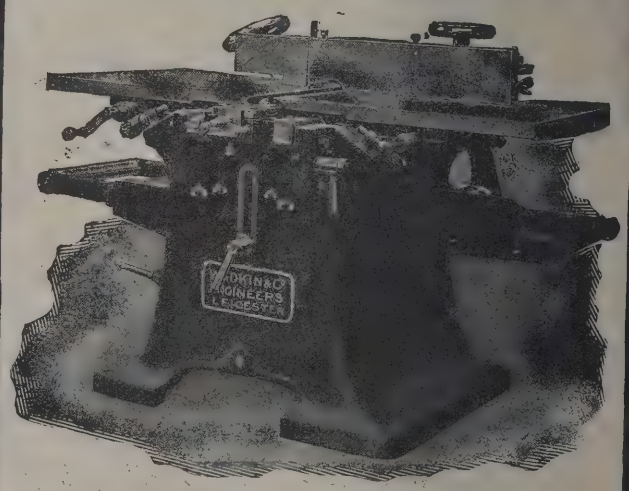
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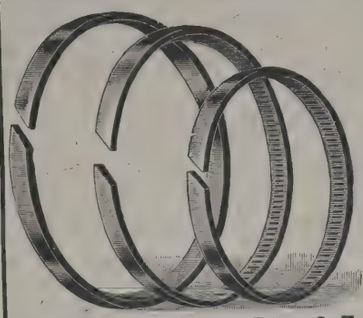
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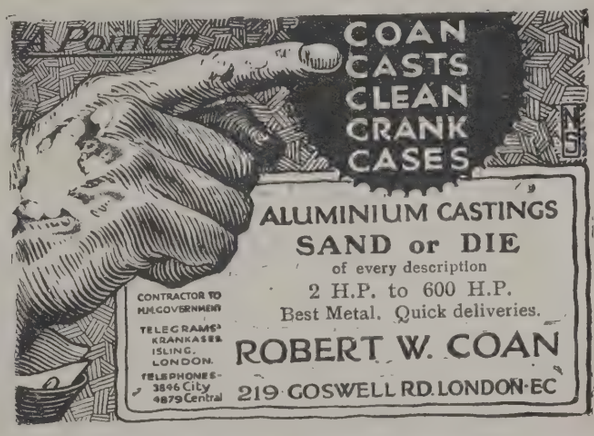
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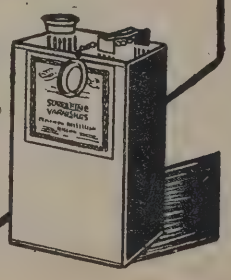
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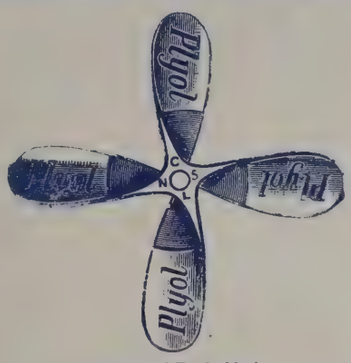
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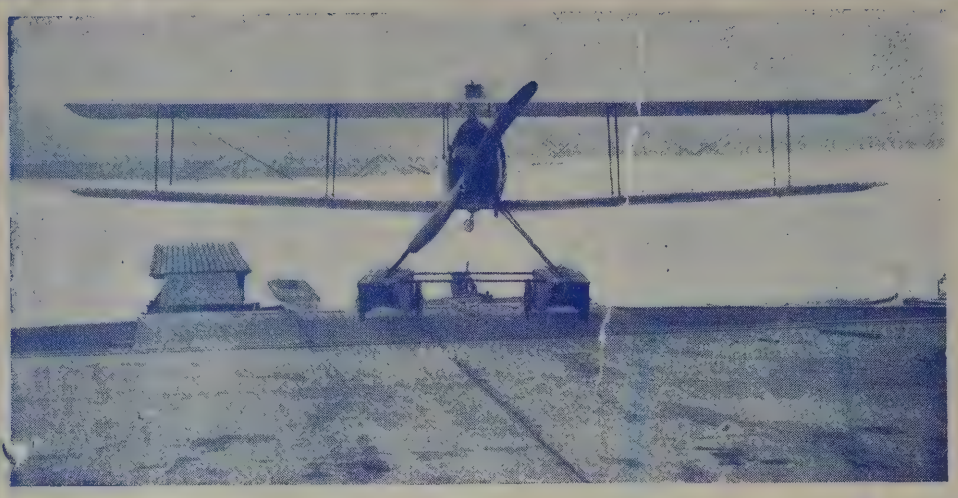
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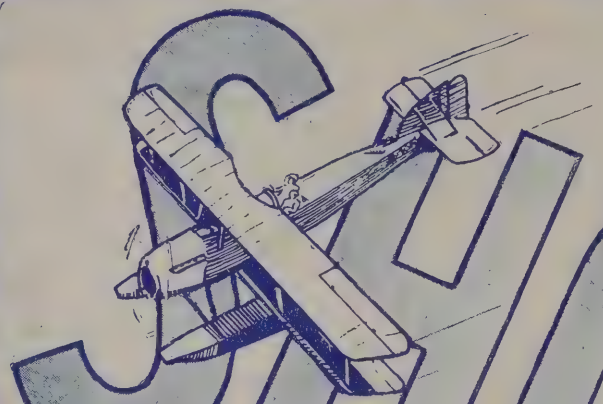
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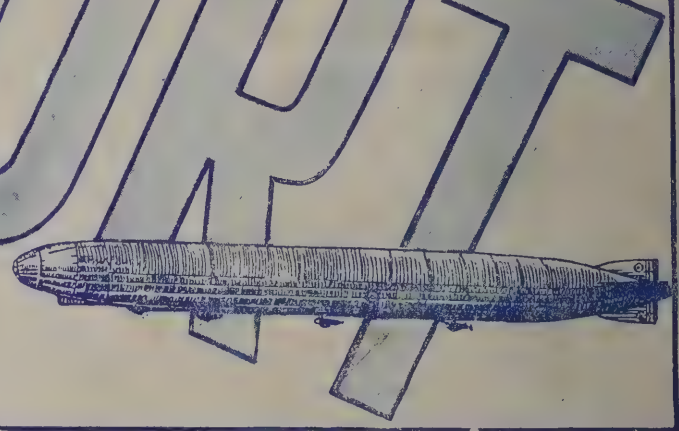


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